

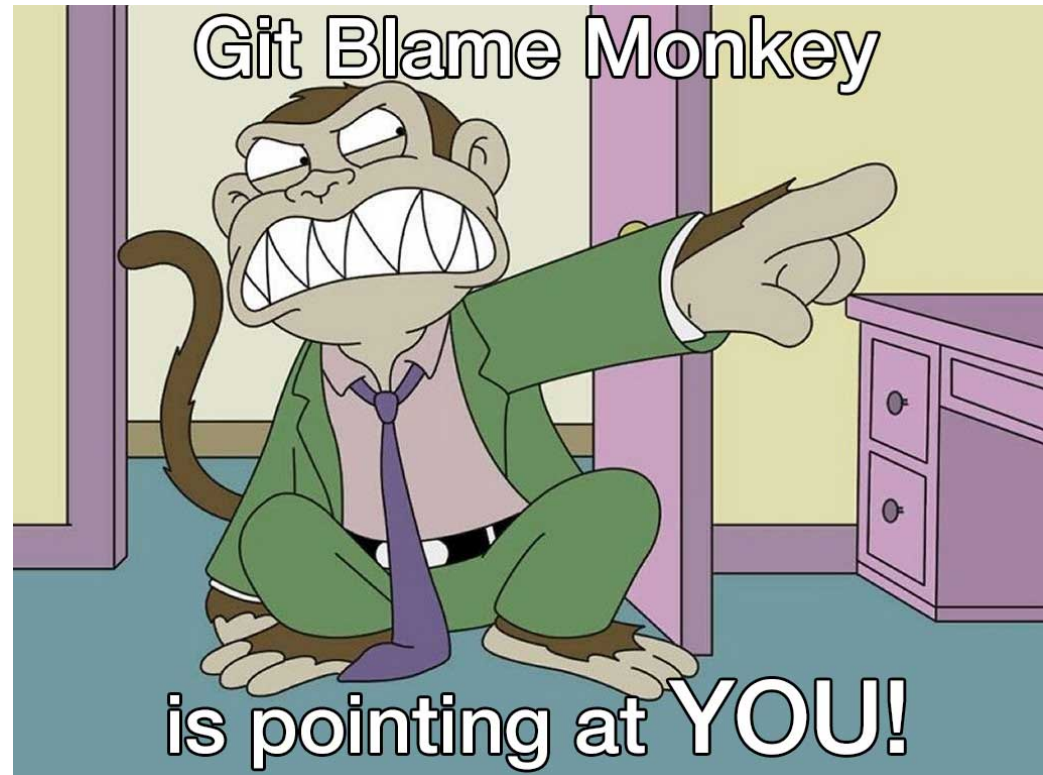
11.03.15

Git Blame

Peter Neher

Why Git Blame?

- What does this line of code do?
- Why does it (not) work?
- Who f***** it up?



Who was the last to change which line of a file?

```
pneher@mbi099:/local/mitk/source/MITK$ git blame CMakeLists.txt
cb14c8bf (Sascha Zelzer 2015-01-09 16:02:14 +0100 1) set(MITK_CMAKE_MINIMUM_REQUIRED_VERSION 3.1)
cb14c8bf (Sascha Zelzer 2015-01-09 16:02:14 +0100 2) cmake_minimum_required(VERSION ${MITK_CMAKE_MINIMUM_REQUIRED_VERSION})
44d91f8e (Andreas Fetzer 2013-10-30 15:42:30 +0100 3)
44d91f8e (Andreas Fetzer 2013-10-30 15:42:30 +0100 4) #-----
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 5) # See http://cmake.org/cmake/help/cmake-2-8-docs.html#section\_Policies for details
70a61234 (Sascha Zelzer 2011-08-05 10:12:10 +0200 6) #-----
70a61234 (Sascha Zelzer 2011-08-05 10:12:10 +0200 7)
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 8) set(project_policies )
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 9) foreach(policy ${project_policies})
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 10)     if(POLICY ${policy})
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 11)         cmake_policy(SET ${policy} NEW)
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 12)     endif()
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 13) endforeach()
70a61234 (Sascha Zelzer 2011-08-05 10:12:10 +0200 14)
70a61234 (Sascha Zelzer 2011-08-05 10:12:10 +0200 15) #-----
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 16) # Superbuild Option - Enabled by default
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 17) #-----
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 18)
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 19) option(MITK_USE_SUPERBUILD "Build MITK and the projects it depends on via SuperBuild.cmake.
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 20)
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 21) if(MITK_USE_SUPERBUILD)
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 22)     project(MITK-superbuild)
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 23)     set(MITK_SOURCE_DIR ${PROJECT_SOURCE_DIR})
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 24)     set(MITK_BINARY_DIR ${PROJECT_BINARY_DIR})
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 25) else()
935c0402 (Sascha Zelzer 2015-01-28 03:17:11 +0100 26)     project(MITK VERSION 2014.10.99)
a329758d (Sascha Zelzer 2011-03-18 19:00:02 +0100 27) endif()
32ea1187 (Sascha Zelzer 2011-02-22 18:47:22 +0100 28)
32ea1187 (Sascha Zelzer 2011-02-22 18:47:22 +0100 29) #-----
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 30) # Update CMake module path
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 31) #-----
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 32)
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 33) set(MITK_CMAKE_DIR ${MITK_SOURCE_DIR}/CMake)
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 34)
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 35) set(CMAKE_MODULE_PATH
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 36)     ${MITK_CMAKE_DIR}
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 37)     ${CMAKE_MODULE_PATH}
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 38)     )
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 39)
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 40) #-----
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 41) # CMake function(s) and macro(s)
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 42) #-----
651178f4 (Sascha Zelzer 2015-02-06 03:38:37 +0100 43)
```

