**Java Programming Language**

**JOB NO : 2**

**JOB NAME:** Calculate the area of Triangle and find the root of Quadratic Equation.

**Calculate the area of Triangle**

**import java.util.Scanner;**

**public class CalculateAreaOfTriangle {**

**public static void main(String[] args) {**

**// Create a Scanner obj for scan user input.**

**Scanner scanner = new Scanner(System.in);**

**// say user for input 3 arms of triangle.**

**System.out.println("Enter 3 arms of triangle one by one: ");**

**// Get input of arms of triangle.**

**double arm1 = scanner.nextDouble();**

**double arm2 = scanner.nextDouble();**

**double arm3 = scanner.nextDouble();**

**// Close the scanner obj.**

**scanner.close();**

**// Here is the Logic**

**if (arm1 + arm2 > arm3 && arm1 + arm3 > arm2 && arm2 + arm3 > arm1){**

**// Calculate half of Boundary.**

**double s = (arm1 + arm2 + arm3) / 2;**

**// Calculate the area.**

**double area = Math.sqrt(s \* (s - arm1) \* (s - arm2) \* (s - arm3));**

**// print the area.**

**System.out.println("Area of triangle: " + area);**

**} else {**

**System.out.println("Triangle is impossible by arms:"+arm1+","+arm2+","+arm3);**

**}**

**}**

**}**

**OUTPUT Case - 1:  
Enter 3 arms of triangle one by one:**

**1**

**2**

**3**

**Triangle is impossible by arms:1.0,2.0,3.0**

**OUTPUT Case - 2:  
Enter 3 arms of triangle one by one:**

**5**

**5**

**4**

**Area of triangle: 9.16515138991168**

**Find the Root of Quadratic Equation**

**import java.util.Scanner;**

**public class FindTheRootOfQuadraticEquation {**

**public static void main(String[] args) {**

**// Create a Scanner obj for scan user input.**

**Scanner scanner = new Scanner(System.in);**

**// say user for input a, b, c of eqation.**

**System.out.println("Enter a, b, c of eqation one by one: ");**

**// Get input a, b, c.**

**double a = scanner.nextDouble();**

**double b = scanner.nextDouble();**

**double c = scanner.nextDouble();**

**// Close the scanner obj**

**scanner.close();**

**// Calculate D**

**double d = b \* b - 4 \* a \* c;**

**// Here is the logic**

**if (d < 0) System.out.println("Roots are imaginary.");**

**else if (d == 0){**

**double x1 = (-b - Math.sqrt(d)) / (2 \* a);**

**double x2 = (-b + Math.sqrt(d)) / (2 \* a);**

**System.out.println("Roots are x1 = " + x1 + " , x2 = " + x2);**

**} else {**

**double x = -b / (2 \* a);**

**System.out.println("Root is x = " + x);**

**}**

**}**

**}**

**OUTPUT Case - 1:  
Enter a, b, c of eqation one by one:**

**56**

**78**

**8**

**Root is x = -0.6964285714285714**

**OUTPUT Case - 1:  
Enter a, b, c of eqation one by one:**

**1**

**2**

**3**

**Roots are imaginary.**

**NOTE :** To find all code and documents go to this link blew:

https://github.com/IsmailHosenIsmailJames/Learn-Java/tree/main/src/Job/Job\_3