

19/11/24

## Lab-7

### Interfaces

1. Implementation of method 1

2. 5 Dog barks  
Dog eat bones

3. sedan is starting  
Sedan is driving.

4. Printing document  
Showing document preview  
Program

5. Interface Polygon  
{

default double getPerimeter();  
{

return 0.0;

}

double getArea();  
}

Class Rectangle implements Polygon  
{

private double length;

private double width;

```
public Rectangle (double length, double width)
{
```

```
    this.length = length;
```

```
    this.width = width;
```

```
}
```

```
public double getArea()
```

```
{
```

```
    return length * width;
```

```
}
```

```
public double getPerimeter()
```

```
{
```

```
    return 2 * (length + width);
```

```
}
```

```
}
```

```
class Circle implements Polygon
```

```
{
```

```
    private double radius;
```

```
    public Circle (double radius)
```

```
{
```

```
        this.radius = radius;
```

```
}
```

```
public double getArea()
```

```
{
```

```
    return Math.PI * radius * radius;
```

```
}
```



```
public double getPerimeter()
```

```
{  
    return 2 * Math.PI * radius;  
}
```

```
3  
class Triangle implements Polygon
```

```
{
```

```
    private double side1, side2, side3;
```

```
    public Triangle(double side1, double side2,  
                    double side3)
```

```
{
```

```
        this.side1 = side1;
```

```
        this.side2 = side2;
```

```
        this.side3 = side3;
```

```
    }
```

```
    public double getArea()
```

```
{
```

```
        double s = (side1 + side2 + side3) / 2;
```

```
        return Math.sqrt(s * (s - side1) * (s - side2)  
                        * (s - side3));
```

```
    }
```

```
    public double getPerimeter()
```

```
{
```

```
        return side1 + side2 + side3;
```

```
}
```

```
}
```

```
public class Main
```

```
{
```

```
    public static void main (String [] args)
```

```
    {
```

```
        Polygon[] polygons = {
```

```
            new Rectangle (5,3),
```

```
            new Circle (4), new Triangle (3,4,5)
```

```
        };
```

```
        for (Polygon polygon : polygons)
```

```
        {
```

```
            System.out.println ("Polygon : " + polygon.  
                                getClass().getSimpleName());
```

```
            System.out.println ("Perimeter : " + polygon.  
                                getPerimeter());
```

```
            System.out.println ("Area : " + polygon.get  
                                Area());
```

```
        }
```

```
    }
```

```
}
```

20 Output

Polygon : Rectangle

Perimeter : 16.0

Area = 15.0

Polygon : Triangle

Perimeter : 12.0

Area = 6.0

25 Polygon : Circle

Perimeter : 25.132741

Area : 50.2654