UKA 2-1-23

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Lab 4

Develop a Java program to create an abstract class named shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the class extends the class Shape

```
import java.util.Scanner;

class InputScanner {
    Scanner s;

  InputScanner() {
     s = new Scanner(System.in);
  }
}
abstract class Shape extends InputScanner {
    double a;
    double b;
    abstract void getInput();
    abstract void displayArea();
}


class Rectangle extends Shape {
    void getInput()
     {
    System.out.print("Enter length & width of the
        rectangle");
     a = s.nextDouble();
     b = s.nextDouble();
  }
```

```
void displayArea()
  {
   System.out.println("Area of Rectangle : " + (a*b));
  }
}

Class Triangle extends Shape {
  void getInput() {
     System.out.print("Enter base and height of the
      Triangle ");
      a = s.nextDouble();
      b = s.nextDouble();
  }
  void displayArea()
   {
   System.out.println("Area of Triangle : " + (0.5 * a*b));
  }
}

class Circle extends Shape {
    void getInput() {
    System.out.print("Enter the radius of the
       circle ");
     a = s.nextDouble();
  }
  void displayArea()
   {
  System.out.println("Area of circle: " + (Math.PI *
                                    a * a));
  }
}

public class Main {
   public static void main (String args[])
    {
```

```
Rectangle rectangle = new Rectangle();
Triangle triangle = new Triangle();
Circle circle = new Circle();

rectangle.getInput();
rectangle.displayArea();
triangle.getInput();
triangle.displayArea();
circle.getInput();
circle.displayArea();
}
}
```

O/P
```
Enter length and width of the rectangle: 2 3
Area of Rectangle 6.0
Enter base and height of the triangle: 6 10
Area of Triangle: 30.0
Enter radius of the circle: 7
Area of the circle: 153.93
```