*WEEK-2***1. Softwares that help to run Java programs**

To run Java programs, you mainly need:

* **JDK (Java Development Kit):** For compiling and running Java code.
* **JRE (Java Runtime Environment):** For running compiled Java programs.
* **IDE (Integrated Development Environment):** Tools like **Eclipse**, **NetBeans**, **IntelliJ IDEA** make writing, compiling, and running Java programs easier.
* **Text editors + Command line:** You can also use Notepad/VS Code + Command Prompt/Terminal.

**2. What is JDK and JRE?**

* **JDK (Java Development Kit):**
  + It contains **compiler (javac)** + **JRE** + debugging tools.
  + Needed for **developers** to write, compile, and run Java programs.
  + Without JDK, you cannot compile .java files into .class files.
* **JRE (Java Runtime Environment):**
  + It contains **JVM (Java Virtual Machine)** + libraries needed to run Java.
  + It is only for **running** Java programs, not for writing/compiling.
  + Users who just need to run Java applications (not code them) only need JRE.

👉 In short:

* JDK = JRE + Compiler + Dev Tools
* JRE = JVM + Libraries

**3. What is Eclipse IDE?**

* **Eclipse IDE** is a free, open-source **Integrated Development Environment (IDE)** mainly used for Java development.
* Features:
  + Code editor with auto-completion
  + Debugger
  + Project management
  + GUI builder support
  + Plugins for other languages (Python, C++, etc.)

**4. How to run Java program in Eclipse / NetBeans IDE?**

**In Eclipse IDE:**

1. Install **Eclipse IDE** and **JDK**.
2. Open Eclipse → Create a new **Java Project** (File > New > Java Project).
3. Create a **Java Class** inside the project (src > New > Class).
4. Write your code inside the class with a main method.
5. Right-click on the file → Run As > Java Application.  
   ✅ Your program runs in the console below.

**In NetBeans IDE:**

1. Install **NetBeans IDE** (it comes bundled with JDK in some versions).
2. Open NetBeans → Create a **New Project** (File > New Project > Java > Java Application).
3. NetBeans will auto-generate a Main.java.
4. Write your code in the main method.
5. Click the **Run button (green play icon)** or press **Shift + F6**.  
   ✅ Output appears in the output window.