



## Open Source Used In Cisco Jabber for Android 14.3

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# 1.9 tidy 5.7.16

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# 1.11 websocketpp 0.8.2

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Bundled Libraries:

\*\*\*\*\* Base 64 Library (base64/base64.hpp) \*\*\*\*\*

base64.hpp is a repackaging of the base64.cpp and base64.h files into a single header suitable for use as a header only library. This conversion was done by Peter Thorson (webmaster@zaphoyd.com) in 2012. All modifications to the code are redistributed under the same license as the original, which is listed below.

base64.cpp and base64.h

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Ren Nyffenegger [rene.nyffenegger@adp-gmbh.ch](mailto:rene.nyffenegger@adp-gmbh.ch)

\*\*\*\*\* SHA1 Library (sha1/sha1.hpp) \*\*\*\*\*

sha1.hpp is a repackaging of the sha1.cpp and sha1.h files from the shallsha1 library (<http://code.google.com/p/smallsha1/>) into a single header suitable for use as a header only library. This conversion was done by Peter Thorson ([webmaster@zaphoyd.com](mailto:webmaster@zaphoyd.com)) in 2013. All modifications to the code are redistributed under the same license as the original, which is listed below.

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\*\*\*\*\* MD5 Library (common/md5.hpp) \*\*\*\*\*

md5.hpp is a reformulation of the md5.h and md5.c code from <http://www.opensource.apple.com/source/cups/cups-59/cups/md5.c> to allow it to function as a component of a header only library. This conversion was done by Peter Thorson (webmaster@zaphoyd.com) in 2012 for the WebSocket++ project. The changes are released under the same license as the original (listed below)

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L. Peter Deutsch  
ghost@aladdin.com

\*\*\*\*\* UTF8 Validation logic (utf8\_validation.hpp) \*\*\*\*\*

utf8\_validation.hpp is adapted from code originally written by Bjoern Hoehrmann <bjoern@hoehrmann.de>. See <http://bjoern.hoehrmann.de/utf-8/decoder/dfa/> for details.

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## 1.13 libjpeg 9d

### 1.13.1 Notifications :

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

### 1.13.2 Available under license :

The Independent JPEG Group's JPEG software

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README for release 9c of 14-Jan-2018

=====

This distribution contains the ninth public release of the Independent JPEG Group's free JPEG software. You are welcome to redistribute this software and to use it for any purpose, subject to the conditions under LEGAL ISSUES, below.

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

IJG is not affiliated with the ISO/IEC JTC1/SC29/WG1 standards committee (previously known as JPEG, together with ITU-T SG16).

#### DOCUMENTATION ROADMAP

=====

This file contains the following sections:

OVERVIEW        General description of JPEG and the IJG software.  
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REFERENCES     Where to learn more about JPEG.  
ARCHIVE LOCATIONS Where to find newer versions of this software.  
ACKNOWLEDGMENTS Special thanks.  
FILE FORMAT WARS Software \*not\* to get.  
TO DO           Plans for future IJG releases.



Other documentation files in the distribution are:

User documentation:

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

Programmer and internal documentation:

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

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

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

## OVERVIEW

=====

This package contains C software to implement JPEG image encoding, decoding, and transcoding. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and grayscale images.

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

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

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG

decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application.

We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

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

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The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable.

The same holds for its supporting scripts (config.guess, config.sub, ltmain.sh). Another support script, install-sh, is copyright by X Consortium but is also freely distributable.

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

## REFERENCES

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

The best short technical introduction to the JPEG compression algorithm is Wallace, Gregory K. "The JPEG Still Picture Compression Standard",

Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44.

(Adjacent articles in

that issue discuss MPEG motion picture compression,

applications of JPEG, and related topics.) If you don't have the CACM issue

handy, a PDF file containing a revised version of Wallace's article is

available at <http://www.ijg.org/files/Wallace.JPEG.pdf>. The file (actually

a preprint for an article that appeared in IEEE Trans. Consumer Electronics)

omits the sample images that appeared in CACM, but it includes corrections

and some added material. Note: the Wallace article is copyright ACM and IEEE,

and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in

"The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by

M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides

good explanations and example C code for a multitude of compression methods

including JPEG. It is an excellent source if you are comfortable reading C

code but don't know much about data compression in general.

The book's JPEG

sample code is far from industrial-strength, but when you are ready to look

at a full implementation, you've got one here...

The best currently available description of JPEG is the textbook "JPEG Still

Image Data Compression Standard" by William B. Pennebaker and Joan L.

Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1.

Price US\$59.95, 638 pp. The book includes the complete text of the ISO JPEG

standards (DIS 10918-1 and draft DIS 10918-2).

Although this is by far the most detailed and comprehensive exposition of

JPEG publicly available, we point out that it is still missing an explanation

of the most essential properties and algorithms of the underlying DCT

technology.

If you think that you know about DCT-based JPEG after reading this book,

then you are in delusion. The real fundamentals and corresponding potential

of DCT-based JPEG are not publicly known so far, and that is the reason for

all the mistaken developments taking place in the image

coding domain.

The original JPEG standard is divided into two parts, Part 1 being the actual

specification, while Part 2 covers compliance testing methods. Part 1 is

titled "Digital Compression and Coding of Continuous-tone Still Images,

Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS

10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of

Continuous-tone Still Images, Part 2: Compliance testing" and has document

numbers ISO/IEC IS 10918-2, ITU-T T.83.

IJG JPEG 8 introduced an implementation of the JPEG SmartScale extension

which is specified in two documents: A contributed document at ITU and ISO

with title "ITU-T JPEG-Plus Proposal for Extending ITU-T T.81 for Advanced

Image Coding", April 2006, Geneva, Switzerland. The latest version of this

document is Revision 3. And a contributed document ISO/IEC JTC1/SC29/WG1 N

5799 with title "Evolution of JPEG", June/July 2011, Berlin, Germany.  
IJG JPEG 9 introduces a reversible color transform  
for improved lossless  
compression which is described in a contributed document ISO/IEC JTC1/SC29/  
WG1 N 6080 with title "JPEG 9 Lossless Coding", June/July 2012, Paris,  
France.

The JPEG standard does not specify all details of an interchangeable file  
format. For the omitted details we follow the "JFIF" conventions, version 2.  
JFIF version 1 has been adopted as Recommendation ITU-T T.871 (05/2011) :  
Information technology - Digital compression and coding of continuous-tone  
still images: JPEG File Interchange Format (JFIF). It is available as a  
free download in PDF file format from <http://www.itu.int/rec/T-REC-T.871>.  
A PDF file of the older JFIF document is available at  
<http://www.w3.org/Graphics/JPEG/jfif3.pdf>.

The TIFF 6.0 file format specification can be obtained by FTP from  
<ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz>. The JPEG incorporation scheme  
found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems.  
IJG does not recommend use of the TIFF 6.0 design (TIFF  
Compression tag 6).  
Instead, we recommend the JPEG design proposed by TIFF Technical Note #2  
(Compression tag 7). Copies of this Note can be obtained from  
<http://www.ijg.org/files/>. It is expected that the next revision  
of the TIFF spec will replace the 6.0 JPEG design with the Note's design.  
Although IJG's own code does not support TIFF/JPEG, the free libtiff library  
uses our library to implement TIFF/JPEG per the Note.

## ARCHIVE LOCATIONS

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The "official" archive site for this software is [www.ijg.org](http://www.ijg.org).  
The most recent released version can always be found there in  
directory "files". This particular version will be archived as  
<http://www.ijg.org/files/jpegsrc.v9c.tar.gz>, and in Windows-compatible  
"zip" archive format as <http://www.ijg.org/files/jpegsr9c.zip>.

The JPEG FAQ (Frequently Asked Questions) article is a source of some  
general information about JPEG.  
It is available on the World Wide Web at <http://www.faqs.org/faqs/jpeg-faq/>  
and other news.answers archive sites,  
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## ACKNOWLEDGMENTS

=====

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Thank to Istvan Sebestyen and Joan L. Mitchell for inviting me to the ITU JPEG (Study Group 16) meeting in Geneva, Switzerland.

Thank to Thomas Wiegand and Gary Sullivan for inviting me to the Joint Video Team (MPEG & ITU) meeting in Geneva, Switzerland.

Thank to Thomas Richter and Daniel Lee for inviting me to the ISO/IEC JTC1/SC29/WG1 (previously known as JPEG, together with ITU-T SG16) meeting in Berlin, Germany.

Thank to John Korejwa and Massimo Ballerini for inviting me to fruitful consultations in Boston, MA and Milan, Italy.

Thank to Hendrik Elstner, Roland Fassauer, Simone Zuck, Guenther Maier-Gerber, Walter Stoeber, Fred Schmitz, and Norbert Braunagel for corresponding business development.

Thank to Nico Zschach and Dirk Stelling of the technical support team at the Digital Images company in Halle for providing me with extra equipment for configuration tests.

Thank to Richard F. Lyon (then of Foveon Inc.) for fruitful communication about JPEG configuration in Sigma Photo Pro software.

Thank to Andrew Finkenstadt for hosting the [ijg.org](http://ijg.org) site.

Thank to Thomas G. Lane for the original design and development of this singular software package.

Thank to Lars Goehler, Andreas Heinecke, Sebastian Fuss, Yvonne Roebert, Andrej Werner, and Ulf-Dietrich Braumann for support and public relations.

## FILE FORMAT WARS

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The ISO/IEC JTC1/SC29/WG1 standards committee (previously known as JPEG, together with ITU-T SG16) currently

promotes different formats containing the name "JPEG" which is misleading because these formats are incompatible with original DCT-based JPEG and are based on faulty technologies. IJG therefore does not and will not support such momentary mistakes (see REFERENCES).

There exist also distributions under the name "OpenJPEG" promoting such kind of formats which is misleading because they don't support original JPEG images.

We have no sympathy for the promotion of inferior formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, interoperable format standards for JPEG files.

Don't use an incompatible file format!

(In any case, our decoder will remain capable of reading existing JPEG image files indefinitely.)

The ISO committee pretends to be "responsible for the popular JPEG" in their public reports which is not true because they don't respond to actual requirements for the maintenance of the original JPEG specification.

Furthermore,

the ISO committee pretends to "ensure interoperability" with their standards which is not true because their "standards" support only application-specific and proprietary use cases and contain mathematically incorrect code.

There are currently different distributions in circulation containing the name "libjpeg" which is misleading because they don't have the features and are incompatible with formats supported by actual IJG libjpeg distributions. One of those fakes is released by members of the ISO committee and just uses the name of libjpeg for misdirection of people, similar to the abuse of the name JPEG as described above, while having nothing in common with actual IJG libjpeg distributions and containing mathematically incorrect code.

The other one claims to be a "derivative" or "fork" of the original libjpeg, but violates the license conditions as described under LEGAL ISSUES above and violates basic C programming properties.

We have no sympathy for the release of misleading, incorrect and illegal distributions derived from obsolete code bases.

Don't use an obsolete code base!

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TO DO

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Version 9 is the second release of a new generation JPEG standard to overcome the limitations of the original JPEG specification, and is the first true source reference JPEG codec.

More features are being prepared for coming releases...

Please send bug reports, offers of help, etc. to [jpeg-info@jpegclub.org](mailto:jpeg-info@jpegclub.org).

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/\*

\* jdct.h

\*

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\* This include file contains common declarations for the forward and

\* inverse DCT modules. These declarations are private to the DCT managers

\* (jcdctmgr.c, jddctmgr.c) and the individual DCT algorithms.

\* The individual DCT algorithms are kept in separate files to ease

\* machine-dependent tuning (e.g., assembly coding).

\*/

Found in path(s):

\* /opt/cola/permits/1103550007\_1605777850.47/0/jpegsrc-v9d-tar-gz/jpeg-9d/jdct.h



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## 1.16 open-ldap 2.4.57

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jar/com/google/gson/internal/LinkedTreeMap.java

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/opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/bind/ArrayTypeAdapter.java  
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\* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/bind/ReflectiveTypeAdapterFactory.java  
\*  
/opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java  
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- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/ExclusionStrategy.java
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- /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonDeserializer.java
- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/\$Gson\$Preconditions.java
- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/Excluder.java
- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonSerializationContext.java
- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonArray.java
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- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/Primitives.java
- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/reflect/TypeToken.java
- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/Gson.java
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- /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonIOException.java
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- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonDeserializationContext.java
- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonElement.java
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- \* /opt/cola/permits/1108597571\_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/FieldNamingPolicy.java
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* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/SqlDateTypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/ConstructorConstructor.java
*
/opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/TimeTypeAdapter.java
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jar/com/google/gson/internal/UnsafeAllocator.java
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jar/com/google/gson/internal/bind/TreeTypeAdapter.java
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jar/com/google/gson/internal/$Gson$Types.java
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jar/com/google/gson/JsonSyntaxException.java  
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jar/com/google/gson/stream/JsonWriter.java  
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jar/com/google/gson/stream/JsonScope.java

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## 1.20 json-c 1.1.0

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## 1.22 libcxxabi 9.0.9svn

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# 1.23 constraintlayout 2.0.1

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 */
```

Found in path(s):

```
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/state/helpers/GuidelineReference.java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/state/Reference.java
*
/opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/state/helpers/BarrierReference.java
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```

apply plugin: 'java'

apply plugin: 'maven'

```
compileJava {
    targetCompatibility = 1.7
    sourceCompatibility = 1.7
}

dependencies {
    testCompile 'org.testng:testng:6.9.10'
}

test {
    useTestNG()

    testLogging.showStandardStreams = true
}
```

```

beforeTest { descriptor ->
    logger.lifecycle("Running test: " + descriptor)
}
onOutput { descriptor, event ->
    logger.lifecycle("Test: " + descriptor + " output: " + event.message )
}
}

archivesBaseName = 'constraintlayout-solver'

project.ext.pomName = 'Android ConstraintLayout Solver'
project.ext.pomDesc = 'Solver for ConstraintLayout'

task publishLocal(type: Upload) {
    configuration = configurations.archives
    repositories {
        mavenDeployer {
            repository(url: uri("$rootProject.ext.localRepo"))
            pom.project {
                name project.ext.pomName
                description project.ext.pomDesc

                url 'http://tools.android.com'
                inceptionYear '2007'

                licenses {
                    license {
                        name 'The Apache Software License, Version 2.0'
                        url 'http://www.apache.org/licenses/LICENSE-2.0.txt'
                        distribution 'repo'
                    }
                }
            }
        }
    }

    scm {
        url 'https://android.googlesource.com/platform/tools/sherpa'
        connection 'git://android.googlesource.com/platform/tools/sherpa.git'
    }
    developers {
        developer {
            name 'The Android Open Source Project'
        }
    }
}
}
}
}
}

```



Found in path(s):

\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/build.gradle

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\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/widget/Barrier.java

\*

/opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/widgets/Chain.java

\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/GoalRow.java

\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/utils/HyperSpline.java

\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/widget/Constraints.java

\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/CenterWrapTest.java

\*

/opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/CircleTest.java

\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/widget/ConstraintAttribute.java

\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/widgets/Barrier.java

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\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/OptimizedGoal.java  
\*  
/opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/EquationVariableTest.java  
\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/ArrayRow.java  
\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/ArrayBackedVariables.java  
\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/Amount.java  
\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/OptimizationsTest.java  
\*  
/opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/OriginalGoal.java  
\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/test/java/android/support/constraint/solver/EquationVariable.java  
\* /opt/cola/permits/1270630270\_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/LinearSystem.java  
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2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/PriorityGoalRow.java

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2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/widget/StateSet.java
*
/opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/MotionLayout.java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/utils/Easing.java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/DesignTool.java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/KeyAttributes.java
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2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/SplineSet.java
*
/opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
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* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
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* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/KeyPositionBase.java
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2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/utils/CurveFit.java
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2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/KeyTimeCycle.java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/solver/src/main/java/androidx/constraintlayout/solver/Metrics.java
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es.java
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2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/KeyCycle.java
*
/opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/utils/StopLogic.java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/TimeCycleSplineSet.
java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/KeyFrames.java
* /opt/cola/permits/1270630270_1645057508.42/0/constraintlayout-2-0-1-zip/constraintlayout-
2.0.1/constraintlayout/constraintlayout/src/main/java/androidx/constraintlayout/motion/widget/KeyCycleOscillator.j
ava

```

## 1.24 libxml2 2.9.13

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The End

## 1.26 zlib 1.2.11

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/\* zlib.h -- interface of the 'zlib' general purpose compression library  
version 1.2.11, January 15th, 2017

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Jean-loup Gailly      Mark Adler  
jloup@gzip.org      madler@alumni.caltech.edu

The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), rfc1951 (deflate format) and rfc1952 (gzip format).

\*/

## 1.27 libiconv 1.17

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jar/com/am/appcompat/app/Fragment.java  
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jar/com/am/appcompat/app/ApplicationHolder.java  
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jar/com/am/appcompat/dialog/MaterialAlertDialog.java  
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jar/com/am/appcompat/view/FloatingActionMode.java

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jar/com/am/appcompat/view/MenuItemView.java  
\* /opt/cola/permits/1549830853\_1675235102.9042222/0/appcompat-1-6-0-sources-  
jar/com/am/appcompat/widget/ImageViewHelper.java  
\* /opt/cola/permits/1549830853\_1675235102.9042222/0/appcompat-1-6-0-sources-  
jar/com/am/appcompat/app/BackPressedDelegate.java  
\* /opt/cola/permits/1549830853\_1675235102.9042222/0/appcompat-1-6-0-sources-  
jar/com/am/appcompat/app/ApplicationCompat.java  
\* /opt/cola/permits/1549830853\_1675235102.9042222/0/appcompat-1-6-0-sources-

