

# Eclipse Environment Setup

Adapted by the CSCI455 staff from a document from Jeffrey Miller and the CS201 team .

## Introduction

This document will go over the steps to install and set up Eclipse, which is a Java integrated development environment (IDE). After the set-up is covered, we'll go through an example of creating a new project and compiling and running it.

I realize this document seems really long, but it's mostly because it's filled with screenshots.

If you have Eclipse installed, and already have experience with it for Java programming, the main things you need to know are: we're using version 1.8 (a.k.a., Java 8) for this course (compiler, library, and runtime environment), we're using the default package for all of our code in this course, and you should refer to the last page for a reference to a guide that includes information on how to change some important settings. For the rest of you, read on...

## Part 1 – Downloading Java and Eclipse


To be able to program in Java locally on your laptop or desktop, it is necessary to have a Java Development Kit (JDK). Oracle no longer supports a free version of Java for class use: you must use OpenJDK instead. You can find the download link here: <https://adoptopenjdk.net>

On that page choose OpenJDK 8 as the version, choose one of the available JVMs, and then click "Latest release".

**Note: If you have any previous or newer version of Java installed, you *must* install OpenJDK 1.8 on top of that version. Otherwise in future assignments your programs may not work!**

For this class, you may want to use Eclipse as your IDE. You can find the download links here: <https://www.eclipse.org/downloads/packages/>


For this course, *Eclipse IDE for Java Developers* is enough:



Eclipse IDE for Java Developers

195 MB 189,835 DOWNLOADS

The essential tools for any Java developer, including a Java IDE, a Git client, XML Editor, Mylyn, Maven and Gradle integration

 Windows 64-bit  
Mac Cocoa 64-bit  
Linux 64-bit

Please choose the right version according to your operating system.

