Java Foundation with Data Structures

Topic : Installation Guide for JDK and Eclipse

Installation Guide for Java, i.e. JDK And Eclipse

Installation steps for JDK:

Step 1: **Checking for any previously installed versions of JDK.**

i. Check if you already have jdk installed on your system by typing the following commands in command prompt.

ii. To open command prompt in Windows, search cmd in the Start menu and open it. (*Refer Step 6 for details*)

iii. Issue the following commands to check if JDK/JRE are already properly installed and display their version. If a version number is displayed, then you already have JDK and JRE properly installed on your computer otherwise, continue to next step.

// Command To display the JRE version:
java -version

// Command To display the JDK version:
javac -version

Step 2 (Optional): Un-installing any previously installed versions of JDK.

It is recommended to install the latest JDK. Although you can install multiple versions of JDK/JRE concurrently, it is messy.

If you have previously installed older version(s) of JDK/JRE and want to install latest version, then first un-install all the previous ones. Go to "Control Panel" ⟹ "Programs" ⟹ "Programs and Features" ⟹ Un-install all those programs which begin with "Java", such as "Java SE Development Kit ...", "Java SE Runtime ...", "Java X Update ...", etc.

Step 3: Download JDK

a) Open the following Java SE download link:
http://www.oracle.com/technetwork/java/javase/downloads/index.html

b) Under "Java SE Downloads" Heading ⟹ click the image with title "Java SE 8u<xx>", where <xx> is the latest update number (example: Java Platform (JDK) 8u131).

c) Under " Java SE Development Kit 8u<xx>" Heading (where <xx> is the latest update number) ⇒ Check the "Accept License Agreement" (by clicking on this radio button).

d) Click on the JDK suitable for your operating system.
Note: "Windows x64" is for 64-bit Windows OS and "Windows x86" is for 32-bit Windows OS. To check whether your Windows OS is 32-bit or 64-bit, go to "Control Panel" ⇒ System and Security ⇒ System ⇒ check in "System Type".

Step 4: Install JDK and JRE

i. From the Downloads folder in your system, run the installer ("jdk-8u<xx>-windows-x64.exe" where <xx> is the latest update number).

ii. A dialog box will open. Click on Next and it will install both the JDK and JRE.

iii. By default, the JDK will be installed in directory "C:\Program Files\Java\jdk1.8.0_xx"; and JRE in "C:\Program Files\Java\jre1.8.0_xx" (where xx denotes the upgrade number).
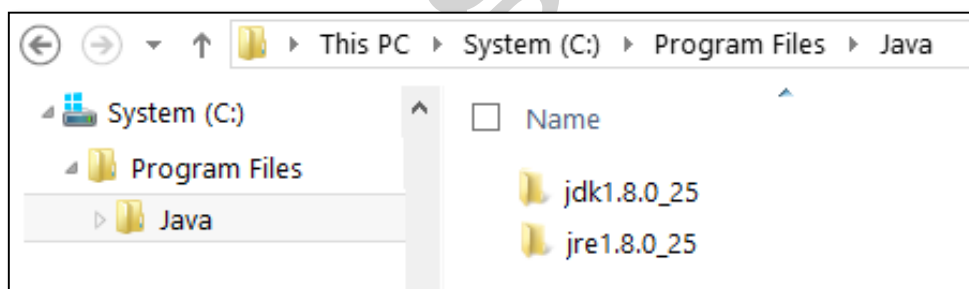
Step 5: Include JDK's "bin" Directory in the PATH (For Windows Users)

NOTE: Windows Shell searches the current directory and the directories listed in the PATH environment variable (system variable) for executable programs. JDK's programs (such as Java compiler javac.exe and Java runtime java.exe) reside in directory "<JAVA_HOME>\bin" (where <JAVA_HOME> denotes the JDK installed directory) (Here, we refer to the JDK installed directory as <JAVA_HOME>).

To edit the PATH environment variable in Windows 7/8/10, follow the steps given below:

a) Launch "Control Panel" $\Rightarrow$ System and Security $\Rightarrow$ System $\Rightarrow$ Click "Advanced system settings" on the left pane.

b) Switch to "Advanced" tab $\Rightarrow$ Push "Environment Variables" button.

c) Under "System Variables" (the bottom pane), scroll down to select "Path" $\Rightarrow$ Click "Edit...".

d) For Windows 10:
You may see a TABLE listing all the existing PATH entries (if not, go to next step). Click "New" $\Rightarrow$ Enter the JDK's binary directory "c:\Program Files\Java\jdk1.8.0_xx\bin" (Replace xx with your installation number!!!) $\Rightarrow$ Select "Move Up" to move this entry all the way to the TOP.

e) For OS prior to Windows 10:
(CAUTION: Don't push "Apply" or "OK" until you are 100% sure. There is no UNDO! To be SAFE, copy the content of the "Variable value" to Notepad before changing it.)
In "Variable value" field, INSERT "c:\Program Files\Java\jdk1.8.0_xx\bin" (Replace xx with your installation number!!!) IN FRONT of all the existing directories, followed by a semi-colon (;) which separates the JDK's binary directory from the rest of the existing directories. DO NOT DELETE any existing entries; otherwise, some existing applications may not run.
Variable name: PATH
Variable value: c:\Program Files\Java\jdk1.8.0_xx\bin;[exiting entries...]

