

Setting up Java and Eclipse

 **1. Setting up Java SE Development Kit (JDK)**
The Java (JDK) version 8 (a.k.a.1.8) installation is necessary for compiling Java programs. If your computer already has the JDK installed, you may skip this section.

Step 1- Download Java SE JDK version 8 update 144 (or the latest posted version).

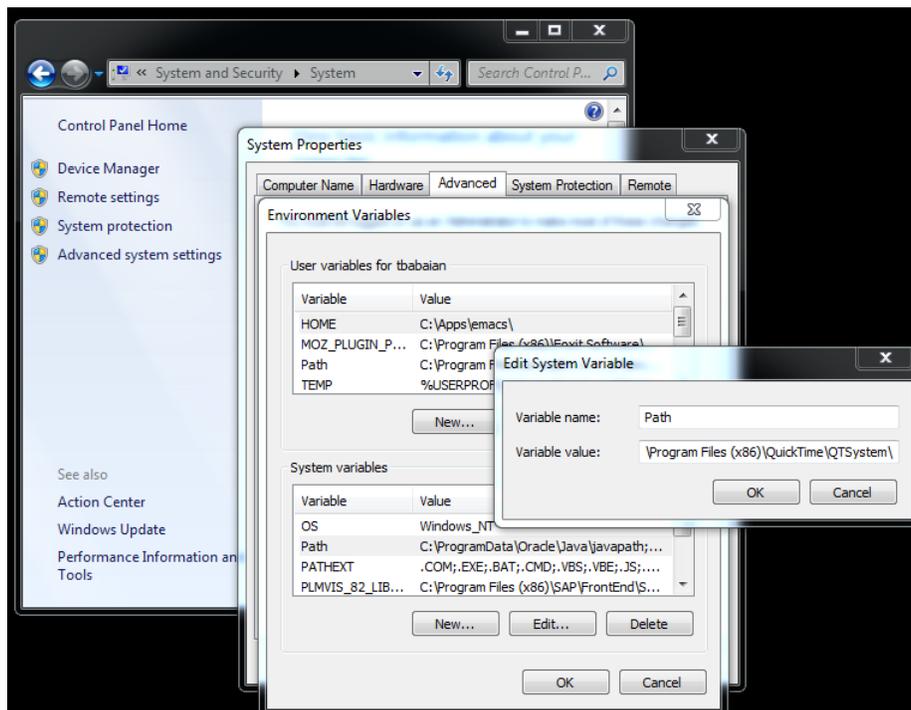
Go to <http://www.oracle.com/technetwork/java/javase/downloads/index.html>.

Click on the **JDK Download** button. Look in the "**Java SE Development Kit**" table and find the version of the file that corresponds to the hardware/operating system configuration on your computer. To find out if you are running a **64-bit or 32-bit** version of Windows, go to the Start menu and select **Control Panel > System and Security > System**. The System Type parameter will indicate the 32-bit (x86) or 64-bit (x64) version. Download the appropriate version, which may take several minutes, depending on the speed of your connection.

Step 2 – Install. Once the download is complete, run the downloaded file (e.g., jdk-8u144-windows-x64.exe or jdk-8u144-windows-i586.exe) to start the Java Installation Wizard. The installation procedure is straightforward. Unless you have changed the default setting, Java will be installed in C:\Program Files\Java\jdk1.8.0_144.

Step 3 - Update the PATH. After the installation is completed, you will need to update the PATH environmental variable so that the operating system can find the location of the Java tools.

Go to **Control Panel > System and Security > System > Advanced system settings** and click on the **Environmental Variables** button on the bottom of the panel. This should display a list of Windows environmental variables. Find the one called **Path** in the **System variables** box and double click it (see picture below; if your screen looks somewhat differently, it may be due to a different version of Windows on your computer). If the list of System Variables does not contain the Path variable, click on **New...** and add it.



Assuming your Java installation is located in C:\Program Files\Java\jdk1.8.0_144, add the following to the start of the **Path** statement, making sure to include the **semicolon**:

```
C:\Program Files\Java\jdk1.8.0_144\bin;
```

Step 4 – Verify: To verify that you have installed the Java JDK properly, go to the Start menu and type **cmd** in the search box. In the command-line window that then appears, type the following and press enter:

```
javac -version
```

You should see a text response that indicates you have installed javac 1.8.0_144 (or whatever version you installed).



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. Download the latest version of **Eclipse IDE for Java Developers** from <http://www.eclipse.org/downloads/eclipse-packages/>.

As in step 1 for installing Java, check if you need the 32- or 64-bit version.

Step 2 – Install. Unzip the downloaded file (e.g. eclipse-java-oxygen-R-win32-x86_64.zip - the versions change often so yours may have a different version number) by selecting the downloaded file in Windows Explorer and extracting its contents to a folder you've created on your hard drive (C:\MyApps\Eclipse, for example).

The Eclipse application – **eclipse.exe** – will be within your Eclipse folder. Add a shortcut to Eclipse on your desktop by right clicking on this file and selecting Create shortcut.

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.

Eclipse starts by asking you to specify the location for your projects, a.k.a. the workspace. Accept the default setting or specify the location of your choice (if you need to switch the workspace at some later time, select File > Switch Workspace from within Eclipse). 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:

- Select Window > Preferences > Java > Compiler and make sure that the value **1.8** is selected in the Compiler Compliance Level.
- Next, go to Window > Preferences > Java > Installed JREs and verify that **jdk1.8.0_144** (or whatever version you have installed) is checked off in the right-hand windowpane of the dialog box. If that 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.
 - Press Ok and wait until Eclipse finds the versions of Java installed on your computer.
 - When the search returns, jdk1.8.0_144 (or higher) should appear as one of the available options. Select it and press OK.