```
jar/com/am/appcompat/widget/AppCompatImageButton.java
* /opt/cola/permits/1549830853_1675235102.9042222/0/appcompat-1-6-0-sources-
jar/com/am/appcompat/view/ToggleLayout.java
*
/opt/cola/permits/1549830853_1675235102.9042222/0/appcompat-1-6-0-sources-
jar/com/am/appcompat/view/FloatingPopupWindow.java
* /opt/cola/permits/1549830853_1675235102.9042222/0/appcompat-1-6-0-sources-
jar/com/am/appcompat/view/BoundsAdapter.java
* /opt/cola/permits/1549830853_1675235102.9042222/0/appcompat-1-6-0-sources-
jar/com/am/appcompat/view/BackgroundLayout.java
```

## 1.30 curl 8.1.2

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## 1.31 unbound 1.13.1

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## 1.32 expat 2.4.8

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## 1.33 pcre 8.44

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End

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-----

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THE BASIC LIBRARY FUNCTIONS

-----

Written by: Philip Hazel

Email local part: ph10

Email domain: cam.ac.uk

University of Cambridge Computing Service,  
Cambridge, England.

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Written by: Zoltan Herczeg

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## 1.34 cpprest 2.9.0

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```
$$ -*- mode: c++; -*-
$var n = 50 $$ Maximum length of Values arguments we want to support.
$var maxtuple = 10 $$ Maximum number of Combine arguments we want to support.
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//
// Author: vladl@google.com (Vlad Losev)

// Type and function utilities for implementing parameterized tests.
// This file is generated by a SCRIPT. DO NOT EDIT BY HAND!
//
```

```

// Currently Google Test
// supports at most $n arguments in Values,
// and at most $maxtuple arguments in Combine. Please contact
// googletestframework@googlegroups.com if you need more.
// Please note that the number of arguments to Combine is limited
// by the maximum arity of the implementation of tr1::tuple which is
// currently set at $maxtuple.

#ifndef GTEST_INCLUDE_GTEST_INTERNAL_GTEST_PARAM_UTIL_GENERATED_H_
#define GTEST_INCLUDE_GTEST_INTERNAL_GTEST_PARAM_UTIL_GENERATED_H_

// scripts/fuse_gtest.py depends on gtest's own header being #included
// *unconditionally*. Therefore these #includes cannot be moved
// inside #if GTEST_HAS_PARAM_TEST.
#include "gtest/internal/gtest-param-util.h"
#include "gtest/internal/gtest-port.h"

#if GTEST_HAS_PARAM_TEST

namespace testing {

// Forward declarations of ValuesIn(), which is implemented in
// include/gtest/gtest-param-test.h.
template <typename ForwardIterator>
internal::ParamGenerator<
  typename ::testing::internal::IteratorTraits<ForwardIterator>::value_type>
  ValuesIn(ForwardIterator
    begin, ForwardIterator end);

template <typename T, size_t N>
internal::ParamGenerator<T> ValuesIn(const T (&array)[N]);

template <class Container>
internal::ParamGenerator<typename Container::value_type> ValuesIn(
  const Container& container);

namespace internal {

// Used in the Values() function to provide polymorphic capabilities.
template <typename T1>
class ValueArray1 {
public:
  explicit ValueArray1(T1 v1) : v1_(v1) {}

  template <typename T>
  operator ParamGenerator<T>() const { return ValuesIn(&v1_, &v1_ + 1); }

private:

```

```

// No implementation - assignment is unsupported.
void operator=(const ValueArray1& other);

const T1 v1_;
};

$range i 2..n
$for i [[
$range j 1..i

template <$for j, [[typename T$j]]>
class ValueArray$i {
public:
ValueArray$i($for j, [[T$j v$j]]) : $for j, [[v$(j)_(v$j)]] {}

template <typename T>
operator ParamGenerator<T>() const {
    const T array[] = {$for j, [[static_cast<T>(v$(j)_)]]];
    return
ValuesIn(array);
}

private:
// No implementation - assignment is unsupported.
void operator=(const ValueArray$i& other);

$for j [[

const T$j v$(j)_;
]]

};

]]

# if GTEST_HAS_COMBINE
// INTERNAL IMPLEMENTATION - DO NOT USE IN USER CODE.
//
// Generates values from the Cartesian product of values produced
// by the argument generators.
//
$range i 2..maxtuple
$for i [[
$range j 1..i
$range k 2..i

template <$for j, [[typename T$j]]>
class CartesianProductGenerator$i

```

```

: public ParamGeneratorInterface< ::std::tr1::tuple<$for j, [[T$j]]> > {
public:
typedef ::std::tr1::tuple<$for j, [[T$j]]> ParamType;

CartesianProductGenerator$(($for j, [[const ParamGenerator<T$j>& g$j]])
: $for j, [[g$(j)_($g$j)]] {}
virtual ~CartesianProductGenerator$( ) {}

virtual ParamIteratorInterface<ParamType>* Begin() const {
return new Iterator(this, $for j, [[g$(j)_($g$j)_begin()]]);
}
virtual ParamIteratorInterface<ParamType>* End() const {
return new Iterator(this,
$for j, [[g$(j)_($g$j)_end()]]);
}

private:
class Iterator : public ParamIteratorInterface<ParamType> {
public:
Iterator(const ParamGeneratorInterface<ParamType>* base, $for j, [[

const ParamGenerator<T$j>& g$j,
const typename ParamGenerator<T$j>::iterator& current$(j)]]
: base_(base),
$for j, [[

begin$(j)_($g$j)_begin(), end$(j)_($g$j)_end(), current$(j)_($current$j)
]] {
ComputeCurrentValue();
}
virtual ~Iterator() {}

virtual const ParamGeneratorInterface<ParamType>* BaseGenerator() const {
return base_;
}
// Advance should not be called on beyond-of-range iterators
// so no component iterators must be beyond end of range, either.
virtual void Advance() {
assert(!AtEnd());
++current$(i)_;

$for k [[
if (current$(i+2-k)_ == end$(i+2-k)_ ) {
current$(i+2-k)_ = begin$(i+2-k)_;
++current$(i+2-k-1)_;
}
]]
}

```

```

    ComputeCurrentValue();
}
virtual ParamIteratorInterface<ParamType>*
Clone() const {
    return new Iterator(*this);
}
virtual const ParamType* Current() const { return &current_value_; }
virtual bool Equals(const ParamIteratorInterface<ParamType>& other) const {
    // Having the same base generator guarantees that the other
    // iterator is of the same type and we can downcast.
    GTEST_CHECK_(BaseGenerator() == other.BaseGenerator())
        << "The program attempted to compare iterators "
        << "from different generators." << std::endl;
    const Iterator* typed_other =
        CheckedDowncastToActualType<const Iterator>(&other);
    // We must report iterators equal if they both point beyond their
    // respective ranges. That can happen in a variety of fashions,
    // so we have to consult AtEnd().
    return (AtEnd() && typed_other->AtEnd()) ||
        ($for j && [[
            current$(j)_ == typed_other->current$(j)_
        ]]);
}

private:
    Iterator(const Iterator& other)
        : base_(other.base_), $for j, [[
            begin$(j)_ (other.begin$(j)_),
            end$(j)_ (other.end$(j)_),
            current$(j)_ (other.current$(j)_)
        ]] {
        ComputeCurrentValue();
    }

    void ComputeCurrentValue() {
        if (!AtEnd())
            current_value_ = ParamType($for j, [[*current$(j)_]);
    }
    bool AtEnd() const {
        // We must report iterator past the end of the range when either of the
        // component iterators has reached the end of its range.
        return
            $for j || [[
                current$(j)_ == end$(j)_
            ]];
}

```



```

}

// No implementation - assignment is unsupported.
void operator=(const Iterator& other);

const ParamGeneratorInterface<ParamType>* const base_;
// begin[i]_ and end[i]_ define the i-th range that Iterator traverses.
// current[i]_ is the actual traversing iterator.
$for j [[

const typename ParamGenerator<T$j>::iterator begin$(j)_;
const typename ParamGenerator<T$j>::iterator end$(j)_;
typename ParamGenerator<T$j>::iterator
current$(j)_;
]]

ParamType current_value_;
}; // class CartesianProductGenerator$i::Iterator

// No implementation - assignment is unsupported.
void operator=(const CartesianProductGenerator$i& other);

$for j [[
const ParamGenerator<T$j> g$(j)_;

]]
}; // class CartesianProductGenerator$i

]]

// INTERNAL IMPLEMENTATION - DO NOT USE IN USER CODE.
//
// Helper classes providing Combine() with polymorphic features. They allow
// casting CartesianProductGeneratorN<T> to ParamGenerator<U> if T is
// convertible to U.
//
$range i 2..maxtuple
$for i [[
$range j 1..i

template <$for j, [[class Generator$j]]>
class CartesianProductHolder$i {
public:
CartesianProductHolder$i($for j, [[const Generator$j& g$j]])
: $for j, [[g$(j)_$(g$j)]] {}
template <$for j, [[typename T$j]]>

```

```

operator ParamGenerator< ::std::tr1::tuple<$for j, [[T$j]]> >() const {
    return ParamGenerator< ::std::tr1::tuple<$for j, [[T$j]]> >(
        new CartesianProductGenerator$i<$for
j, [[T$j]]>(
$for j,[[

        static_cast<ParamGenerator<T$j> >(g$(j)_
]));
}

private:
// No implementation - assignment is unsupported.
void operator=(const CartesianProductHolder$i& other);

$for j [[
const Generator$j g$(j)_;

]]
}; // class CartesianProductHolder$i

]]

# endif // GTEST_HAS_COMBINE

} // namespace internal
} // namespace testing

# endif // GTEST_HAS_PARAM_TEST

# endif // GTEST_INCLUDE_GTEST_INTERNAL_GTEST_PARAM_UTIL_GENERATED_H_

Found in path(s):
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-param-util-generated.h.pump
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-param-util-generated.h.pump
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$$ -*- mode: c++; -*-
$var n = 10 $$ Maximum number of tuple fields we want to support.
$$ This meta comment fixes auto-indentation in Emacs. }}
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//
// Author: wan@google.com (Zhanyong Wan)

// Implements a subset of TR1 tuple needed by Google Test and Google Mock.

#ifndef GTEST_INCLUDE_GTEST_INTERNAL_GTEST_TUPLE_H_
#define GTEST_INCLUDE_GTEST_INTERNAL_GTEST_TUPLE_H_

#include
<utility> // For ::std::pair.

// The compiler used in Symbian has a bug that prevents us from declaring the
// tuple template as a friend (it complains that tuple is redefined). This
// hack bypasses the bug by declaring the members that should otherwise be
// private as public.
// Sun Studio versions < 12 also have the above bug.
#if defined(__SYMBIAN32__) || (defined(__SUNPRO_CC) && __SUNPRO_CC < 0x590)
# define GTEST_DECLARE_TUPLE_AS_FRIEND_ public:
#else
# define GTEST_DECLARE_TUPLE_AS_FRIEND_ \
    template <GTEST_$(n)_TYPENAMES_(U)> friend class tuple; \
    private:
#endif
#endif

```

```

$range i 0..n-1
$range j 0..n
$range k 1..n
// GTEST_n_TUPLE_(T) is the type of an n-tuple.
#define GTEST_0_TUPLE_(T) tuple<>

$for k [[
$range m 0..k-1
$range m2 k..n-1
#define GTEST_$(k)_TUPLE_(T) tuple<$for m, [[T##$m]]$for m2 [[, void]]>

]]

// GTEST_n_TYPENAMES_(T) declares a list of n typenames.

$for j [[
$range m 0..j-1
#define GTEST_$(j)_TYPENAMES_(T) $for m, [[typename T##$m]]

]]

// In
theory, defining stuff in the ::std namespace is undefined
// behavior. We can do this as we are playing the role of a standard
// library vendor.
namespace std {
namespace tr1 {

template <$for i, [[typename T$i = void]]>
class tuple;

// Anything in namespace gtest_internal is Google Test's INTERNAL
// IMPLEMENTATION DETAIL and MUST NOT BE USED DIRECTLY in user code.
namespace gtest_internal {

// ByRef<T>::type is T if T is a reference; otherwise it's const T&.
template <typename T>
struct ByRef { typedef const T& type; }; // NOLINT
template <typename T>
struct ByRef<T&> { typedef T& type; }; // NOLINT

// A handy wrapper for ByRef.
#define GTEST_BY_REF_(T) typename ::std::tr1::gtest_internal::ByRef<T>::type

// AddRef<T>::type is T if T is a reference; otherwise it's T&. This
// is the same as tr1::add_reference<T>::type.
template <typename T>

```

```

struct AddRef { typedef T& type; }; // NOLINT
template <typename T>
struct AddRef<T&> { typedef T& type; }; // NOLINT

// A handy wrapper
for AddRef.
#define GTEST_ADD_REF_(T) typename ::std::tr1::gtest_internal::AddRef<T>::type

// A helper for implementing get<k>().
template <int k> class Get;

// A helper for implementing tuple_element<k, T>. kIndexValid is true
// iff k < the number of fields in tuple type T.
template <bool kIndexValid, int kIndex, class Tuple>
struct TupleElement;

$for i [[
template <GTEST_$(n)_TYPENAMES_(T)>
struct TupleElement<true, $i, GTEST_$(n)_TUPLE_(T) > {
    typedef T$i type;
};

]]
} // namespace gtest_internal

template <>
class tuple<> {
public:
    tuple() {}
    tuple(const tuple& /* t */) {}
    tuple& operator=(const tuple& /* t */) { return *this; }
};

$for k [[
$range m 0..k-1
template <GTEST_$(k)_TYPENAMES_(T)>
class $if k < n [[GTEST_$(k)_TUPLE_(T)]] $else [[tuple]] {
public:
    template <int k> friend class gtest_internal::Get;

    tuple() : $for m, [[f$(m)_()]] {}

    explicit tuple($for m, [[GTEST_BY_REF_(T$m) f$m]]) : [[]]
    $for m, [[f$(m)_f$m]] {}

```

```

tuple(const tuple& t)
: $for m, [[f$(m)_ (t.f$(m)_)]] {}

template <GTEST_$(k)_TYPENAMES_(U)>
tuple(const GTEST_$(k)_TUPLE_(U)& t) : $for m, [[f$(m)_ (t.f$(m)_)]] {}

$if k == 2 [[
template <typename U0, typename U1>
tuple(const ::std::pair<U0, U1>& p) : f0_(p.first), f1_(p.second) {}

]]

tuple& operator=(const tuple& t) { return CopyFrom(t); }

template <GTEST_$(k)_TYPENAMES_(U)>
tuple& operator=(const GTEST_$(k)_TUPLE_(U)& t) {
    return CopyFrom(t);
}

$if k == 2 [[
template <typename U0, typename U1>
tuple& operator=(const ::std::pair<U0, U1>& p) {
    f0_ = p.first;
    f1_ = p.second;
    return *this;
}

]]

GTEST_DECLARE_TUPLE_AS_FRIEND_

template <GTEST_$(k)_TYPENAMES_(U)>
tuple& CopyFrom(const GTEST_$(k)_TUPLE_(U)& t) {

$for m [[
    f$(m)_ = t.f$(m)_;

]]
    return *this;
}

$for m [[
    T$m f$(m)_;

]]
};

