1. **Assignment Description:** Develop a set of tests for an existing triangle classification program. Use those tests to find and fix defects in that program, Report on your testing results for the Triangle problem
2. **Author: Tanmay Bhoir**
3. **Summary:** The program identifies a triangle type (right, equilateral, scalene, isosceles) based on given inputs of the lengths of the sides. The test cases included different possible inputs including 0, negative values and positive values that cannot form a triangle.

**Buggy Test Report**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Input** | **Expected Results** | **Actual Result** | **Pass or Fail** |
| 1 | 3,4,5 | Right triangle | Not a triangle | Fail |
| 2 | 5,3,4 | Right triangle | Not a triangle | Fail |
| 3 | 1,1,1 | Equilateral triangle | Not a triangle | Fail |
| 4 | 100,100,100 | Equilateral triangle | Not a triangle | Fail |
| 5 | 5,5,3 | Isosceles triangle | Not a triangle | Fail |
| 6 | 36,28,36 | Isosceles triangle | Not a triangle | Fail |
| 7 | 13,9,14 | Scalene triangle | Not a triangle | Fail |
| 8 | 7,15,12 | Scalene triangle | Not a triangle | Fail |
| 9 | 1,2,10 | Not a triangle | Not a triangle | Pass |
| 10 | 150,1,1 | Not a triangle | Not a triangle | Pass |
| 11 | 300,2,2 | Invalid Input | Not a triangle | Fail |
| 12 | 10, False, 10 | Invalid Input | Not a triangle | Pass |
| 13 | -1,-1,-1 | Invalid Input | Not a triangle | Pass |

**Improved Test Report**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Input** | **Expected Results** | **Actual Result** | **Pass or Fail** |
| 1 | 3,4,5 | Right triangle | Right triangle | Pass |
| 2 | 5,3,4 | Right triangle | Right triangle | Pass |
| 3 | 1,1,1 | Equilateral triangle | Equilateral triangle | Pass |
| 4 | 100,100,100 | Equilateral triangle | Equilateral triangle | Pass |
| 5 | 5,5,3 | Isosceles triangle | Isosceles triangle | Pass |
| 6 | 36,28,36 | Isosceles triangle | Isosceles triangle | Pass |
| 7 | 13,9,14 | Scalene triangle | Scalene triangle | Pass |
| 8 | 7,15,12 | Scalene triangle | Scalene triangle | Pass |
| 9 | 1,2,10 | Not a triangle | Not a triangle | Pass |
| 10 | 150,1,1 | Not a triangle | Not a triangle | Pass |
| 11 | 300,2,2 | Invalid Input | Invalid Input | Pass |
| 12 | 10, False, 10 | Invalid Input | Invalid Input | Pass |
| 13 | -1,-1,-1 | Invalid Input | Invalid Input | Pass |

**Test Report on testing the bug free code:**

**Test Report Summary**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Test 1** | **Test 2** | **Test 3** |
| **Tests Planned** | Positive scenarios with valid inputs | Negative scenarios with valid inputs | Scenarios with invalid inputs |
| **Tests Executed** | Positive scenarios with valid inputs, one for each type of triangle | Negative scenarios with valid inputs, one for each type of triangle | Scenarios with invalid inputs like alphabets, special characters, 0 and values greater than 200. |
| **Tests passed** | All | All | All |
| **Defects found** | None | None | None |
| **Defects fixed** | None | None | None |