

23/10/24

LAB - 4 SHAPES

```
import java.util.Scanner;
```

```
abstract class Shape {
```

```
    int dim1;
```

```
    int dim2;
```

```
    public Shape() {
```

```
        this.dim1 = 0;
```

```
        this.dim2 = 0;
```

```
    }
```

```
    public Shape (int dim1, int dim2) {
```

```
        this.dim1 = dim1;
```

```
        this.dim2 = dim2;
```

```
    }
```

```
    public abstract void printArea();
```

```
class Rectangle extends Shape {
```

```
    public Rectangle (int length, int
```

```
        width) {
```

```
        dim1 = length;
```

```
        dim2 = width;
```

```
    }
```



```
public void printArea() {  
    int area = dim1 * dim2;  
    System.out.println("Area of Rectangle: " + area);  
}
```

```
class Triangle extends Shape {  
    public Triangle(int base, int height) {  
        dim1 = base;  
        dim2 = height;  
    }
```

```
    public void printArea() {  
        double area = 0.5 * dim1 * dim2;  
        System.out.println("Area of Triangle: " +  
            area);  
    }  
}
```

```
class Circle extends Shape {  
    public Circle(int radius) {  
        dim1 = radius;  
        dim2 = 0;  
    }
```



```
public void printArea() {  
    double area = Math.PI * dnm1 * dnm1;  
    System.out.println("Area of Circle: " +  
        area);  
}
```

```
public class Shapes {  
    public static void main (String[] args) {  
        Scanner in = new Scanner (System.in);  
        System.out.println("Enter length and  
            width for Rectangle:");  
        int length = in.nextInt();  
        int width = in.nextInt();  
        Shape rectangle = new Rectangle (length, width);  
        rectangle.printArea();  
  
        System.out.println("Enter base and height  
            for Triangle:");  
        int base = in.nextInt();  
        int height = in.nextInt();  
        Shape triangle = new Triangle (base, height);  
        triangle.printArea();  
    }  
}
```



```
System.out.println("Enter radius for circle:");
int radius = in.nextInt();
```

```
Shape circle = new Circle(radius);
```

```
circle.printArea();
```

```
in.close();
```

```
}
```

```
}
```

O/p. Enter length and width for Rectangle:

20

40

Area of Rectangle : 800

Enter base and height for Triangle:

30

20

Area of Triangle : 300.0

Enter radius for Circle:

19

Area of circle : 1134.1149479459152

Q1
23/12/21