Too much output? Use -L

```
pneher@mbi099:/local/mitk/source/MITK$ git blame -L 243,255 CMakeLists.txt
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 243) mitkFunctionAddExternalProject(NAME ANN ON ADVANCED DOC "Use Approximate Nearest Neighbor Library")
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 244) mitkFunctionAddExternalProject(NAME CppUnit ON ADVANCED DOC "Use CppUnit for unit tests")
fe5fe8fb (Stefan Kislinskiy 2014-12-09 11:07:52 +0100 245)
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 246) mitkFunctionAddExternalProject(NAME PCRE OFF ADVANCED NO_PACKAGE)
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 247) mitkFunctionAddExternalProject(NAME ZLIB OFF ADVANCED NO_PACKAGE NO_CACHE)
fe5fe8fb (Stefan Kislinskiy 2014-12-09 11:07:52 +0100 248)
dc673643 (Michael Brehler 2015-03-05 12:47:43 +0100 249) mitkFunctionAddExternalProject(NAME HDF5 OFF ADVANCED)
dc673643 (Michael Brehler 2015-03-05 12:47:43 +0100 250)
5261db06 (Sascha Zelzer 2015-02-04 10:47:10 +0100 251) # -----
5261db06 (Sascha Zelzer 2015-02-04 10:47:10 +0100 252) # The following external projects must be
5261db06 (Sascha Zelzer 2015-02-04 10:47:10 +0100 253) # ordered according to their
5261db06 (Sascha Zelzer 2015-02-04 10:47:10 +0100 254) # inter-dependencies
fe5fe8fb (Stefan Kislinskiy 2014-12-09 11:07:52 +0100 255)
pneher@mbi099:/local/mitk/source/MITK$
```

Don't know the line numbers? Use `-L` with regular expression.

```
pneher@mbi099:/local/mitk/source/MITK$ git blame -L/ANN/,/HDF5/ CMakeLists.txt
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 243) mitkFunctionAddExternalProject(NAME ANN ON ADVANCED DOC "U
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 244) mitkFunctionAddExternalProject(NAME CppUnit ON ADVANCED DOC "U
fe5fe8fb (Stefan Kislinskiy 2014-12-09 11:07:52 +0100 245)
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 246) mitkFunctionAddExternalProject(NAME PCRE OFF ADVANCED NO_PAC
74068804 (Sascha Zelzer 2015-02-05 02:26:23 +0100 247) mitkFunctionAddExternalProject(NAME ZLIB OFF ADVANCED NO_PAC
fe5fe8fb (Stefan Kislinskiy 2014-12-09 11:07:52 +0100 248)
dc673643 (Michael Brehler 2015-03-05 12:47:43 +0100 249) mitkFunctionAddExternalProject(NAME HDF5 OFF ADVANCED)
pneher@mbi099:/local/mitk/source/MITK$
```

