

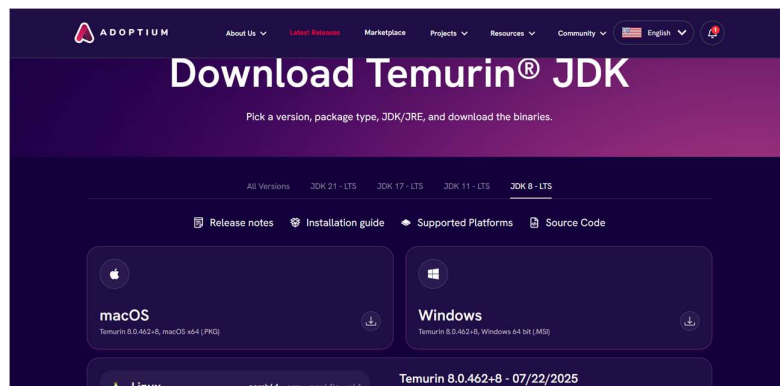
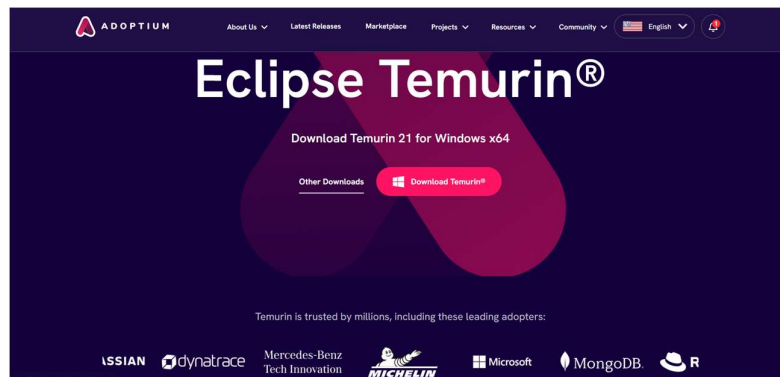
## Part 1: Installing the Java Development Kit (JDK)

Maven requires Java to run, so we must install this first.

### Step 1.1: Download the JDK

For new users, it is best to use a free, easy-to-install distribution of Java. We will use **Eclipse Adoptium (Temurin)**, which is a popular, community-supported version.

1. Go to the official download page: <https://adoptium.net/temurin/releases/>
2. On the download page, make the following selections:
  - **Operating System:** Windows
  - **Architecture:** x64
  - **Package Type:** MSI (This is an installer, which is the easiest option)
  - **Version:** Choose an **LTS** (Long-Term Support) version 8.
3. Click the .msi download button.



### Step 1.2: Run the Installer

1. Once the download is complete, double-click the .msi file to run the installer.
2. Proceed through the installation wizard by clicking "Next".
3. When you reach the "Custom Setup" screen, pay close attention. Click on the small hard drive icon next to **"Set JAVA\_HOME variable"** and select **"Will be installed on local hard drive."**
4. Do the same for **"Add to PATH"**.
  - o **Why is this important?** This step makes the installer automatically set up your environment variables for you, which is a huge time-saver!
5. Click "Next" and then "Install" to complete the installation.

## Part 2: Installing Apache Maven

Unlike the JDK, Maven does not have an installer. You simply download and unzip a folder.

### Step 2.1: Download Maven

1. Go to the official Apache Maven download page:  
<https://maven.apache.org/download.cgi>
2. Look for the "Files" section. Underneath it, find the **"Binary zip archive"** link. It will be a file named something like apache-maven-3.9.8-bin.zip.
3. Click the link to download the .zip file.

### Step 2.2: Extract Maven

1. Create a permanent folder for Maven. A good, clean location is C:\Program Files\maven. Open File Explorer, navigate to C:\Program Files, and create a new folder named maven.
2. Find the .zip file you just downloaded (e.g., apache-maven-3.9.8-bin.zip).
3. Unzip or extract the contents of this file into the C:\Program Files\maven directory you just created.

After extracting, your folder structure should look like this: C:\Program Files\maven\apache-maven-3.9.8 (the version number might be different). Inside that folder, you will see directories like bin, conf, lib, etc.

### Part 3: Setting Up Environment Variables Manually

If the Java installer did not set the variables for you, or to set them for Maven, follow these steps.

#### Step 3.1: Open the Environment Variables Window

1. Press the **Windows Key** and type Edit the system environment variables.
2. Click on the matching search result.
3. In the "System Properties" window that opens, click the "**Environment Variables...**" button.

#### Step 3.2: Create System Variables for JAVA\_HOME and MAVEN\_HOME

In the bottom half of the window ("System variables"), we will create two new variables.

##### 1. For JAVA\_HOME:

- Click "New...".
- **Variable name:** JAVA\_HOME
- **Variable value:** C:\Program Files\Eclipse Adoptium\jdk-21.0.x.x (Browse to or type the path to your JDK installation. The exact version number might differ).
- Click OK.

##### 2. For MAVEN\_HOME:

- Click "New...".
- **Variable name:** MAVEN\_HOME
- **Variable value:** C:\Program Files\maven\apache-maven-3.9.8 (Browse to or type the path where you extracted Maven).
- Click OK.

#### Step 3.3: Add Java and Maven to the Path Variable

The Path variable tells Windows where to find executable programs.

1. In the "System variables" section, find and select the variable named **Path**.
2. Click the "Edit..." button.
3. A new window will open showing a list of paths. Click the "**New**" button to add an empty line.

4. Type the following exactly: %JAVA\_HOME%\bin
5. Click "**New**" again to add another empty line.
6. Type the following exactly: %MAVEN\_HOME%\bin
  - **Why do we use %...%?** This syntax reuses the JAVA\_HOME and MAVEN\_HOME variables we just created. If you ever update Java or Maven to a latest version, you only need to change the \_HOME variable, and the Path will automatically point to the right place.
7. Click **OK** on all the windows to close and save your changes.