

Gtest - Report

Resource

<https://github.com/google/googletest/tree/main/googletest/samples>

<https://github.com/google/googletest/blob/main/docs/samples.md>

Description



Use to:

Running given sample unit test

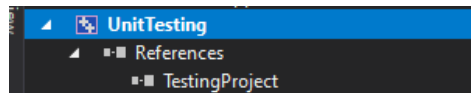


How to use:

Set up environment

Program is separate into 3 part

- **Gtest**
→ I build Gtest source to lib file and put it in "Dependencies/Gtest".
- **Resource** which choose to test
→ Is the sample from (1 to 10). Because each time testing I have to change this resource so I add references for Visual studio is able to build this resource automatically before build unit test.



- **Unit test**
Used to run test case for each sample.

Sample

- Sample 1

Test suit	Test case	Assumption	Input	Expect	Passed
FactorialTest	Negative	EXPECT_EQ	argument: -5	1	✓
		EXPECT_EQ	argument: -1	1	✓
		EXPECT_GT	argument: -10	1	✓
	Zero	EXPECT_EQ	argument: 0	1	✓
	Positive	EXPECT_EQ	argument: 1	1	✓
		EXPECT_EQ	argument: 2	2	✓
		EXPECT_EQ	argument: 3	6	✓
		EXPECT_EQ	argument: 8	40320	✓
IsPrimeTest	Negative	EXPECT_FALSE	argument: -1	false	✓
		EXPECT_FALSE	argument: -2	false	✓
		EXPECT_FALSE	argument: INT_MIN	false	✓
	Trivial	EXPECT_FALSE	argument: 0	false	✓
		EXPECT_FALSE	argument: 1	false	✓
		EXPECT_TRUE	argument: 2	true	✓
	Positive	EXPECT_TRUE	argument: 3	true	✓
		EXPECT_FALSE	argument: 4	false	✓
		EXPECT_TRUE	argument: 5	true	✓
		EXPECT_FALSE	argument: 6	false	✓
		EXPECT_TRUE	argument: 23	true	✓

Result:

```

Microsoft Visual Studio Debug Console
Running main() from C:\Users\nkhoi\Documents\Project\Personal\Project1\Project1\src\gtest_main.cc
[*****] Running 6 tests from 2 test suites.
[*****] Global test environment set-up.
[*****] 3 tests from FactorialTest
[ RUN ] FactorialTest.Negative
[ OK ] FactorialTest.Negative (0 ms)
[ RUN ] FactorialTest.Zero
[ OK ] FactorialTest.Zero (0 ms)
[ RUN ] FactorialTest.Positive
[ OK ] FactorialTest.Positive (0 ms)
[*****] 3 tests from FactorialTest (1 ms total)

[*****] 3 tests from IsPrimeTest
[ RUN ] IsPrimeTest.Negative
[ OK ] IsPrimeTest.Negative (0 ms)
[ RUN ] IsPrimeTest.Trivial
[ OK ] IsPrimeTest.Trivial (0 ms)
[ RUN ] IsPrimeTest.Positive
[ OK ] IsPrimeTest.Positive (0 ms)
[*****] 3 tests from IsPrimeTest (1 ms total)

[*****] Global test environment tear-down
[*****] 6 tests from 2 test suites ran. (4 ms total)
[ PASSED ] 6 tests.

C:\Users\nkhoi\Documents\Project\Personal\CodeSample_Gtest\Debug\UnitTesting.exe (process 25568) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .

```

- Sample 2

Test suit	Test case	Assumption	Input	Expect	Passed
MyString	DefaultConstructor	EXPECT_STREQ	argument: s.c_string()	nullptr	✓
		EXPECT_EQ	argument: s.Length()	0u	✓
	ConstructorFromCString	EXPECT_EQ	argument: strcmp(s.c_string(), kHelloString)	0	✓
		EXPECT_EQ	argument: s.Length()	sizeof(kHelloString) / sizeof(kHelloString[0]) - 1	✓
	CopyConstructor	EXPECT_EQ	argument: strcmp(s2.c_string(), kHelloString)	0	✓
	Set	EXPECT_EQ	argument: strcmp(s.c_string(), kHelloString)	0	✓
IsPrimeTest	Negative	EXPECT_EQ	argument: strcmp(s.c_string(), kHelloString)	0	✓
			argument: s.c_string()	nullptr	✓

Result

```

Microsoft Visual Studio Debug Console
Running main() from C:\Users\nkhoi\Documents\Project\Personal\Project1\Project1\src\gtest_main.cc
[*****] Running 4 tests from 1 test suite.
[-----] Global test environment set-up.
[-----] 4 tests from MyString
[ RUN ] MyString.DefaultConstructor
[ OK ] MyString.DefaultConstructor (0 ms)
[ RUN ] MyString.ConstructorFromCString
[ OK ] MyString.ConstructorFromCString (0 ms)
[ RUN ] MyString.CopyConstructor
[ OK ] MyString.CopyConstructor (0 ms)
[ RUN ] MyString.Set
[ OK ] MyString.Set (0 ms)
[-----] 4 tests from MyString (1 ms total)

[-----] Global test environment tear-down
[-----] 4 tests from 1 test suite ran. (2 ms total)
[ PASSED ] 4 tests.

C:\Users\nkhoi\Documents\Project\Personal\CodeSample_Gtest\Debug\UnitTesting.exe (process 2188) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .

```

• Sample 3:

Fixture: Help us set up data easier

Test suit	Test case	Assumption	Input	Expect	Passed
QueueTestSmpl3	DefaultConstructor	EXPECT_EQ	argument: q0_.Size()	0u	✓
	Dequeue	EXPECT_TRUE	argument: q0_.Dequeue()==nullptr	true	✓
		EXPECT_EQ	argument: q1_.Dequeue()!=nullptr	true	✓
		EXPECT_EQ	argument: q1_.Dequeue()	1	✓
		EXPECT_EQ	argument: q1_.Size()	0	✓
		EXPECT_TRUE	argument: q2_.Dequeue()!=nullptr	true	✓
		EXPECT_EQ	argument: q2_.Dequeue()	2	✓
		EXPECT_EQ	argument: q2_.Size()	1u	✓
		EXPECT_FALSE	argument: -2	false	✓
		EXPECT_FALSE	argument: INT_MIN	false	✓
	Map	MapTester	argument: q1	passed	✓
		MapTester	argument: q2	passed	✓
		MapTester	argument: q0	passed	✓

Result:

```
Microsoft Visual Studio Debug Console
Running main() from D:\Coding Sample\CodingSample_GDB\Project1\src\gtest_main.cc
[=====] Running 3 tests from 1 test suite.
[-----] Global test environment set-up.
[-----] 3 tests from QueueTestSmp13
[ RUN    ] QueueTestSmp13.DefaultConstructor
[ OK     ] QueueTestSmp13.DefaultConstructor (0 ms)
[ RUN    ] QueueTestSmp13.Dequeue
[ OK     ] QueueTestSmp13.Dequeue (0 ms)
[ RUN    ] QueueTestSmp13.Map
[ OK     ] QueueTestSmp13.Map (0 ms)
[-----] 3 tests from QueueTestSmp13 (0 ms total)

[-----] Global test environment tear-down
[=====] 3 tests from 1 test suite ran. (2 ms total)
[ PASSED ] 3 tests.

D:\Coding Sample\CodingSample_GDB\x64\Debug\Project1.exe (process 14548) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

• Sample 4:

Test suit	Test case	Assumption	Input	Expect	Passed
Counter	Decrement	EXPECT_EQ	argument: 0	0	✓
	Increment	EXPECT_EQ	argument: 0	0	✓
	Increment	EXPECT_EQ	argument: 1	1	✓
	Increment	EXPECT_EQ	argument: 2	2	✓
	Decrement	EXPECT_EQ	argument: 3	3	✓