ASSIGNMENT – 1

UNIVERSITY OF TOMORROW

NAME – NARAYAN VYAS

SAP – 500122747

ENROL – R2142231971

BATCH – 2 (CCVT)

INTRODUCTION TO JAVA ENVIRONMENT

Q1 Explore and understand the role of JDK, JRE, and JVM?

Java Assignment

Name - Narayan Vyas
SAP - 500192274
Enroll - R21422 31971
Batch - 2 (((UT)

Q 1- Explore and understand the role of JDK, JRE and JVM

An   JKD (Java Development Kit)

• Development Tools
→ The JDK is a comprehensive kit for Java developer. It includes everything in the JRE plus additional tools for developing, compiling, and debugging Java applications.

• Includes JRE
→ The JDK contains a JRE, so you can both develop and run Java programs with it

Key component :

Compiler (javac) : Compiles Java source code into bytecode

Debugger (jdb) : Helps developers finds and fix error in their code

Java Doc : Generate documentation from Java source code

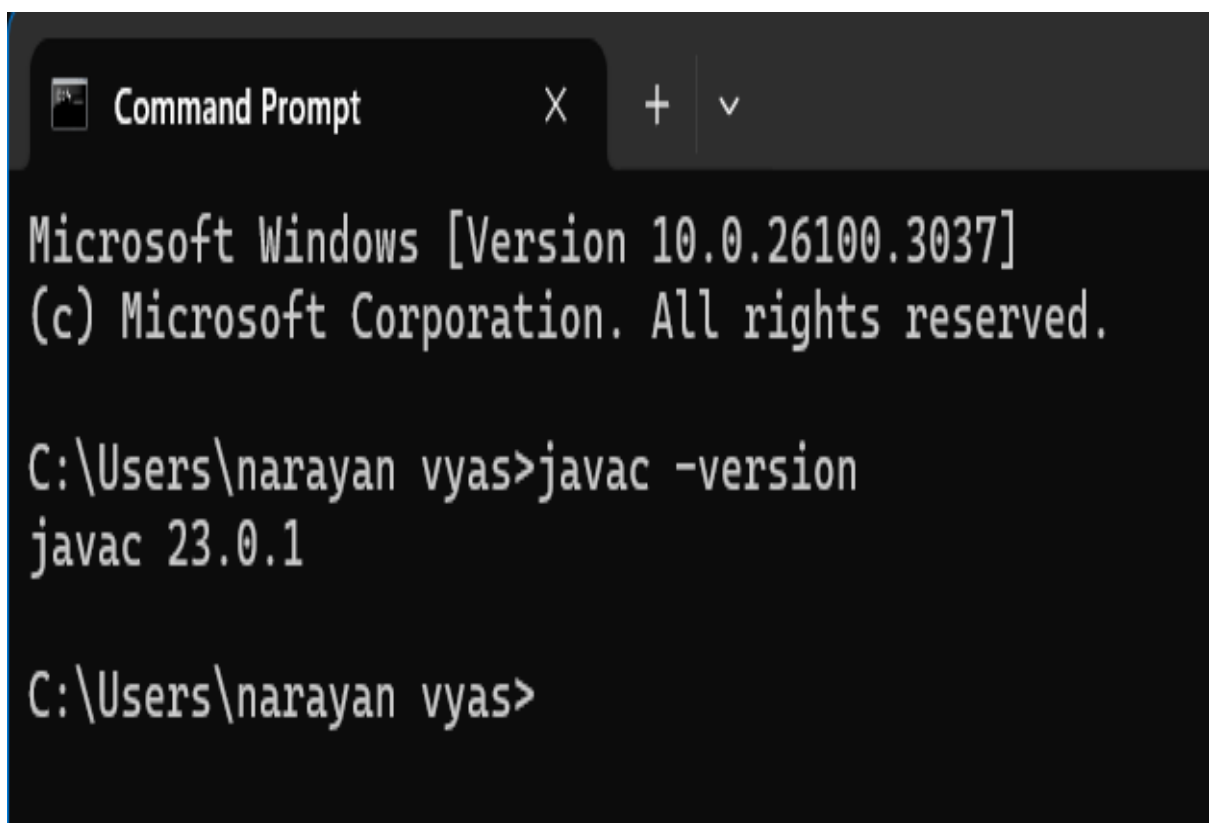Other Tools : Includes tools for archiving, profiling and more

2 (JRE) Java Runtime Environment

○ Runtime Environment

→ The JRE provides the necessary environment for running Java applications.

○ Includes JVM

→ It contains the JVM along with other essential components like class libraries and supporting files that the JVM needs during execution.

○ for users

→ If you only need to run Java programs, you only need the JRE, you don't need the JDK.

3 - JVM (Java Virtual Machine)

○ Core of Java

→ The JVM is the heart of Java's platform independence. Its a virtual machine that execute Java byte code.

○ Platform Specific

→ JVMs are platform-dependent, meaning there is a specific JVM implementation for each operating system.

○ Bytecode execution:

→ When you compile a Java program, its converted into an intermediate code called bytecode. The JVM interprets this bytecode and translates it into the instruction that the underlying operating system can understand and execute.

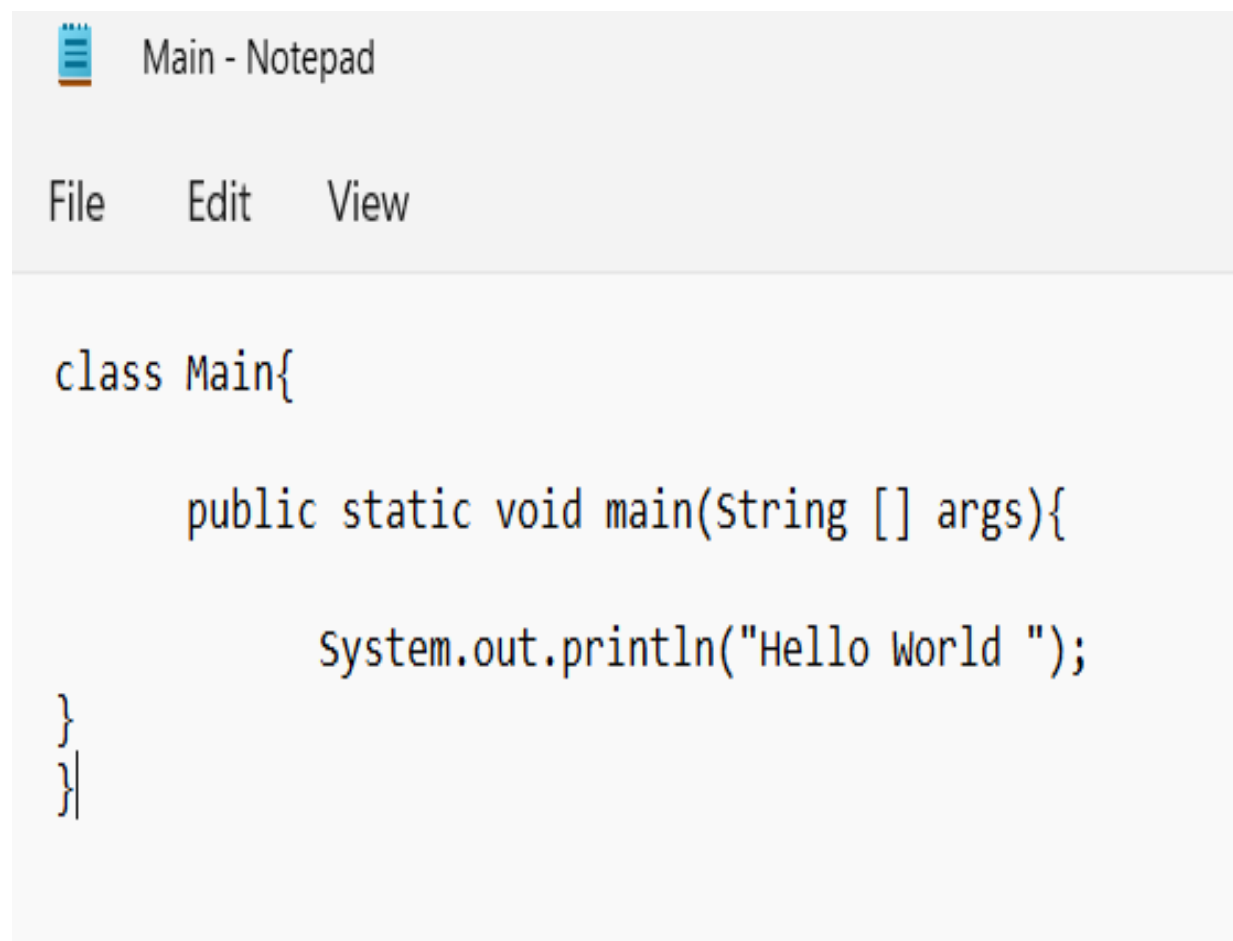# Q2 Install latest available JDK and verify the java environment?

jdk-23_windows-x64_bin.exe

Command Prompt

Microsoft Windows [Version 10.0.26100.3037]
(c) Microsoft Corporation. All rights reserved.

C:\Users\narayan vyas>javac -version
javac 23.0.1

C:\Users\narayan vyas>

Q3 Create a simple Hello World program using text editor and show the steps to compile and execute the program using command prompt?

Main - Notepad

File   Edit   View

```
class Main{

    public static void main(String [] args){

        System.out.println("Hello World ");
}
}
```

```
C:\Users\narayan vyas>cd "C:\Users\narayan vyas\Downloads"

C:\Users\narayan vyas\Downloads>javac Main.java

C:\Users\narayan vyas\Downloads>java Main
Hello World
```

Q4 DISPLAY YOUR NAME AND COMPLETE ADDRESS IN DIFFERENT LINES?

Main.java | Share | Run | Output

```java
import java.util.Scanner;
class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter your name : ");
        String a = scanner.nextLine();
        System.out.print("Enter your address: ");
        String b = scanner.nextLine();
        System.out.println(" Your Name is : " + a + "\n Your Address is

    }
}
```

Output:
```
Enter your name : NARAYAN VYAS
Enter your address: BIJNOR UP
```