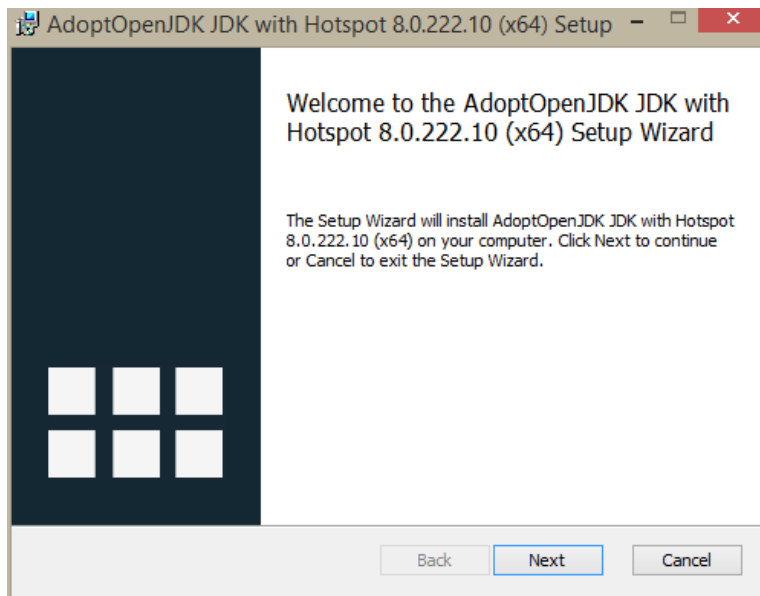
## Part 2 – Installing Java and Eclipse

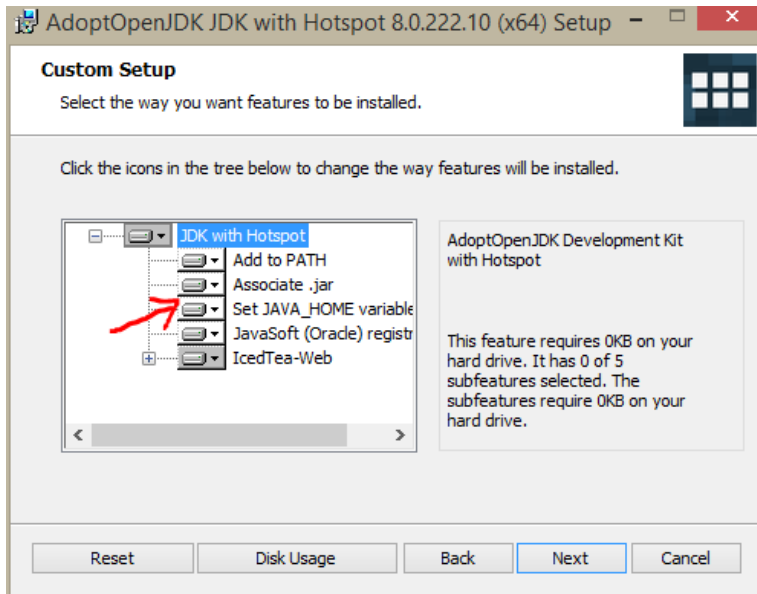
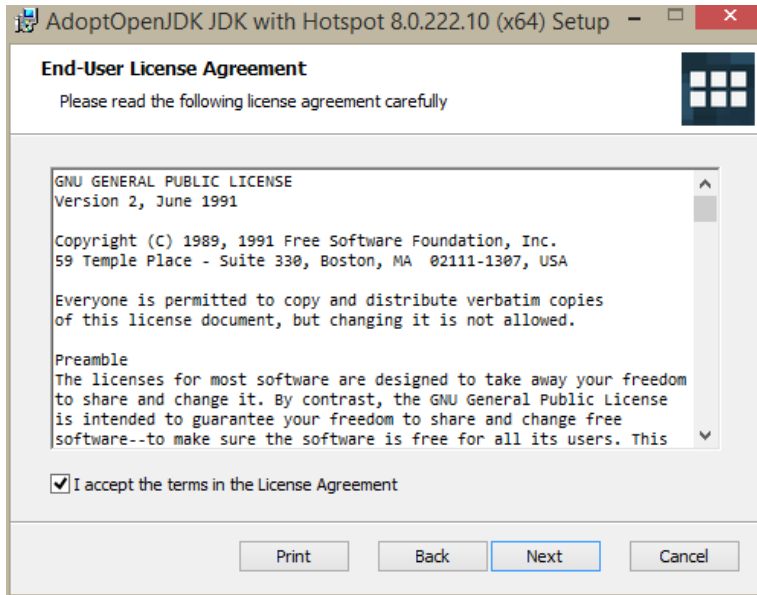
We'll separate the instructions for installing on Windows vs. a Mac (Note: Mac instructions begin on p. 16):

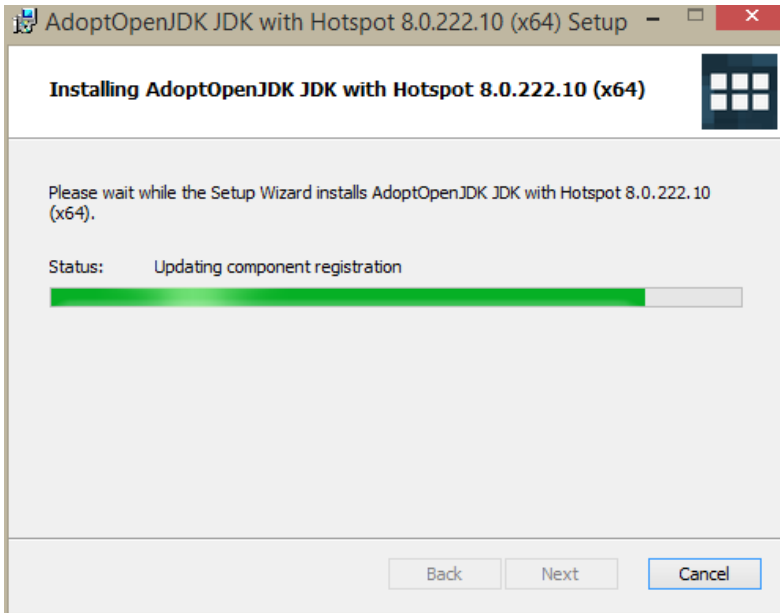
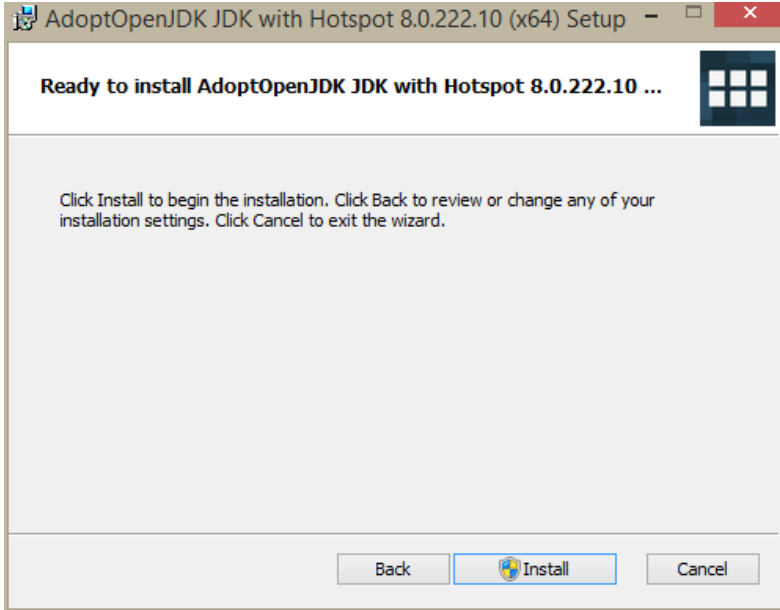
### ***Windows Installation:***

