Java Foundations Practices - Section 4

Problem 1: Writing methods

In this practice, you will write methods that return values for the following scenarios:

1. Converts given temperature in Fahrenheit to Celsius. Formula: C=5/9*(F-32)

Method:

```
public class TemperatureConverter {
    public static double fahrenheitToCelsius(double fahrenheit) {
        return (5.0 / 9.0) * (fahrenheit - 32);
    }

    public static void main(String[] args) {
        double fahrenheitTemp = 98.6;
        System.out.println(fahrenheitTemp + "°F is equal to " +
fahrenheitToCelsius(fahrenheitTemp) + "°C");
    }
}
```

2.Computes the hypotenuse length of a triangle given its side lengths.

Method:

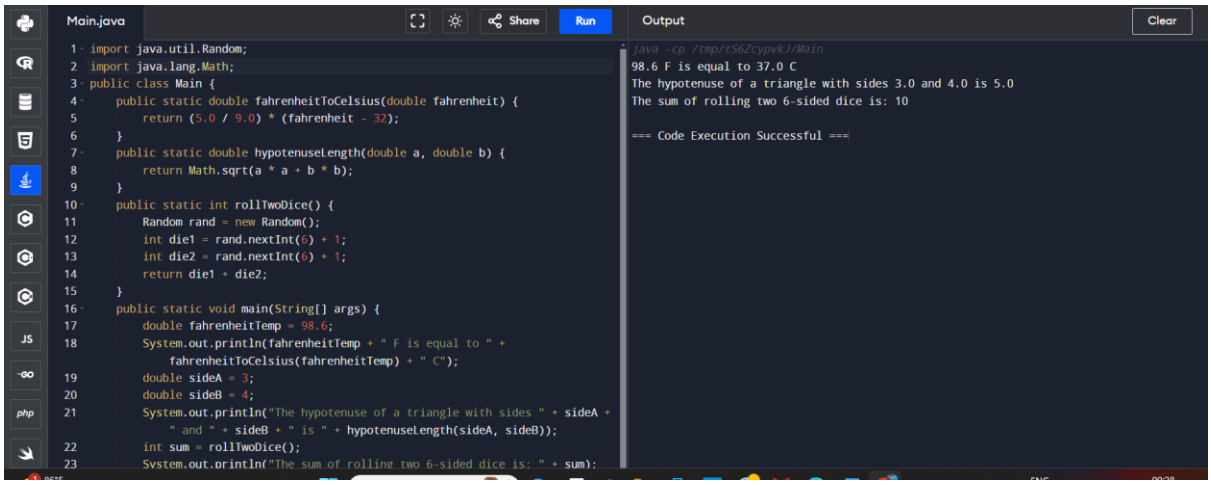
```
import java.lang.Math;
public class HypotenuseCalculator {
    public static double hypotenuseLength(double a, double b) {
        return Math.sqrt(a * a + b * b);
    }
    public static void main(String[] args) {
        double sideA = 3;
        double sideB = 4;
        System.out.println("The hypotenuse of a triangle with sides " + sideA + " and " + sideB
+ " is " + hypotenuseLength(sideA, sideB));
    }
}
```

3. Simulate the rolling of two 6-sided dice and display their sum.

Method:

```
import java.util.Random;
public class DiceRoller {
    // Method to roll two 6-sided dice and return their sum
    public static int rollTwoDice() {
        Random rand = new Random();
        int die1 = rand.nextInt(6) + 1;
        int die2 = rand.nextInt(6) + 1;
        return die1 + die2;
    }
    public static void main(String[] args) {
        int sum = rollTwoDice();
        System.out.println("The sum of rolling two 6-sided dice is: " + sum);
    }
}
```

Output:



Problem 2: Process a name

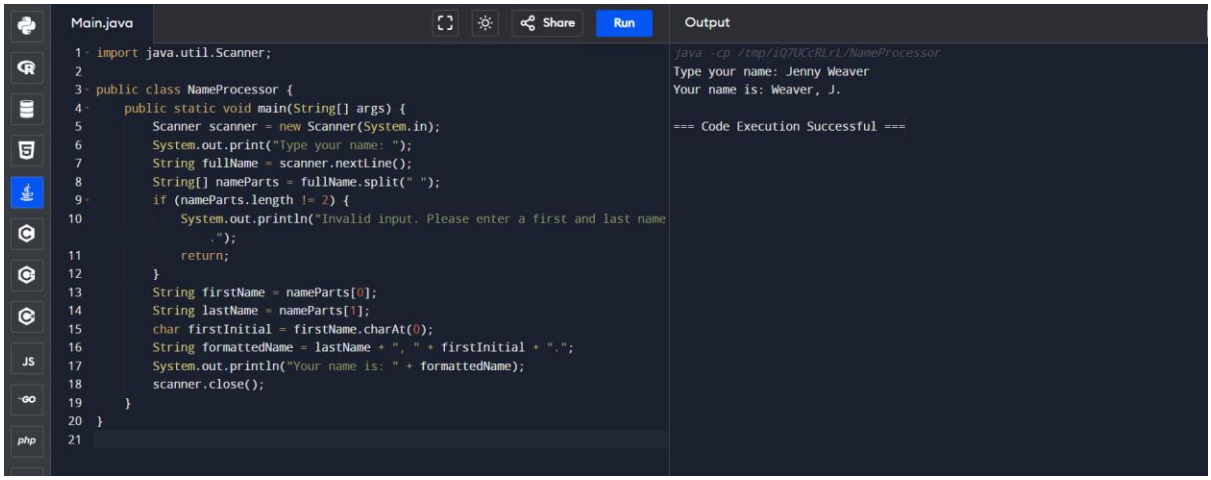
In this practice, you will develop a java program that processes a name entered by the user. The program does the following: It reads the user's first and last name (read an entire line as a single string), then prints the last name followed by a comma and the first initial. (Assume that the user types a valid name.)

Code:

```
import java.util.Scanner;

public class NameProcessor {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Type your name: ");
        String fullName = scanner.nextLine();
        String[] nameParts = fullName.split(" ");
        if (nameParts.length != 2) {
            System.out.println("Invalid input. Please enter a first and last name.");
            return;
        }
        String firstName = nameParts[0];
        String lastName = nameParts[1];
        char firstInitial = firstName.charAt(0);
        String formattedName = lastName + ", " + firstInitial + ".";
        System.out.println("Your name is: " + formattedName);
        scanner.close();
    }
}
```

Output:


Main.java
Share
Run
Output
import java.util.Scanner;
public class NameProcessor {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);
System.out.print("Type your name: ");
String fullName = scanner.nextLine();
String[] nameParts = fullName.split(" ");
if (nameParts.length != 2) {
System.out.println("Invalid input. Please enter a first and last name.");
return;
}
String firstName = nameParts[0];
String lastName = nameParts[1];
char firstInitial = firstName.charAt(0);
String formattedName = lastName + ", " + firstInitial + ".";
System.out.println("Your name is: " + formattedName);
scanner.close();
}
}
java -cp /tmp/iQ7UCcRLrL/NameProcessor
Type your name: Jenny Weaver
Your name is: Weaver, J.
=== Code Execution Successful ===