sThe **Smart Tomcat** plugin is the most popular way to run Java Servlets and Jakarta EE web applications inside **IntelliJ IDEA Community Edition**. It integrates Apache Tomcat directly into Community Edition's run configurations without needing complex Maven plugins.

Here is the step-by-step setup guide.

1.Download Apache Tomcat:

1. Visit the official Apache Tomcat download page (Tomcat 10 or 11 is recommended for `jakarta.servlet` compatibility).
2. Download the **Core zip** or **tar.gz** archive under the "Binary Distributions" section.
3. Extract the downloaded folder to a permanent location on your computer

OR

1.Offline Install Apache Tomcat:

1. Download ‘apache-tomcat-11.0.26-windows-x64.zip’ from local server 192.168.1.200 and Use ‘Extract Here’ option to unzip at local drive.

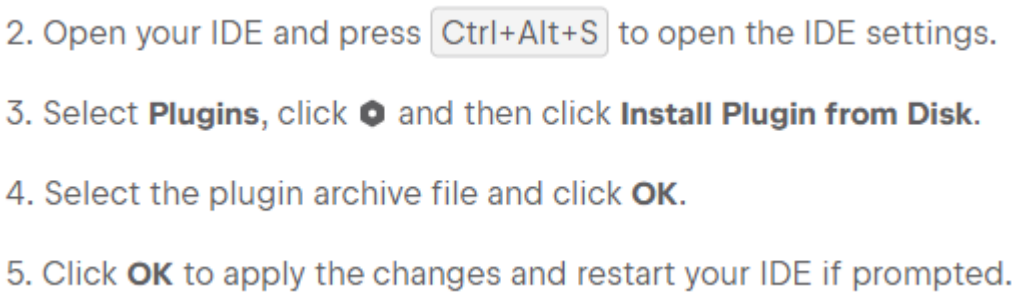
2.Install Smart Tomcat Plugin in IntelliJ:

1. Open IntelliJ IDEA Community Edition.
2. Go to **Settings** (Windows/Linux: `File -> Settings`).
3. Select **Plugins** from the left sidebar.
4. Click the **Marketplace** tab at the top.
5. Search for **Smart Tomcat** and click **Install**.
6. Restart IntelliJ IDEA if prompted

OR

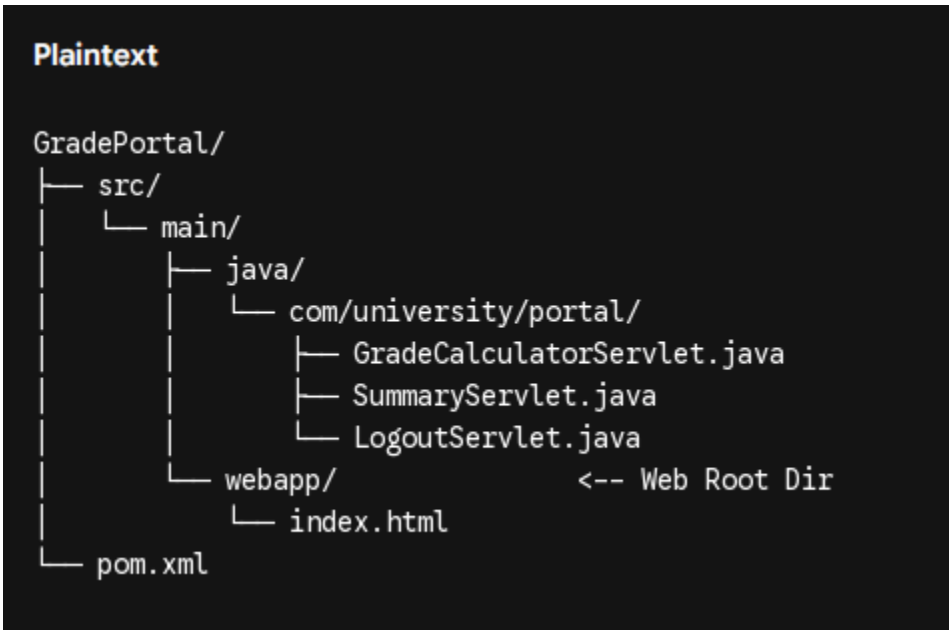
2. Offline Install Smart Tomcat Plugin in IntelliJ:

1. Download SmartTomcat-4.8.0.zip from Local Server 192.168.1.200
2. Open IntelliJ IDEA Community Edition.



3.Configure Project Folder Structure:

Ensure your Maven project has the proper web directory structure:



If the `webapp` folder does not exist, right-click `src/main` -> `New` -> `Directory` and name it `webapp`.

