

Exercise 02:

Answer

```
abstract class Shape {
    public abstract double calculateArea();

    public void display() {
        System.out.println("Shape: " + this.getClass().getSimpleName());
        System.out.println("Area: " + calculateArea());
    }
}

class Circle extends Shape {
    private double radius;

    public Circle(double radius) {
        this.radius = radius;
    }
    public double calculateArea() {
        return Math.PI * radius * radius;
    }
}

class Rectangle extends Shape {
    private double length,width;

    public Rectangle(double length, double width) {
        this.length = length;
        this.width = width;
    }

    public double calculateArea() {
        return length * width;
    }
}
```

```
public class Main {  
    public static void main(String[] args) {  
        Circle circle = new Circle(8);  
        Rectangle rectangle = new Rectangle(3, 2);  
        circle.display();  
        rectangle.display();  
    }  
}
```

Output:

Shape: Circle
Area: 201.06

Shape: Rectangle
Area: 6.0