**Lab 1: Setting Up the Java Development Environment**

**Objectives:**

* Install the Java Development Kit (JDK).
* Choose and install an Integrated Development Environment (IDE).
* Familiarize yourself with the basic functionalities of your chosen IDE.

**Tasks:**

1. **Download and Install the JDK:**
   * Visit the official Oracle website: <https://www.oracle.com/java/technologies/downloads/>.
   * **Important:** Download the **JDK** (Java Development Kit) version you need, not the JRE (Java Runtime Environment) which only runs Java programs, not develop them.
   * Choose the appropriate version for your operating system (Windows, macOS, Linux). Download the installer file.
   * Double-click the downloaded installer file and follow the on-screen instructions. It's generally recommended to accept the default installation directory unless you have specific reasons to choose a different location.
   * **Windows Users:** Setting environment variables might be necessary in some cases. Refer to the following resources for instructions specific to your Windows version:
     + <https://www.alphr.com/set-environment-variables-windows-11/>
     + <https://www.shellhacks.com/windows-cmd-path-variable-add-to-path-echo-path/>
   * **macOS/Linux Users:** Setting environment variables is generally simpler on these systems. Consult your system's documentation for specific steps if needed.
2. **Choose and Install an IDE:**
   * Here are some popular IDEs for Java development:
     + **Eclipse:** Open-source, customizable
     + **IntelliJ IDEA:** Commercial, feature-rich
     + **NetBeans:** Open-source, user-friendly
     + **VS Code**
   * Visit the website of your chosen IDE and download the appropriate installation file for your operating system. Follow the on-screen instructions to complete the installation.
3. **Familiarize Yourself with Your IDE:**
   * Open your chosen IDE and explore the interface.
   * **Creating Projects:** Look for options to create new Java projects. Familiarize yourself with the project structure and how to navigate between files.
   * **Writing Code:** Locate the code editor where you'll write your Java programs.
   * **Running Programs:** Identify how to compile and run your Java code within the IDE. Look for buttons or menus related to running the program.

**Deliverables:**

1. **JDK and IDE Installation Report:**
   * Create a short report documenting the installation process for both the JDK and your chosen IDE.
   * Include screenshots of the following:
     + Downloading the JDK installer file.
     + Installing the JDK (optional, if the installer allows screenshots during the process).
     + Downloading the IDE installer file.
     + Installing the IDE (optional, if possible).
     + Your IDE's interface showing a new Java project.
2. **"Hello, World!" Program:**
   * Create a new Java project in your IDE.
   * Within the project, create a new Java class named HelloWorld.java.
   * In this class, write the following code:

public class HelloWorld {

public static void main(String[] args) {

System.out.println("Hello, World!");

}

}

* Explain each line of code briefly in your report (e.g., public class, main method).
* Compile and run the program using your IDE's functionalities.
* In your report, include the screenshot of the program running successfully, displaying "Hello, World!" on the console.

Roll No:

Name:

Subject:   
Teacher Name: