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**BATCH: 1 DevOps**

# **CI - CD Lab**

Triangle classification

Question 1 :

You need to write a triangle classification program in Java programming language. The program will take three integers as input and will produce a string as output.

Input to the program represent three sides of the triangle.

Output represents the kind of triangle based on the three sides: Scalene, Isosceles, and Equilateral.

Note: The program need not only classify triangles on valid inputs but also consider the cases which are not a valid input sides.

# traingleClassification

Classify a triangle based on length of three sides

Input will be three integers

⚡️a ,c ,d is representing the side. of triangle

⚡️Equilateral Triangle: A triangle is said to be equilateral triangle if all the sides are equal. If a, b, c are three sides of the triangle. Then, the triangle is equilateral only if A = B = C.

⚡️Isosceles Triangle: A triangle is said to be an isosceles triangle if any of its two sides are equal. If a ,b ,c are three sides of the triangle.Then, the triangle is isosceles if either a = b or a =c or b = c.

⚡️Scalene Triangle: A triangle is said Scalene Triangle if none of its sides is equal .

⚡️There is two more condition to be verified to avoide any errors in the program.

1. The first is that input should be in +ve Intergers or decimals.

for this we use try and catch function any input other than number will result in error and will be identified by catch function

2. The second but most important to check that the sum of any two side should be greater than the third side otherwise the triangle will not be formed

for the we use \*\*"if(a<=0 || b<=0 || c<=0)"\*\*. statement

Code :

import java.util.\*; // imported scanner fucntion

public class Triangle {

int a,b,c; //variable declaretion

public static void main(String[] args){

Scanner sc = new Scanner(System.in); //scanner function

System.out.println("Enter the sides of Triangle");

try{ // for insuring number input

System.out.println("Enter the 1st sides of Triangle : ");

int a = sc.nextInt();

System.out.println("Enter the 2nd sides of Triangle : ");

int b = sc.nextInt();

System.out.println("Enter the 3rd sides of Triangle : ");

int c = sc.nextInt();

if(a<=0 || b<=0 || c<=0) //. checking for invalid imputs such as negative value and zero

System.out.println("InvalidInput");

else if(a>=(b+c) || c>=(b+a) || b>=(a+c)). //if sum of two sides is less then the third side then the trangle cannot be formed

System.out.println("Not a Triangle");

else if(a==b && b==c) //checking for equilateral triangle

System.out.println("Equilateral Triangle");

else if(((a\*a)+(b\*b))==(c\*c) || ((a\*a)+(c\*c))==(b\*b) || ((c\*c)+(b\*b))==(a\*a)). // checking for right angled triangle

System.out.println("Right angle Triangle");

else if(a!=b && b!=c && c!=a) // checking for Scalene Triangle

System.out.println("Scalene Triangle");

else if(a==b || c==a || c==b)

System.out.println("Isosceles Triangle"); //. checking for Isosceles Triangle

}

catch(InputMismatchException ime){

System.out.println("Error: your value must be an integer!");

}

}

}