# Assignment Description:

Sometimes, you may be required to improve, update, or fix a program that has been written by someone else. You will begin this project with a pre-existing version of the classify triangle software that you will be given. Additionally, you will receive a beginning test program that partially tests the classify triangle program.

You must alter the list of test cases in the test program in order to assess whether the software is correctly implemented. Until you believe that your tests appropriately test all of the conditions, you will need to update the test program. Then, to determine how accurate the original triangle program is, you should run every test against it. Observe the results, and then document them in the official test report that is described below. You shouldn't alter the categorise triangle program at all for this initial stage. Simply changing the test software is sufficient.

You will next update the classify triangle software to address every flaw based on the outcomes of your initial tests. Till all errors have been corrected, keep running the test cases as you make corrections. Run one final execution of the test program, record the outcomes, and then report on them in the official test report outlined below.

2. **Author**: Amith Vishnu

GitHub:https://github.com/amithvishnu/Triangle567

# 3. Summary

**Initial test results:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Input** | **Expected Results** | **Actual Results** | **Pass or Fail** |
| testEquilateralTriangle1 | *(1, 1, 1)* | Equilateral | InvalidInput | Fail |
| testEquilateralTriangle2 | *(7, 7, 7)* | Equilateral | InvalidInput | Fail |
| testEquilateralTriangle3 | *(15, 1, 15)* | Equilateral | Equilateral | Pass |
| testIsoscelesTriangle1 | *(5, 5, 3)* | Isosceles | InvalidInput | Fail |
| testIsoscelesTriangle2 | *(4, 6, 6)* | Isosceles | InvalidInput | Fail |
| testIsoscelesTriangle3 | *(8, 6, 8)* | Isosceles | InvalidInput | Fail |
| testIsoscelesTriangle4 | *(6, 6, 4)* | Isosceles | InvalidInput | Fail |
| testScaleneTriangle1 | *(10, 11, 12)* | Scalene | InvalidInput | Fail |
| testScaleneTriangle2 | *(1, 2, 3)* | Scalene | InvalidInput | Fail |
| testScaleneTriangle3 | *(100, 110, 112)* | Scalene | InvalidInput | Fail |
| testScaleneTriangle4 | *(10, 10, 12)* | Scalene | Scalene | Pass |
| testInvalidInput1 | *(-1, -1, -1)* | InvalidInput | InvalidInput | Pass |
| testInvalidInput3 | *("200", "200", "200")* | InvalidInput | InvalidInput | Fail |
| testNotATriangle1 | *(1, 3, 5)* | NotATriangle | InvalidInput | Fail |
| testNotATriangle2 | *(1, 4, 5)* | NotATriangle | InvalidInput | Fail |
| testNotATriangle3 | *(1, 0, 1)* | NotATriangle | InvalidInput | Fail |
| testNotATriangle4 | *(1, 17, 5)* | NotATriangle | InvalidInput | Fail |
| testRightTriangle1 | *(3, 4, 5)* | RightTriangle | InvalidInput | Fail |
| testRightTriangle2 | *(5, 3, 4)* | RightTriangle | InvalidInput | Fail |
| testRightTriangle3 | *(13, 12, 5)* | RightTriangle | InvalidInput | Fail |
| testRightTriangle4 | *(8, 6, 10)* | RightTriangle | InvalidInput | Fail |
| testRightTriangle5 | *(21, 6, 10)* | RightTriangle | RightTriangle | Pass |

**Test Run Matrix:**

**Test Run 1 Test Run 2 Test Run 3 Test Run 4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tests Planned** | 22 | 22 | 22 | 22 |
| **Tests Executed** | 22 | 22 | 22 | 22 |
| **Tests Passed** | 4 | 6 | 18 | 22 |
| **Defects Found** | 2 | 1 | 3 | 0 |
| **Defects Fixed** | 0 | 2 | 1 | 3 |

**Final test results:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test ID | Input | Expected Results | Actual Results | Pass or Fail |
| testEquilateralTriangle1 | *(1, 1, 1)* | Equilateral | Equilateral | Pass |
| testEquilateralTriangle2 | *(7, 7, 7)* | Equilateral | Equilateral | Pass |
| testEquilateralTriangle3 | *(15, 1, 15)* | Equilateral | Equilateral | Pass |
| testIsoscelesTriangle1 | *(5, 5, 3)* | Isosceles | Isosceles | Pass |
| testIsoscelesTriangle2 | *(4, 6, 6)* | Isosceles | Isosceles | Pass |
| testIsoscelesTriangle3 | *(8, 6, 8)* | Isosceles | Isosceles | Pass |
| testIsoscelesTriangle4 | *(6, 6, 4)* | Isosceles | Isosceles | Pass |
| testScaleneTriangle1 | *(10, 11, 12)* | Scalene | Scalene | Pass |
| testScaleneTriangle2 | *(1, 2, 3)* | Scalene | Scalene | Pass |
| testScaleneTriangle3 | *(100, 110, 112)* | Scalene | Scalene | Pass |
| testScaleneTriangle4 | *(10, 10, 12)* | Scalene | Scalene | Pass |
| testInvalidInput1 | *(-1, -1, -1)* | InvalidInput | InvalidInput | Pass |
| testInvalidInput3 | *("200", "200", "200")* | InvalidInput | InvalidInput | Pass |
| testNotATriangle1 | *(1, 3, 5)* | NotATriangle | NotATriangle | Pass |
| testNotATriangle2 | *(1, 4, 5)* | NotATriangle | NotATriangle | Pass |
| testNotATriangle3 | *(1, 0, 1)* | NotATriangle | NotATriangle | Pass |
| testNotATriangle4 | *(1, 17, 5)* | NotATriangle | NotATriangle | Pass |
| testRightTriangle1 | *(3, 4, 5)* | RightTriangle | RightTriangle | Pass |
| testRightTriangle2 | *(5, 3, 4)* | RightTriangle | RightTriangle | Pass |
| testRightTriangle3 | *(13, 12, 5)* | RightTriangle | RightTriangle | Pass |
| testRightTriangle4 | *(8, 6, 10)* | RightTriangle | RightTriangle | Pass |
| testRightTriangle5 | *(21, 6, 10)* | RightTriangle | RightTriangle | Pass |

# Erroneous code can be fixed quite effectively with test-driven debugging. As I performed the tests and addressed bugs in the code, more flaws were discovered. Nevertheless, I believe that building tests first and then developing all the code is a more efficient approach to error-check than the other way around.

# 4. Honor pledge:

I pledge my honor that I have abided by the Stevens Honor System.