```

```

]]
// 6.1.3.2 Tuple creation functions.

// Known limitations: we don't support passing an
// std::tr1::reference_wrapper<T> to make_tuple(). And we don't
//
// implement tie().

inline tuple<> make_tuple() { return tuple<>(); }

$for k [[
$range m 0..k-1

template <GTEST_$(k)_TYPENAMES_(T)>
inline GTEST_$(k)_TUPLE_(T) make_tuple($for m, [[const T$m& f$m]]) {
    return GTEST_$(k)_TUPLE_(T)($for m, [[f$m]]);
}

]]

// 6.1.3.3 Tuple helper classes.

template <typename Tuple> struct tuple_size;

$for j [[
template <GTEST_$(j)_TYPENAMES_(T)>
struct tuple_size<GTEST_$(j)_TUPLE_(T) > {
    static const int value = $j;
};

]]

template <int k, class Tuple>
struct tuple_element {
    typedef typename gtest_internal::TupleElement<
        k < (tuple_size<Tuple>::value), k, Tuple>::type type;
};

#define GTEST_TUPLE_ELEMENT_(k, Tuple) typename tuple_element<k, Tuple >::type

// 6.1.3.4 Element access.

namespace gtest_internal {

$for i [[

```

```

template <>
class Get<$i> {
public:
    template <class Tuple>
    static GTEST_ADD_REF_(GTEST_TUPLE_ELEMENT_($i, Tuple))
    Field(Tuple& t) { return t.f$(i); } // NOLINT

    template <class Tuple>
    static GTEST_BY_REF_(GTEST_TUPLE_ELEMENT_($i,
    Tuple))
    ConstField(const Tuple& t) { return t.f$(i); }
};

]]
} // namespace gtest_internal

template <int k, GTEST_$(n)_TYPENAMES_(T)>
GTEST_ADD_REF_(GTEST_TUPLE_ELEMENT_(k, GTEST_$(n)_TUPLE_(T)))
get(GTEST_$(n)_TUPLE_(T)& t) {
    return gtest_internal::Get<k>::Field(t);
}

template <int k, GTEST_$(n)_TYPENAMES_(T)>
GTEST_BY_REF_(GTEST_TUPLE_ELEMENT_(k, GTEST_$(n)_TUPLE_(T)))
get(const GTEST_$(n)_TUPLE_(T)& t) {
    return gtest_internal::Get<k>::ConstField(t);
}

// 6.1.3.5 Relational operators

// We only implement == and !=, as we don't have a need for the rest yet.

namespace gtest_internal {

// SameSizeTuplePrefixComparator<k, k>::Eq(t1, t2) returns true if the
// first k fields of t1 equals the first k fields of t2.
// SameSizeTuplePrefixComparator(k1, k2) would be a compiler error if
// k1 != k2.
template <int kSize1, int kSize2>
struct SameSizeTuplePrefixComparator;

template <>
struct SameSizeTuplePrefixComparator<0, 0> {
    template <class Tuple1, class
    Tuple2>
    static bool Eq(const Tuple1& /* t1 */, const Tuple2& /* t2 */) {
        return true;
    }
};

```



```

}
};

template <int k>
struct SameSizeTuplePrefixComparator<k, k> {
    template <class Tuple1, class Tuple2>
    static bool Eq(const Tuple1& t1, const Tuple2& t2) {
        return SameSizeTuplePrefixComparator<k - 1, k - 1>::Eq(t1, t2) &&
            ::std::tr1::get<k - 1>(t1) == ::std::tr1::get<k - 1>(t2);
    }
};

} // namespace gtest_internal

template <GTEST_${(n)}_TYPENAMES_(T), GTEST_${(n)}_TYPENAMES_(U)>
inline bool operator==(const GTEST_${(n)}_TUPLE_(T)& t,
    const GTEST_${(n)}_TUPLE_(U)& u) {
    return gtest_internal::SameSizeTuplePrefixComparator<
        tuple_size<GTEST_${(n)}_TUPLE_(T) >::value,
        tuple_size<GTEST_${(n)}_TUPLE_(U) >::value>::Eq(t, u);
}

template <GTEST_${(n)}_TYPENAMES_(T), GTEST_${(n)}_TYPENAMES_(U)>
inline bool operator!=(const GTEST_${(n)}_TUPLE_(T)& t,
    const GTEST_${(n)}_TUPLE_(U)& u) { return !(t == u); }

// 6.1.4 Pairs.
// Unimplemented.

}
// namespace tr1
} // namespace std

$for j [[
#undef GTEST_${(j)}_TUPLE_

]]

$for j [[
#undef GTEST_${(j)}_TYPENAMES_

]]

#undef GTEST_DECLARE_TUPLE_AS_FRIEND_
#undef GTEST_BY_REF_
#undef GTEST_ADD_REF_

```

```
#undef GTEST_TUPLE_ELEMENT_
```

```
#endif // GTEST_INCLUDE_GTEST_INTERNAL_GTEST_TUPLE_H_
```

Found in path(s):

```
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-  
zip/include/gtest/internal/gtest-tuple.h.pump
```

```
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-  
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-tuple.h.pump
```

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

```
$$ -*- mode: c++; -*-
```

```
$$ This is a Pump source file. Please use Pump to convert it to
```

```
$$ gmock-generated-function-mockers.h.
```

```
$$
```

```
$var n = 10 $$ The maximum arity we support.
```

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```
//
```

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//
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```

```
//
```

```
// Author: wan@google.com (Zhanyong Wan)
```

```

// Google Mock - a framework for writing C++ mock classes.
//
// This file implements function mockers of various arities.

#ifndef GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_FUNCTION MOCKERS_H_
#define
GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_FUNCTION MOCKERS_H_

#include "gmock/gmock-spec-builders.h"
#include "gmock/internal/gmock-internal-utils.h"

namespace testing {
namespace internal {

template <typename F>
class FunctionMockerBase;

// Note: class FunctionMocker really belongs to the ::testing
// namespace. However if we define it in ::testing, MSVC will
// complain when classes in ::testing::internal declare it as a
// friend class template. To workaroud this compiler bug, we define
// FunctionMocker in ::testing::internal and import it into ::testing.
template <typename F>
class FunctionMocker;

$range i 0..n
$for i [[
$range j 1..i
$var typename_As = [[[$for j [[, typename A$j]]]]
$var As = [[[$for j, [[A$j]]]]
$var as = [[[$for j, [[a$j]]]]
$var Aas = [[[$for j, [[A$j a$j]]]]
$var ms = [[[$for j, [[m$j]]]]
$var matchers = [[[$for j, [[const Matcher<A$j>& m$j]]]]
template <typename R$typename_As>
class FunctionMocker<R($As)> : public
    internal::FunctionMockerBase<R($As)>
{
public:
typedef R F($As);
typedef typename internal::Function<F>::ArgumentTuple ArgumentTuple;

MockSpec<F>& With($matchers) {

$if i >= 1 [[
    this->current_spec().SetMatchers(::std::tr1::make_tuple($ms));

```

```

]]
    return this->current_spec();
}

R Invoke($Aas) {
    // Even though gcc and MSVC don't enforce it, 'this->' is required
    // by the C++ standard [14.6.4] here, as the base class type is
    // dependent on the template argument (and thus shouldn't be
    // looked into when resolving InvokeWith).
    return this->InvokeWith(ArgumentTuple($as));
}
};

]]
} // namespace internal

// The style guide prohibits "using" statements in a namespace scope
// inside a header file. However, the FunctionMocker class template
// is meant to be defined in the ::testing namespace. The following
// line is just a trick for working around a bug in MSVC 8.0, which
// cannot handle it if we define FunctionMocker in ::testing.
using internal::FunctionMocker;

//
// GMOCK_RESULT_(tn, F) expands to the result type of function type F.
// We define this as a variadic macro in case F contains unprotected
// commas (the same reason that we use variadic macros in other places
// in this file).
// INTERNAL IMPLEMENTATION - DON'T USE IN USER CODE!!!
#define GMOCK_RESULT_(tn, ...) \
    tn ::testing::internal::Function<__VA_ARGS__>::Result

// The type of argument N of the given function type.
// INTERNAL IMPLEMENTATION - DON'T USE IN USER CODE!!!
#define GMOCK_ARG_(tn, N, ...) \
    tn ::testing::internal::Function<__VA_ARGS__>::Argument##N

// The matcher type for argument N of the given function type.
// INTERNAL IMPLEMENTATION - DON'T USE IN USER CODE!!!
#define GMOCK_MATCHER_(tn, N, ...) \
    const ::testing::Matcher<GMOCK_ARG_(tn, N, __VA_ARGS__)>&

// The variable for mocking the given method.
// INTERNAL IMPLEMENTATION - DON'T USE IN USER CODE!!!
#define GMOCK_MOCKER_(arity, constness, Method) \
    GTEST_CONCAT_TOKEN_(gmock##constness##arity##_##Method##_

```

\_\_LINE\_\_)

```
$for i [[
$range j 1..i
$var arg_as = [[for j, \
    [[GMOCK_ARG_(tn, $j, __VA_ARGS__) gmock_a$j]]]]
$var as = [[for j, [[gmock_a$j]]]]
$var matcher_as = [[for j, \
    [[GMOCK_MATCHER_(tn, $j, __VA_ARGS__) gmock_a$j]]]]
// INTERNAL IMPLEMENTATION - DON'T USE IN USER CODE!!!
#define GMOCK_METHOD$i([[]](tn, constness, ct, Method, ...) \
GMOCK_RESULT_(tn, __VA_ARGS__) ct Method( \
    $arg_as) constness { \
    GTEST_COMPILE_ASSERT((:std::tr1::tuple_size< \
        tn ::testing::internal::Function<__VA_ARGS__>::ArgumentTuple>::value == $i), \
        this_method_does_not_take_${[[]]}_argument[[if i != 1 [[s]]]); \
    GMOCK_MOCKER_($i, constness, Method).SetOwnerAndName(this, #Method); \
    return GMOCK_MOCKER_($i, constness, Method).Invoke($as); \
} \
::testing::MockSpec<__VA_ARGS__>& \
    gmock_##Method($matcher_as) constness { \
    GMOCK_MOCKER_($i, constness, Method).RegisterOwner(this); \
    \
    return GMOCK_MOCKER_($i, constness, Method).With($as); \
} \
mutable ::testing::FunctionMocker<__VA_ARGS__> GMOCK_MOCKER_($i, constness, Method)

]]
$for i [[
#define MOCK_METHOD$(m, ...) GMOCK_METHOD$([[]]_(, , m, __VA_ARGS__))

]]

$for i [[
#define MOCK_CONST_METHOD$(m, ...) GMOCK_METHOD$([[]]_(, const, , m, __VA_ARGS__))

]]

$for i [[
#define MOCK_METHOD$([[]]_T(m, ...) GMOCK_METHOD$([[]]_(typename, , , m, __VA_ARGS__))

]]
```

```

$for i [[
#define MOCK_CONST_METHOD$i[[]]_T(m, ...) \
    GMOCK_METHOD$i[[]]_(typename, const, , m, __VA_ARGS__)
]]

$for i [[
#define MOCK_METHOD$i[[]]_WITH_CALLTYPE(ct, m, ...) \
    GMOCK_METHOD$i[[]]_(, ct, m, __VA_ARGS__)
]]

$for i [[
#define MOCK_CONST_METHOD$i[[]]_WITH_CALLTYPE(ct, m, ...) \
    GMOCK_METHOD$i[[]]_(, const, ct, m, __VA_ARGS__)
]]

$for i [[
#define MOCK_METHOD$i[[]]_T_WITH_CALLTYPE(ct, m, ...) \
    GMOCK_METHOD$i[[]]_(typename, , ct, m, __VA_ARGS__)
]]

$for i [[
#define MOCK_CONST_METHOD$i[[]]_T_WITH_CALLTYPE(ct,
m, ...) \
    GMOCK_METHOD$i[[]]_(typename, const, ct, m, __VA_ARGS__)
]]

// A MockFunction<F> class has one mock method whose type is F. It is
// useful when you just want your test code to emit some messages and
// have Google Mock verify the right messages are sent (and perhaps at
// the right times). For example, if you are exercising code:
//
// Foo(1);
// Foo(2);
// Foo(3);
//
// and want to verify that Foo(1) and Foo(3) both invoke
// mock.Bar("a"), but Foo(2) doesn't invoke anything, you can write:
//
// TEST(FooTest, InvokesBarCorrectly) {

```

```

// MyMock mock;
// MockFunction<void(string check_point_name)> check;
// {
//   InSequence s;
//
//   EXPECT_CALL(mock, Bar("a"));
//   EXPECT_CALL(check, Call("1"));
//   EXPECT_CALL(check, Call("2"));
//   EXPECT_CALL(mock, Bar("a"));
// }
// Foo(1);
// check.Call("1");
// Foo(2);
// check.Call("2");
// Foo(3);
// }
//
// The expectation spec says that the first Bar("a") must happen
//
// before check point "1", the second Bar("a") must happen after check
// point "2", and nothing should happen between the two check
// points. The explicit check points make it easy to tell which
// Bar("a") is called by which call to Foo().
template <typename F>
class MockFunction;

$for i [[
$range j 0..i-1
template <typename R$for j [[, typename A$j]]>
class MockFunction<R($for j, [[A$j]]> {
public:
MockFunction() {}

MOCK_METHOD$i[[]]_T(Call, R($for j, [[A$j]]));

private:
GTEST_DISALLOW_COPY_AND_ASSIGN_(MockFunction);
};

]]
} // namespace testing

#endif // GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_FUNCTION MOCKERS_H_

```

Found in path(s):

\* /opt/cola/permits/1862451770\_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-

zip/include/gmock/gmock-generated-function-mockers.h.pump  
\* /opt/cola/permits/1862451770\_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-  
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-function-mockers.h.pump  
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```
$$ -*- mode: c++; -*-  
$var n = 50 $$ Maximum length of type lists we want to support.  
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//  
// Author: wan@google.com (Zhanyong Wan)  
  
// Type utilities needed for implementing typed and type-parameterized  
// tests. This file is generated by a SCRIPT. DO NOT EDIT BY HAND!  
//  
// Currently we support at most $n types in a list, and at most $n  
// type-parameterized tests in one  
// type-parameterized test case.  
// Please contact googletestframework@googlegroups.com if you need  
// more.
```



```

#ifndef GTEST_INCLUDE_GTEST_INTERNAL_GTEST_TYPE_UTIL_H_
#define GTEST_INCLUDE_GTEST_INTERNAL_GTEST_TYPE_UTIL_H_

#include "gtest/internal/gtest-port.h"

// #ifdef __GNUC__ is too general here. It is possible to use gcc without using
// libstdc++ (which is where cxxabi.h comes from).
# if GTEST_HAS_CXXABI_H_
#  include <cxxabi.h>
#  elif defined(__HP_aCC)
#  include <acxx_demangle.h>
#  endif // GTEST_HASH_CXXABI_H_

namespace testing {
namespace internal {

// GetTypeName<T>() returns a human-readable name of type T.
// NB: This function is also used in Google Mock, so don't move it inside of
// the typed-test-only section below.
template <typename T>
std::string GetTypeName() {
# if GTEST_HAS_RTTI

    const char* const name = typeid(T).name();
#  if GTEST_HAS_CXXABI_H_ || defined(__HP_aCC)
    int status = 0;
    // gcc's implementation of typeid(T).name() mangles the type name,
    //
    // so we have to demangle it.
#   if GTEST_HAS_CXXABI_H_
    using abi::__cxa_demangle;
#   endif // GTEST_HAS_CXXABI_H_
    char* const readable_name = __cxa_demangle(name, 0, 0, &status);
    const std::string name_str(status == 0 ? readable_name : name);
    free(readable_name);
    return name_str;
#  else
    return name;
#  endif // GTEST_HAS_CXXABI_H_ || __HP_aCC

# else

    return "<type>";

# endif // GTEST_HAS_RTTI
}

# if GTEST_HAS_TYPED_TEST || GTEST_HAS_TYPED_TEST_P

```

```
// AssertTypeEq<T1, T2>::type is defined iff T1 and T2 are the same
// type. This can be used as a compile-time assertion to ensure that
// two types are equal.
```

```
template <typename T1, typename T2>
struct AssertTypeEq;
```

```
template <typename T>
struct AssertTypeEq<T, T> {
    typedef bool type;
};
```

```
// A unique type used as the default value for the arguments of class
// template Types. This allows us to simulate variadic templates
// (e.g. Types<int>, Type<int, double>, and etc), which C++ doesn't
// support directly.
```

```
struct
    None {};
```

```
// The following family of struct and struct templates are used to
// represent type lists. In particular, TypesN<T1, T2, ..., TN>
// represents a type list with N types (T1, T2, ..., and TN) in it.
// Except for Types0, every struct in the family has two member types:
// Head for the first type in the list, and Tail for the rest of the
// list.
```

```
// The empty type list.
struct Types0 {};
```

```
// Type lists of length 1, 2, 3, and so on.
```

```
template <typename T1>
struct Types1 {
    typedef T1 Head;
    typedef Types0 Tail;
};
```

```
$range i 2..n
```

```
$for i [[
$range j 1..i
$range k 2..i
template <$for j, [[typename T$j]]>
struct Types$i {
    typedef T1 Head;
    typedef Types$(i-1)<$for k, [[T$k]]> Tail;
};
```

```

]]

} // namespace internal

// We don't want to require the users to write TypesN<...> directly,
// as that would require them to count the length. Types<...> is much
// easier to write, but generates horrible messages when there is a
// compiler error, as gcc insists on printing out each
// template
// argument, even if it has the default value (this means Types<int>
// will appear as Types<int, None, None, ..., None> in the compiler
// errors).
//
// Our solution is to combine the best part of the two approaches: a
// user would write Types<T1, ..., TN>, and Google Test will translate
// that to TypesN<T1, ..., TN> internally to make error messages
// readable. The translation is done by the 'type' member of the
// Types template.

$range i 1..n
template <$for i, [[typename T$i = internal::None]]>
struct Types {
  typedef internal::Types$n<$for i, [[T$i]]> type;
};

template <>
struct Types<$for i, [[internal::None]]> {
  typedef internal::Types0 type;
};

$range i 1..n-1
$for i [[
$range j 1..i
$range k i+1..n
template <$for j, [[typename T$j]]>
struct Types<$for j, [[T$j]]$for k[[, internal::None]]> {
  typedef internal::Types$i<$for j, [[T$j]]> type;
};

]]

namespace internal {

# define GTEST_TEMPLATE_ template <typename T> class

// The template "selector" struct

