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\* Matric no: 1723396

\* Lab #7 INHERITANCE &amp; POLYMORPHISM

\* Section #1

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public class Triangle extends GeometricObject {

private double side1, side2, side3;

private String color;

private boolean filled;

public Triangle() {

side1 = 1.0;

side2 = 1.0;

side3 = 1.0;

color = "white";

filled = false;

}

public Triangle(double side1, double side2, double side3) {

this.side1 = side1;

this.side2 = side2;

this.side3 = side3;

}

public double getArea() {

double s = (side1 + side2+ side3)/2;

double area = Math.sqrt((s \* (s- side1) \* (s - side2) \* (s - side3)));

return area;

}

public double getPerimeter() {

return side1 + side2 + side3;

}

public String toString() {

return "Triangle: side1 = " + side1 + " side2 = " + side2 + " side3 = " + side3;

}

public double getSide1() {

return side1;

}

public void setSide1(double side1) {

this.side1 = side1;

}

public double getSide2() {

return side2;

}

public void setSide2(double side2) {

this.side2 = side2;

}

public double getSide3() {

return side3;

}

public void setSide3(double side3) {

this.side3 = side3;

}

public String getColor() {

return color;

}

public void setColor(String color) {

this.color = color;

}

public boolean isFilled() {

return filled;

}

public void setFilled(boolean filled) {

this.filled = filled;

}

}

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public class GeometricObject {

public GeometricObject() {

}

}

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import java.util.Scanner;

public class TriangleTest {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

double side1, side2, side3;

String color;

boolean filled;

Triangle triangle;

System.out.print("Enter 3 sides of the triangle: ");

side1 = scan.nextDouble();

side2 = scan.nextDouble();

side3 = scan.nextDouble();

System.out.print("Enter the triangle color: ");

color = scan.next();

System.out.print("Is the color filled? (y,n): ");

filled = (scan.next().charAt(0) == 'y')? true: false;

triangle = new Triangle(side1, side2, side3);

triangle.setColor(color);

triangle.setFilled(filled);

System.out.println("The triangle area is: " + triangle.getArea());

System.out.println("The triangle perimeter is: " + triangle.getPerimeter());

System.out.println("The triangle color is: " + triangle.getColor()

+ " and the filled option is: " + triangle.isFilled());

}

}