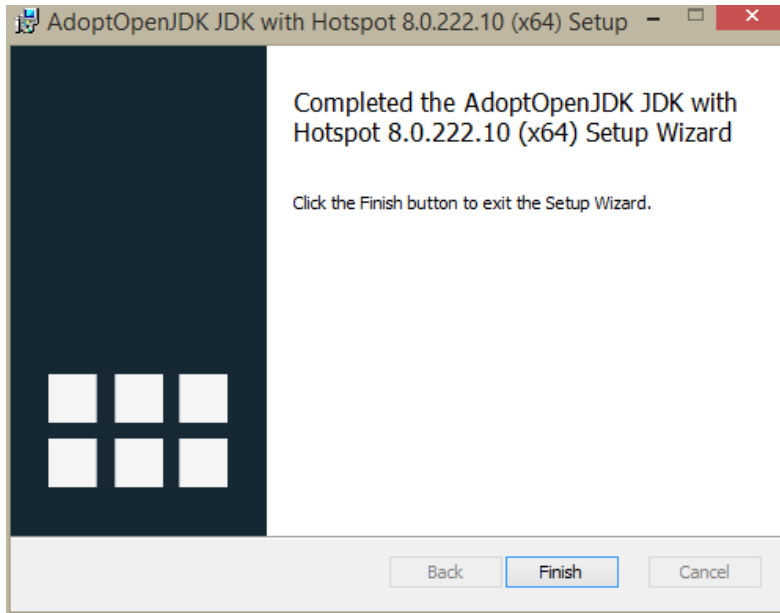
Based on the instructions in Part 1, you should have a downloaded install file for OpenJDK8. It would be a .msi file with a name such as **OpenJDK8U-jdk\_x64\_windows\_hotspot\_8u222b10.msi** Double-click this file.

As shown in the below screen shots, keep clicking Next-> Next-> Next -> Finish, you will get OpenJDK installed with all the default settings. When you are at the feature installation step in the OpenJDK install wizard that you select Set JAVA HOME feature to be present on local drive. It will help updating the default java path which is a system environment variable used by applications like Eclipse. If it is not set properly Eclipse projects would not work. Also you can change the install directory if you really want to for some reason, but I'd recommend leaving it as the default!