```

```

TemplateSel<Tmpl> is used to
// represent Tmpl, which must be a class template with one type
// parameter, as a type. TemplateSel<Tmpl>::Bind<T>::type is defined
// as the type Tmpl<T>. This allows us to actually instantiate the
// template "selected" by TemplateSel<Tmpl>.
//
// This trick is necessary for simulating typedef for class templates,
// which C++ doesn't support directly.
template <GTEST_TEMPLATE_ Tmpl>
struct TemplateSel {
    template <typename T>
    struct Bind {
        typedef Tmpl<T> type;
    };
};

#define GTEST_BIND_(TmplSel, T) \
    TmplSel::template Bind<T>::type

// A unique struct template used as the default value for the
// arguments of class template Templates. This allows us to simulate
// variadic templates (e.g. Templates<int>, Templates<int, double>,
// and etc), which C++ doesn't support directly.
template <typename T>
struct NoneT {};

// The following family of struct and struct templates are used to
// represent template lists. In particular, TemplatesN<T1,
// T2, ...,
// TN> represents a list of N templates (T1, T2, ..., and TN). Except
// for Templates0, every struct in the family has two member types:
// Head for the selector of the first template in the list, and Tail
// for the rest of the list.

// The empty template list.
struct Templates0 {};

// Template lists of length 1, 2, 3, and so on.

template <GTEST_TEMPLATE_ T1>
struct Templates1 {
    typedef TemplateSel<T1> Head;
    typedef Templates0 Tail;
};

$range i 2..n

$for i [[

```

```

$range j 1..i
$range k 2..i
template <$for j, [[GTEST_TEMPLATE_ T$j]]>
struct Templates$i {
    typedef TemplateSel<T1> Head;
    typedef Templates$(i-1)<$for k, [[T$k]]> Tail;
};

]]

// We don't want to require the users to write TemplatesN<...> directly,
// as that would require them to count the length. Templates<...> is much
// easier to write, but generates horrible messages when there is a
// compiler error, as gcc insists on printing out each template
// argument, even if it has the default value (this
// means Templates<list>
// will appear as Templates<list, NoneT, NoneT, ..., NoneT> in the compiler
// errors).
//
// Our solution is to combine the best part of the two approaches: a
// user would write Templates<T1, ..., TN>, and Google Test will translate
// that to TemplatesN<T1, ..., TN> internally to make error messages
// readable. The translation is done by the 'type' member of the
// Templates template.

$range i 1..n
template <$for i, [[GTEST_TEMPLATE_ T$i = NoneT]]>
struct Templates {
    typedef Templates$n<$for i, [[T$i]]> type;
};

template <>
struct Templates<$for i, [[NoneT]]> {
    typedef Templates0 type;
};

$range i 1..n-1
$for i [[
$range j 1..i
$range k i+1..n
template <$for j, [[GTEST_TEMPLATE_ T$j]]>
struct Templates<$for j, [[T$j]]$for k[[, NoneT]]> {
    typedef Templates$i<$for j, [[T$j]]> type;
};

]]

```

```
// The TypeList template makes it possible to use either a single type
// or a Types<...> list in TYPED_TEST_CASE() and
// INSTANTIATE_TYPED_TEST_CASE_P().
```

```
template
<typename T>
struct TypeList {
    typedef Types1<T> type;
};
```

```
$range i 1..n
template <$for i, [[typename T$i]]>
struct TypeList<Types<$for i, [[T$i]]> > {
    typedef typename Types<$for i, [[T$i]]>::type type;
};
```

```
#endif // GTEST_HAS_TYPED_TEST || GTEST_HAS_TYPED_TEST_P
```

```
} // namespace internal
} // namespace testing
```

```
#endif // GTEST_INCLUDE_GTEST_INTERNAL_GTEST_TYPE_UTIL_H_
```

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```
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-type-util.h.pump
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-type-util.h.pump
```

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```
$$ -*- mode: c++; -*-
```

```
$var n = 50 $$ Maximum length of Values arguments we want to support.
```

```
$var maxtuple = 10 $$ Maximum number of Combine arguments we want to support.
```

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//
// Authors: vladl@google.com (Vlad Losev)
//
// Macros and functions for implementing parameterized tests
// in Google C++ Testing Framework (Google Test)
//
// This file is generated by a SCRIPT. DO
// NOT EDIT BY HAND!
//
#ifdef GTEST_INCLUDE_GTEST_GTEST_PARAM_TEST_H_
#define GTEST_INCLUDE_GTEST_GTEST_PARAM_TEST_H_

// Value-parameterized tests allow you to test your code with different
// parameters without writing multiple copies of the same test.
//
// Here is how you use value-parameterized tests:

#if 0

// To write value-parameterized tests, first you should define a fixture
// class. It is usually derived from testing::TestWithParam<T> (see below for
// another inheritance scheme that's sometimes useful in more complicated
// class hierarchies), where the type of your parameter values.
// TestWithParam<T> is itself derived from testing::Test. T can be any
// copyable type. If it's a raw pointer, you are responsible for managing the
// lifespan of the pointed values.

class FooTest : public ::testing::TestWithParam<const char*> {
// You can implement all the usual class fixture members here.
};

// Then, use the TEST_P macro to define as many parameterized tests

```

```

// for this
// fixture as you want. The _P suffix is for "parameterized"
// or "pattern", whichever you prefer to think.

TEST_P(FooTest, DoesBlah) {
    // Inside a test, access the test parameter with the GetParam() method
    // of the TestWithParam<T> class:
    EXPECT_TRUE(foo.Blah(GetParam()));
    ...
}

TEST_P(FooTest, HasBlahBlah) {
    ...
}

// Finally, you can use INSTANTIATE_TEST_CASE_P to instantiate the test
// case with any set of parameters you want. Google Test defines a number
// of functions for generating test parameters. They return what we call
// (surprise!) parameter generators. Here is a summary of them, which
// are all in the testing namespace:
//
//
// Range(begin, end [, step]) - Yields values {begin, begin+step,
//                               begin+step+step, ...}. The values do not
//                               include end. step defaults to 1.
// Values(v1, v2, ..., vN) - Yields values {v1, v2, ..., vN}.
// ValuesIn(container) - Yields values from a C-style
//                       array, an STL
//                       ValuesIn(begin,end) container, or an iterator range [begin, end).
// Bool() - Yields sequence {false, true}.
// Combine(g1, g2, ..., gN) - Yields all combinations (the Cartesian product
//                             for the math savvy) of the values generated
//                             by the N generators.
//
// For more details, see comments at the definitions of these functions below
// in this file.
//
// The following statement will instantiate tests from the FooTest test case
// each with parameter values "meeny", "miny", and "moe".

INSTANTIATE_TEST_CASE_P(InstantiationName,
                        FooTest,
                        Values("meeny", "miny", "moe"));

// To distinguish different instances of the pattern, (yes, you
// can instantiate it more than once) the first argument to the
// INSTANTIATE_TEST_CASE_P macro is a prefix that will be added to the
// actual test case name. Remember to pick unique prefixes for

```



```

different
// instantiations. The tests from the instantiation above will have
// these names:
//
// * InstantiationName/FooTest.DoesBlah/0 for "meeny"
// * InstantiationName/FooTest.DoesBlah/1 for "miny"
// * InstantiationName/FooTest.DoesBlah/2 for "moe"
// * InstantiationName/FooTest.HasBlahBlah/0 for "meeny"
// * InstantiationName/FooTest.HasBlahBlah/1 for "miny"
// * InstantiationName/FooTest.HasBlahBlah/2 for "moe"
//
// You can use these names in --gtest_filter.
//
// This statement will instantiate all tests from FooTest again, each
// with parameter values "cat" and "dog":

const char* pets[] = {"cat", "dog"};
INSTANTIATE_TEST_CASE_P(AnotherInstantiationName, FooTest, ValuesIn(pets));

// The tests from the instantiation above will have these names:
//
// * AnotherInstantiationName/FooTest.DoesBlah/0 for "cat"
// * AnotherInstantiationName/FooTest.DoesBlah/1 for "dog"
// * AnotherInstantiationName/FooTest.HasBlahBlah/0 for "cat"
// * AnotherInstantiationName/FooTest.HasBlahBlah/1
for "dog"
//
// Please note that INSTANTIATE_TEST_CASE_P will instantiate all tests
// in the given test case, whether their definitions come before or
// AFTER the INSTANTIATE_TEST_CASE_P statement.
//
// Please also note that generator expressions (including parameters to the
// generators) are evaluated in InitGoogleTest(), after main() has started.
// This allows the user on one hand, to adjust generator parameters in order
// to dynamically determine a set of tests to run and on the other hand,
// give the user a chance to inspect the generated tests with Google Test
// reflection API before RUN_ALL_TESTS() is executed.
//
// You can see samples/sample7_unittest.cc and samples/sample8_unittest.cc
// for more examples.
//
// In the future, we plan to publish the API for defining new parameter
// generators. But for now this interface remains part of the internal
// implementation and is subject to change.
//
// A parameterized test fixture must

```

be derived from `testing::Test` and from  
`testing::WithParamInterface<T>`, where `T` is the type of the parameter  
values. Inheriting from `TestWithParam<T>` satisfies that requirement because  
`TestWithParam<T>` inherits from both `Test` and `WithParamInterface`. In more  
complicated hierarchies, however, it is occasionally useful to inherit  
separately from `Test` and `WithParamInterface`. For example:

```
class BaseTest : public ::testing::Test {
    // You can inherit all the usual members for a non-parameterized test
    // fixture here.
};

class DerivedTest : public BaseTest, public ::testing::WithParamInterface<int> {
    // The usual test fixture members go here too.
};

TEST_F(BaseTest, HasFoo) {
    // This is an ordinary non-parameterized test.
}

TEST_P(DerivedTest, DoesBlah) {
    // GetParam works just the same here as if you inherit from TestWithParam.
    EXPECT_TRUE(foo.Blah(GetParam()));
}

#ifdef 0

#include "gtest/internal/gtest-port.h"

#ifndef GTEST_OS_SYMBIAN
#include <utility>
#endif

//
// scripts/fuse_gtest.py depends on gtest's own header being #included
// *unconditionally*. Therefore these #includes cannot be moved
// inside #if GTEST_HAS_PARAM_TEST.
#include "gtest/internal/gtest-internal.h"
#include "gtest/internal/gtest-param-util.h"
#include "gtest/internal/gtest-param-util-generated.h"

#ifdef GTEST_HAS_PARAM_TEST

namespace testing {

// Functions producing parameter generators.
//
// Google Test uses these generators to produce parameters for value-
```

```

// parameterized tests. When a parameterized test case is instantiated
// with a particular generator, Google Test creates and runs tests
// for each element in the sequence produced by the generator.
//
// In the following sample, tests from test case FooTest are instantiated
// each three times with parameter values 3, 5, and 8:
//
// class FooTest : public TestWithParam<int> { ... };
//
// TEST_P(FooTest, TestThis) {
// }
// TEST_P(FooTest, TestThat) {
// }
// INSTANTIATE_TEST_CASE_P(TestSequence, FooTest,
//   Values(3, 5, 8));
//

// Range() returns generators providing sequences of values in a range.
//
// Synopsis:
// Range(start, end)
// - returns a generator producing a sequence of values {start, start+1,
//   start+2, ..., }.
// Range(start, end, step)
// - returns a generator producing a sequence of values {start, start+step,
//   start+step+step, ..., }.
// Notes:
// * The generated sequences never include end. For example, Range(1, 5)
//   returns a generator producing a sequence {1, 2, 3, 4}. Range(1, 9, 2)
//   returns a generator producing {1, 3, 5, 7}.
// * start and end must have the same type. That type may be any integral or
//   floating-point type or a user defined type satisfying these conditions:
// * It must be assignable (have operator=() defined).
// * It must have operator+() (operator+(int-compatible type) for
//   two-operand version).
// * It must have operator<() defined.
// Elements in the resulting sequences will also have
that type.
// * Condition start < end must be satisfied in order for resulting sequences
//   to contain any elements.
//
template <typename T, typename IncrementT>
internal::ParamGenerator<T> Range(T start, T end, IncrementT step) {
  return internal::ParamGenerator<T>(
    new internal::RangeGenerator<T, IncrementT>(start, end, step));
}

template <typename T>

```

```

internal::ParamGenerator<T> Range(T start, T end) {
    return Range(start, end, 1);
}

// ValuesIn() function allows generation of tests with parameters coming from
// a container.
//
// Synopsis:
// ValuesIn(const T (&array)[N])
// - returns a generator producing sequences with elements from
//   a C-style array.
// ValuesIn(const Container& container)
// - returns a generator producing sequences with elements from
//   an STL-style container.
// ValuesIn(Iterator begin, Iterator end)
// - returns a generator producing sequences with elements from
//   a range [begin, end) defined by a pair of STL-style iterators.
// These
//   iterators can also be plain C pointers.
//
// Please note that ValuesIn copies the values from the containers
// passed in and keeps them to generate tests in RUN_ALL_TESTS().
//
// Examples:
//
// This instantiates tests from test case StringTest
// each with C-string values of "foo", "bar", and "baz":
//
// const char* strings[] = {"foo", "bar", "baz"};
// INSTANTIATE_TEST_CASE_P(StringSequence, SrtingTest, ValuesIn(strings));
//
// This instantiates tests from test case StlStringTest
// each with STL strings with values "a" and "b":
//
// ::std::vector< ::std::string> GetParameterStrings() {
//     ::std::vector< ::std::string> v;
//     v.push_back("a");
//     v.push_back("b");
//     return v;
// }
//
// INSTANTIATE_TEST_CASE_P(CharSequence,
//     StlStringTest,
//     ValuesIn(GetParameterStrings()));
//
// This will also instantiate tests from CharTest
// each with parameter values 'a' and 'b':

```

```

//
// ::std::list<char> GetParameterChars()
// {
// ::std::list<char> list;
// list.push_back('a');
// list.push_back('b');
// return list;
// }
// ::std::list<char> l = GetParameterChars();
// INSTANTIATE_TEST_CASE_P(CharSequence2,
//     CharTest,
//     ValuesIn(l.begin(), l.end()));
//
template <typename ForwardIterator>
internal::ParamGenerator<
    typename ::testing::internal::IteratorTraits<ForwardIterator>::value_type>
ValuesIn(ForwardIterator begin, ForwardIterator end) {
    typedef typename ::testing::internal::IteratorTraits<ForwardIterator>
        ::value_type ParamType;
    return internal::ParamGenerator<ParamType>(
        new internal::ValuesInIteratorRangeGenerator<ParamType>(begin, end));
}

template <typename T, size_t N>
internal::ParamGenerator<T> ValuesIn(const T (&array)[N]) {
    return ValuesIn(array, array + N);
}

template <class Container>
internal::ParamGenerator<typename Container::value_type> ValuesIn(
    const Container& container) {
    return ValuesIn(container.begin(),
        container.end());
}

// Values() allows generating tests from explicitly specified list of
// parameters.
//
// Synopsis:
// Values(T v1, T v2, ..., T vN)
// - returns a generator producing sequences with elements v1, v2, ..., vN.
//
// For example, this instantiates tests from test case BarTest each
// with values "one", "two", and "three":
//
// INSTANTIATE_TEST_CASE_P(NumSequence, BarTest, Values("one", "two", "three"));
//
// This instantiates tests from test case BazTest each with values 1, 2, 3.5.

```

