

# Setting up Java and Eclipse



## 1. Setting up Java SE Development Kit (JDK)

Java (JDK) is needed for compiling Java programs. If your computer already has the JDK installed, you may skip this section. **If you are using a Mac, you do not need to perform step 3 below.**

**Step 1- Download Java SE JDK** version 16 (or latest posted).

Go to <https://www.oracle.com/java/technologies/javase-downloads.html>

Under the heading Oracle JDK, click on the **JDK Download** button to load the download page. Scroll down the page to view the available downloads. For Windows PCs, click on the link to download **jdk-16.0.1\_windows-x64\_bin.exe** OR for Mac PCs download **jdk16.0.1\_osx-64\_bin.dmg**.

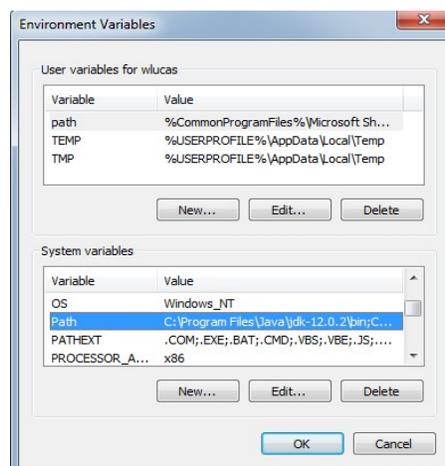
Accept the license agreement and click the button to download the appropriate version. This may take several minutes, depending on the speed of your connection.

**Step 2 – Install.** Once the download is complete, click on the file and run the Java Installation Wizard. The installation procedure is straightforward. Use the default settings, the JDK will be installed in C:\Program Files\Java\jdk-16.0.1 or in a library folder on a Mac.

**Step 3 - Update the PATH** (required for **Windows OS only**). After the installation is completed, you will need to update the Windows PATH environmental variable so the operating system can find the location of the Java tools. For Windows versions older than Windows10, see <https://www.computerhope.com/issues/ch000549.htm> for how to access and change the **Environment Variables**. For Windows 10, you can simply go to the Windows Start Menu and search for **System Environment Variables**. Click **Edit System Environment Variables**, then:

- Click the **Environment Variables** button in the System Properties window.
- In the lower scroll window, find the **system variable** called **Path** and double click it.
- Click the **New** button and add the following **Path** statement, making sure to use the correct number for the version you downloaded: **C:\Program Files\Java\jdk-16.0.1\bin**. Click the **Move Up** button until this path statement is the first one in the list.
- Click the OK button to save this change. Click the OK button again to exit the windows.

The resulting path should be similar to the one shown in the figure below, except it should show version 16.0.1



**Step 4 – Verify** that you have installed the Java JDK properly: On a Windows machine, go to the Start menu, type **cmd** in the search box, and click on Command Prompt. On a Mac, open the Terminal window. In either case, type the following in the command line window that appears and then press enter: **javac -version**

You should see a text response that indicates you have installed javac 16.0.1



## 2. Setting up Eclipse

*Eclipse is the development environment that will be used in this class.*

**Step 1- Download:** Eclipse is available for free from [www.eclipse.org](http://www.eclipse.org). Download the latest version of **Eclipse IDE for Java Developers** from <http://www.eclipse.org/downloads/eclipse-packages/>. To do this, scroll down to the heading Eclipse IDE 2021-03 R Packages. Under the subheading **Eclipse IDE for Java Developers**, click on the correct version of Eclipse to download for your system, choose either **Win x86\_64** or **Mac x86\_64**, then click the Download button.

**Step 2 – Install.** On a **Windows machine**, unzip the downloaded file (e.g., **eclipse-java-2021-03-R-win32-x86\_64.zip**) by selecting that file in the Downloads folder. **After you click Extract All, edit the folder destination to be C:\MyApps\Eclipse then click Extract.**

The Eclipse application – **eclipse.exe** – will be stored your C:\MyApps\Eclipse folder. Add a shortcut to Eclipse on your desktop by right clicking on this file and selecting Create shortcut. Drag the shortcut to the desktop.

**On a Mac**, open the downloaded file (e.g., **eclipse-inst-jre-mac64.dmg**), which unzips the Eclipse installer app. Run the installer. Then click on Eclipse IDE for Java Developers and install to the default directory. When the installation is completed, click the Launch button.

**Step 3 – Run.** Run Eclipse. If an error message appears, you most likely do not have the right version of Java installed. Follow the instructions from Section 1 of this handout to set up the Java JDK and then run Eclipse again.

Next, you should see the *Welcome* window, which you can close. A separate handout takes you through the details of creating and running a Java project.

**Step 4 – Verify.** You should verify that the current workspace of Eclipse is using the appropriate settings for Java. From the menus at the top of the Eclipse window:

- Go to Window > Preferences > Java > Installed JREs for **Windows** or Eclipse > Preferences > Java > Installed JREs on a **Mac** and verify that **jdk-16.0.1** is selected in the right-hand windowpane of the dialog box. If the correct version does not show up in the list of selections, then
  - Press the Search button and select C:\Program Files\Java as the search directory for Windows, or search your hard drive on a Mac starting with /Library/Java/JavaVirtualMachines.
  - Press Ok and wait until Eclipse finds the versions of Java installed on your computer.
  - When the search returns, the newly installed JDK should appear as one of the available options. Select it and press OK.
- On a **Windows** machine, select Window > Preferences > Java > Compiler. On a **Mac**, select Eclipse > Preferences > Java > Compiler. Verify that the Compiler Compliance Level is set to the highest value you can find in the list Eclipse offers.