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.

Note that you should NOT simply replace the logic with your logic from Assignment 1.  Test teams typically don't have the luxury of rewriting code from scratch and instead must fix what's delivered to the test team.

Summary / Test Strategy

There is a separate test for each type of triangle and a single test case for NotATriangle and InvalidInput. Each test case shuffles the largest and smallest numbers around to ensure the order of numbers does not matter. Additionally, the NotATriangle and InvalidInput test case checks for non-integer inputs, out of range inputs, and inputs that would not create a triangle.

Using the testing strategy above, it was easier to catch errors in the code that were not immediately apparent by reading it. While I found most of the errors by reading through the code, the extra safety net of test cases helped ensure no errors would be left in the final product.

Results

Test Report 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Input** | **Expected Results** | **Actual Result** | **Pass or Fail** |
| **testNotTriangles** | **A,1,1** | **NotATriangle** | **Error** | **Fail** |
| **testEquilateralTriangles** | **1,1,1** | **Equilateral** | **InvalidInput** | **Fail** |
| **testIsoscelesTriangles** | **2,2,3** | **Isosceles** | **InvalidInput** | **Fail** |
| **testRightTriangles** | **3,4,5** | **Right** | **InvalidInput** | **Fail** |
| **testScaleneTriangles** | **3,4,6** | **Scalene** | **InvalidInput** | **Fail** |

Test Report 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Input** | **Expected Results** | **Actual Result** | **Pass or Fail** |
| **testNotTriangles** | **A,1,1** | **NotATriangle** | **NotATriangle** | **Pass** |
| **testEquilateralTriangles** | **1,1,1** | **Equilateral** | **Equilateral** | **Pass** |
| **testIsoscelesTriangles** | **2,2,3** | **Isosceles** | **Isosceles** | **Pass** |
| **testRightTriangles** | **3,4,5** | **Right** | **Right** | **Pass** |
| **testScaleneTriangles** | **3,4,6** | **Scalene** | **Scalene** | **Pass** |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Test Run 1 | Test Run 2 | Test Run 3 |
| Tests Planned | testRightTriangles  testEquilateralTriangles  testIsoscelesTriangles  testScaleneTriangles  testNotTriangles | testRightTriangles  testEquilateralTriangles  testIsoscelesTriangles  testScaleneTriangles  testNotTriangles | testRightTriangles  testEquilateralTriangles  testIsoscelesTriangles  testScaleneTriangles  testNotTriangles |
| Tests Executed | testRightTriangles  testEquilateralTriangles  testIsoscelesTriangles  testScaleneTriangles  testNotTriangles | testRightTriangles  testEquilateralTriangles  testIsoscelesTriangles  testScaleneTriangles  testNotTriangles | testRightTriangles  testEquilateralTriangles  testIsoscelesTriangles  testScaleneTriangles  testNotTriangles |
| Tests Passed |  | testRightTriangles  testEquilateralTriangles  testNotTriangles | testRightTriangles  testEquilateralTriangles  testIsoscelesTriangles  testScaleneTriangles  testNotTriangles |
| Defects Found | Incorrect ordering for error checking, issue checking if issues checking if not a triangle, issue checking if equilateral, issue checking right triangles, issue checking scalene | Isosceles misspelled | None |
| Defects Fixed | Incorrect ordering for error checking, issue checking if issues checking if not a triangle, issue checking right triangles, issue checking scalene | Isosceles corrected | None |