```

// The exact type of values will depend on the type of parameter in BazTest.
//
// INSTANTIATE_TEST_CASE_P(FloatingNumbers, BazTest, Values(1, 2, 3.5));
//
// Currently, Values() supports from 1 to $n parameters.
//
$range i 1..n
$for i [[
$range j 1..i

template <$for j, [[typename T$j]]>
internal::ValueArray$i<$for j, [[T$j]]> Values($for j, [[T$j v$j]]) {
    return internal::ValueArray$i<$for j, [[T$j]]>($for j, [[v$j]]);
}

]]

// Bool() allows generating
// tests with parameters in a set of (false, true).
//
// Synopsis:
// Bool()
// - returns a generator producing sequences with elements {false, true}.
//
// It is useful when testing code that depends on Boolean flags. Combinations
// of multiple flags can be tested when several Bool()'s are combined using
// Combine() function.
//
// In the following example all tests in the test case FlagDependentTest
// will be instantiated twice with parameters false and true.
//
// class FlagDependentTest : public testing::TestWithParam<bool> {
//     virtual void SetUp() {
//         external_flag = GetParam();
//     }
// }
// INSTANTIATE_TEST_CASE_P(BoolSequence, FlagDependentTest, Bool());
//
inline internal::ParamGenerator<bool> Bool() {
    return Values(false, true);
}

# if GTEST_HAS_COMBINE
// Combine() allows the user to combine two or more sequences to produce
// values of a Cartesian product of those sequences' elements.
//
// Synopsis:
// Combine(gen1, gen2, ..., genN)

```

```

// - returns a generator
// producing sequences with elements coming from
// the Cartesian product of elements from the sequences generated by
// gen1, gen2, ..., genN. The sequence elements will have a type of
// tuple<T1, T2, ..., TN> where T1, T2, ..., TN are the types
// of elements from sequences produced by gen1, gen2, ..., genN.
//
// Combine can have up to $maxtuple arguments. This number is currently limited
// by the maximum number of elements in the tuple implementation used by Google
// Test.
//
// Example:
//
// This will instantiate tests in test case AnimalTest each one with
// the parameter values tuple("cat", BLACK), tuple("cat", WHITE),
// tuple("dog", BLACK), and tuple("dog", WHITE):
//
// enum Color { BLACK, GRAY, WHITE };
// class AnimalTest
//   : public testing::TestWithParam<tuple<const char*, Color> > {...};
//
// TEST_P(AnimalTest, AnimalLooksNice) {...}
//
// INSTANTIATE_TEST_CASE_P(AnimalVariations, AnimalTest,
//   Combine(Values("cat", "dog"),
//           Values(BLACK, WHITE)));
//
// This will instantiate tests in FlagDependentTest with all variations of two
// Boolean flags:
//
// class FlagDependentTest
//   : public testing::TestWithParam<tuple<bool, bool> > {
//   virtual void SetUp() {
//     // Assigns external_flag_1 and external_flag_2 values from the tuple.
//     tie(external_flag_1, external_flag_2) = GetParam();
//   }
// };
//
// TEST_P(FlagDependentTest, TestFeature1) {
//   // Test your code using external_flag_1 and external_flag_2 here.
// }
// INSTANTIATE_TEST_CASE_P(TwoBoolSequence, FlagDependentTest,
//   Combine(Bool(), Bool()));
//
$range i 2..maxtuple
$for i [[
$range j 1..i

```

```

template <$for j, [[typename Generator$j]]>
internal::CartesianProductHolder$i<$for j, [[Generator$j]]> Combine(
    $for j, [[const Generator$j& g$j]]) {
return internal::CartesianProductHolder$i<$for j, [[Generator$j]]>(
    $for j, [[g$j]]);
}

]]
# endif // GTEST_HAS_COMBINE

#
define TEST_P(test_case_name, test_name) \
class GTEST_TEST_CLASS_NAME_(test_case_name, test_name) \
    : public test_case_name { \
public: \
    GTEST_TEST_CLASS_NAME_(test_case_name, test_name)() {} \
    virtual void TestBody(); \
private: \
    static int AddToRegistry() { \
        ::testing::UnitTest::GetInstance()->parameterized_test_registry(). \
            GetTestCasePatternHolder<test_case_name>(\
                #test_case_name, __FILE__, __LINE__)->AddTestPattern(\
                    #test_case_name, \
                    #test_name, \
                    new ::testing::internal::TestMetaFactory< \
                        GTEST_TEST_CLASS_NAME_(test_case_name, test_name)>()); \
        return 0; \
    } \
    static int gtest_registering_dummy_; \
    GTEST_DISALLOW_COPY_AND_ASSIGN_( \
        GTEST_TEST_CLASS_NAME_(test_case_name, test_name)); \
}; \
int GTEST_TEST_CLASS_NAME_(test_case_name, \
    test_name)::gtest_registering_dummy_ = \
    GTEST_TEST_CLASS_NAME_(test_case_name, test_name)::AddToRegistry(); \
void GTEST_TEST_CLASS_NAME_(test_case_name, test_name)::TestBody()

# define INSTANTIATE_TEST_CASE_P(prefix, test_case_name, generator) \
::testing::internal::ParamGenerator<test_case_name::ParamType> \
    gtest_##prefix##test_case_name##_EvalGenerator_() { return generator; } \
int gtest_##prefix##test_case_name##_dummy_ = \
    ::testing::UnitTest::GetInstance()->parameterized_test_registry(). \
        GetTestCasePatternHolder<test_case_name>(\
            #test_case_name, __FILE__, __LINE__)->AddTestCaseInstantiation(\
                #prefix, \

```



```

    &gtest_##prefix##test_case_name##_EvalGenerator_, \
    __FILE__, __LINE__)

} // namespace testing

#endif // GTEST_HAS_PARAM_TEST

#endif // GTEST_INCLUDE_GTEST_GTEST_PARAM_TEST_H_

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* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
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zip/include/gmock/gmock-generated-actions.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/gtest-message.h
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zip/include/gtest/internal/gtest-port.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-internal-utils.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-actions.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-cardinalities.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/gtest.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-

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zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-port.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/gtest-test-part.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/gtest_pred_impl.h
*
/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/gtest-printers.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/gtest-
param-test.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gmock/gmock-generated-matchers.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/gtest_pred_impl.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-matchers.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-internal.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-port.h
*

```

```

/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-spi.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-internal.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-spec-builders.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-printers.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-death-test.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-linked_ptr.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-string.h
*
/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-string.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-matchers.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gmock/internal/gmock-internal-utils.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-message.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-test-part.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-param-test.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-nice-strict.h
*
/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-generated-internal-utils.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest_prod.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-spi.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest_prod.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-linked_ptr.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-more-matchers.h
*

```

```
/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-death-test-internal.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-actions.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-spec-builders.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-death-test-internal.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gmock/gmock-more-actions.h
No license file was found, but licenses were detected in source scan.
```

```
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```

Found in path(s):

```
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-param-util.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-param-util.h
*
/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-param-util-generated.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-param-util-generated.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/gtest-typed-test.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-type-util.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/gtest-typed-test.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-type-util.h
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gtest/internal/gtest-tuple.h
*
/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-tuple.h
No license file was found, but licenses were detected in source scan.
```

```

$$ -*- mode: c++; -*-
$$ This is a Pump source file. Please use Pump to convert it to
$$ gmock-generated-actions.h.
$$
$var n = 10 $$ The maximum arity we support.
$$}} This meta comment fixes auto-indentation in editors.
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//
// Author: wan@google.com (Zhanyong Wan)

// Google Mock - a framework for writing C++ mock classes.
//
// This file implements some commonly used
// variadic actions.

#ifndef GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_ACTIONS_H_
#define GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_ACTIONS_H_

#include "gmock/gmock-actions.h"
#include "gmock/internal/gmock-port.h"

```

```

namespace testing {
namespace internal {

// InvokeHelper<F> knows how to unpack an N-tuple and invoke an N-ary
// function or method with the unpacked values, where F is a function
// type that takes N arguments.
template <typename Result, typename ArgumentTuple>
class InvokeHelper;

$range i 0..n
$for i [[
$range j 1..i
$var types = [[[$for j [[, typename A$j]]]]
$var as = [[[$for j, [[A$j]]]]
$var args = [[[$if i==0 [[]] $else [[ args]]]]
$var import = [[[$if i==0 [[]] $else [[
    using ::std::tr1::get;

]]]]
$var gets = [[[$for j, [[get<$(j - 1)>(args)]]]]
template <typename R$types>
class InvokeHelper<R, ::std::tr1::tuple<$as>> {
public:
    template <typename Function>
    static R Invoke(Function function, const ::std::tr1::tuple<$as>&$args) {
$import    return function($gets);
    }

    template <class Class, typename MethodPtr>
    static R InvokeMethod(Class* obj_ptr,
        MethodPtr method_ptr,
        const ::std::tr1::tuple<$as>&$args) {
$import    return (obj_ptr->*method_ptr)($gets);
    }
};

]]
// CallableHelper has static methods for invoking "callables",
// i.e. function pointers and functors. It uses overloading to
// provide a uniform interface for invoking different kinds of
// callables. In particular, you can use:
//
// CallableHelper<R>::Call(callable, a1, a2, ..., an)
//
// to invoke an n-ary callable, where R is its return type. If an

```

```

// argument, say a2, needs to be passed by reference, you should write
// ByRef(a2) instead of a2 in the above expression.
template <typename R>
class CallableHelper {
public:
    // Calls a nullary callable.
    template <typename Function>
    static R Call(Function function) { return function(); }

    // Calls a unary callable.

    // We deliberately pass a1 by value instead of const reference
    here
    // in case it is a C-string literal. If we had declared the
    // parameter as 'const A1& a1' and write Call(function, "Hi"), the
    // compiler would've thought A1 is 'char[3]', which causes trouble
    // when you need to copy a value of type A1. By declaring the
    // parameter as 'A1 a1', the compiler will correctly infer that A1
    // is 'const char*' when it sees Call(function, "Hi").
    //
    // Since this function is defined inline, the compiler can get rid
    // of the copying of the arguments. Therefore the performance won't
    // be hurt.
    template <typename Function, typename A1>
    static R Call(Function function, A1 a1) { return function(a1); }

$range i 2..n
$for i
[[
$var arity = [[if i==2 [[binary]] $elif i==3 [[ternary]] $else [[i-ary]]]]

    // Calls a $arity callable.

$range j 1..i
$var typename_As = [[for j, [[typename A$j]]]]
$var Aas = [[for j, [[A$j a$j]]]]
$var as = [[for j, [[a$j]]]]
$var typename_Ts = [[for j, [[typename T$j]]]]
$var Ts = [[for
j, [[T$j]]]]
    template <typename Function, $typename_As>
    static R Call(Function function, $Aas) {
        return function($as);
    }
]]
}; // class CallableHelper

```

```

// An INTERNAL macro for extracting the type of a tuple field. It's
// subject to change without notice - DO NOT USE IN USER CODE!
#define GMOCK_FIELD_(Tuple, N) \
    typename ::std::tr1::tuple_element<N, Tuple>::type

$range i 1..n

// SelectArgs<Result, ArgumentTuple, k1, k2, ..., k_n>::type is the
// type of an n-ary function whose i-th (1-based) argument type is the
// k{i}-th (0-based) field of ArgumentTuple, which must be a tuple
// type, and whose return type is Result. For example,
// SelectArgs<int, ::std::tr1::tuple<bool, char, double, long>, 0, 3>::type
// is int(bool, long).
//
// SelectArgs<Result, ArgumentTuple, k1, k2, ..., k_n>::Select(args)
// returns the selected fields (k1, k2, ..., k_n) of args as a tuple.
// For example,
// SelectArgs<int, ::std::tr1::tuple<bool, char, double>, 2, 0>::Select(
//
//     ::std::tr1::make_tuple(true, 'a', 2.5))
// returns ::std::tr1::tuple (2.5, true).
//
// The numbers in list k1, k2, ..., k_n must be >= 0, where n can be
// in the range [0, $n]. Duplicates are allowed and they don't have
// to be in an ascending or descending order.

template <typename Result, typename ArgumentTuple, $for i, [[int k$i]]>
class SelectArgs {
public:
    typedef Result type($for i, [[GMOCK_FIELD_(ArgumentTuple, k$i)]]);
    typedef typename Function<type>::ArgumentTuple SelectedArgs;
    static SelectedArgs Select(const ArgumentTuple& args) {
        using ::std::tr1::get;
        return SelectedArgs($for i, [[get<k$i>(args)]]);
    }
};

$for i [[
$range j 1..n
$range j1 1..i-1
template <typename Result, typename ArgumentTuple$for j1[[, int k$j1]]>
class SelectArgs<Result, ArgumentTuple,
    $for j, [[[$if j <= i-1 [[k$j]] $else [-1]]]]> {
public:
    typedef Result type($for j1, [[GMOCK_FIELD_(ArgumentTuple, k$j1)]]);
    typedef typename Function<type>::ArgumentTuple

```



```

SelectedArgs;
static SelectedArgs Select(const ArgumentTuple& [[]]
$if i == 1 [[/* args */] $else [[args]]) {
    using ::std::tr1::get;
    return SelectedArgs($for j1, [[get<k$j1>(args)]]);
}
};

]]
#undef GMOCK_FIELD_

$var ks = [[$for i, [[k$i]]]]

// Implements the WithArgs action.
template <typename InnerAction, $for i, [[int k$i = -1]]>
class WithArgsAction {
public:
    explicit WithArgsAction(const InnerAction& action) : action_(action) {}

    template <typename F>
    operator Action<F>() const { return MakeAction(new Impl<F>(action_)); }

private:
    template <typename F>
    class Impl : public ActionInterface<F> {
    public:
        typedef typename Function<F>::Result Result;
        typedef typename Function<F>::ArgumentTuple ArgumentTuple;

        explicit Impl(const InnerAction& action) : action_(action) {}

        virtual Result Perform(const ArgumentTuple& args) {
            return action_.Perform(SelectArgs<Result, ArgumentTuple, $ks>::Select(args));
        }

    private:
        typedef
        typename SelectArgs<Result, ArgumentTuple,
            $ks>::type InnerFunctionType;

        Action<InnerFunctionType> action_;
    };

    const InnerAction action_;

    GTEST_DISALLOW_ASSIGN_(WithArgsAction);
};

```

```

// A macro from the ACTION* family (defined later in this file)
// defines an action that can be used in a mock function. Typically,
// these actions only care about a subset of the arguments of the mock
// function. For example, if such an action only uses the second
// argument, it can be used in any mock function that takes >= 2
// arguments where the type of the second argument is compatible.
//
// Therefore, the action implementation must be prepared to take more
// arguments than it needs. The ExcessiveArg type is used to
// represent those excessive arguments. In order to keep the compiler
// error messages tractable, we define it in the testing namespace
// instead of testing::internal. However, this is an INTERNAL TYPE
// and subject to change without notice, so a user MUST
// NOT USE THIS
// TYPE DIRECTLY.
struct ExcessiveArg {};

// A helper class needed for implementing the ACTION* macros.
template <typename Result, class Impl>
class ActionHelper {
public:
    $range i 0..n
    $for i

    [[
    $var template = [[ $if i==0 [[]] $else [[
    $range j 0..i-1
    template <$for j, [[typename A$j]]>
    ]]]
    $range j 0..i-1
    $var As = [[ $for j, [[A$j]]]]
    $var as = [[ $for j, [[get<$j>(args)]]]]
    $range k 1..n-i
    $var eas = [[ $for k, [[ExcessiveArg()]]]]
    $var arg_list = [[ $if (i==0) | (i==n) [[ $as$eas]] $else [[ $as, $eas]]]]
    $template
    static Result Perform(Impl* impl, const ::std::tr1::tuple<$As>& args) {
        using ::std::tr1::get;
        return impl->template gmock_PerformImpl<$As>(args, $arg_list);
    }

    ]]
};

} // namespace internal

// Various overloads for Invoke().

