**Resources: Programming in C++**

**Installing GoogleTest (Unit Test Framework for C++)**

**All OS (at a Unix prompt)**

Visit the [release page](#). Download the latest release (choose zip or tar.gz). This is currently 1.8.1 (Spring 2019).

Unpack the source code:

```bash
unzip googletest-release-1.8.1.zip
or
tar -zxvf googletest-release-1.8.1.tar.gz
```

Move into the source tree:

```bash
cd googletest-release-1.8.1/googletest
```

Compile the source code, and build a library:

```bash
g++ -std=c++11 -pthread -g -Wall -Wextra -Werror -I. -I./include -c src/gtest-all.cc
g++ -std=c++11 -pthread -g -Wall -Wextra -Werror -I. -I./include -c src/gtest_main.cc
ar rv gtest_main.a gtest-all.o gtest_main.o
```

Make sure that `sudo` will run as root. This command may prompt you for your password. Then, it should display `root`. If you run it second time, it should not prompt you for your password. Then, you are ready to move on to the next step.

```bash
sudo whoami
```

Install the library for use:

```bash
sudo mkdir -p /usr/local/lib
sudo mv gtest_main.a /usr/local/lib/libgtest.a
sudo chmod 644 /usr/local/lib/libgtest.a
sudo mkdir -p /usr/local/include
sudo mv include/gtest /usr/local/include
sudo chmod -R o+r /usr/local/include/gtest
```

For Linux/Windows:

```bash
sudo chown -R root:root /usr/local/include/gtest
sudo chown root:root /usr/local/lib/libgtest.a
```

For MacOS

```bash
sudo chown -R root:wheel /usr/local/include/gtest
sudo chown root:wheel /usr/local/lib/libgtest.a
```

Remove the source code, it’s no longer needed.

```bash
cd ../..
rm -r googletest-release-1.8.1
rm googletest-release-1.8.1.tar.gz
or
rm googletest-release-1.8.1.zip
```