Exercises

Finish writing the following methods in the class.

- `calculateArea(int length, int width)`
- `calculatePerimeter(int length, int width)`
- `calculateDiagonal(int length, int width)`

Modify the class to include the following features:
- Add a method to calculate the area of a rectangle.
- Add a method to calculate the perimeter of a rectangle.
- Add a method to calculate the diagonal of a rectangle.

Summary

In this chapter, we have covered classes and objects. We have learned how to create classes and objects, and how to use them in programs. We have also learned about method overriding, which is the process of creating a new method in a subclass that has the same name as a method in the superclass. This allows us to redefine the behavior of a method in a subclass.

JAVA

```java
public class Rectangle {
    private double width;
    private double height;

    // Constructor
    public Rectangle(double width, double height) {
        this.width = width;
        this.height = height;
    }

    // Methods
    public double area() {
        return width * height;
    }

    public double perimeter() {
        return 2 * (width + height);
    }

    public double diagonal() {
        return Math.sqrt(width * width + height * height);
    }
}
```