```

```

// WithArgs<N1, N2, ..., Nk>(an_action) creates an action that passes
// the selected arguments of the mock function to an_action and
// performs it. It serves as an adaptor between actions with
// different argument
// lists. C++ doesn't support default arguments for
// function templates, so we have to overload it.

$range i 1..n
$for i [[
$range j 1..i
template <$for j [[int k$j, ]]typename InnerAction>
inline internal::WithArgsAction<InnerAction$for j [[, k$j]]>
WithArgs(const InnerAction& action) {
return internal::WithArgsAction<InnerAction$for j [[, k$j]]>(action);
}

]]

// Creates an action that does actions a1, a2, ..., sequentially in
// each invocation.
$range i 2..n
$for i [[
$range j 2..i
$var types = [[for j, [[typename Action$j]]]]
$var Aas = [[for j [[, Action$j a$j]]]]

template <typename Action1, $types>
$range k 1..i-1

inline $for k [[internal::DoBothAction<Action$k, ]]Action$i$for k [[>]]

DoAll(Action1 a1$Aas) {
$if i==2 [[

return internal::DoBothAction<Action1, Action2>(a1, a2);
]] $else [[
$range j2 2..i

return DoAll(a1, DoAll($for j2, [[a$j2]]));
]]
}

]]

} // namespace testing

```

```

// The ACTION* family of macros can be used in a namespace scope to
// define custom
actions easily. The syntax:
//
// ACTION(name) { statements; }
//
// will define an action with the given name that executes the
// statements. The value returned by the statements will be used as
// the return value of the action. Inside the statements, you can
// refer to the K-th (0-based) argument of the mock function by
// 'argK', and refer to its type by 'argK_type'. For example:
//
// ACTION(IncrementArg1) {
//   arg1_type temp = arg1;
//   return ++(*temp);
// }
//
// allows you to write
//
// ...WillOnce(IncrementArg1());
//
// You can also refer to the entire argument tuple and its type by
// 'args' and 'args_type', and refer to the mock function type and its
// return type by 'function_type' and 'return_type'.
//
// Note that you don't need to specify the types of the mock function
// arguments. However rest assured that your code is still type-safe:
// you'll get a compiler error if *arg1 doesn't support the ++
// operator, or if the type of ++(*arg1) isn't
compatible with the
// mock function's return type, for example.
//
// Sometimes you'll want to parameterize the action. For that you can use
// another macro:
//
// ACTION_P(name, param_name) { statements; }
//
// For example:
//
// ACTION_P(Add, n) { return arg0 + n; }
//
// will allow you to write:
//
// ...WillOnce(Add(5));
//
// Note that you don't need to provide the type of the parameter
// either. If you need to reference the type of a parameter named
// 'foo', you can write 'foo_type'. For example, in the body of

```

```

// ACTION_P(Add, n) above, you can write 'n_type' to refer to the type
// of 'n'.
//
// We also provide ACTION_P2, ACTION_P3, ..., up to ACTION_P$n to support
// multi-parameter actions.
//
// For the purpose of typing, you can view
//
// ACTION_Pk(Foo, p1, ..., pk) { ... }
//
// as shorthand for
//
// template <typename p1_type, ..., typename pk_type>
// FooActionPk<p1_type, ..., pk_type> Foo(p1_type p1, ..., pk_type pk) { ... }
//
// In particular,
// you can provide the template type arguments
// explicitly when invoking Foo(), as in Foo<long, bool>(5, false);
// although usually you can rely on the compiler to infer the types
// for you automatically. You can assign the result of expression
// Foo(p1, ..., pk) to a variable of type FooActionPk<p1_type, ...,
// pk_type>. This can be useful when composing actions.
//
// You can also overload actions with different numbers of parameters:
//
// ACTION_P(Plus, a) { ... }
// ACTION_P2(Plus, a, b) { ... }
//
// While it's tempting to always use the ACTION* macros when defining
// a new action, you should also consider implementing ActionInterface
// or using MakePolymorphicAction() instead, especially if you need to
// use the action a lot. While these approaches require more work,
// they give you more control on the types of the mock function
// arguments and the action parameters, which in general leads to
// better compiler error messages that pay off in the long run. They
//
// also allow overloading actions based on parameter types (as opposed
// to just based on the number of parameters).
//
// CAVEAT:
//
// ACTION*() can only be used in a namespace scope. The reason is
// that C++ doesn't yet allow function-local types to be used to
// instantiate templates. The up-coming C++0x standard will fix this.
// Once that's done, we'll consider supporting using ACTION*() inside
// a function.
//
// MORE INFORMATION:

```

```

//
// To learn more about using these macros, please search for 'ACTION'
// on http://code.google.com/p/googlemock/wiki/CookBook.

$range i 0..n
$range k 0..n-1

// An internal macro needed for implementing ACTION*().
#define GMOCK_ACTION_ARG_TYPES_AND_NAMES_UNUSED_ \
    const args_type& args GTEST_ATTRIBUTE_UNUSED_
$for k [[, \
    arg$k[[]]_type arg$k GTEST_ATTRIBUTE_UNUSED_]

// Sometimes you want to give an action explicit template parameters
// that cannot be inferred from its value parameters. ACTION() and
// ACTION_P*() don't support that.
// ACTION_TEMPLATE() remedies that
// and can be viewed as an extension to ACTION() and ACTION_P*().
//
// The syntax:
//
// ACTION_TEMPLATE(ActionName,
//                 HAS_m_TEMPLATE_PARAMS(kind1, name1, ..., kind_m, name_m),
//                 AND_n_VALUE_PARAMS(p1, ..., p_n)) { statements; }
//
// defines an action template that takes m explicit template
// parameters and n value parameters. name_i is the name of the i-th
// template parameter, and kind_i specifies whether it's a typename,
// an integral constant, or a template. p_i is the name of the i-th
// value parameter.
//
// Example:
//
// DuplicateArg<k, T>(output) converts the k-th argument of the mock
// function to type T and copies it to *output.
// ACTION_TEMPLATE(DuplicateArg,
//                 HAS_2_TEMPLATE_PARAMS(int, k, typename, T),
//                 AND_1_VALUE_PARAMS(output)) {
//     *output = T(std::tr1::get<k>(args));
// }
// ...
// int n;
// EXPECT_CALL(mock, Foo(
//     _))
//     .WillOnce(DuplicateArg<1, unsigned char>(&n));
//
// To create an instance of an action template, write:

```

```

//
// ActionName<t1, ..., t_m>(v1, ..., v_n)
//
// where the ts are the template arguments and the vs are the value
// arguments. The value argument types are inferred by the compiler.
// If you want to explicitly specify the value argument types, you can
// provide additional template arguments:
//
// ActionName<t1, ..., t_m, u1, ..., u_k>(v1, ..., v_n)
//
// where u_i is the desired type of v_i.
//
// ACTION_TEMPLATE and ACTION/ACTION_P* can be overloaded on the
// number of value parameters, but not on the number of template
// parameters. Without the restriction, the meaning of the following
// is unclear:
//
// OverloadedAction<int, bool>(x);
//
// Are we using a single-template-parameter action where 'bool' refers
// to the type of x, or are we using a two-template-parameter action
// where the compiler is asked to infer the type of x?
//
// Implementation
// notes:
//
// GMOCK_INTERNAL_*_HAS_m_TEMPLATE_PARAMS and
// GMOCK_INTERNAL_*_AND_n_VALUE_PARAMS are internal macros for
// implementing ACTION_TEMPLATE. The main trick we use is to create
// new macro invocations when expanding a macro. For example, we have
//
// #define ACTION_TEMPLATE(name, template_params, value_params)
//   ... GMOCK_INTERNAL_DECL_##template_params ...
//
// which causes ACTION_TEMPLATE(..., HAS_1_TEMPLATE_PARAMS(typename, T), ...)
// to expand to
//
//   ... GMOCK_INTERNAL_DECL_HAS_1_TEMPLATE_PARAMS(typename, T) ...
//
// Since GMOCK_INTERNAL_DECL_HAS_1_TEMPLATE_PARAMS is a macro, the
// preprocessor will continue to expand it to
//
//   ... typename T ...
//
// This technique conforms to the C++ standard and is portable. It
// allows us to implement action templates using O(N) code, where N is
// the maximum number of template/value parameters supported. Without
// using it, we'd have to devote O(N^2) amount of code to implement all

```

```

// combinations
of m and n.

// Declares the template parameters.

$range j 1..n
$for j [[
$range m 0..j-1
#define GMOCK_INTERNAL_DECL_HAS_${j}[[[]]
_TEMPLATE_PARAMS($for m, [[kind$m, name$m]]) $for m, [[kind$m name$m]]

]]

// Lists the template parameters.

$for j [[
$range m 0..j-1
#define GMOCK_INTERNAL_LIST_HAS_${j}[[[]]
_TEMPLATE_PARAMS($for m, [[kind$m, name$m]]) $for m, [[name$m]]

]]

// Declares the types of value parameters.

$for i [[
$range j 0..i-1
#define GMOCK_INTERNAL_DECL_TYPE_AND_${i}[[[]]
_VALUE_PARAMS($for j, [[p$j]]) $for j [[, typename p$j##_type]]

]]

// Initializes the value parameters.

$for i [[
$range j 0..i-1
#define GMOCK_INTERNAL_INIT_AND_${i}[[[]] _VALUE_PARAMS($for j, [[p$j]])\
($for j, [[p$j##_type gmock_p$j]])$if i>0 [[ : ]]$for j, [[p$j(gmock_p$j)]]

]]

// Declares the fields for storing the value parameters.

$for i [[
$range j 0..i-1

```



```

#define GMOCK_INTERNAL_DEFN_AND_$(i)
_VALUE_PARAMS($for j, [[p$j]]) $for j [[p$j##_type p$j; ]]

]]

// Lists the value parameters.

$for
i [[
$range j 0..i-1
#define GMOCK_INTERNAL_LIST_AND_$(i)
_VALUE_PARAMS($for j, [[p$j]]) $for j, [[p$j]]

]]

// Lists the value parameter types.

$for i [[
$range j 0..i-1
#define GMOCK_INTERNAL_LIST_TYPE_AND_$(i)
_VALUE_PARAMS($for j, [[p$j]]) $for j [[, p$j##_type]]

]]

// Declares the value parameters.

$for i [[
$range j 0..i-1
#define GMOCK_INTERNAL_DECL_AND_$(i)_VALUE_PARAMS($for j, [[p$j]]) [[]]
$for j, [[p$j##_type p$j]]

]]

// The suffix of the class template implementing the action template.
$for i [[

$range j 0..i-1
#define GMOCK_INTERNAL_COUNT_AND_$(i)_VALUE_PARAMS($for j, [[p$j]]) [[]]
$if i==1 [[P]] $elif i>=2 [[P$i]]
]]

// The name of the class template implementing the action template.

```

```

#define GMOCK_ACTION_CLASS_(name, value_params)\
    GTEST_CONCAT_TOKEN_(name##Action, GMOCK_INTERNAL_COUNT_##value_params)

$range k 0..n-1

#define ACTION_TEMPLATE(name, template_params, value_params)\
template <GMOCK_INTERNAL_DECL_##template_params\

    GMOCK_INTERNAL_DECL_TYPE_##value_params>\
class GMOCK_ACTION_CLASS_(name, value_params) {\
public:\
    GMOCK_ACTION_CLASS_(name, value_params)\
    GMOCK_INTERNAL_INIT_##value_params {}\
template <typename F>\
class gmock_Impl : public ::testing::ActionInterface<F> {\
public:\
    typedef F function_type;\
    typedef typename ::testing::internal::Function<F>::Result return_type;\
    typedef typename ::testing::internal::Function<F>::ArgumentTuple\
        args_type;\
    explicit gmock_Impl GMOCK_INTERNAL_INIT_##value_params {}\
    virtual return_type Perform(const args_type& args) {\
        return ::testing::internal::ActionHelper<return_type, gmock_Impl>::\
            Perform(this, args);\
    }\
    template <$for k, [[typename arg$k[[]]_type]]>\
        return_type gmock_PerformImpl(const args_type& args[[]]\
$for k [[, arg$k[[]]_type arg$k]]) const;\
    GMOCK_INTERNAL_DEFN_##value_params\
private:\
    GTEST_DISALLOW_ASSIGN_(gmock_Impl);\
};\
template <typename F> operator ::testing::Action<F>() const {\
    return ::testing::Action<F>(\
        new gmock_Impl<F>(GMOCK_INTERNAL_LIST_##value_params));\
}\
GMOCK_INTERNAL_DEFN_##value_params\
private:\
    GTEST_DISALLOW_ASSIGN_(GMOCK_ACTION_CLASS_(name, value_params));\
};\
template <GMOCK_INTERNAL_DECL_##template_params\
    GMOCK_INTERNAL_DECL_TYPE_##value_params>\
inline GMOCK_ACTION_CLASS_(name, value_params)<\
    GMOCK_INTERNAL_LIST_##template_params\
    GMOCK_INTERNAL_LIST_TYPE_##value_params> name(\
    GMOCK_INTERNAL_DECL_##value_params) {\
    return GMOCK_ACTION_CLASS_(name, value_params)<\
        GMOCK_INTERNAL_LIST_##template_params\

```

```

    GMOCK_INTERNAL_LIST_TYPE_##value_params>(\
      GMOCK_INTERNAL_LIST_##value_params);\
  }\
  template <GMOCK_INTERNAL_DECL_##template_params\
    GMOCK_INTERNAL_DECL_TYPE_##value_params>\
  template <typename F>\
  template <typename arg0_type,\
  typename arg1_type, typename arg2_type, \
    typename arg3_type, typename arg4_type, typename arg5_type, \
    typename arg6_type, typename arg7_type, typename arg8_type, \
    typename arg9_type>\
  typename ::testing::internal::Function<F>::Result\
  GMOCK_ACTION_CLASS_(name, value_params)<\
    GMOCK_INTERNAL_LIST_##template_params\
    GMOCK_INTERNAL_LIST_TYPE_##value_params>::gmock_Impl<F>::\
    gmock_PerformImpl(\
    GMOCK_ACTION_ARG_TYPES_AND_NAMES_UNUSED_) const

$for i

[[
$var template = [[Sif i==0 [[]] $else [[
$range j 0..i-1

  template <$for j, [[typename p$j##_type]]>\
  ]]]]
$var class_name = [[name##Action[[Sif i==0 [[]] $elif i==1 [[P]]
  $else [[P$i]]]]]]
$range j 0..i-1
$var ctor_param_list = [[Sfor j, [[p$j##_type gmock_p$j]]]]
$var param_types_and_names = [[Sfor j, [[p$j##_type p$j]]]]
$var inits = [[Sif i==0 [[]] $else [[ : $for j, [[p$j(gmock_p$j)]]]]]]
$var param_field_decls
= [[Sfor j
[[
  p$j##_type p$j;\
]]]]
$var param_field_decls2 = [[Sfor j
[[
  p$j##_type p$j;\
]]]]
$var params = [[Sfor j, [[p$j]]]]
$var param_types = [[Sif i==0 [[]] $else [[<$for j, [[p$j##_type]]>]]]]
$var typename_arg_types = [[Sfor k, [[typename arg$k[[]]_type]]]]
$var arg_types_and_names = [[Sfor k, [[arg$k[[]]_type arg$k]]]]
$var macro_name = [[Sif i==0 [[ACTION]] $elif i==1 [[ACTION_P]]

```

\$else [[ACTION\_P\$i]]]]

```
#define $macro_name(name$for j [[, p$j]])\ $template
class $class_name {\
public:\
    $class_name($ctor_param_list)$inits {\
template <typename F>\
class gmock_Impl : public ::testing::ActionInterface<F> {\
public:\
    typedef F function_type;\
    typedef typename ::testing::internal::Function<F>::Result return_type;\
    typedef typename ::testing::internal::Function<F>::ArgumentTuple\
        args_type;\
    [[Sif i==1 [[explicit ]]]]gmock_Impl($ctor_param_list)$inits {\
    virtual return_type
Perform(const args_type& args) {\
    return ::testing::internal::ActionHelper<return_type, gmock_Impl>::\
        Perform(this, args);\
    }\
    template <$typename_arg_types>\
    return_type gmock_PerformImpl(const args_type& args, [[]]
$arg_types_and_names) const;\ $param_field_decls
private:\
    GTEST_DISALLOW_ASSIGN_(gmock_Impl);\
};\
template <typename F> operator ::testing::Action<F>() const {\
    return ::testing::Action<F>(new gmock_Impl<F>($params));\
}\ $param_field_decls2
private:\
    GTEST_DISALLOW_ASSIGN_($class_name);\
};\ $template
inline $class_name$param_types name($param_types_and_names) {\
    return $class_name$param_types($params);\
}\ $template
template <typename F>\
template <$typename_arg_types>\
typename ::testing::internal::Function<F>::Result\
    $class_name$param_types::gmock_Impl<F>::gmock_PerformImpl(\
        GMOCK_ACTION_ARG_TYPES_AND_NAMES_UNUSED_) const
]]
$$ } // This meta comment fixes
auto-indentation in Emacs. It won't
$$ // show up in the generated code.
```

```
namespace testing {
```

```
// The ACTION*(*) macros trigger warning C4100 (unreferenced formal
```

```

// parameter) in MSVC with -W4. Unfortunately they cannot be fixed in
// the macro definition, as the warnings are generated when the macro
// is expanded and macro expansion cannot contain #pragma. Therefore
// we suppress them here.
#ifdef _MSC_VER
# pragma warning(push)
# pragma warning(disable:4100)
#endif

// Various overloads for InvokeArgument<N>().
//
// The InvokeArgument<N>(a1, a2, ..., a_k) action invokes the N-th
// (0-based) argument, which must be a k-ary callable, of the mock
// function, with arguments a1, a2, ..., a_k.
//
// Notes:
//
// 1. The arguments are passed by value by default. If you need to
// pass an argument by reference, wrap it inside ByRef(). For
// example,
//
//   InvokeArgument<1>(5, string("Hello"), ByRef(foo))
//
// passes 5 and string("Hello") by value, and passes foo
// by
// reference.
//
// 2. If the callable takes an argument by reference but ByRef() is
// not used, it will receive the reference to a copy of the value,
// instead of the original value. For example, when the 0-th
// argument of the mock function takes a const string&, the action
//
//   InvokeArgument<0>(string("Hello"))
//
// makes a copy of the temporary string("Hello") object and passes a
// reference of the copy, instead of the original temporary object,
// to the callable. This makes it easy for a user to define an
// InvokeArgument action from temporary values and have it performed
// later.

$range i 0..n
$for i [[
$range j 0..i-1

ACTION_TEMPLATE(InvokeArgument,
    HAS_1_TEMPLATE_PARAMS(int, k),
    AND_${i}[_]_VALUE_PARAMS($for j, [[p$j])) {
return internal::CallableHelper<return_type>::Call(