4.Create Smart Tomcat Run Configuration:

1. In the top toolbar, click **Add Configuration...** (or click the run dropdown next to the green play button).
2. Click the **+ (Add New Configuration)** button in the top left corner.
3. Scroll down and select **Smart Tomcat**.
4. Configure the fields:
    - **Name:** `Tomcat Server`
    - **Tomcat server:** Click . . . and select the extracted Apache Tomcat folder from Step 1.
    - **Catalina base:** Click … and select the extracted Apache Tomcat folder from Step 1.
    - **Deployment Directory:** Browse and select your project's `webapp` folder (`src/main/webapp`).

      for example : `D`:\Users\sflo32\IdeaProjects\GradePortal\src\main\webapp

    - **Context Path:** `/` (or `/GradePortal` if you prefer a custom URL prefix).
    - **Server port:** `8080`
5. Click **Apply** and then **OK**.

To create and run an **Embedded Tomcat Server using Maven**.

1.Create a Maven Project:

1. Open IntelliJ IDEA and select **New Project**.
2. Choose **Maven** and name your project `GradePortal`.

2.Configure pom.xml with Embedded Tomcat:

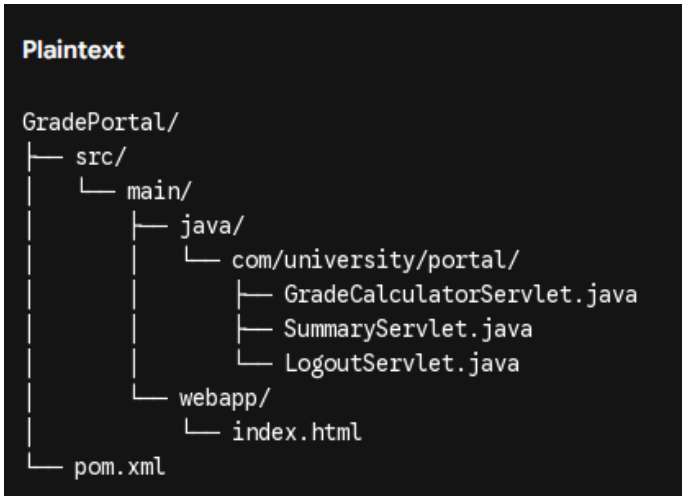
Replace your `pom.xml` with the following configuration. This includes the Servlet API and the Smart Tomcat / Jetty plugin so you can run Tomcat directly via Maven without downloading an external server:

Pom.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
http://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>

    <groupId>com.university</groupId>
    <artifactId>GradePortal</artifactId>
    <version>1.0-SNAPSHOT</version>
    <packaging>war</packaging>

    <properties>
        <maven.compiler.source>17</maven.compiler.source>
        <maven.compiler.target>17</maven.compiler.target>
        <project.build.sourceEncoding>UTF-
8</project.build.sourceEncoding>
    </properties>

    <dependencies>
        <!-- Jakarta Servlet API -->
        <dependency>
            <groupId>jakarta.servlet</groupId>
            <artifactId>jakarta.servlet-api</artifactId>
            <version>6.1.0</version>
            <scope>provided</scope>
        </dependency>
    </dependencies>
```

```
    <build>
        <plugins>
            <!-- Plugin to run Tomcat via Maven -->
            <plugin>
                <groupId>org.apache.tomcat.maven</groupId>
                <artifactId>tomcat7-maven-
plugin</artifactId>
                <version>2.2</version>
                <configuration>
                    <port>8080</port>
                    <path>/</path>
                </configuration>
            </plugin>
        </plugins>
    </build>
</project>
```

3. Set Up Project Directory Structure



Create GradeCalculatorServlet.java, SummaryServlet.java and LogoutServlet.java using separate file, attached next.

Click on Maven icon at Right-side and Click on Sync Button ( ) and Select "Reload all Maven Projects"

Download **"jakarta.servlet-api-6.1.0.jar"** and Copy **"jakarta.servlet-api-6.1.0.jar" into "**`D:\Users\sflo32\.m2\repository\jakarta\servlet\jakarta.servlet-api\6.1.0`**"**

5.Run Your Servlet Application:

1. Select **Tomcat Server** from the run configuration dropdown in the top toolbar.

1. Click the **Green Play Button**.
2. Watch the IntelliJ Terminal window. Once Tomcat finishes booting, open your browser and navigate to:

   `http://localhost:8080/index.html`

Common Troubleshooting Tips

- **`404 Not Found` Error:** Double-check your **Deployment Directory** setting in Smart Tomcat. It **must** point specifically to `src/main/webapp` (where `index.html` lives), not the root project folder.
- **`java.lang.ClassNotFoundException: jakarta.servlet.ServletException`:** Ensure your `pom.xml` has the `jakarta.servlet-api` dependency added with `<scope>provided</scope>` so Tomcat handles the Servlet container classes at runtime.

4. Run the Application:

1. Click on 'Run' [Green Button] Top.
2. Goto Browser and Type URL:

   localhost:8080

3. For any change in code, Click on 'Stop' [Red Button] and click again 'Run' [Green Button]

If Servlet does not run, do the following step and repeat above Step 4

Search for "Environment Variables for your account" -> Click on 'Environment variables' Click 'New' at 'User Variables for sflo21' and add "JRE_HOME" with "C:\Program Files\Java\jdk-25" -> Click 'ok' and 'ok'.
