**Decision table approach: if-else condition**

**Test Case Name :** Decision table for triangle problem

**Experiment Number** : 1

**Test input Data :** Enter the 3 Integer Value( a , b and c )

**Pre-condition** : a < b + c , b < a + c and c < a + b

**Post-condition**:

**Brief Description** : Check whether given value for a equilateral, isosceles , Scalene triangle or can't from a triangle

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| **Case Id** | **Description** | **Input Data** | | | **Expected Output** | **Actual Output** | **Status** | **Comments** |
| **a** | **b** | **C** |
| 1 | Enter the value of a, b and c Such that a is not less than sum of two sides | 20 | 5 | 5 | Message should be  displayed can't form a triangle |  |  |  |
| 2 | Enter the value of a, b and c Such that  b is not less than sum of two sides and a is less than sum of other two sides | 3 | 15 | 11 | Message should be  displayed can't form a triangle |  |  |  |
| 3 | Enter the value of a, b and c Such that  c is not less than sum of two sides and a and b is less than sum of other two sides | 4 | 5 | 20 | Message should be displayed can't form a triangle |  |  |  |
| 4 | Enter the value a, b and c satisfying precondition and a=b, b=c and c=a | 5 | 5 | 5 | Should display the  message Equilateral triangle |  |  |  |
| 5 | Enter the value a ,b and c satisfying precondition and a=b and b ≠ c | 10 | 10 | 9 | Should display the  message Isosceles triangle |  |  |  |
| 6 | Enter the value a, b and c satisfying  precondition and a ≠b , b ≠ c and c ≠ a | 5 | 6 | 7 | Should display the  message Scalene triangle |  |  |  |

**Input data decision Table**

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| **RULES** | | **R1** | **R2** | **R3** | **R4** | **R5** | **R6** | **R7** | **R8** | **R9** | **R10** | **R11** |
| **Conditions** | C1: a < b + c |  |  |  |  |  |  |  |  |  |  |  |
| C2 : b < a + c |  |  |  |  |  |  |  |  |  |  |  |
| C3 : c < a + b |  |  |  |  |  |  |  |  |  |  |  |
| C4 : a = b |  |  |  |  |  |  |  |  |  |  |  |
| C5 : a = c |  |  |  |  |  |  |  |  |  |  |  |
| C6 : b = c |  |  |  |  |  |  |  |  |  |  |  |
| **Actions** | a1 : Not a triangle |  |  |  |  |  |  |  |  |  |  |  |
| a2 : Scalene triangle |  |  |  |  |  |  |  |  |  |  |  |
| a3 : Isosceles triangle |  |  |  |  |  |  |  |  |  |  |  |
| a4 : Equilateral triangle |  |  |  |  |  |  |  |  |  |  |  |
| a5 : Impossible |  |  |  |  |  |  |  |  |  |  |  |

**Derive test cases for your program based on boundary value analysis, execute the test cases and discuss the results**

**Test Case Name :**Boundary Value Analysis for triangle problem (max range 10)

**Experiment Number :** 2

**Test Data :** Enter the 3 Integer Value( a , b and c )

**Pre-condition :** 1 ≤ a ≤ 10 , 1 ≤ b ≤ 10 and 1 ≤ c ≤ 10 and a < b + c , b < a + c and c < a + b

**Brief Description :** Check whether given value for a equilateral, isosceles , Scalene triangle or can't from a triangle

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| **Case Id** | Description | **Input Data** | | | **Expected Output** | **Actual Output** | **Status** | **Comments** |
| **A** | **b** | **c** |
| 1 | Enter the min value for a , b and c | 1 | 1 | 1 | Should display the message Equilateral  triangle |  |  |  |
| 2 | Enter the min value for 2 items and min +1 for any one item1 | 1 | 1 | 2 | Message should be displayed can't form a triangle |  |  |  |
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