

```
abstract class Shape{  
    int x, y;  
    Shape(int x, int y){  
        this.x = x;  
        this.y = y;  
    }  
    void printArea(){}  
}
```

```
class Rectangle extends Shape{  
    Rectangle(int length, int breadth){  
        super(length, breadth);  
    }  
    void printArea(){  
        int area = x * y;  
        System.out.println("Area of Rectangele = " + area);  
    }  
}
```

```
class Triangle extends Shape{  
    Triangle(int base, int height){  
        super(base, height);  
    }  
    void printArea(){  
        double area = x * y * 0.5;  
        System.out.println("Area of Triangle = " + area);  
    }  
}
```

```
class Circle extends Shape{  
    Circle(int radius){
```

```

        super(radius, 0);
    }
    void printArea(){
        double area = Math.PI * x * x;
        System.out.println("Area of Circle = " + area);
    }
}

```

```

public class LP4 {
    public static void main(String[] args) {
        Rectangle r = new Rectangle(10, 5);
        r.printArea();
        Triangle t = new Triangle(6, 8);
        t.printArea();
        Circle c = new Circle(7);
        c.printArea();
    }
}

```

```

C:\Users\Sarim Ali\OneDrive\Desktop\OOPs\Lab>java LP4
Area of Rectangele = 50
Area of Triangle = 24.0
Area of Circle = 153.93804002589985

```

### Lab-Program-4

24/10/24

Develop a Java program to create an abstract class named Shape that contains 2 integers and an empty method named printArea(). Provide three classes named rectangle, triangle and circle such that each one of the classes extends the class Shape. Each one of the classes contains only the method printArea() that prints the area of the given shape.

<sup>abstract</sup>  
Class Shape {

int x, y;

void printArea() {}

class Rectangle extends Shape {

Rectangle(int length, int breadth) {

this.x = length;

this.y = breadth;

}

void printArea() {

int area = x \* y;

System.out.println("Area of rectangle: " + area);

}

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```
class Triangle extends Shape {
    Triangle (int base, int height) {
        double x = base;
        this.y = height;
    }
    void printArea() {
        double area = 0.5 * x * y;
        System.out.println("Area of Triangle: " + area);
    }
}

class Circle extends Shape {
    Circle (int radius) {
        this.x = radius;
    }
    void printArea() {
        double area = Math.PI * radius * radius;
        System.out.println("Area of Circle: " + area);
    }
}

class Main {
    public static void main (String[] args) {
        Shape r = new Rectangle (10, 5);
        Shape t = new Triangle (6, 8);
        Shape c = new Circle (7);
        r.printArea();
        t.printArea();
        c.printArea();
    }
}
```

Output: Area of rectangle: 50

Area of triangle = 24.00

Area of circle : 153.93804002589985