Programming Fundamentals II

Lab 2: Assignment

Lab Guidelines:

- Feel free to utilize any **IDE** for completing this laboratory assignment.
- It's crucial to note that in this lab, you're **Not allowed** to use conditionals or loops as they fall outside the scope of the assignment.
- This lab comprises **five** problems that necessitate resolution.
- The initial two issues pertain to **debugging**, while the remaining concerns involve code **composition**.
- Please ascertain that your code adheres to proper formatting and is adequately commented.
- Submit the code for each problem under its corresponding exercise number in a .java file.(e.g Exercise1.java).

Note: *If you have any inquiries, please feel free to reach out to us via the discussion platform accessible to participants of this lab.*

Exercise 1: Experiment with a Java Program

- Create a Java project called project1 and under the src folder of project1 create a class called Hello.java in which you type the following class:

```
public class Hello {
    public static void main (String args[]) {

     System.out.print("Hello, welcome to Java Course");
   }

 }
```

- Run the class as a “Java Application” . What was the output?

- Perform the following experiments and record your findings:

    o Remove the first **public** keyword. Does the class compile? _____ Does it run? ____ Restore the public keyword.

    o Remove the second **public** keyword. Does the class compile? ___ Does it run? ___ Restore the public keyword.

    o Remove the **static** keyword. Does the class compile? ____ Does it run? _____ Restore the static keyword.

    o Remove the **void** keyword. Does the class compile? _____ Does it run? _____ Restore the void keyword.

    o Replace the **void** keyword with **int** and add a return 0; statement just before the end of the main method. Does the class compile? _____ Does it run? _____ Restore the void keyword.

o Rewrite the method name as **Main** instead of **main**. Does the class compile? _____ Does it run? _____ Restore the main method name.

o Change the type of the **args[]** array from String to **int**. Does the class compile? ____ Does it run? _____ Restore **args** data type.

o Change the argument name from **args** to **myArgs**. Does the class compile? _____ Does it run? _____ Restore args name.

o Change the argument from **args[]** to **[]args**. Does the class compile? _____ Does it run? _____.

Exercise 2: Translate the following algorithm into Java code:

Step 1: Declare a **double** variable named **miles** with an initial value **100**.

Step 2: Declare a **double** constant named **KILOMETERS_PER_MILE** with value**1.609**.

Step 3: Declare a **double** variable named **kilometres**, multiply **miles** and **KILOMETERS_PER_MILE**, and assign the result to **kilometres**.

Step 4: Display **kilometres** to the console.

➔ What is **kilometres** after Step 4?

Exercise 3: Write a Java program to swap two variables.

Exercise 4: Write a program to evenly divide pizzas. Prompt for the number of people, the number of pizzas, and the number of slices per pizza. Ensure that the number of pieces comes out even. Display the number of pieces of pizza each person should get. If there are leftovers, show the number of leftover pieces.

Sample Output:

```
How many people? 8
How many pizzas do you have? 2
8 people with 2 pizzas
Each person gets 2 pieces of pizza.
There are 0 leftover pieces.
```

Exercise 5: Write a program that prompts for two numbers. Print the sum, difference, product, and quotient of those numbers as shown in the example output:

Sample Output:

```
What is the first number? 10
What is the second number? 5
10 + 5 = 15
10 - 5 = 5
10 * 5 = 50
10 / 5 = 2
```

End of Lab!