Where did a copied line originally come from? Use -C

```
pneher@mbi099:/local/mitk/source/MITK$ git blame -L 571,584 -C CMakeLists.txt
52b8be1b CMakeLists.txt (Sascha Zelzer 2015-01-29 02:58:21 +0100 571) set(MITK_CXX_FEATURES cxx_auto_type cxx_nullptr cxx_override)
52b8be1b CMakeLists.txt (Sascha Zelzer 2015-01-29 02:58:21 +0100 572)
5a3c27b2 CMake/mitkSetupVariables.cmake (Sascha Zelzer 2015-01-28 03:15:02 +0100 573) if(NOT DEFINED CMAKE_DEBUG_POSTFIX)
5a3c27b2 CMake/mitkSetupVariables.cmake (Sascha Zelzer 2015-01-28 03:15:02 +0100 574) # We can't do this yet because the CTK Plugin Framework
5a3c27b2 CMake/mitkSetupVariables.cmake (Sascha Zelzer 2015-01-28 03:15:02 +0100 575) # cannot cope with a postfix yet.
5a3c27b2 CMake/mitkSetupVariables.cmake (Sascha Zelzer 2015-01-28 03:15:02 +0100 576) #set(CMAKE_DEBUG_POSTFIX d)
5a3c27b2 CMake/mitkSetupVariables.cmake (Sascha Zelzer 2015-01-28 03:15:02 +0100 577) endif()
32ea1187 CMake/mitkSetupVariables.cmake (Sascha Zelzer 2011-02-22 18:47:22 +0100 578)
32ea1187 CMakeLists.txt (Sascha Zelzer 2011-02-22 18:47:22 +0100 579) #-----
32ea1187 CMakeLists.txt (Sascha Zelzer 2011-02-22 18:47:22 +0100 580) # Output directories.
32ea1187 CMakeLists.txt (Sascha Zelzer 2011-02-22 18:47:22 +0100 581) #-----
32ea1187 CMakeLists.txt (Sascha Zelzer 2011-02-22 18:47:22 +0100 582)
691cec93 CMakeLists.txt (Sascha Zelzer 2015-01-28 03:16:44 +0100 583) set(_default_LIBRARY_output_dir lib)
691cec93 CMakeLists.txt (Sascha Zelzer 2015-01-28 03:16:44 +0100 584) set(_default_RUNTIME_output_dir bin)
pneher@mbi099:/local/mitk/source/MITK$
```

You don't like terminal windows? Use git gui blame

```
Commit: personal/neher/ismrm_phantom5 File: SuperBuild.cmake
6454 6454 1 include(mitkFunctionInstallExternalCMakeProject)
32ea 32ea 2
34b7 34b7 3 #-----
MN MN 4 # Convenient macro allowing to download a file
32ea 32ea 5 #-----
SZ SZ 6
eac1 de9f 7 if(NOT MITK_THIRDPARTY_DOWNLOAD_PREFIX_URL)
SZ SZ 8 set(MITK_THIRDPARTY_DOWNLOAD_PREFIX_URL http://mitk.org/download/thirdparty)
9 endif()
5e11 10
eac1 eac1 11 macro(downloadFile url dest)
SZ SZ 12 file(DOWNLOAD ${url} ${dest} STATUS status)
9dd2 13 list(GET status 0 error_code)
SZ 14 list(GET status 1 error_msg)
eac1 15 if(error_code)
SZ 16 message(FATAL_ERROR "error: Failed to download ${url} - ${error_msg}")
17 endif()
18 endmacro()
34b7 34b7 19
32ea 32ea 20 #-----
SZ SZ 21 # MITK Prerequisites
22 #-----
23
4867 4867 24 if(UNIX AND NOT APPLE)
PN 4a75 25
e954 e954 26 include(mitkFunctionCheckPackageHeader)
4867 4a75 27
e954 e954 28 # Check for libxt-dev
SZ SZ 29 mitkFunctionCheckPackageHeader(StringDefs.h libxt-dev /usr/include/X11/)
4867 eb4f 30
e954 e954 31 # Check for libtiff4-dev
SZ SZ 32 mitkFunctionCheckPackageHeader(tiff.h libtiff4-dev)
33
eb4f 33
e954 34 # Check for libwrap0-dev
SZ 35 mitkFunctionCheckPackageHeader(tcpd.h libwrap0-dev)
4867 4867 36
PN PN 37 endif()
38
de9f de9f 39 # We need a proper patch program. On Linux and MacOS, we assume
SZ SZ 40 # that "patch" is available. On Windows, we download patch.exe
41 # if not patch program is found.
42 find_program(PATCH_COMMAND patch)
43 if((NOT PATCH_COMMAND OR NOT EXISTS ${PATCH_COMMAND}) AND WIN32)
44 downloadFile(${MITK_THIRDPARTY_DOWNLOAD_PREFIX_URL}/patch.exe
45 ${CMAKE_CURRENT_BINARY_DIR}/patch.exe)
Annotation complete.
```

Git blame

- <http://git-scm.com/docs/git-blame>

Git tools

- <https://git.wiki.kernel.org/index.php/InterfacesFrontendsAndTools>
- <http://git-scm.com/download/gui/linux>

Git Wiki

- https://git.wiki.kernel.org/index.php/Main_Page