

Lab1

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Question 1:

uml

- | Rectangle |
|--|
| Attributes |
| - width: double |
| - height: double |
| Methods |
| + Rectangle() |
| + Rectangle(width: double, height: double) |
| + getArea(): double |
| + getPerimeter(): double |

code

```
class Rectangle {  
    // Fields  
    private double width;  
    private double height;  
  
    // No-argument constructor (default width and height to 1)  
    public Rectangle() {  
        this.width = 1;  
        this.height = 1;  
    }  
  
    // Constructor with specified width and height  
    public Rectangle(double width, double height) {  
        this.width = width;  
    }  
}
```

```

        this.height = height;
    }

    // Method to calculate area
    public double getArea() {
        return width * height;
    }

    // Method to calculate perimeter
    public double getPerimeter() {
        return 2 * (width + height);
    }

    // Getter for width
    public double getWidth() {
        return width;
    }

    // Getter for height
    public double getHeight() {
        return height;
    }
}

// Test class
public class Question1 {
    public static void main(String[] args) {
        // Create two Rectangle objects
        Rectangle rect1 = new Rectangle(4, 40);
        Rectangle rect2 = new Rectangle(3.5, 35.9);

        // Display first rectangle's properties
        System.out.println("Rectangle 1:");
        System.out.println("Width: " + rect1.getWidth());
        System.out.println("Height: " + rect1.getHeight());
        System.out.println("Area: " + rect1.getArea());
        System.out.println("Perimeter: " + rect1.getPerimeter());

        // Display second rectangle's properties
        System.out.println("\nRectangle 2:");
        System.out.println("Width: " + rect2.getWidth());
        System.out.println("Height: " + rect2.getHeight());
        System.out.println("Area: " + rect2.getArea());
        System.out.println("Perimeter: " + rect2.getPerimeter());
    }
}

```

output

```
• > cd "/Users/v/Desktop/lab1/" && javac Question1.java && java Question1
Rectangle 1:
Width: 4.0
Height: 40.0
Area: 160.0
Perimeter: 88.0

Rectangle 2:
Width: 3.5
Height: 35.9
Area: 125.64999999999999
Perimeter: 78.8

~/Desktop/lab1
> 
```

Question2

uml

- | Stock |
|--|
| Attributes |
| - symbol: String |
| - name: String |
| - previousClosingPrice: double |
| - currentPrice: double |
| Methods |
| + Stock(symbol: String, name: String) |
| + getChangePercent(): double |
| + setCurrentPrice(price: double): void |
| + setPreviousClosingPrice(price: double): void |
| + getSymbol(): String |
| + getName(): String |
| + getPreviousClosingPrice(): double |

Stock
+ getCurrentPrice(): double

code

```

class Stock {
    // Fields
    private String symbol;
    private String name;
    private double previousClosingPrice;
    private double currentPrice;

    // Constructor
    public Stock(String symbol, String name) {
        this.symbol = symbol;
        this.name = name;
    }

    // Method to calculate percentage change
    public double getChangePercent() {
        return ((currentPrice - previousClosingPrice) /
previousClosingPrice) * 100;
    }

    // Setter for previous closing price
    public void setPreviousClosingPrice(double price) {
        this.previousClosingPrice = price;
    }

    // Setter for current price
    public void setCurrentPrice(double price) {
        this.currentPrice = price;
    }

    // Getter methods
    public String getSymbol() {
        return symbol;
    }

    public String getName() {
        return name;
    }

    public double getPreviousClosingPrice() {

```

```

        return previousClosingPrice;
    }

    public double getCurrentPrice() {
        return currentPrice;
    }
}

// Test class
public class Question2 {
    public static void main(String[] args) {
        // Create a Stock object
        Stock stock = new Stock("ORCL", "Oracle Corporation");

        // Set previous closing price and current price
        stock.setPreviousClosingPrice(34.5);
        stock.setCurrentPrice(34.35);

        // Display stock information
        System.out.println("Stock Symbol: " + stock.getSymbol());
        System.out.println("Stock Name: " + stock.getName());
        System.out.println("Previous Closing Price: $" +
stock.getPreviousClosingPrice());
        System.out.println("Current Price: $" + stock.getCurrentPrice());
        System.out.println("Price Change Percentage: " +
stock.getChangePercent() + "%");
    }
}

```

output

```

> cd "/Users/v/Desktop/lab1/" && javac Question2.java && java Question2
Stock Symbol: ORCL
Stock Name: Oracle Corporation
Previous Closing Price: $34.5
Current Price: $34.35
Price Change Percentage: -0.434782608695648%

```