**LAB EXPERIMENT – 2**

**Aim : Perform Boundary Value testing testing.**

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**Aim: To determine the nature of roots of quadratic equations. Its input is triple of +ve integers (say a, b, c) and values may be from the interval [1,100].**

**The program output may have one of the following:-**

**[Not a Quadratic equation, Real roots, Imaginary roots, Equal roots]**

**Generate the test case using Boundary value Analysis**

Ans.

1. Boundary value analysis :

Total number of input variables : 3 (A,B,C)

Total Test cases : 4\*3 + 1 = 13

Input Domain for A = [1,100] B = [1,100] C = [1,100]

The boundary value for A = {1,2,50,99,100}

The boundary value for B = {1,2,50,99,100}

The boundary value for C = {1,2,50,99,100}

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test No.** | **Input** | | | **Expected Output** | **Actual Output** | **Result** |
| **A** | **B** | **C** |
| **1.** | 1 | 50 | 50 | REAL | REAL | TRUE |
| **2.** | 2 | 50 | 50 | REAL | REAL | TRUE |
| **3.** | 99 | 50 | 50 | IMAGINARY | IMAGINARY | TRUE |
| **4.** | 100 | 50 | 50 | IMAGINARY | IMAGINARY | TRUE |
| **5.** | 50 | 50 | 50 | IMAGINARY | IMAGINARY | TRUE |
| **6.** | 50 | 1 | 50 | REAL | REAL | TRUE |
| **7.** | 50 | 2 | 50 | REAL | REAL | TRUE |
| **8.** | 50 | 99 | 50 | IMAGINARY | IMAGINARY | TRUE |
| **9.** | 50 | 100 | 50 | IMAGINARY | IMAGINARY | TRUE |
| **10.** | 50 | 50 | 100 | IMAGINARY | IMAGINARY | TRUE |
| **11.** | 50 | 50 | 99 | IMAGINARY | IMAGINARY | TRUE |
| **12.** | 50 | 50 | 2 | REAL | REAL | TRUE |
| **13.** | 50 | 50 | 1 | REAL | REAL | TRUE |

**Aim: To determine the type of triangle. Its input is triple of +ve integers (say a, b, c) and the values may be from interval [1,100]. The program output may be one of the following:**

**[Scalene, Isosceles, Equilateral, Not a Triangle]**

**Generate the test case using Boundary value Analysis.**

Ans.

1. Boundary value analysis :

Total number of input variables : 3 (A,B,C)

Total Test cases : 4\*3 + 1 = 13

Input Domain for A = [1,100] B = [1,100] C = [1,100]

The boundary value for A = {1,2,50,99,100}

The boundary value for B = {1,2,50,99,100}

The boundary value for C = {1,2,50,99,100}

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test No.** | **Input** | | | **Expected Output** | **Actual Output** | **Result** |
| **A** | **B** | **C** |
| **1.** | 1 | 50 | 50 | ISOCELES | ISOCELES | TRUE |
| **2.** | 2 | 50 | 50 | ISOCELES | ISOCELES | TRUE |
| **3.** | 99 | 50 | 50 | ISOCELES | ISOCELES | TRUE |
| **4.** | 100 | 50 | 50 | ISOCELES | ISOCELES | TRUE |
| **5.** | 50 | 50 | 50 | EQUILATERAL | EQUILATERAL | TRUE |
| **6.** | 50 | 1 | 50 | ISOCELES | ISOCELES | TRUE |
| **7.** | 50 | 2 | 50 | ISOCELES | ISOCELES | TRUE |
| **8.** | 50 | 99 | 50 | ISOCELES | ISOCELES | TRUE |
| **9.** | 50 | 100 | 50 | ISOCELES | ISOCELES | TRUE |
| **10.** | 50 | 50 | 100 | ISOCELES | ISOCELES | TRUE |
| **11.** | 50 | 50 | 99 | ISOCELES | ISOCELES | TRUE |
| **12.** | 50 | 50 | 2 | ISOCELES | ISOCELES | TRUE |
| **13.** | 50 | 50 | 1 | ISOCELES | ISOCELES | TRUE |