2-1-24

Lab Program-4

Develop a Java Program to create an abstract class named Shape.

```
import java.util.Scanner;
class inputScanner
{
    protected Scanner s;
    public inputScanner()
    {
        s = new Scanner(System.in);
    }
    public int getInput(String message)
    {
        System.out.println(message)
        return s.nextInt();
    }
}

abstract class Shape extends inputScanner
{
    protected int a,b;
    public Shape()
    {
        super();
    }
    abstract public void printArea();
}

class Rectangle extends Shape
{
    protected int a,b;
    public Rectangle()
```

```
    {
        super();
    }
    public void printArea()
    {
        a = getInput("Enter the length : ");
        b = getInput("Enter the breadth : ");
        int area = a*b;
        System.out.println("Area of the rectangle : "+area);
    }
}

class Triangle extends Shape
{
    protected int a, b;
    public Triangle()
    {
        super();
    }
    public void printArea()
    {
        a = getInput("Enter the side 1 : ");
        b = getInput("Enter the side 2 : ");
        double area = 0.5*a*b;
        System.out.println("Area of the Triangle : "+area);
    }
}

class Circle extends Shape
{
    protected int a;
    public Circle()
    {
        super();
    }
```

```
    public void printArea()
    {
        a= getInput ("Enter the radius: ");
        double area = 3.14 * a* a;
        System.out.println("Area of the circle: "+area);
    }
}

public class mainArea
{
    public static void main (String args[])
    {
        Rectangle r = new Rectangle();
        Triangle t = new Triangle();
        Circle c = new Circle();
        r.printArea();
        t.printArea();
        c.printArea();
    }
}
```

Output:

```
Enter the length : 3
Enter the breadth : 4
Area of the Rectangle : 12
Enter the side 1 : 5
Enter the side 2 : 6
Area of the Triangle : 15.0
Enter the radius: 4
Area of the circle : 50.24
```

02/01/24