```

```

        ::std::tr1::get<k>(args)$for j [[, p$j]];
    }

]]

// Various overloads for ReturnNew<T>().
//
// The ReturnNew<T>(a1, a2, ...,
// a_k) action returns a pointer to a new
// instance of type T, constructed on the heap with constructor arguments
// a1, a2, ..., and a_k. The caller assumes ownership of the returned value.
$range i 0..n
$for i [[
$range j 0..i-1
$var ps = [[for j, [[p$j]]]]

ACTION_TEMPLATE(ReturnNew,
                HAS_1_TEMPLATE_PARAMS(typename, T),
                AND_${i}[_]_VALUE_PARAMS($ps)) {
    return new T($ps);
}

]]

#ifdef _MSC_VER
# pragma warning(pop)
#endif

} // namespace testing

#endif // GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_ACTIONS_H_

Found in path(s):
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-actions.h.pump
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gmock/gmock-generated-actions.h.pump
No license file was found, but licenses were detected in source scan.

$$ -*- mode: c++; -*-
$$ This is a Pump source file. Please use Pump to convert it to
$$ gmock-generated-actions.h.
$$
$var n = 10 $$ The maximum arity we support.
$$ }} This line fixes auto-indentation of the following code in Emacs.
// Copyright 2008, Google Inc.
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//

```

```

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// Google Mock - a framework for writing C++ mock classes.
//
// This file implements some commonly used variadic matchers.

#ifndef GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_MATCHERS_H_
#define
GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_MATCHERS_H_

#include <iterator>
#include <sstream>
#include <string>
#include <vector>
#include "gmock/gmock-matchers.h"

namespace testing {
namespace internal {

$range i 0..n-1

// The type of the i-th (0-based) field of Tuple.
#define GMOCK_FIELD_TYPE_(Tuple, i) \

```

```

typename ::std::tr1::tuple_element<i, Tuple>::type

// TupleFields<Tuple, k0, ..., kn> is for selecting fields from a
// tuple of type Tuple. It has two members:
//
// type: a tuple type whose i-th field is the ki-th field of Tuple.
// GetSelectedFields(t): returns fields k0, ..., and kn of t as a tuple.
//
// For example, in class TupleFields<tuple<bool, char, int>, 2, 0>, we have:
//
// type is tuple<int, bool>, and
// GetSelectedFields(make_tuple(true, 'a', 42)) is (42, true).

template <class Tuple$for i [[, int k$i = -1]]>
class TupleFields;

// This generic version is used when there are $n selectors.
template <class
    Tuple$for i [[, int k$i]]>
class TupleFields {
public:
    typedef ::std::tr1::tuple<$for i, [[GMOCK_FIELD_TYPE_(Tuple, k$i)]> type;
    static type GetSelectedFields(const Tuple& t) {
        using ::std::tr1::get;
        return type($for i, [[get<k$i>(t)]]);
    }
};

// The following specialization is used for 0 ~ $(n-1) selectors.

$for i [[
    $$ }}
$range j 0..i-1
$range k 0..n-1

template <class Tuple$for j [[, int k$j]]>
class TupleFields<Tuple, $for k, [[$if k < i [[k$k]] $else [[-1]]]]> {
public:
    typedef ::std::tr1::tuple<$for j, [[GMOCK_FIELD_TYPE_(Tuple, k$j)]> type;
    static type GetSelectedFields(const Tuple& $if i==0 [[/* t */] $else [[t]]) {
        using ::std::tr1::get;
        return type($for j, [[get<k$j>(t)]]);
    }
};

]]

#undef GMOCK_FIELD_TYPE_

```



```

// Implements the Args() matcher.

$var ks = [[for i, [[k$i]]]]
template <class ArgsTuple$for i [[, int k$i = -1]]>
class ArgsMatcherImpl : public MatcherInterface<ArgsTuple> {
public:
// ArgsTuple may have top-level const or reference
modifiers.
typedef GTEST_REMOVE_REFERENCE_AND_CONST_(ArgsTuple) RawArgsTuple;
typedef typename internal::TupleFields<RawArgsTuple, $ks>::type SelectedArgs;
typedef Matcher<const SelectedArgs&> MonomorphicInnerMatcher;

template <typename InnerMatcher>
explicit ArgsMatcherImpl(const InnerMatcher& inner_matcher)
    : inner_matcher_(SafeMatcherCast<const SelectedArgs&>(inner_matcher)) {}

virtual bool MatchAndExplain(ArgsTuple args,
                             MatchResultListener* listener) const {
    const SelectedArgs& selected_args = GetSelectedArgs(args);
    if (!listener->IsInterested())
        return inner_matcher_.Matches(selected_args);

    PrintIndices(listener->stream());
    *listener << "are " << PrintToString(selected_args);

    StringMatchResultListener inner_listener;
    const bool match = inner_matcher_.MatchAndExplain(selected_args,
                                                       &inner_listener);
    PrintIfNotEmpty(inner_listener.str(),
                    listener->stream());
    return match;
}

virtual void DescribeTo(::std::ostream* os) const {
    *os << "are a tuple ";
    PrintIndices(os);
    inner_matcher_.DescribeTo(os);
}

virtual void DescribeNegationTo(::std::ostream* os) const {
    *os << "are a tuple ";
    PrintIndices(os);
    inner_matcher_.DescribeNegationTo(os);
}

private:
static SelectedArgs GetSelectedArgs(ArgsTuple args) {

```

```

return TupleFields<RawArgsTuple, $ks>::GetSelectedFields(args);
}

// Prints the indices of the selected fields.
static void PrintIndices(::std::ostream* os) {
    *os << "whose fields (";
    const int indices[$n] = { $ks };
    for (int i = 0; i < $n; i++) {
        if (indices[i] < 0)
            break;

        if (i >= 1)
            *os << ", ";

        *os << "#" << indices[i];
    }
    *os << ") ";
}

const MonomorphicInnerMatcher inner_matcher_;

GTEST_DISALLOW_ASSIGN_(ArgsMatcherImpl);
};

template <class InnerMatcher$for i [[, int k$i = -1]]>
class ArgsMatcher {
public:
    explicit ArgsMatcher(const InnerMatcher& inner_matcher)
        : inner_matcher_(inner_matcher) {}

    template <typename ArgsTuple>
    operator Matcher<ArgsTuple>() const {
        return MakeMatcher(new ArgsMatcherImpl<ArgsTuple, $ks>(inner_matcher_));
    }

private:
    const InnerMatcher inner_matcher_;

    GTEST_DISALLOW_ASSIGN_(ArgsMatcher);
};

// A set of metafunctions for computing the result type of AllOf.
// AllOf(m1, ..., mN) returns
// AllOfResultN<decltype(m1), ..., decltype(mN)>::type.

// Although AllOf isn't defined for one argument, AllOfResult1 is defined
// to simplify the implementation.
template <typename M1>

```

```

struct AllOfResult1 {
    typedef M1 type;
};

$range i 1..n

$range i 2..n
$for i [[
$range j 2..i
$var m = i/2
$range k 1..m
$range t m+1..i

template <typename M1$for j [[, typename M$j]]>
struct AllOfResult$i {
    typedef BothOfMatcher<
        typename AllOfResult$m<$for k, [[M$k]]>::type,
        typename AllOfResult$(i-m)<$for t, [[M$t]]>::type
    > type;
};

]]

//
// A set of metafunctions for computing the result type of AnyOf.
// AnyOf(m1, ..., mN) returns
// AnyOfResultN<decltype(m1), ..., decltype(mN)>::type.

// Although AnyOf isn't defined for one argument, AnyOfResult1 is defined
// to simplify the implementation.
template <typename M1>
struct AnyOfResult1 {
    typedef M1 type;
};

$range i 1..n

$range i 2..n
$for i [[
$range j 2..i
$var m = i/2
$range k 1..m
$range t m+1..i

template <typename M1$for j [[, typename M$j]]>
struct AnyOfResult$i {
    typedef EitherOfMatcher<
        typename AnyOfResult$m<$for k, [[M$k]]>::type,

```

```

    typename AnyOfResult$(i-m)<$for t, [[M$t]]>::type
> type;
};

]]

} // namespace internal

// Args<N1, N2, ..., Nk>(a_matcher) matches a tuple if the selected
// fields of it matches a_matcher. C++ doesn't support default
// arguments for function templates, so we have to overload it.

$range i 0..n
$for i [[
$range j 1..i
template <$for j [[int k$j, ]]typename InnerMatcher>
inline internal::ArgsMatcher<InnerMatcher$for
j [[, k$j]]>
Args(const InnerMatcher& matcher) {
    return internal::ArgsMatcher<InnerMatcher$for j [[, k$j]]>(matcher);
}

]]
// ElementsAre(e_1, e_2, ... e_n) matches an STL-style container with
// n elements, where the i-th element in the container must
// match the i-th argument in the list. Each argument of
// ElementsAre() can be either a value or a matcher. We support up to
// $n arguments.
//
// The use of DecayArray in the implementation allows ElementsAre()
// to accept string literals, whose type is const char[N], but we
// want to treat them as const char*.
//
// NOTE: Since ElementsAre() cares about the order of the elements, it
// must not be used with containers whose elements's order is
// undefined (e.g. hash_map).

$range i 0..n
$for i [[

$range j 1..i

$if i>0 [[

template <$for j, [[typename T$j]]>
]]

```

```

inline internal::ElementsAreMatcher<
    std::tr1::tuple<
$for j, [[

        typename internal::DecayArray<T$j[[]]>::type]]> >
ElementsAre($for j,
    [[const T$j& e$j]]) {
    typedef std::tr1::tuple<
$for j, [[

        typename internal::DecayArray<T$j[[]]>::type]]> Args;
    return internal::ElementsAreMatcher<Args>(Args($for j, [[e$j]]));
}

]]

// UnorderedElementsAre(e_1, e_2, ..., e_n) is an ElementsAre extension
// that matches n elements in any order. We support up to n=$n arguments.

$range i 0..n
$for i [[

$range j 1..i

$if i>0 [[

template <$for j, [[typename T$j]]>
]]

inline internal::UnorderedElementsAreMatcher<
    std::tr1::tuple<
$for j, [[

        typename internal::DecayArray<T$j[[]]>::type]]> >
UnorderedElementsAre($for j, [[const T$j& e$j]]) {
    typedef std::tr1::tuple<
$for j, [[

        typename internal::DecayArray<T$j[[]]>::type]]> Args;
    return internal::UnorderedElementsAreMatcher<Args>(Args($for j, [[e$j]]));
}

]]

// AllOf(m1, m2, ..., mk) matches any value that matches all of the given
// sub-matchers. AllOf is called fully qualified to prevent ADL from firing.

$range i 2..n

```

```

$for i [[
$range j 1..i
$var
  m = i/2
$range k 1..m
$range t m+1..i

template <$for j, [[typename M$j]]>
inline typename internal::AllOfResult$i<$for j, [[M$j]]>::type
AllOf($for j, [[M$j m$j]]) {
  return typename internal::AllOfResult$i<$for j, [[M$j]]>::type(
    $if m == 1 [[m1]] $else [[:testing::AllOf($for k, [[m$k]])]],
    $if m+1 == i [[m$i]] $else [[:testing::AllOf($for t, [[m$t]])]]);
}

]]

// AnyOf(m1, m2, ..., mk) matches any value that matches any of the given
// sub-matchers. AnyOf is called fully qualified to prevent ADL from firing.

$range i 2..n
$for i [[
$range j 1..i
$var m = i/2
$range k 1..m
$range t m+1..i

template <$for j, [[typename M$j]]>
inline typename internal::AnyOfResult$i<$for j, [[M$j]]>::type
AnyOf($for j, [[M$j m$j]]) {
  return typename internal::AnyOfResult$i<$for j, [[M$j]]>::type(
    $if m == 1 [[m1]] $else [[:testing::AnyOf($for k, [[m$k]])]],
    $if m+1 == i [[m$i]] $else [[:testing::AnyOf($for t, [[m$t]])]]);
}

]]

} // namespace testing
$$ } // This
  Pump meta comment fixes auto-indentation in Emacs. It will not
  $$ // show up in the generated code.

// The MATCHER* family of macros can be used in a namespace scope to
// define custom matchers easily.
//
// Basic Usage
// =====

```

```

//
// The syntax
//
// MATCHER(name, description_string) { statements; }
//
// defines a matcher with the given name that executes the statements,
// which must return a bool to indicate if the match succeeds. Inside
// the statements, you can refer to the value being matched by 'arg',
// and refer to its type by 'arg_type'.
//
// The description string documents what the matcher does, and is used
// to generate the failure message when the match fails. Since a
// MATCHER() is usually defined in a header file shared by multiple
// C++ source files, we require the description to be a C-string
// literal to avoid possible side effects. It can be empty, in which
// case we'll use the sequence of words in the matcher name as the
// description.
//
//
// For example:
//
// MATCHER(IsEven, "") { return (arg % 2) == 0; }
//
// allows you to write
//
// // Expects mock_foo.Bar(n) to be called where n is even.
// EXPECT_CALL(mock_foo, Bar(IsEven()));
//
// or,
//
// // Verifies that the value of some_expression is even.
// EXPECT_THAT(some_expression, IsEven());
//
// If the above assertion fails, it will print something like:
//
// Value of: some_expression
// Expected: is even
// Actual: 7
//
// where the description "is even" is automatically calculated from the
// matcher name IsEven.
//
// Argument Type
// =====
//
// Note that the type of the value being matched (arg_type) is
// determined by the context in which you use the matcher and is
// supplied to you by the compiler, so you don't need to worry about

```

```

// declaring it (nor can you). This allows the matcher to be
// polymorphic. For example, IsEven() can be used to match any type
// where the value of "(arg % 2) == 0" can be implicitly converted to
//
// a bool. In the "Bar(IsEven())" example above, if method Bar()
// takes an int, 'arg_type' will be int; if it takes an unsigned long,
// 'arg_type' will be unsigned long; and so on.
//
// Parameterizing Matchers
// =====
//
// Sometimes you'll want to parameterize the matcher. For that you
// can use another macro:
//
// MATCHER_P(name, param_name, description_string) { statements; }
//
// For example:
//
// MATCHER_P(HasAbsoluteValue, value, "") { return abs(arg) == value; }
//
// will allow you to write:
//
// EXPECT_THAT(Blah("a"), HasAbsoluteValue(n));
//
// which may lead to this message (assuming n is 10):
//
// Value of: Blah("a")
// Expected: has absolute value 10
// Actual: -9
//
// Note that both the matcher description and its parameter are
// printed, making the message human-friendly.
//
// In the matcher definition body, you can write 'foo_type' to
// reference the type of a parameter named 'foo'. For example, in the
// body of MATCHER_P(HasAbsoluteValue,
// value) above, you can write
// 'value_type' to refer to the type of 'value'.
//
// We also provide MATCHER_P2, MATCHER_P3, ..., up to MATCHER_P$n to
// support multi-parameter matchers.
//
// Describing Parameterized Matchers
// =====
//
// The last argument to MATCHER*() is a string-typed expression. The
// expression can reference all of the matcher's parameters and a
// special bool-typed variable named 'negation'. When 'negation' is

