LAB 4

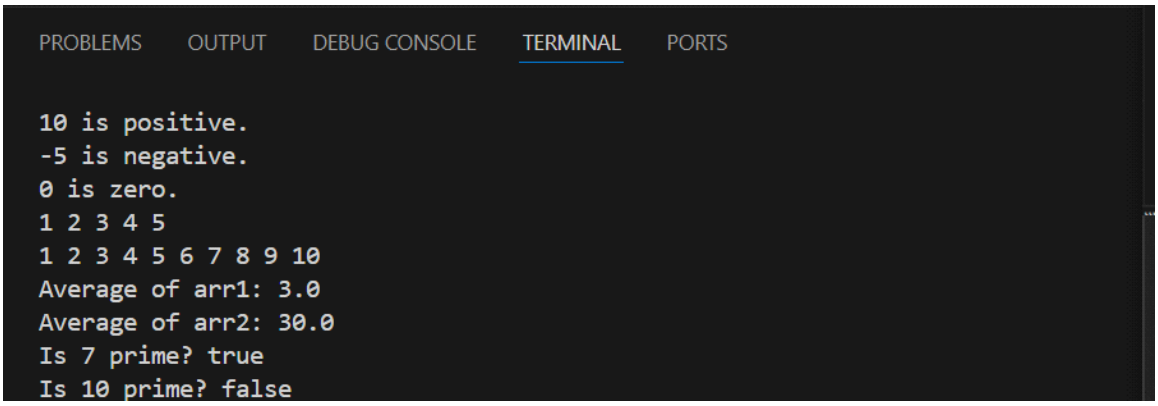
```
public class LabAssignment {

    // Task 1: Variable Declaration and Initialization
    public static void main(String[] args) {
        int intValue = 42;
        double doubleValue = 3.14;
        boolean booleanValue = true;
        String stringValue = "Java Basics Lab";

        System.out.println("Integer Value: " + intValue);
        System.out.println("Double Value: " + doubleValue);
        System.out.println("Boolean Value: " + booleanValue);
        System.out.println("String Value: " + stringValue);



        // Task 2: Control Structures
        checkNumber(10);
        checkNumber(-5);
        checkNumber(0);

        // Task 3: Loops
```

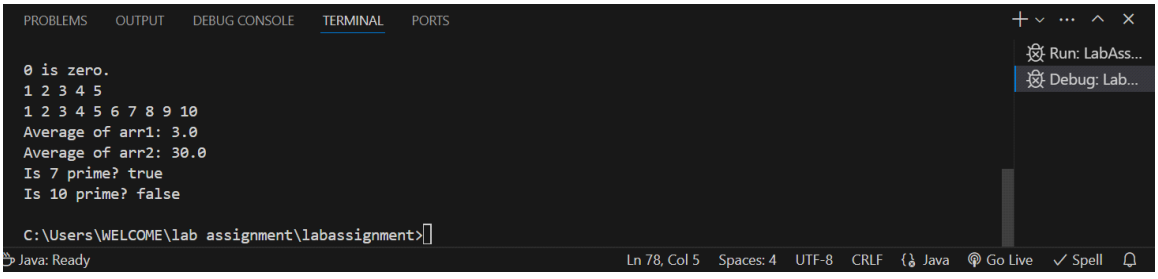
```
    printNumbers(5);
    printNumbers(10);

    // Task 4: Methods
    int[] arr1 = {1, 2, 3, 4, 5};
    int[] arr2 = {10, 20, 30, 40, 50};
    System.out.println("Average of arr1: " + calculateAverage(arr1));
    System.out.println("Average of arr2: " + calculateAverage(arr2));

    // Task 5: Bonus Challenge
    System.out.println("Is 7 prime? " + isPrime(7));
    System.out.println("Is 10 prime? " + isPrime(10));
}

// Task 2: Control Structures
public static void checkNumber(int number) {
    if (number > 0) {
        System.out.println(number + " is positive.");
    } else if (number < 0) {
        System.out.println(number + " is negative.");
    } else {
        System.out.println(number + " is zero.");
    }
}
```

```
// Task 3: Loops
public static void printNumbers(int n) {
    for (int i = 1; i <= n; i++) {
        System.out.print(i + " ");
    }
    System.out.println();
}

// Task 4: Methods
public static double calculateAverage(int[] numbers) {
    int sum = 0;
    for (int num : numbers) {
        sum += num;
    }
    return (double) sum / numbers.length;
}

// Task 5: Bonus Challenge
public static boolean isPrime(int number) {
    if (number <= 1) {
        return false;
    }
    for (int i = 2; i <= Math.sqrt(number); i++) {
        if (number % i == 0) {
            return false;
```

```
        }
    }
    return true;
  }
}
```


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Run: LabAss...
Debug: Lab...
Microsoft Windows [Version 10.0.22631.3447]
(c) Microsoft Corporation. All rights reserved.
C:\Users\WELCOME\lab assignment\labassignment> cmd /C "C:\Users\WELCOME\AppData\Roaming\Code\User\globalStorage\pleiades.java-extension-pack-jdk\java\21\bin\java.exe -agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:51869 -XX:+ShowCodeDetailsInExceptionMessages -cp "C:\Users\WELCOME\lab assignment\labassignment\bin" LabAssignment "
Integer Value: 42
Double Value: 3.14


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
10 is positive.
-5 is negative.
0 is zero.
1 2 3 4 5
1 2 3 4 5 6 7 8 9 10
Average of arr1: 3.0
Average of arr2: 30.0
Is 7 prime? true
Is 10 prime? false


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Run: LabAss...
Debug: Lab...
0 is zero.
1 2 3 4 5
1 2 3 4 5 6 7 8 9 10
Average of arr1: 3.0
Average of arr2: 30.0
Is 7 prime? true
Is 10 prime? false
C:\Users\WELCOME\lab assignment\labassignment>
Java: Ready
Ln 78, Col 5
Spaces: 4
UTF-8
CRLF
Java
Go Live
Spell