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# Lab 1 - 2: Exploring Common Syntax Errors with the "Hello World" Program

**Objective:** In this lab, you will be introduced to common syntax errors that can occur while writing Java code. You will start with a simple "Hello World" program and then intentionally introduce various mistakes. Your task is to observe the resulting error messages and understand the nature of each mistake.

## Part 1: The Initial "Hello World" Program

1. Open your preferred Integrated Development Environment (IDE) for Java programming.

2. Create a new Java class named HelloWorld.

3. Write the initial "Hello World" code:

```
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

4. Compile and run the program to ensure that it works correctly and displays "Hello, World!" on the console.

## Part 2: Introducing Syntax Errors

1. Copy the initial code from Part 1.

2. Intentionally introduce the following syntax errors one by one and observe the error messages generated by the compiler.

### Error 1: Missing Semicolon

Remove the semicolon at the end of the System.out.println() statement.

### Error 2: Incorrect Capitalization of Class Name

Change the class name's capitalization by making the first letter lowercase.

### Error 3: Misspelled Method Name

Change the method name from main to something else, e.g., mainn.

### Error 4: Missing or Mismatched Parentheses

Introduce a missing or mismatched parentheses in the main method declaration.

## Part 3: Analyzing Error Messages

1. After introducing each error, save the code and compile it.

2. Read and analyze the error messages generated by the compiler. Try to understand what each error message is indicating.

**Questions:**

1. **Identify the type of error in the code and provide a fix.**

```
public class ErrorQuestion1 {
    public static void main(String[] args) {
        int x = 5;
        System.out.println("The value of x is: " + x)
    }
}
```

2. **Identify the type of error in the code and provide a fix.**

```
public class ErrorQuestion2 {
    public static void main(String[] args) {

        System.out.println("Islamic UNIVERSIT");
    }
}
```

3. **Identify the type of error in the code and provide a fix.**

```
public class ErrorQuestion3 {
    public static void main(String[] args) {

        System.out.println(20/0);
    }
}
```

**Conclusion:**

In this lab, you explored common syntax errors that can occur while writing Java code. By intentionally introducing mistakes into a "Hello World" program, you observed the resulting error messages and learned how to interpret them. This experience will help you become more proficient in identifying and correcting errors as you continue to write Java programs. Understanding these mistakes and their corresponding error messages is crucial for becoming a successful Java programmer.