SOFTWARE TESTING

THE ROLE OF A TESTER IS TO BREAK THE SOFTWARE

Prepared For :
SIR MUKHTAIR ZAMIN

Prepared By :
BASIT IQBAL
FA21-BSE-050

Question:

Create a program in java to implement Logic to find third angle of a triangle. After that check the triangle type with respect to the angle. Write the program on either paper or compiler but do not execute.

If it's on paper, move it to the peer for static review.

If it's on compiler, hand it over to the peer.

Answer:

Class Name: Triangle.java

```
class Triangle {

   int angle1, angle2, angle3;


   public int getAngle1() {
      return angle1;
   }

   public int getAngle2() {
      return angle2;
   }

   public int getAngle3() {
      return angle3;
   }

   public void setAngle1(int angle1) {
      this.angle1 = angle1;
   }

   public void setAngle2(int angle2) {
      this.angle2 = angle2;
   }

   public void setAngle3(int angle3) {
      this.angle3 = angle3;
   }

   public void calculateThirdAngle(){
```

```
    if(isValidInput()){
      setAngle3(180 - (getAngle1()+ getAngle2()));
    }

  }

  public String typeOfTriangle(){
    String type="";
    if(getAngle1()!=0 && getAngle2()!=0 && getAngle3()!=0){
      if(getAngle1() == 60 && getAngle2() ==60 && getAngle3()==60){
        type = "Equilateral Triangel";

      }
      else if(getAngle1() == getAngle2() || getAngle2()== getAngle3() || getAngle1()==
getAngle3()){
        type="Isoceles Traingle";

      }
      else{
        type = "Scalene Triangle ";
      }
    }
    else{
      System.out.println("Type of triangle can not be specified with invalid inputs");
    }

    return type;
  }

  public boolean isValidInput(){
    if(getAngle1()<=0|| getAngle2()<=0){
      System.out.println("Angles Can not be less then zero");
      return false;
    }
    else if(getAngle1()>=180 || getAngle2()>=180){
      System.out.println("Angle can not be greater then 180");
      return false;
    }
    else if(getAngle1() + getAngle2() >= 180){
      System.out.println("Values of Angles are very high Triangle can not be formed");
      return false;
    }
    return true;
  }

}
```

Class Name: Main.java

```
import java.util.Scanner;

public class Main {
   public static void main(String[] args) {
      try{
      Scanner sc = new Scanner(System.in);
         char choice = 'y';
      while(choice == 'y' || choice == 'Y'){
      System.out.print("Enter the Value for Angle 1 : ");
      int angle1 = sc.nextInt();
      System.out.print("Enter the Value for Angle 2 : ");
      int angle2 = sc.nextInt();

      Triangle triangle = new Triangle();
      triangle.setAngle1(angle1);
      triangle.setAngle2(angle2);
      triangle.calculateThirdAngle();
      int thirdAngle = triangle.getAngle3();
         System.out.print("Third Angle is : " +  thirdAngle);
         System.out.println("");
        String type = triangle.typeOfTriangle();
         System.out.print("Type of Triangle is : "+ type);
         System.out.println("");

        boolean isvalid = true;
         while(isvalid){
         System.out.print("\nWould You like to run again : (y for Yes) : ");
         choice = sc.next().charAt(0);
            if(choice !='y' && choice !='Y' && choice != 'n' && choice != 'N'){
               System.out.println("Invalid Input plz .. enter (y for yes and n for no) : ");
               isvalid = true;
            }
            else{
               isvalid=false;
            }
         }

         System.out.println("----------------------------------\n\n");

      }
      }catch(Exception e){
         System.out.println("Type of Angle Should be Number (inteager) ");
      }
   }
```

```
}
```

Test Case Id	Test Case Description	Input Data	Expected Output	Actual Output	Verdict
TC_001	To check that if any angle entered is not an integer.	{Angle1 = a Angle2=30}, {Angle1=40 Angle2 = b}	Display Msg: “Type of Angle Should be Number (integer)”	Display Msg: “Type of Angle Should be Number (integer)”	Pass
TC_002	To Check that if any angle entered is equal to 0.	{Angle1 = 0 Angle2=10}, {Angle1=10 Angle2 =0}	Display Msg: “Angles Can not be less than zero”	Display Msg: “Angles Can not be less than zero”	Pass
TC_003	To Check that if any angle entered is greater than or equal to 180.	{Angle1 = 190 Angle2=10}, {Angle1=10 Angle2 =200}	Display Msg: “Angle cannot be greater than 180”	Display Msg: “Angle cannot be greater than 180”	Pass
TC_004	To Check that the sum of the tow entered angle is greater then or equal to 180.	{Angle1 = 170 Angle2=10}, {Angle1=30 Angle2 =160}	Display Msg: “Values of Angles are very high Triangle cannot be formed”	Display Msg: “Values of Angles are very high Triangle cannot be formed”	Pass
TC_005	To find angl3 and To show that it is a equilateral triangle	{Angle1=60 Angle2 =60}	Angle3 = 60, And it is an Equivaletral Triangle	Angle3 = 60, And it is an Equivaletral Triangle	Pass
TC_006	To find angle3 and To show that it is a isosceles triangle.	{Angle1=30 Angle2 =30}	Angle3 = 90, And it is an Isosceles Triangle	Angle3 = 90, And it is an Isosceles Triangle	Pass
TC_007	To find the angle3 and To	{Angle1=40 Angle2 =60}	Angle3 = 80,	Angle3 = 60,	Pass

	show that it is a scalene triangle		And it is an Scalene Triangle	And it is an Scalene Triangle	