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LAB Experiment 1

Introduction to Java Environment

1. Explore and understand the role of JDK, JRE and JVM.

Ans:

- **JDK (Java Development Kit):** It is a package containing tools for developing Java applications. It includes the JRE and necessary development tools like the compiler (javac).
- **JRE (Java Runtime Environment):** It is required to run Java programs. It contains libraries and the JVM but does not include development tools.
- **JVM (Java Virtual Machine):** It is responsible for running Java programs by converting bytecode into machine code.

2. Install latest available JDK and verify the Java Environment.

Ans: We will download JDK from the website. So I have chosen Oracle website And download the latest version of this.

The screenshot shows the Oracle website's Java Downloads section for JDK 23 on Windows. The page has a dark header with the Oracle logo and navigation links. Below the header, there's a sub-header with 'Tools and resources', 'Java downloads' (which is highlighted), and 'Java archive'. The main content area features a table with three columns: 'Product/file description', 'File size', and 'Download'. The table lists three download options: 'x64 Compressed Archive' (228.77 MB), 'x64 Installer' (205.27 MB), and 'x64 MSI Installer' (204.02 MB). Each row provides a direct download link and a SHA256 hash. Below the table, there's a 'Documentation Download' button and a 'Release information' section with links to 'Online Documentation', 'Installation Instructions', 'Release Notes', 'Documentation License', and 'JDK 23 Licensing Information User Manual (includes third-party licenses)'.

Product/file description	File size	Download
x64 Compressed Archive	228.77 MB	https://download.oracle.com/java/23/latest/jdk-23_windows-x64_bin.zip (sha256)
x64 Installer	205.27 MB	https://download.oracle.com/java/23/latest/jdk-23_windows-x64_bin.exe (sha256)
x64 MSI Installer	204.02 MB	https://download.oracle.com/java/23/latest/jdk-23_windows-x64_bin.msi (sha256)

Documentation Download

Release information

- [Online Documentation](#)
- [Installation Instructions](#)
- [Release Notes](#)
- [Documentation License](#)
- [JDK 23 Licensing Information User Manual \(includes third-party licenses\)](#)

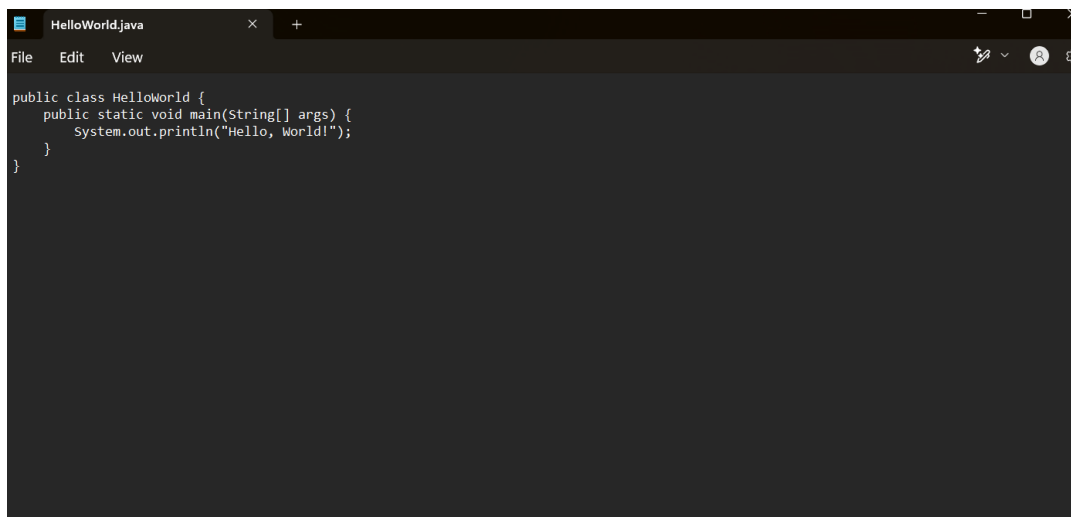
After this we will install the application and after that we will open Command Prompt and then We will enter some Commands in this.

```
>java -version  
>javac -version
```

3. Create a Sample Hello World Program using simple text editor (e.g. Notepad) and show the steps to compile and execute the program using command prompt.

Ans:

We will open the notepad and then type the java code were we have to print the “Hello World” and then save it with enable ALL FILE option.

A screenshot of a Notepad window with the title bar 'HelloWorld.java'. The window has a menu bar with 'File', 'Edit', and 'View'. The code inside is:

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

The we will locate the Path of that file and then we will open it in Command Prompt and we will run the code of that.

4. Display your name and complete address in different lines.

Ans:

I have Chosen Eclipse IDE and we will type the code for the Introduction in which we have to print My Information like Name, Sap id, Roll no. and City and State.

Code-

```
package Java;
```

```
public class Introduction {
```

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

```
        System.out.println("Name: Nipun Agrawal");
```

```
        System.out.println("Sap ID: 500119472");
```

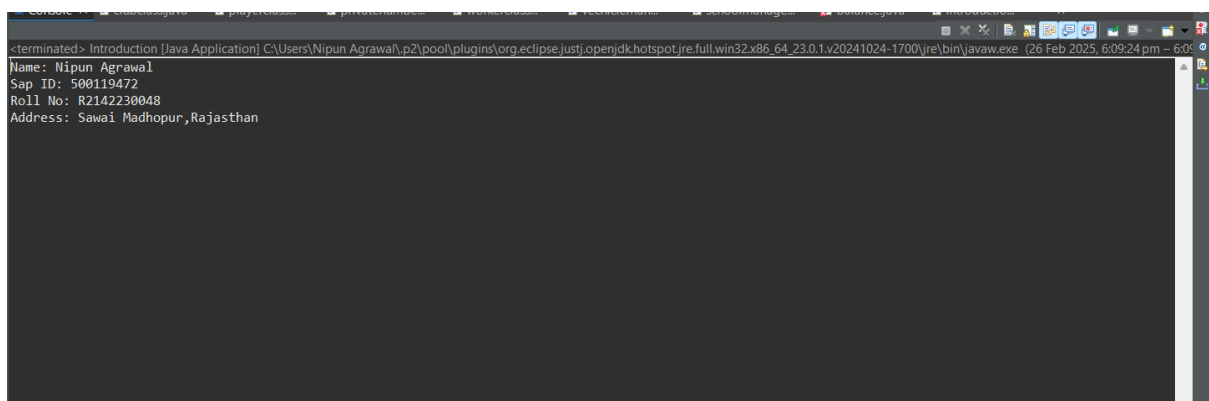
```
        System.out.println("Roll No: R2142230048");
```

```
        System.out.println("Address: Sawai Madhopur,Rajasthan");
```

```
    }
```

```
}
```

Output –



The screenshot shows a Java application window titled "Introduction [Java Application]". The window's title bar includes the path "C:\Users\Nipun Agrawal\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_23.0.1.v20241024-1700\jre\bin\javaw.exe" and the timestamp "(26 Feb 2025, 6:09:24 pm - 6:09)". The main content area of the window displays the following output:

```
Name: Nipun Agrawal  
Sap ID: 500119472  
Roll No: R2142230048  
Address: Sawai Madhopur,Rajasthan
```

