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Contents

1.1 websocketpp 0.8.0

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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
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base64.cpp and base64.h

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Ren Nyffenegger rene.nyffenegger@adp-gmbh.ch

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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
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1.2 tidy 5.7.24

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HTML Tidy

HTML parser and pretty printer

Contributing Author(s):

Dave Raggett <dsr@w3.org>

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1.3 libusb 1.0.21

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1.4 jansson 2.12

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1.5 opus 1.3.1

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1.6 libilbc 2.0.2

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1.10 tiny-xml 2.5.3

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/** @mainpage

<h1> TinyXML </h1>

TinyXML is a simple, small, C++ XML parser that can be easily
integrated into other programs.

<h2> What it does. </h2>

In brief, TinyXML parses an XML document, and builds from that a
Document Object Model (DOM) that can be read, modified, and saved.

XML stands for "eXtensible Markup Language." It allows you to create
your own document markups. Where HTML does a very good job of marking
documents for browsers, XML allows you to define any kind of document
markup, for example a document that describes a "to do" list for an
organizer application. XML is a very structured and convenient format.
All those random file formats created to store application data can
all be replaced with XML. One parser for everything.

The best place for the complete, correct, and quite frankly hard to
read spec is at
http://www.w3.org/TR/2004/REC-xml-20040204/.
An intro to XML
(that I really like) can be found at
http://skew.org/xml/tutorial.

There are different ways to access and interact with XML data.
TinyXML uses a Document Object Model (DOM), meaning the XML data is parsed
into a C++ objects that can be browsed and manipulated, and then
written to disk or another output stream. You can also construct an XML document
from scratch with C++ objects and write this to disk or another output
stream.

TinyXML is designed to be easy and fast to learn. It is two headers
and four cpp files. Simply add these to your project and off you go.
There is an example file - xmltest.cpp - to get you started.

TinyXML is released under the ZLib license,
so you can use it in open source or commercial code. The details
of the license are at the top of every source file.

TinyXML attempts to be a flexible parser, but with truly correct and
compliant XML output. TinyXML should compile on

any reasonably C++
compliant system. It does not rely on exceptions or RTTI. It can be
compiled with or without STL support. TinyXML fully supports
the UTF-8 encoding, and the first 64k character entities.

<h2> What it doesn't do. </h2>

TinyXML doesn't parse or use DTDs (Document Type Definitions) or XSLs
(eXtensible Stylesheet Language.) There are other parsers out there
(check out www.sourceforge.org, search for XML) that are much more fully
featured. But they are also much bigger, take longer to set up in
your project, have a higher learning curve, and often have a more
restrictive license. If you are working with browsers or have more
complete XML needs, TinyXML is not the parser for you.

The following DTD syntax will not parse at this time in TinyXML:

@verbatim
<!DOCTYPE Archiv [
<!ELEMENT Comment (#PCDATA)>
]>
@endverbatim

because TinyXML sees this as a !DOCTYPE node with an illegally
embedded !ELEMENT node. This may be addressed in the future.

<h2> Tutorials. </h2>

For
the impatient, here is a tutorial to get you going. A great way to get started,
but it is worth your time to read this (very short) manual completely.

- @subpage tutorial0

<h2> Code Status. </h2>

TinyXML is mature, tested code. It is very stable. If you find
bugs, please file a bug report on the sourceforge web site
(www.sourceforge.net/projects/tinyxml). We'll get them straightened
out as soon as possible.

There are some areas of improvement; please check sourceforge if you are
interested in working on TinyXML.

<h2> Related Projects </h2>

TinyXML projects you may find useful! (Descriptions provided by the projects.)

 TinyXPath (http://tinyxpath.sourceforge.net). TinyXPath is a small footprint
   XPath syntax decoder, written in C++.
 TinyXML++ (http://code.google.com/p/ticpp/). TinyXML++ is a completely new
   interface to TinyXML that uses MANY of the C++ strengths. Templates,
  exceptions, and much better error handling.

<h2>
 Features </h2>

<h3> Using STL </h3>

TinyXML can be compiled to use or not use STL. When using STL, TinyXML
uses the std::string class, and fully supports std::istream, std::ostream,
operator<<, and operator>>. Many API methods have both 'const char*' and
'const std::string&' forms.

When STL support is compiled out, no STL files are included whatsoever. All
the string classes are implemented by TinyXML itself. API methods
all use the 'const char*' form for input.

Use the compile time #define:

 TIXML_USE_STL

to compile one version or the other. This can be passed by the compiler,
or set as the first line of "tinyxml.h".

Note: If compiling the test code in Linux, setting the environment
variable TINYXML_USE_STL=YES/NO will control STL compilation. In the
Windows project file, STL and non STL targets are provided. In your project,
It's probably easiest to add the line "#define TIXML_USE_STL" as the first
line of tinyxml.h.

<h3> UTF-8 </h3>

TinyXML supports UTF-8 allowing
 to manipulate XML files in any language. TinyXML
also supports "legacy mode" - the encoding used before UTF-8 support and
probably best described as "extended ascii".

Normally, TinyXML will try to detect the correct encoding and use it. However,
by setting the value of TIXML_DEFAULT_ENCODING in the header file, TinyXML
can be forced to always use one encoding.

TinyXML will assume Legacy Mode until one of the following occurs:

  If the non-standard but common "UTF-8 lead bytes" (0xef 0xbb 0xbf)
  begin the file or data stream, TinyXML will read it as UTF-8.
  If the declaration tag is read, and it has an encoding="UTF-8", then
  TinyXML will read it as UTF-8.
  If the declaration tag is read, and it has no encoding specified, then TinyXML will
  read it as UTF-8.
  If the declaration tag is read, and it has an encoding="something else", then TinyXML
  will read it as Legacy Mode. In legacy mode, TinyXML will work as it did before. It's

 not clear what that mode does exactly, but old content should keep working.
  Until one of the above criteria is met, TinyXML runs in Legacy Mode.

What happens if the encoding is incorrectly set or detected? TinyXML will try
to read and pass through text seen as improperly encoded. You may get some strange results or
mangled characters. You may want to force TinyXML to the correct mode.

You may force TinyXML to Legacy Mode by using LoadFile(TIXML_ENCODING_LEGACY) or
LoadFile(filename, TIXML_ENCODING_LEGACY). You may force it to use legacy mode all
the time by setting TIXML_DEFAULT_ENCODING = TIXML_ENCODING_LEGACY. Likewise, you may
force it to TIXML_ENCODING_UTF8 with the same technique.

For English users, using English XML, UTF-8 is the same as low-ASCII. You
don't need to be aware of UTF-8 or change your code in any way. You can think
of UTF-8 as a "superset" of ASCII.

UTF-8 is not a double byte format - but it is a standard encoding of Unicode!
TinyXML
 does not use or directly support wchar, TCHAR, or Microsoft's _UNICODE at this time.
It is common to see the term "Unicode" improperly refer to UTF-16, a wide byte encoding
of unicode. This is a source of confusion.

For "high-ascii" languages - everything not English, pretty much - TinyXML can
handle all languages, at the same time, as long as the XML is encoded
in UTF-8. That can be a little tricky, older programs and operating systems
tend to use the "default" or "traditional" code page. Many apps (and almost all
modern ones) can output UTF-8, but older or stubborn (or just broken) ones
still output text in the default code page.

For example, Japanese systems traditionally use SHIFT-JIS encoding.
Text encoded as SHIFT-JIS can not be read by TinyXML.
A good text editor can import SHIFT-JIS and then save as UTF-8.

The Skew.org link does a great
job covering the encoding issue.

The test file "utf8test.xml" is an XML containing English,

Spanish, Russian,
and Simplified Chinese. (Hopefully they are translated correctly). The file
"utf8test.gif" is a screen capture of the XML file, rendered in IE. Note that
if you don't have the correct fonts (Simplified Chinese or Russian) on your
system, you won't see output that matches the GIF file even if you can parse
it correctly. Also note that (at least on my Windows machine) console output
is in a Western code page, so that Print() or printf() cannot correctly display
the file. This is not a bug in TinyXML - just an OS issue. No data is lost or
destroyed by TinyXML. The console just doesn't render UTF-8.

<h3> Entities </h3>
TinyXML recognizes the pre-defined "character entities", meaning special
characters. Namely:

@verbatim
 & &
 < <
 > >
 " "
 ' '
@endverbatim

These are recognized when the XML document is read, and translated to there
UTF-8 equivalents. For instance, text with the XML of:

@verbatim
 Far & Away
@endverbatim

will have the Value()
 of "Far & Away" when queried from the TiXmlText object,
and will be written back to the XML stream/file as an ampersand. Older versions
of TinyXML "preserved" character entities, but the newer versions will translate
them into characters.

Additionally, any character can be specified by its Unicode code point:
The syntax " " or " " are both to the non-breaking space characher.

<h3> Printing </h3>
TinyXML can print output in several different ways that all have strengths and limitations.

- Print(FILE*). Output to a std-C stream, which includes all C files as well as stdout.
 - "Pretty prints", but you don't have control over printing options.
 - The output is streamed directly to the FILE object, so there is no memory overhead
   in the TinyXML code.
 - used by Print() and SaveFile()

- operator<<. Output to a c++ stream.
 - Integrates with standart C++ iostreams.
 - Outputs in "network printing" mode without line breaks. Good for network transmission
   and moving XML
 between C++ objects, but hard for a human to read.

- TiXmlPrinter. Output to a std::string or memory buffer.
 - API is less concise
 - Future printing options will be put here.
 - Printing may change slightly in future versions as it is refined and expanded.

<h3> Streams </h3>
With TIXML_USE_STL on TinyXML supports C++ streams (operator <<,>>) streams as well as C (FILE*) streams. There are some differences that you may need to be aware of.

C style output:
 - based on FILE*
 - the Print() and SaveFile() methods

 Generates formatted output, with plenty of white space, intended to be as
 human-readable as possible. They are very fast, and tolerant of ill formed
 XML documents. For example, an XML document that contains 2 root elements
 and 2 declarations, will still print.

C style input:
 - based on FILE*
 - the Parse() and LoadFile() methods

 A fast, tolerant read. Use whenever you don't need the C++ streams.

C++ style output:
 - based on std::ostream
 - operator<<

 Generates
 condensed output, intended for network transmission rather than
 readability. Depending on your system's implementation of the ostream class,
 these may be somewhat slower. (Or may not.) Not tolerant of ill formed XML:
 a document should contain the correct one root element. Additional root level
 elements will not be streamed out.

C++ style input:
 - based on std::istream
 - operator>>

 Reads XML from a stream, making it useful for network transmission. The tricky
 part is knowing when the XML document is complete, since there will almost
 certainly be other data in the stream. TinyXML will assume the XML data is

complete after it reads the root element. Put another way, documents that
are ill-constructed with more than one root element will not read correctly.
Also note that operator>> is somewhat slower than Parse, due to both
implementation of the STL and limitations of TinyXML.

<h3> White space </h3>
The world simply does not agree on whether white space should be kept,
or condensed.
For example, pretend the '_' is a space, and look at "Hello____world". HTML, and
at least some XML parsers, will interpret this as "Hello_world". They condense white
space. Some XML parsers do not, and will leave it as "Hello____world". (Remember
to keep pretending the _ is a space.) Others suggest that __Hello___world__ should become
Hello___world.

It's an issue that hasn't been resolved to my satisfaction. TinyXML supports the
first 2 approaches. Call TiXmlBase::SetCondenseWhiteSpace(bool) to set the desired behavior.
The default is to condense white space.

If you change the default, you should call TiXmlBase::SetCondenseWhiteSpace(bool)
before making any calls to Parse XML data, and I don't recommend changing it after
it has been set.

<h3> Handles </h3>

Where browsing an XML document in a robust way, it is important to check
for null returns from method calls. An error safe implementation can
generate a lot of code like:

```
@verbatim
TiXmlElement* root = document.FirstChildElement(
 "Document" );
if ( root )
{
 TiXmlElement* element = root->FirstChildElement( "Element" );
 if ( element )
 {
  TiXmlElement* child = element->FirstChildElement( "Child" );
  if ( child )
  {
   TiXmlElement* child2 = child->NextSiblingElement( "Child" );
   if ( child2 )
   {
    // Finally do something useful.
@endverbatim
```

Handles have been introduced to clean this up. Using the TiXmlHandle class,
the previous code reduces to:

@verbatim
TiXmlHandle docHandle(&document);
TiXmlElement* child2 = docHandle.FirstChild("Document").FirstChild("Element").Child("Child", 1
).ToElement();
if (child2)
{
 // do something useful
@endverbatim

Which is much easier to deal with. See TiXmlHandle for more information.

<h3> Row and Column tracking </h3>
Being able to track nodes and attributes back to their origin location
in source files can be very important for some applications. Additionally,
knowing where parsing errors occured in the original source can be very
time
 saving.

TinyXML can tracks the row and column origin of all nodes and attributes
in a text file. The TiXmlBase::Row() and TiXmlBase::Column() methods return
the origin of the node in the source text. The correct tabs can be
configured in TiXmlDocument::SetTabSize().

<h2> Using and Installing </h2>

To Compile and Run xmltest:

A Linux Makefile and a Windows Visual C++ .dsw file is provided.
Simply compile and run. It will write the file demotest.xml to your
disk and generate output on the screen. It also tests walking the
DOM by printing out the number of nodes found using different
techniques.

The Linux makefile is very generic and runs on many systems - it
is currently tested on mingw and
MacOSX. You do not need to run 'make depend'. The dependecies have been
hard coded.

<h3>Windows project file for VC6</h3>

tinyxml: tinyxml library, non-STL
tinyxmlSTL: tinyxml library, STL
tinyXmlTest: test app, non-STL
tinyXmlTestSTL: test app,

STL

<h3>Makefile</h3>
At the top of the makefile you can set:

PROFILE, DEBUG, and TINYXML_USE_STL. Details (such that they are) are in
the makefile.

In the tinyxml directory, type "make clean" then "make". The executable
file 'xmltest' will be created.

<h3>To Use in an Application:</h3>

Add tinyxml.cpp, tinyxml.h, tinyxmlerror.cpp, tinyxmlparser.cpp, tinystr.cpp, and tinystr.h to your
project or make file. That's it! It should compile on any reasonably
compliant C++ system. You do not need to enable exceptions or
RTTI for TinyXML.

<h2> How TinyXML works. </h2>

An example is probably the best way to go. Take:
@verbatim
<?xml version="1.0" standalone=no>
<!-- Our to do list data -->
<ToDo>
<Item priority="1"> Go to the <bold>Toy store!</bold></Item>
<Item priority="2"> Do bills</Item>
</ToDo>
@endverbatim

Its not much of a To Do list, but it will do. To read this file
(say "demo.xml") you would create a document, and parse it in:
@verbatim
TiXmlDocument
doc("demo.xml");
doc.LoadFile();
@endverbatim

And its ready to go. Now lets look at some lines and how they
relate to the DOM.

@verbatim
<?xml version="1.0" standalone=no>
@endverbatim

The first line is a declaration, and gets turned into the
TiXmlDeclaration class. It will be the first child of the
document node.

This is the only directive/special tag parsed by TinyXML.
Generally directive tags are stored in TiXmlUnknown so the
commands wont be lost when it is saved back to disk.

@verbatim
<!-- Our to do list data -->
@endverbatim

A comment. Will become a TiXmlComment object.

@verbatim
<ToDo>
@endverbatim

The "ToDo" tag defines a TiXmlElement object. This one does not have
any attributes, but does contain 2 other elements.

@verbatim
<Item priority="1">
@endverbatim

Creates another TiXmlElement which is a child of the "ToDo" element.
This element has 1 attribute, with the name "priority" and the value
"1".

@verbatim
Go to the
@endverbatim

A TiXmlText.
This is a leaf node and cannot contain other nodes.
It is a child of the "Item" TiXmlElement.

@verbatim
<bold>
@endverbatim

Another TiXmlElement, this one a child of the "Item" element.

Etc.

