1. Assignment Description:

Sometimes you will be given a program that someone else has written, and you will be asked to fix, update and enhance that program. In this assignment you will start with an existing implementation of the classify triangle program that will be given to you. You will also be given a starter test program that tests the classify triangle program, but those tests are not complete.

In order to determine if the program is correctly implemented, you will need to update the set of test cases in the test program. You will need to update the test program until you feel that your tests adequately test all of the conditions. Then you should run the complete set of tests against the original triangle program to see how correct the triangle program is. Capture and then report on those results in a formal test report described below. For this first part you should not make any changes to the classify triangle program. You should only change the test program.

Based on the results of your initial tests, you will then update the classify triangle program to fix all defects. Continue to run the test cases as you fix defects until all of the defects have been fixed. Run one final execution of the test program and capture and then report on those results in a formal test report described below.

2. Author: Chih-Yu Lee

3. Summary:

Github Repo: https://github.com/cylee820621/SSW-567HW02a-Triangle

Test-driven debugging is a very useful and effective way to fix and complete a untested program, or in other case, It can lead to a much better progra. In my opinion, a developer can do a better job and reduce time cost if he/she starts with this technique, and do a better planning for the program.

4. Honor pledge:

I pledge my honor that I have abided by the Stevens Honor System. -*Chih-Yu Lee*

5. Detailed results:

(on following pages)

1. the initial buggy implementation of classifyTriangle

Test ID	Input	Expected Results	Actual Result	Pass or Fail
testRightTriangleA	3,4,5	'Right'	‘InvalidInput'	Fail
testRightTriangleA	5,3,4	'Right'	‘InvalidInput'	Fail
testEquilateralTriangleA	1,1,1	'Equilateral’	‘InvalidInput'	Fail
testEquilateralTriangleA	1000,1000,1000	'Equilateral’	‘InvalidInput'	Fail
testScaleneTriangleA	10, 15, 12	'Scalene'	‘InvalidInput'	Fail
testIsocelesTriangleA	3, 3, 2	'Isoceles'	‘InvalidInput'	Fail
testIsocelesTriangleB	4, 6, 6	'Isoceles'	‘InvalidInput'	Fail
testInvalidInputA	-1, -1, -1	'InvalidInput'	‘InvalidInput	Pass
testInvalidInputC	"200", "0", "0"	'InvalidInput'	‘InvalidInput	Error
testNotATriangleA	5, 2, 2)	'NotATriangle'	‘InvalidInput	Fail
testNotATriangleB	1, 5, 1	'NotATriangle'	‘InvalidInput	Fail
testNotATriangleC	2, 2, 5	'NotATriangle'	‘InvalidInput	Fail

```
----------------------------------------------------------------------
Ran 12 tests in 0.006s

FAILED (failures=10, errors=1)
(base) lizhiyus-MacBook-Pro:SSW-567HW02a-Triangle cylee820621$
```

2.improved implementation of classifyTriangle

Test ID	Input	Expected Results	Actual Result	Pass or Fail
testRightTriangleA	3,4,5	'Right'	'Right'	Pass
testRightTriangleA	5,3,4	'Right'	'Right'	Pass
testEquilateralTriangleA	1,1,1	'Equilateral’	'Equilateral’	Pass
testEquilateralTriangleB	1000,1000,1000	'Equilateral’	'Equilateral’	Pass
testEquilateralTriangleC	1.1,1.1,1.1	'Equilateral’	'Equilateral’	Pass
testScaleneTriangleA	10, 15, 12	'Scalene'	'Scalene'	Pass
testIsocelesTriangleA	3, 3, 2	'Isoceles'	'Isoceles'	Pass
testIsocelesTriangleB	4, 6, 6	'Isoceles'	'Isoceles'	Pass
testInvalidInputA	-1, -1, -1	'InvalidInput'	‘InvalidInput	Pass
testInvalidInputC	"200", "0", "0"	'InvalidInput'	‘InvalidInput	Pass
testNotATriangleA	5, 2, 2	'NotATriangle'	'NotATriangle'	Pass
testNotATriangleB	1, 5, 1	'NotATriangle'	'NotATriangle'	Pass
testNotATriangleC	2, 2, 5	'NotATriangle'	'NotATriangle'	Pass

```
(base) lizhiyus-MacBook-Pro:SSW-567HW02a-Triangle cylee820621$ /Use
sktop/SSW-567HW02a-Triangle/TestTriangle.py
InvalidInput
Running unit tests
.............
----------------------------------------------------------------------
Ran 13 tests in 0.001s

OK
(base) lizhiyus-MacBook-Pro:SSW-567HW02a-Triangle cylee820621$
```

	Test Run 1	Test Run2	Test Run2	Test Run3
Tests Planned	12	12	12	12
Tests Executed	12	12	12	12
Tests Passed	1	4	11	12
Defects Found	11	2	9	1
Defects Fixed	0	2	9	1