

How to run tests and debug Google Test project in VS Code?

Asked 4 years, 2 months ago Modified 9 days ago Viewed 67k times



I want to run the sample tests and debug the [Google Test project](#). I am using VS Code on Ubuntu 16.04 LTS.

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- I cloned the project locally at `/home/user/Desktop/projects/cpp/googletest`,
- created a new directory called `mybuild` at `/home/user/Desktop/projects/cpp/mybuild`.
- According to the README instructions here: <https://github.com/google/googletest/tree/master/googletest> I used the command, `cmake -Dgtest_build_samples=ON /home/user/Desktop/projects/cpp/googletest` to build the project and this generated a bunch of files and apparently the build succeeded.

Now, I have 2 problems:

1. How do I run the sample tests for the project?
2. How do I debug these test and the source code for the project?

c++

visual-studio-code

cmake

googletest

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edited Jul 15, 2020 at 13:10



Waqar

9,174 5 37 45

asked Jul 15, 2020 at 8:39



Very Professional
Username

1,445 2 20 34

1 Answer

Sorted by: Highest score (default)





1. Start with a clean directory:

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/home/user/Desktop/projects/cpp/ # your project lives here



2. Add your cmake file(CMakeLists.txt), your source files, and test file. The directory now looks like this:



```
└─cpp/
  ├── CMakeLists.txt
  ├── myfunctions.h
  └── mytests.cpp
```

3. Clone and add `googletest` to this directory:

```
└─cpp/
  ├── googletest/
  ├── CMakeLists.txt
  ├── myfunctions.h
  └── mytests.cpp
```

4. Open your `CMakeLists.txt` and enter the following:

```
cmake_minimum_required(VERSION 3.12) # version can be different

set(GOOGLETEST_VERSION 1.15.2)

project(my_cpp_project) #name of your project

enable_testing() #to discover tests in test explorer

add_subdirectory(googletest) # add googletest subdirectory

include_directories(googletest/include) # this is so we can #include
<gtest/gtest.h>

add_executable(mytests mytests.cpp) # add this executable

target_link_libraries(mytests PRIVATE gtest) # link google test to this
executable

include(GoogleTest)
gtest_discover_tests(mytests) # discovers tests by asking the compiled test
executable to enumerate its tests
```

5. Contents of `myfunctions.h` for the example:

```
#ifndef _ADD_H
#define _ADD_H

int add(int a, int b)
{
```

```
    return a + b;
}

#endif
```

6. Contents of `mytests.cpp` for the example:

```
#include <gtest/gtest.h>
#include "myfunctions.h"

TEST(myfunctions, add)
{
    GTEST_ASSERT_EQ(add(10, 22), 32);
}

int main(int argc, char* argv[])
{
    ::testing::InitGoogleTest(&argc, argv);
    return RUN_ALL_TESTS();
}
```

Now you just have to run the tests. There are multiple ways to do that.

In the terminal, create a `build/` dir in `cpp/`:

```
mkdir build
```

Your directory should now look like this:

```
└─cpp/
  ├── build/
  ├── googletest/
  ├── CMakeLists.txt
  ├── myfunctions.h
  └─ mytests.cpp
```

Next go into the `build` directory:

```
cd build
```

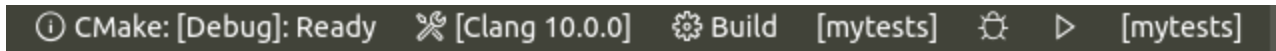
Then run:

```
cmake ..
make
./mytests
```

Alternative way:

- Install the [CMake Tools](#) extension for VS Code

- In the bottom bar, you can see the current target (in square brackets **Build [mytest]** and **Run [mytest]**) you want to build / run:
- Then just click the run button.



Building Google test itself

Using terminal:

1. Go into the dir `/home/user/Desktop/projects/cpp/googletest`
2. Create `build/` inside it so that it looks like following:

```
└─cpp/googletest/
  └─ build/
  └─ ...other googletest files
```

3. `cd build`
4. Run: `cmake -Dgtest_build_samples=ON -DCMAKE_BUILD_TYPE=Debug ..`
5. `make -j4`
6. `./googletest/sample1_unittest`

Using VS-Code

1. Open the `googletest` folder into VS Code
2. CMake extension will prompt for configuration, allow it
3. You will see a `.vscode` directory. Inside it is `settings.json` file, open it, and add the following to it:

```
"cmake.configureSettings": { "gtest_build_samples": "ON" }
```

4. Build and run from the buttons in the bottom bar

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edited Sep 11 at 2:38



Ahamed Aslam

3 2



answered Jul 15, 2020 at 9:24



Waqar

9,174 5 37 45

- 2 Thanks for answering but I think you misunderstood me. I dont have any project which I want to test using Google Test. I want to build and debug the Google Test library itself. Is it possible? How can I do it? PS: Please dont delete this answer, its quite good and will help me later when I use Google Test for writing tests for my project. — [Very Professional Username](#) Jul 15, 2020 at 10:14

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- 2 That should be even more simple, I will put it in the answer. – [Waqar](#) Jul 15, 2020 at 10:15
-
- 1 @Waqar When I try to Build I get **fatal error: gtest/gtest.h: No such file or directory** I used **Using VS-Code** steps. – [Sachith Muhandiram](#) Dec 13, 2020 at 6:46 
-
- 1 @SachithMuhandiram are you able to build using the command line? And are you trying to build GoogleTest itself or do you want to write tests for your project? – [Waqar](#) Dec 13, 2020 at 7:07
-
- 2 If you want to integrate it into your project, you have to follow the instructions in the first part of the post(before **Building Google test itself**). The second part is if you want to build googletest and maybe contribute to the project. – [Waqar](#) Dec 13, 2020 at 12:22 
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