**IDE Installation Guide**

**Tools Covered:** STS, VSCode, Eclipse EE, IntelliJ IDEA | **Maven Setup** | **VSCode Configuration**

**1. Install IDEs**

Download and install the following IDEs from their official sources:

**a. Spring Tool Suite (STS)**

* **Download**: [Spring Tools](https://spring.io/tools)
* **Installation**:
  + Extract the downloaded ZIP to C:\STS (recommended).
  + Launch STS.exe from the extracted folder.

**b. Eclipse IDE for Enterprise Java (EE)**

* **Download**: [Eclipse IDE](https://www.eclipse.org/downloads/packages/)
* **Installation**:
  + Run the installer, select **Eclipse IDE for Enterprise Java and Web Developers**.
  + Install to C:\eclipse (default path).

**c. IntelliJ IDEA**

* **Download**: [IntelliJ IDEA](https://www.jetbrains.com/idea/download/)
* **Installation**:
  + Run the installer and follow prompts.
  + Choose **Community Edition** (free) or **Ultimate Edition** (trial).

**d. Visual Studio Code (VSCode)**

* **Download**: [VSCode](https://code.visualstudio.com/" \t "_blank)
* **Installation**:
  + Run the installer and accept defaults.

**2. Install Apache Maven**

**Step 1: Download Maven**

* **Download**: [Apache Maven Binary ZIP](https://maven.apache.org/download.cgi) (e.g., apache-maven-3.9.9-bin.zip).

**Step 2: Extract Maven**

* Extract the ZIP to C:\ (path becomes C:\apache-maven-3.9.9).

**Step 3: Add Maven to System PATH**

1. Open **Start Menu** > Search for **Edit the system environment variables** > Click **Environment Variables**.
2. Under **System Variables**, select **Path** > Click **Edit** > **New**.
3. Add the Maven bin folder path: C:\apache-maven-3.9.9\bin.
4. Click **OK** to save.

**Step 4: Verify Installation**

* Open **Command Prompt** and run:

bash

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mvn --version

* Expected Output:

bash

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Apache Maven 3.9.9 (...)

Java version: 23.0.2 (...)

OS: Windows 10

**3. Configure VSCode Extensions**

Install the following extensions in VSCode:

1. **Java Extensions**:
   * **Extension Pack for Java** (Microsoft)
   * **Project Manager for Java** (Microsoft)
2. **Spring/Spring Boot**:
   * **Spring Boot Tools** (VMware)
   * **Spring Boot Dashboard** (Microsoft)
3. **Maven Integration**:
   * **Maven for Java** (Microsoft)
   * **Maven Helper** (Red Hat)

**Steps to Install Extensions**:

* Open VSCode > Click the **Extensions** icon (Ctrl+Shift+X).
* Search for the extension name > Click **Install**.

**4. Post-Installation Notes**

1. **Java Requirement**:
   * Ensure **JDK 23** (or higher) is installed and linked in your IDE.
   * Confirm with java --version in the terminal.
2. **IDE-Specific Maven Configuration**:
   * In STS/Eclipse/IntelliJ, set Maven to use the installed C:\apache-maven-3.9.9 directory.
3. **VSCode Settings**:
   * Configure the Java Home path in VSCode:

json

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"java.home": "C:\\Program Files\\Java\\jdk-23"

**Troubleshooting**

* **Maven not recognized**: Restart your terminal/IDE after updating the PATH.
* **Extension Errors**: Ensure you install extensions from trusted publishers (Microsoft, Red Hat, VMware).

**Resources**:

* [Maven Installation Guide](https://maven.apache.org/install.html)
* [VSCode Java Tutorial](https://code.visualstudio.com/docs/java/java-tutorial)

Let me know if you need further clarifications! 🚀