Step 6: Verify the JDK Installation

Launch a CMD shell via one of the following means:
a) Click "Search" button $\Rightarrow$ Enter "cmd" $\Rightarrow$ Choose "Command Prompt", or
b) right-click "Start" button $\Rightarrow$ run... $\Rightarrow$ enter "cmd", or
c) (Prior to Windows 10) click "Start" button $\Rightarrow$ All Programs $\Rightarrow$ Accessories (or Windows System) $\Rightarrow$ Command Prompt, or
d) (Windows 10) click "Start" button $\Rightarrow$ Windows System $\Rightarrow$ Command Prompt

Now, Issue the following commands to verify your JDK installation:
i.   Issue "path" command to list the contents of the PATH environment variable. Check to make sure that your <JAVA_HOME>\bin is listed in the PATH.

Don't type prompt>, it denotes the command prompt! Just type the commands highlighted bold below.
// Display the PATH entries
prompt> **path**
//Expected output:
PATH=c:\Program Files\Java\jdk1.8.0_xx\bin;[other entries...]

ii. Issue the following commands to verify that JDK/JRE are properly installed and display their version (*Repeat Step 1*):

// Display the JRE version
prompt> **java -version**
//Expected output if JRE is properly installed:
java version "1.8.0_xx"
Java(TM) SE Runtime Environment (build 1.8.0_xx-b13)
Java HotSpot(TM) 64-Bit Server VM (build 25.5-b02, mixed mode)

// Display the JDK version
prompt> **javac -version**
//Expected output if JDK is properly installed:
javac 1.8.0_xx

Installation steps for Eclipse:

Step 1: Download Eclipse

  i.   Go to https://www.eclipse.org/downloads/
  ii.   Under "Get Eclipse Neon" ⇒ Click "Download Packages". Select the entry "Eclipse IDE for Java Developers". Then, from "Download Links", select suitable option for your OS (example: Windows 32-bit or Windows 64-bit)
  iii. Click on the zip file to download it. (example: "eclipse-java-neon-2-win32-x86_64.zip" or "eclipse-inst-win64.exe")

Step 2: Unzip the downloaded file

To install Eclipse, simply unzip and extract the contents of the downloaded file into a directory of your choice (e.g., "C:\myproject").
Create a shortcut on your desktop to the eclipse.exe file in this eclipse folder:
 On most Windows systems, you can do this as follows:
  i.   Right-click the file eclipse.exe
  ii.   Select "Send to" option
  iii. Click on option "Desktop (create shortcut)"
  iv.   Now you are ready to perform a one-time only setup of Eclipse on your machine.

Step 3: Launch Eclipse

Double-click the shortcut to Eclipse.exe that we just created above and run it.
Then a Workspace Launcher pop-up window will appear. In the Workspace text box, set the path for your Workspace folder. Click OK.
Example:
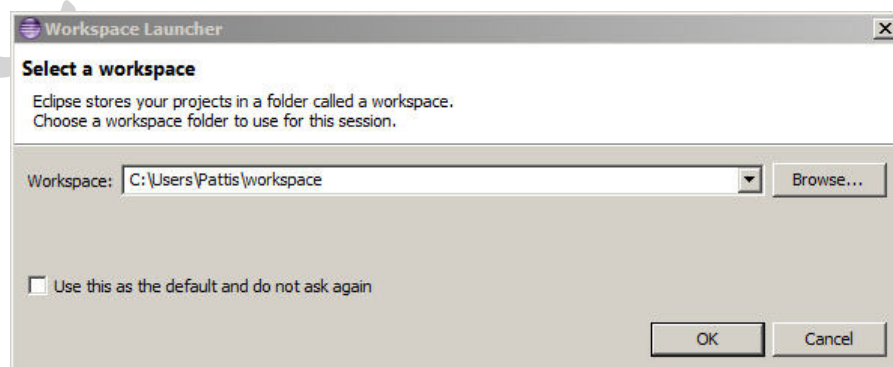
Finally, the Eclipse workbench will open with a Welcome tab.