

1. **Assignment Description:** To (a) develop a set of tests for an existing triangle classification program, (b) use those tests to find and fix defects in that program, and (c) report on your testing results for the Triangle problem.

2. **Author:** Danping Cai

3. **Summary:** I used unittest to debug an unfinished program and have improved the imperfect program using the bugs I have found. I found test driven debugging a very useful tool to use on any project that's not written by us but given to us.

5. **Honor pledge:** I pledge that all the work is my own.

6. **Detailed results, if any:**

Initial buggy test report:

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	22,22,22	Equilateral'	InvalidInput	Fail
testScaleneTriangleA	3333,3333,3333	Scalene'	InvalidInput	Fail
testIsoscelesTriangleA	11, 16, 13	Isosceles'	InvalidInput	Fail
testIsoscelesTriangleB	5, 5, 4	Isosceles'	InvalidInput	Fail
testInvalidInputA	44, 66, 66	Isosceles'	InvalidInput	Fail
testInvalidInputC	-99,-99,-99	InvalidInput'	InvalidInput	Pass
testNotATriangleA	233,233,499	NotATriangle'	InvalidInput	Fail

testNotATriangleB	3,1,1	NotATriangle'	InvalidInput	Fail
testNotATriangleC	20, 20, 50	NotATriangle'	InvalidInput	Fail

Improved test report:

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
testEquilateralTriangleA	22,22,22	Equilateral'	Equilateral	Pass
testScaleneTriangleA	3333,3333,3333	Scalene'	Scalene'	Pass
testIsoscelesTriangleA	11, 16, 13	Isosceles'	Isosceles'	Pass
testIsoscelesTriangleB	5, 5, 4	Isosceles'	Isosceles'	Pass
testInvalidInputA	44, 66, 66	Isosceles'	Isosceles'	Pass
testInvalidInputC	-99,-99,-99	InvalidInput'	InvalidInput	Pass
testNotATriangleA	23,23,0	InvalidInput'	InvalidInput'	Pass
testNotATriangleB	3,1,1	NotATriangle'	NotATriangle'	Pass
testNotATriangleC	20, 20, 50	NotATriangle'	NotATriangle'	Pass

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TestTriangle x
/anaconda3/envs/ssw555/bin/python /Users/acai/Desktop/homework_assignments/Triangle567/TestTriangle.py
InvalidInput
Running unit tests
.....
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Ran 12 tests in 0.001s

OK

Process finished with exit code 0

```

Python Console    Terminal    ▶ 4: Run    ≡ 6: TODO

At first I ran the TestTriangle.py against Triangle.py, found 12 fails. I fixed data type check(not strings), triangle formation essentials, triangle classification and so on.

	Test Run 1	Test Run2	Test Run2	Test Run3
<b>Tests Planned</b>	12	12	12	12
<b>Tests Executed</b>	12	12	12	12
<b>Tests Passed</b>	0	4	11	12
<b>Defects Found</b>	12	5	4	0
<b>Defects Fixed</b>	0	2	10	0

