

Selected files

4 printable files

Circle.java
GeometricObject.java
Main.java
Rectangle.java

Circle.java

```
1 // Implementation class Circle
2 public class Circle implements GeometricObject {
3     private double radius;
4
5     // Constructor
6     public Circle(double radius) {
7         this.radius = radius;
8     }
9
10    // Override getArea method
11    @Override
12    public double getArea() {
13        return Math.PI * radius * radius;
14    }
15
16    // Override getPerimeter method
17    @Override
18    public double getPerimeter() {
19        return 2 * Math.PI * radius;
20    }
21
22    // Override toString method
23    @Override
24    public String toString() {
25        return "Circle[radius=" + radius + "]";
26    }
27 }
28
```

GeometricObject.java

```
1 // Interface GeometricObject
2 public interface GeometricObject {
3     double getArea();
4     double getPerimeter();
5 }
6
```

Main.java

```
1 public class Main {
2     public static void main(String[] args) {
3         // Create a Rectangle object with length=10 and width=12
4         Rectangle rectangle = new Rectangle(10, 12);
5
6         // Create a Circle object with radius=3
7         Circle circle = new Circle(3);
8     }
9 }
```

```
9      // Print the area of the Rectangle
10     System.out.println("Area of the Rectangle: " + rectangle.getArea());
11
12     // Print the area of the Circle
13     System.out.println("Area of the Circle: " + circle.getArea());
14
15     // Print the area of the Rectangle
16     System.out.println("Perimeter of the Rectangle: " + rectangle.getPerimeter());
17
18     // Print the area of the Circle
19     System.out.println("Perimeter of the Circle: " + circle.getPerimeter());
20
21     // Print the area of the Rectangle
22     System.out.println("" + rectangle.toString());
23
24     // Print the area of the Circle
25     System.out.println("" + circle.toString());
26 }
27 }
```

Rectangle.java

```
1 // Implementation class Rectangle
2 public class Rectangle implements GeometricObject {
3     private double width;
4     private double height;
5
6     // Constructor
7     public Rectangle(double width, double height) {
8         this.width = width;
9         this.height = height;
10    }
11
12    // Override getArea method
13    @Override
14    public double getArea() {
15        return width * height;
16    }
17
18    // Override getPerimeter method
19    @Override
20    public double getPerimeter() {
21        return 2 * (width + height);
22    }
23
24    // Override toString method
25    @Override
26    public String toString() {
27        return "Rectangle[width=" + width + ",length=" + height + "];"
28    }
29 }
30
```