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Object Oriented Programming Using Java

Week 8

1)





2)



import java.util.\*;

abstract class Shape {

abstract double calculateArea();

}

class Circle extends Shape {

private double radius;

Circle(double r) {

radius = r;

}

double calculateArea() {

return Math.PI \* radius \* radius;

}

}

class Rectangle extends Shape {

private double length;

private double breadth;

Rectangle(double l, double b) {

length = l;

breadth = b;

}

double calculateArea() {

return length \* breadth;

}

}

class Triangle extends Shape {

private double base;

private double height;

Triangle(double b, double h) {

base = b;

height = h;

}

double calculateArea() {

return 0.5 \* base \* height;

}

}

public class Prog {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

double r = sc.nextDouble();

Shape circle = new Circle(r);

System.out.println("Area of a circle: "+String.format("%.2f",circle.calculateArea()));

double length = sc.nextDouble();

double breadth = sc.nextDouble();

Shape rectangle = new Rectangle(length, breadth);

System.out.println("Area of a Rectangle: " + String.format("%.2f",rectangle.calculateArea()));

double base = sc.nextDouble();

double height = sc.nextDouble();

Shape triangle = new Triangle(base, height);

System.out.println("Area of a Triangle: " + String.format("%.2f",triangle.calculateArea()));

}

}



3)