Looking at the entire object tree, you end up with:

@verbatim
TiXmlDocument "demo.xml"
 TiXmlDeclaration "version='1.0'" "standalone=no"
 TiXmlComment " Our to do list data"
 TiXmlElement "ToDo"
  TiXmlElement "Item" Attribtutes: priority = 1
   TiXmlText "Go to the "
   TiXmlElement "bold"
    TiXmlText "Toy store!"
  TiXmlElement "Item" Attributes: priority=2
   TiXmlText "Do bills"
@endverbatim

<h2> Documentation </h2>

The documentation is build with Doxygen, using the 'dox'
configuration file.

<h2> License </h2>

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<h2> References </h2>

The World Wide Web Consortium is the definitive standard body for
XML, and their web pages contain huge amounts of information.

The definitive spec:

http://www.w3.org/TR/2004/REC-xml-20040204/

I also recommend "XML Pocket Reference" by Robert Eckstein and published by
OReilly...the book that got
the whole thing started.

<h2> Contributors, Contacts, and a Brief History </h2>

Thanks very much to everyone who sends suggestions, bugs, ideas, and
encouragement. It all helps, and makes this project fun. A special thanks
to the contributors on the web pages that keep it lively.

So many people have sent in bugs and ideas, that rather than list here
we try to give credit due in the "changes.txt" file.

TinyXML was originally written by Lee Thomason. (Often the "I" still
in the documentation.) Lee reviews changes and releases new versions,
with the help of Yves Berquin, Andrew Ellerton, and the tinyXml community.

We appreciate your suggestions, and would love to know if you
use TinyXML. Hopefully you will enjoy it and find it useful.
Please post questions, comments, file bugs, or contact us at:

www.sourceforge.net/projects/tinyxml

Lee Thomason, Yves Berquin, Andrew Ellerton
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1.11 openssl 1.1.1q

1.11.1 Available under license :

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 Examples of how to use the nextToken() and toLong() and toDouble() to parse a CSV line

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SafeString replace()
Examples of SafeString replace for chars and strings

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SafeString readUntil, non-blocking until delimiter found
Example of how to use the non-blocking readUntil() method to parse a CSV line

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SafeStringReader_GPS.ino

This example reads GPS data from a SafeStringStream continuously using a SafeStringReader

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Examples of how to prefix different data types to SafeStrings

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* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeStringsInClasses_1/SafeStringsInClasses_1.ino
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/*
SSring indexOf() and lastIndexOf()

by Matthew Ford
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www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

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* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringIndexOf/SafeStringIndexOf.ino
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/*
SafeString from char* with specified size constructor
Examples of how to create SafeStrings from an existing pointer to a char[]
also see the SafeString_ConstructorAndDebugging, SafeStringFromCharArray and SafeStringFromCharPtr examples

by Matthew Ford
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Modified from String Examples by Tom Igoe
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www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringFromCharPtrWithSize/SafeStringFromCharPtrWithSize.ino
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/*
SafeString Case changes
Examples of how to change the case of a SafeString

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www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

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* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringCaseChanges/SafeStringCaseChanges.ino
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/*
SafeString.h static memory SafeString library modified by
Matthew Ford
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modified from
WString.h - String library for Wiring & Arduino
...mostly rewritten by Paul Stoffregen...
Copyright (c) 2009-10 Hernando Barragan. All right reserved.
Copyright 2011, Paul Stoffregen, paul@pjrc.com

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*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/src/SafeString.h
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/*
OBD_Processor.ino for SafeString V4.0.0+

Example of using SafeString to process Car OnBoardData

by Matthew Ford
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download and install the SafeString library V4.0.0+ from Arduino library manager
or from www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/OBD_Processor/OBD_Processor.ino
No license file was found, but licenses were detected in source scan.