```



```

// false, the expression should evaluate to the matcher's description;
// otherwise it should evaluate to the description of the negation of
// the matcher. For example,
//
// using testing::PrintToString;
//
// MATCHER_P2(InClosedRange, low, hi,
//   string(negation ? "is not" : "is") + " in range [" +
//   PrintToString(low) + ", " + PrintToString(hi) + "]") {
//   return low <= arg && arg <= hi;
// }
// ...
// EXPECT_THAT(3, InClosedRange(4, 6));
// EXPECT_THAT(3, Not(InClosedRange(2,
// 4)));
//
// would generate two failures that contain the text:
//
// Expected: is in range [4, 6]
// ...
// Expected: is not in range [2, 4]
//
// If you specify "" as the description, the failure message will
// contain the sequence of words in the matcher name followed by the
// parameter values printed as a tuple. For example,
//
// MATCHER_P2(InClosedRange, low, hi, "") { ... }
// ...
// EXPECT_THAT(3, InClosedRange(4, 6));
// EXPECT_THAT(3, Not(InClosedRange(2, 4)));
//
// would generate two failures that contain the text:
//
// Expected: in closed range (4, 6)
// ...
// Expected: not (in closed range (2, 4))
//
// Types of Matcher Parameters
// =====
//
// For the purpose of typing, you can view
//
// MATCHER_Pk(Foo, p1, ..., pk, description_string) { ... }
//
// as shorthand for
//
// template <typename p1_type, ..., typename pk_type>
// FooMatcherPk<p1_type, ..., pk_type>

```

```

// Foo(p1_type p1, ..., pk_type pk) { ... }
//
//
When you write Foo(v1, ..., vk), the compiler infers the types of
// the parameters v1, ..., and vk for you. If you are not happy with
// the result of the type inference, you can specify the types by
// explicitly instantiating the template, as in Foo<long, bool>(5,
// false). As said earlier, you don't get to (or need to) specify
// 'arg_type' as that's determined by the context in which the matcher
// is used. You can assign the result of expression Foo(p1, ..., pk)
// to a variable of type FooMatcherPk<p1_type, ..., pk_type>. This
// can be useful when composing matchers.
//
// While you can instantiate a matcher template with reference types,
// passing the parameters by pointer usually makes your code more
// readable. If, however, you still want to pass a parameter by
// reference, be aware that in the failure message generated by the
// matcher you will see the value of the referenced object but not its
// address.
//
// Explaining Match Results
// =====
//
//
Sometimes the matcher description alone isn't enough to explain why
// the match has failed or succeeded. For example, when expecting a
// long string, it can be very helpful to also print the diff between
// the expected string and the actual one. To achieve that, you can
// optionally stream additional information to a special variable
// named result_listener, whose type is a pointer to class
// MatchResultListener:
//
//
// MATCHER_P(EqualsLongString, str, "") {
//   if (arg == str) return true;
//
//   *result_listener << "the difference: "
//       << DiffStrings(str, arg);
//   return false;
// }
//
// Overloading Matchers
// =====
//
// You can overload matchers with different numbers of parameters:
//
// MATCHER_P(Blah, a, description_string1) { ... }
// MATCHER_P2(Blah, a, b, description_string2) { ... }
//

```

```

// Caveats
// =====
//
// When defining a new matcher, you should also consider implementing
// MatcherInterface or using
// MakePolymorphicMatcher(). These
// approaches require more work than the MATCHER* macros, but also
// give you more control on the types of the value being matched and
// the matcher parameters, which may leads to better compiler error
// messages when the matcher is used wrong. They also allow
// overloading matchers based on parameter types (as opposed to just
// based on the number of parameters).
//
// MATCHER*() can only be used in a namespace scope. The reason is
// that C++ doesn't yet allow function-local types to be used to
// instantiate templates. The up-coming C++0x standard will fix this.
// Once that's done, we'll consider supporting using MATCHER*() inside
// a function.
//
// More Information
// =====
//
// To learn more about using these macros, please search for 'MATCHER'
// on http://code.google.com/p/googlemock/wiki/CookBook.

$range i 0..n
$for i

[[
$var macro_name = [[${if i==0 [[MATCHER]] $elif i==1 [[MATCHER_P]]

    $else [[MATCHER_P$i]]]]
$var class_name = [[name##Matcher[[${if i==0 [[]] $elif i==1 [[P]]
    $else [[P$i]]]]]]]]
$range j 0..i-1
$var template = [[${if i==0 [[]] $else [[

template <${for j, [[typename p$j##_type]]}>\
]]]]
$var ctor_param_list = [[${for j, [[p$j##_type gmock_p$j]]]]
$var impl_ctor_param_list = [[${for j, [[p$j##_type gmock_p$j]]]]
$var impl_inits = [[${if i==0 [[]] $else [[ : ${for j, [[p$j(gmock_p$j)]]]]]]
$var inits = [[${if i==0 [[]] $else [[ : ${for j, [[p$j(gmock_p$j)]]]]]]
$var params = [[${for j, [[p$j]]]]
$var param_types = [[${if i==0 [[]] $else [[<${for j, [[p$j##_type]]>]]]]
$var param_types_and_names = [[${for j, [[p$j##_type p$j]]]]
$var param_field_decls = [[${for j

[[

```

```

    p$j##_type p$j;\
  ]]]]
$var param_field_decls2 = [[$for j
[[

    p$j##_type p$j;\
  ]]]]

#define $macro_name(name$for j [[, p$j]], description)\$template
class $class_name {\
  public:\
    template <typename arg_type>\
    class gmock_Impl
: public ::testing::MatcherInterface<arg_type> {\
  public:\
    [[if i==1 [[explicit ]]]]gmock_Impl($impl_ctor_param_list)\
      $impl_inits {\}\
    virtual bool MatchAndExplain(\
      arg_type arg, ::testing::MatchResultListener* result_listener) const;\
    virtual void DescribeTo(::std::ostream* gmock_os) const {\
      *gmock_os << FormatDescription(false);\
    }\
    virtual void DescribeNegationTo(::std::ostream* gmock_os) const {\
      *gmock_os << FormatDescription(true);\
    }\$param_field_decls
  private:\
    ::testing::internal::string FormatDescription(bool negation) const {\
      const ::testing::internal::string gmock_description = (description);\
      if (!gmock_description.empty())\
        return gmock_description;\
      return ::testing::internal::FormatMatcherDescription(\
        negation, #name, \
        ::testing::internal::UniversalTersePrintTupleFieldsToStrings(\
          ::std::tr1::tuple<$for
j, [[p$j##_type]]>>($for j, [[p$j]]));\
    }\
    GTEST_DISALLOW_ASSIGN_(gmock_Impl);\
  };\
  template <typename arg_type>\
  operator ::testing::Matcher<arg_type>() const {\
    return ::testing::Matcher<arg_type>(\
      new gmock_Impl<arg_type>($params));\
  }\
  $class_name($ctor_param_list)$inits {\
  }\$param_field_decls2
  private:\
    GTEST_DISALLOW_ASSIGN_($class_name);\

```

```

};\stemplate
inline $class_name$param_types name($param_types_and_names) {\
    return $class_name$param_types($params);\
}\stemplate
template <typename arg_type>\
bool $class_name$param_types::gmock_Impl<arg_type>::MatchAndExplain(\
    arg_type arg, \
    ::testing::MatchResultListener* result_listener GTEST_ATTRIBUTE_UNUSED_)\
    const
]]

```

```
#endif // GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_MATCHERS_H_
```

Found in path(s):

```
* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-matchers.h.pump
*
```

```
/opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
zip/include/gmock/gmock-generated-matchers.h.pump
```

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```
$$ -*- mode: c++; -*-
```

```
$$ This is a Pump source file. Please use Pump to convert it to
```

```
$$ gmock-generated-nice-strict.h.
```

```
$$
```

```
$var n = 10 $$ The maximum arity we support.
```

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//
// Author: wan@google.com (Zhanyong Wan)

// Implements class templates NiceMock, NaggyMock, and StrictMock.
//
// Given a mock class MockFoo that is created using Google Mock,
// NiceMock<MockFoo> is
// a subclass of MockFoo that allows
// uninteresting calls (i.e. calls to mock methods that have no
// EXPECT_CALL specs), NaggyMock<MockFoo> is a subclass of MockFoo
// that prints a warning when an uninteresting call occurs, and
// StrictMock<MockFoo> is a subclass of MockFoo that treats all
// uninteresting calls as errors.
//
// Currently a mock is naggy by default, so MockFoo and
// NaggyMock<MockFoo> behave like the same. However, we will soon
// switch the default behavior of mocks to be nice, as that in general
// leads to more maintainable tests. When that happens, MockFoo will
// stop behaving like NaggyMock<MockFoo> and start behaving like
// NiceMock<MockFoo>.
//
// NiceMock, NaggyMock, and StrictMock "inherit" the constructors of
// their respective base class, with up-to $n arguments. Therefore
// you can write NiceMock<MockFoo>(5, "a") to construct a nice mock
// where MockFoo has a constructor that accepts (int, const char*),
// for example.
//
// A known limitation is
// that NiceMock<MockFoo>, NaggyMock<MockFoo>,
// and StrictMock<MockFoo> only works for mock methods defined using
// the MOCK_METHOD* family of macros DIRECTLY in the MockFoo class.
// If a mock method is defined in a base class of MockFoo, the "nice"
// or "strict" modifier may not affect it, depending on the compiler.
// In particular, nesting NiceMock, NaggyMock, and StrictMock is NOT
// supported.
//
// Another known limitation is that the constructors of the base mock
// cannot have arguments passed by non-const reference, which are
// banned by the Google C++ style guide anyway.

```

```

#ifndef GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_NICE_STRICT_H_
#define GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_NICE_STRICT_H_

#include "gmock/gmock-spec-builders.h"
#include "gmock/internal/gmock-port.h"

namespace testing {

$range kind 0..2
$for kind [[

$var clazz=[[ $if kind==0 [[NiceMock]]
              $elif kind==1 [[NaggyMock]]
              $else [[StrictMock]]]]]

$var method=[[ $if kind==0 [[AllowUninterestingCalls]]
                $elif kind==1 [[WarnUninterestingCalls]]
                $else [[FailUninterestingCalls]]]]]

template <class MockClass>
class $clazz : public MockClass {
public:
    // We don't factor out the constructor body to a common method, as
    // we have to avoid a possible clash with members of MockClass.
    $clazz() {
        ::testing::Mock::$method(
            internal::ImplicitCast_<MockClass*>(this));
    }

    // C++ doesn't (yet) allow inheritance of constructors, so we have
    // to define it for each arity.
    template <typename A1>
    explicit $clazz(const A1& a1) : MockClass(a1) {
        ::testing::Mock::$method(
            internal::ImplicitCast_<MockClass*>(this));
    }

$range i 2..n
$for i [[
$range j 1..i
template <$for j, [[typename A$j]]>
$clazz($for j, [[const A$j& a$j]]) : MockClass($for j, [[a$j]]) {
    ::testing::Mock::$method(
        internal::ImplicitCast_<MockClass*>(this));
    }

]]]
}

```

```

virtual ~$clazz() {
    ::testing::Mock::UnregisterCallReaction(
        internal::ImplicitCast_<MockClass*>(this));
}

private:
    GTEST_DISALLOW_COPY_AND_ASSIGN_($clazz);
};

]]

// The following specializations catch some (relatively more common)
// user errors of nesting nice and strict mocks. They do NOT catch
// all possible errors.

// These specializations are declared but not defined, as NiceMock,
// NaggyMock, and StrictMock cannot be nested.

template <typename MockClass>
class NiceMock<NiceMock<MockClass> >;
template <typename MockClass>
class NiceMock<NaggyMock<MockClass> >;
template <typename MockClass>
class NiceMock<StrictMock<MockClass> >;

template <typename MockClass>
class NaggyMock<NiceMock<MockClass> >;
template <typename MockClass>
class NaggyMock<NaggyMock<MockClass> >;
template <typename MockClass>
class NaggyMock<StrictMock<MockClass> >;

template <typename MockClass>
class StrictMock<NiceMock<MockClass> >;
template <typename MockClass>
class StrictMock<NaggyMock<MockClass> >;
template <typename MockClass>
class StrictMock<StrictMock<MockClass>
>;

} // namespace testing

#endif // GMOCK_INCLUDE_GMOCK_GMOCK_GENERATED_NICE_STRICT_H_

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* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-
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* /opt/cola/permits/1862451770_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-

```



zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-nice-strict.h.pump

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```
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```

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```
$$ gmock-generated-function-mockers.h.
```

```
$$
```

```
$var n = 10 $$ The maximum arity we support.
```

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```
//
```

```
// Author: wan@google.com (Zhanyong Wan)
```

```
// Google Mock - a framework for writing C++ mock classes.
```

```
//
```

```
// This file contains template meta-programming utility classes needed
```

```
// for implementing Google
```

```
Mock.
```

```
#ifndef GMOCK_INCLUDE_GMOCK_INTERNAL_GMOCK_GENERATED_INTERNAL_UTILS_H_
```

```
#define GMOCK_INCLUDE_GMOCK_INTERNAL_GMOCK_GENERATED_INTERNAL_UTILS_H_
```

```

#include "gmock/internal/gmock-port.h"

namespace testing {

template <typename T>
class Matcher;

namespace internal {

// An IgnoredValue object can be implicitly constructed from ANY value.
// This is used in implementing the IgnoreResult(a) action.
class IgnoredValue {
public:
// This constructor template allows any value to be implicitly
// converted to IgnoredValue. The object has no data member and
// doesn't try to remember anything about the argument. We
// deliberately omit the 'explicit' keyword in order to allow the
// conversion to be implicit.
template <typename T>
IgnoredValue(const T& /* ignored */) {} // NOLINT(runtime/explicit)
};

// MatcherTuple<T>::type is a tuple type where each field is a Matcher
// for the corresponding field in tuple type T.
template <typename Tuple>
struct MatcherTuple;

$range
i 0..n
$for i [[
$range j 1..i
$var typename_As = [[[$for j, [[typename A$j]]]]
$var As = [[[$for j, [[A$j]]]]
$var matcher_As = [[[$for j, [[Matcher<A$j>]]]]
template <$typename_As>
struct MatcherTuple< ::std::tr1::tuple<$As>> {
typedef ::std::tr1::tuple<$matcher_As > type;
};

]]

// Template struct Function<F>, where F must be a function type, contains
// the following typedefs:
//
// Result:          the function's return type.
// ArgumentN:       the type of the N-th argument, where N starts with 1.

```

```

// ArgumentTuple:    the tuple type consisting of all parameters of F.
// ArgumentMatcherTuple: the tuple type consisting of Matchers for all
//                    parameters of F.
// MakeResultVoid:    the function type obtained by substituting void
//                    for the return type of F.
// MakeResultIgnoredValue:
//                    the function type obtained by substituting Something
//                    for the return
//                    type of F.
template <typename F>
struct Function;

template <typename R>
struct Function<R()> {
    typedef R Result;
    typedef ::std::tr1::tuple<> ArgumentTuple;
    typedef typename MatcherTuple<ArgumentTuple>::type ArgumentMatcherTuple;
    typedef void MakeResultVoid();
    typedef IgnoredValue MakeResultIgnoredValue();
};

$range i 1..n
$for i [[
$range j 1..i
$var typename_As = [[[$for j [[, typename A$j]]]]
$var As = [[[$for j, [[A$j]]]]
$var matcher_As = [[[$for j, [[Matcher<A$j>]]]]
$range k 1..i-1
$var prev_As = [[[$for k, [[A$k]]]]
template <typename R$typename_As>
struct Function<R($As)>
    : Function<R($prev_As)> {
    typedef A$i Argument$i;
    typedef ::std::tr1::tuple<$As> ArgumentTuple;
    typedef typename MatcherTuple<ArgumentTuple>::type ArgumentMatcherTuple;
    typedef void MakeResultVoid($As);
    typedef IgnoredValue MakeResultIgnoredValue($As);
};

]]
} // namespace internal

} // namespace testing

#endif // GMOCK_INCLUDE_GMOCK_INTERNAL_GMOCK_GENERATED_INTERNAL_UTILS_H_

```

Found

in path(s):

\* /opt/cola/permits/1862451770\_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-  
zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-generated-internal-utils.h.pump  
\* /opt/cola/permits/1862451770\_1701856512.9667168/0/vendors-gtest-1-8-0-234-windows-  
zip/include/gmock/internal/gmock-generated-internal-utils.h.pump

## 1.35 sipcc 12.8.0

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## 1.36 udt 1.0.3

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```
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* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/UDTSender.java
*
* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-
jar/udt/packets/ConnectionHandshake.java
* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/packets/Destination.java
* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/packets/ConnectionFactory.java
* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-
jar/udt/receiver/AckHistoryWindow.java
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```

```

jar/udt/packets/NegativeAcknowledgement.java
* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/packets/DataPacket.java
* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/util/ReceiveFile.java
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* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/util/TestSocket.java
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*
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* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/UDTServerSocket2.java
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* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/ServerSession.java
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jar/udt/receiver/ReceiverLossListEntry.java
* /opt/cola/permits/1863851477_1702003930.1194167/0/udt-1-0-3-sources-2-jar/udt/unicore/FufexReceive.java

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