**Week #2**

## What are the softwares that helps to run java programs?

The software needed to compile and execute java code are:

* Java Development Kit (JDK)
* Java Runtime Environment (JRE)
* Integrated Development Environments (IDE)

## What is JDK and JRE?

1. **Java Development Kit (JDK):** A software development environment which is used to develop and run Java programs. It provides all the necessary tools and libraries that Java developers need to write, compile, debug, and package Java programs.  
   It consists of:

* Compiler: Converts your Java code (.java) into bytecode (.class).
* JRE (Java Runtime Environment): To run the program after compilation.
* Debuggers, documentation generator, etc.

1. **Java Runtime Environment (JRE):** It is a software package that provides the necessary components to run Java applications.  
   It includes:

* JVM (Java Virtual Machine): Executes Java bytecode.
* Class libraries: pre-written Java classes.

## What is eclipse IDE?

Eclipse IDE (Integrated Development Environment) is a free, open-source tool that provides everything a programmer needs in one place to write, compile, debug, and run programs. It is especially popular for Java development but also supports C, C++, Python and more via plugins.

## How to run the java program in eclipse/netbeans IDE?

**Eclipse:**

1. **Install & Setup Eclipse:**

* Download and install Eclipse IDE for Java Developers.
* Make sure JDK is installed on your system.

1. **Create a New Project:**

* Open Eclipse > File > New > Java Project.
* Enter a Project Name > Click Finish.

1. **Create a Java Class:**

* Right-click on the src folder > New > Class.
* Enter a Class Name (e.g. HelloWorld).
* Check public static void main(String[] args) if you want Eclipse to add the main method automatically.
* Click Finish.

1. **Write your Code**
2. **Run the Program:**

* Click the green play button on the toolbar
* OR right-click the file > Run As > Java Application.
* Output will appear in the Console window at the bottom.

**NetBeans:**

1. **Install & Setup NetBeans:**

* Download and install Apache NetBeans IDE.
* Ensure the JDK is installed.

1. **Create a New Project:**

* Open NetBeans > File > New Project.
* Select Java > Java Application > Click Next.
* Enter a Project Name and select location.
* Check Create Main Class option if you want NetBeans to generate the main method.
* Click Finish.

1. **Write Your Code**
2. **Run the Program:**

* Click the green play button on the toolbar
* OR right-click project > Run.
* Output will show in the Output window at the bottom.