/*
SafeString from char* constructor
Examples of how to create SafeStrings from an existing pointer to a char[]
also see the SafeString_ConstructorAndDebugging, SafeStringFromCharArray and
SafeStringFromCharPtrWithSize examples

by Matthew Ford
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www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-
4.1.24/examples/SafeString_Tests/SafeStringFromCharPtr/SafeStringFromCharPtr.ino
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/*
SafeString substring()
Examples of SafeString substring

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www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
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* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringSubstring/SafeStringSubstring.ino

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```
/* SafeStringWithArraysOfCstrings.ino
   Example of using SafeString for working with char[][xx]

 by Matthew Ford
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 download and install the SafeString library from Arduino library manager
 or from www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/
```

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeStringWithArraysOfCstrings/SafeStringWithArraysOfCstrings.ino
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```
/*
 SafeStringReader_flushInput.ino

 This example flushes any initial input and also starts flushing if "flush" is found in the text stream

 by Matthew Ford
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 download and install the SafeString library from Arduino library manager
 or from www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/
```

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeStringReader_flushInput/SafeStringReader_flushInput.ino
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```
/*
 SafeString charAt() and setCharAt()
 Examples of how to get and set characters of a SafeString

 by Matthew Ford
 Mods Copyright(c)2020 Forward Computing and Control Pty. Ltd.
 Modified from String Examples by Tom Igoe
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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/
```

Found in path(s):

* /safestring-4-1-24-zip/SafeString-
4.1.24/examples/SafeString_Tests/SafeStringCharacters/SafeStringCharacters.ino
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/*
 Comparing SafeStrings
 Examples of how to compare SafeStrings using the comparison operators

 by Matthew Ford
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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-
4.1.24/examples/SafeString_Tests/SafeStringComparisonOperators/SafeStringComparisonOperators.ino
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/*
 SafeString to Number conversion
 Examples of SafeString to Number conversions and comparing these to the results from String methods

 by Matthew Ford
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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringToNum/SafeStringToNum.ino
No license file was found, but licenses were detected in source scan.

/*
 Fixed 9 Formatting of double/float/long/ing

 by Matthew Ford
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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-

4.1.24/examples/SafeString_Tests/SafeString_fixedWidthFormat/SafeString_fixedWidthFormat.ino
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/*
 SafeSting length(), trim()

 by Matthew Ford
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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringLengthTrim/SafeStringLengthTrim.ino
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/*
 SafeStringReader_Assign.ino

 This example = to SafeStringReader

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 download and install the SafeString library from Arduino library manager
 or from www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeStringReader_Assign/SafeStringReader_Assign.ino
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/*
 SafeString from char[] constructor
 Examples of how to create SafeStrings from an existing char[]
 also see the SafeString_ConstructorAndDebugging, SafeStringFromCharPtr and SafeStringFromCharPtrWithSize examples

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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html

*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-
4.1.24/examples/SafeString_Tests/SafeStringFromCharArray/SafeStringFromCharArray.ino
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/*
 Tokenizing SafeStrings and converting to numbers
 Examples of how to use the stoken and toLong() and toDouble() to parse a CSV line

 by Matthew Ford
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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

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* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeString_stoken/SafeString_stoken.ino
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/*
 sfStream.ino

 SafeStringStream Unit test
 Example of using SafeStringStream

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 https://www.forward.com.au/pfod/ArduinoProgramming/Serial_IO/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeStringStream_Tests/sfStream/sfStream.ino
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/*
 SafeString startsWith(), startsWithIgnoreCase(), endsWithCharFrom() and endsWith()

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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringStartsWithEndsWith/SafeStringStartsWithEndsWith.ino
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```
/*
 Blink

 Turns an led on for one second, then off for one second, repeatedly.

 Most Arduinos have an on-board led you can control. On the UNO, MEGA and ZERO
 it is attached to digital pin 13, on MKR1000 on pin 6. led is set to
 the correct led pin independent of which board is used.
 If you want to know what pin the on-board led is connected to on your Arduino
 model, check the Technical Specs of your board at:
 https://www.arduino.cc/en/Main/Products

 modified 8 May 2014
 by Scott Fitzgerald
 modified 2 Sep 2016
 by Arturo Guadalupi
 modified 8 Sep 2016
 by Colby Newman

 This example code is in the public domain.

 http://www.arduino.cc/en/Tutorial/Blink
*/
```

Found in path(s):
* /safestring-4-1-24-zip/SafeString-4.1.24/examples/loopTimer/LoopTimer_BlinkDelay/LoopTimer_BlinkDelay.ino
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```
/*
 Appending to SafeStrings using the += operator and concat()
 Examples of how to append different data types to SafeStrings
 Also has examples of using hasError() method

 by Matthew Ford
 Mods Copyright(c)2020 Forward Computing and Control Pty. Ltd.
 Modified from String Examples by Tom Igoe
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 www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
*/
```

Found in path(s):

* /safestring-4-1-24-zip/SafeString-4.1.24/examples/SafeString_Tests/SafeStringAssignmentAndConcatOperator/SafeStringAssignmentAndConcatOperator.ino

1.13 cpprest 2.9.0

1.13.1 Available under license :

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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// THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
// (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
// OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
//
// 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):
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-generated-internal-utils.h.pump
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/internal/gmock-generated-internal-utils.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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// OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
//
// 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 workaround 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 == $i), \
      this_method_does_not_take_$i[[]]_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)


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

]]


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

]]


$for i [[
#define MOCK_METHOD$i[[]]_T(m, ...) GMOCK_METHOD$i[[]]_(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):
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-function-mockers.h.pump
* /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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Found in path(s):
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-param-util.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-param-util.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-param-util-generated.h
*
/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-param-util-generated.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-typed-test.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-type-util.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-typed-test.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-type-util.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-tuple.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-tuple.h
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```

Found in path(s):
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-actions.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-message.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-death-test.h
*

/vendors-gtest-1-8-0-234-windows-zip/include/gmock/internal/gmock-port.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-port.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-internal-utils.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-actions.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-cardinalities.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-function-mockers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-function-mockers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-filepath.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-actions.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-matchers.h
*
/vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-cardinalities.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-more-matchers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-nice-strict.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/internal/gmock-generated-internal-utils.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-filepath.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-more-actions.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-port.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-test-part.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest_pred_impl.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-printers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-param-test.h
*
/vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-matchers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest_pred_impl.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-matchers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-internal.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-port.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-spi.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-internal.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-spec-builders.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-printers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-death-test.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock.h
*
/vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-linked_ptr.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-string.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-string.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-matchers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/internal/gmock-internal-utils.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-message.h

* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-test-part.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-param-test.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-nice-strict.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/internal/gmock-generated-internal-utils.h
*
 /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest_prod.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-spi.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest_prod.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-linked_ptr.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-more-matchers.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-death-test-internal.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-actions.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-spec-builders.h
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-death-test-internal.h
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-more-actions.h
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$$ -*- mode: c++; -*-
$$ 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

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

 template <$for j, [[typename p$j##_type]]>\
]]]]
$var class_name = [[name##Action[[$if i==0 [[]] $elif i==1 [[P]]
                                    $else [[P$i]]]]]]
$range j 0..i-1
```

```
$var ctor_param_list = [[$for j, [[p$j##_type gmock_p$j]]]]
$var param_types_and_names = [[$for j, [[p$j##_type p$j]]]]
$var inits = [[$if i==0 [[]] $else [[ : $for j, [[p$j(gmock_p$j)]]]]]]
$var param_field_decls
 = [[$for j
[[

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

  p$j##_type p$j;\
]]]]
$var params = [[$for j, [[p$j]]]]
$var param_types = [[$if i==0 [[]] $else [[<$for j, [[p$j##_type]]>]]]]
$var typename_arg_types = [[$for k, [[typename arg$k[[]]_type]]]]
$var arg_types_and_names = [[$for k, [[arg$k[[]]_type arg$k]]]]
$var macro_name = [[$if 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)$inits {}\
   template <typename F>\
   class gmock_Impl : public ::testing::ActionInterface<F> {\
    public:\
     typedef F function_type;\
     typedef typename ::testing::internal::Function<F>::Result return_type;\
     typedef typename ::testing::internal::Function<F>::ArgumentTuple\
         args_type;\
     [[$if 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):
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-actions.h.pump
* /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.

```
$$ -*- mode: c++; -*-
$var n = 50  $$ 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

// AssertyTypeEq<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_
```

Found in path(s):
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-type-util.h.pump
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-type-util.h.pump
No license file was found, but licenses were detected in source scan.

```
$$ -*- mode: c++; -*-
$var n = 10  $$ 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


$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):

* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-tuple.h.pump
* /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.

```
$$ -*- mode: c++; -*-
$var n = 50  $$ 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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// OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
//
// 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!
//
#ifndef 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 then 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()));
}

#endif  // 0

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

```
#if !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"

#if 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 produces 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_
```

Found in path(s):
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/gtest-param-test.h.pump
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/gtest-param-test.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.
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```
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// OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

// 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);\
 };\$template
 inline $class_name$param_types name($param_types_and_names) {\
   return $class_name$param_types($params);\
```

```
 }\$template
 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):
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-matchers.h.pump
* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-matchers.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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```

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

 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):
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gtest-1.7.0/include/gtest/internal/gtest-param-util-generated.h.pump
* /vendors-gtest-1-8-0-234-windows-zip/include/gtest/internal/gtest-param-util-generated.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-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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* /vendors-gtest-1-8-0-234-windows-zip/include/gmock/gmock-generated-nice-strict.h.pump
* /vendors-gtest-1-8-0-234-windows-zip/include/opensource/gmock-1.7.0/include/gmock/gmock-generated-nice-strict.h.pump

1.14 sipcc 12.8.0

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1.15 zlib 1.3.1

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1.16 nghttp2 1.64.0

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[src/readfloat.c]

strtod implementation.
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The original code can be found in https://github.com/mattn/strtod

[src/fmt_fp.c]

The code in this function was inspired from Fred Bayer's pdouble.c.
Since pdouble.c was released as Public Domain, I'm releasing this
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Dave Hylands

The original code can be found in https://github.com/dhylands/format-float

[mrbgems/mruby-dir/src/Win/dirent.c] used only for Windows platform

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set yrange [0:]
set terminal pngcairo font 'Sans, 8' lw 1 size 1400,1024
set xtics rotate by -45
set style histogram errorbars gap 2 lw 1
set style fill solid border -1
mruby-set

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1.17 openssl 1.1.1zb

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1.18 sqlite 2025-07-17

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1.20 sentry 8.52.1

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1.21 curl 8.16.0

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1.22 fmdb 2.7.8

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1.23 zipfoundation 0.9.16

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1.24 libxml2 2.15.1

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1.25 fmt 14.29

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

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

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

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

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

2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
3.0	2.6	2008	PSF	yes
3.0.1	3.0	2009	PSF	yes
3.1	3.0.1	2009	PSF	yes
3.1.1	3.1	2009	PSF	yes
3.1.2	3.1.1	2010	PSF	yes
3.1.3	3.1.2	2010	PSF	yes
3.1.4	3.1.3	2011	PSF	yes
3.2	3.1	2011	PSF	yes
3.2.1	3.2	2011	PSF	yes
3.2.2	3.2.1	2011	PSF	yes
3.2.3	3.2.2	2012	PSF	yes
3.3.0	3.2	2012	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

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

Thanks to the many outside volunteers who have worked under Guido's

direction to make these releases possible.

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  * Detect unordered_map in stl_hash.m4.
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  * Fixed warnings about generated constructors not explicitly initializing
    all fields (only present with certain compiler settings).
  * Added generation of field number constants.
Wink Saville <wink@google.com>
  * Fixed initialization ordering problem in logging code.
Will Pierce <willp@nuclei.com>
  * Small patch improving performance of in Python serialization.
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  * Emacs mode for Protocol Buffers (editors/protobuf-mode.el).
Scott Stafford <scott.stafford@gmail.com>
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* HPUX support.
Oliver Jowett <oliver.jowett@gmail.com>
* Detect whether zlib is new enough in configure script.
* Fixes for Solaris 10 32/64-bit confusion.
Evan Jones <evanj@mit.edu>
* Optimize Java serialization code when writing a small message to a stream.
* Optimize Java serialization of strings so that UTF-8 encoding happens only
once per string per serialization call.
* Clean up some Java warnings.
* Fix bug with permanent callbacks that delete themselves when run.
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* Added CodedInputStream.getTotalBytesRead().
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* Added atomicops for AIX (POWER)
Nipunn Koorapati <nipunn1313@gmail.com>
* Provide a type alias field ValueType
on EnumTypeWrapper
* Match service argument names to abstract interface