

## **OOJ LAB 4**

**USN:1BM21CS231**

Develop a java program to create an abstract class named Shape that contains two intergers and an empty method named PrintArea(). Provide three classes named Rectangle,Triangle,Circle such that each one of these extends class Shape and has the method PrintArea() that prints the area of the given shape.

```
import java.util.*;
```

```
abstract class Shape
```

```
{  
    abstract void PrintArea();  
}
```

```
class Rectangle extends Shape
```

```
{  
    double length,breadth;
```

```
    Rectangle(double l,double b)
```

```
{  
    length=l;  
    breadth=b;  
}
```

```
void PrintArea()
```

```
{
```

```
        System.out.println("The Area of the rectangle is: "+(length*breadth));  
    }  
}
```

```
class Triangle extends Shape
```

```
{  
    double base,height;
```

```
    Triangle(double b,double h)
```

```
{  
    base=b;  
    height=h;  
}
```

```
void PrintArea()
```

```
{  
    System.out.println("The Area of the triangle is: "+(0.5*base*height));  
}  
}
```

```
class Circle extends Shape
```

```
{  
    double radius;
```

```
    Circle(double r)
```

```
{  
    radius=r;  
}
```

```
void PrintArea()
```

```
{
```

```
        System.out.println("The Area of the circle is: "+((Math.PI)*(Math.pow(radius,2))));  
    }  
}
```

```
public class MyShape  
{  
    public static void main(String [] args)  
    {  
        Scanner sc = new Scanner(System.in);  
        Rectangle rect = new Rectangle(23.4,54.9);  
        Triangle tri = new Triangle(56.7,62.84);  
        Circle cir = new Circle(50.0);  
  
        rect.PrintArea();  
        tri.PrintArea();  
        cir.PrintArea();  
    }  
}
```

 Command Prompt

```
Microsoft Windows [Version 10.0.22000.1219]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\Admin>set path="C:\Program Files\Java\jdk-19\bin"  
  
C:\Users\Admin>cd Desktop  
  
C:\Users\Admin\Desktop>javac MyShape.java  
  
C:\Users\Admin\Desktop>java MyShape  
The Area of the rectangle is: 1284.6599999999999  
The Area of the triangle is: 1781.5140000000001  
The Area of the circle is: 7853.981633974483  
  
C:\Users\Admin\Desktop>
```