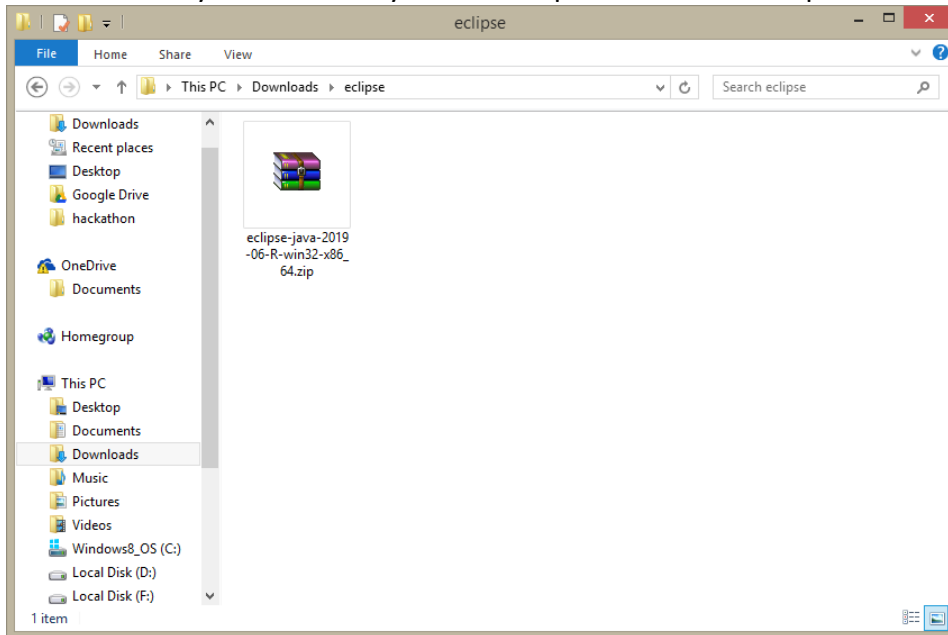


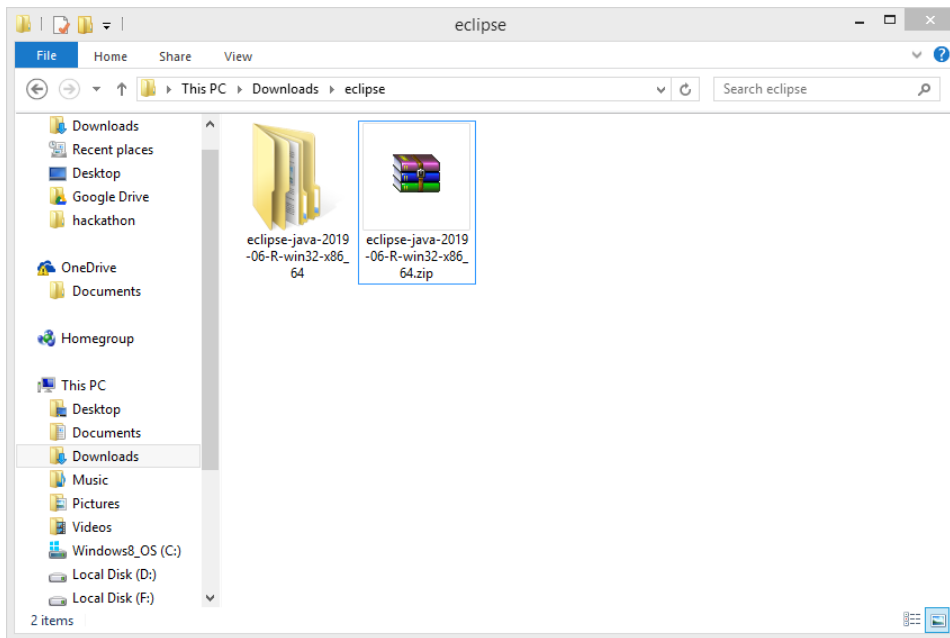
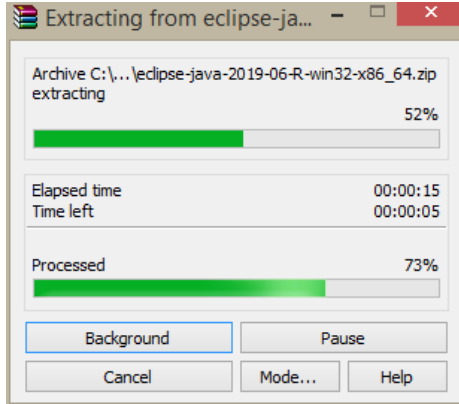




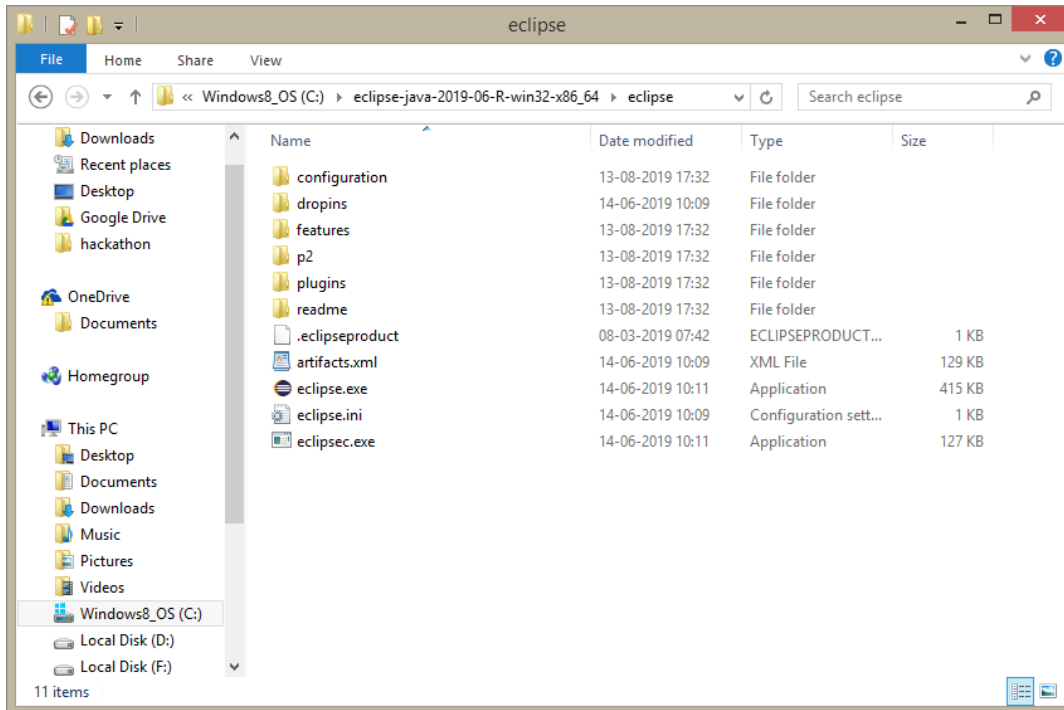
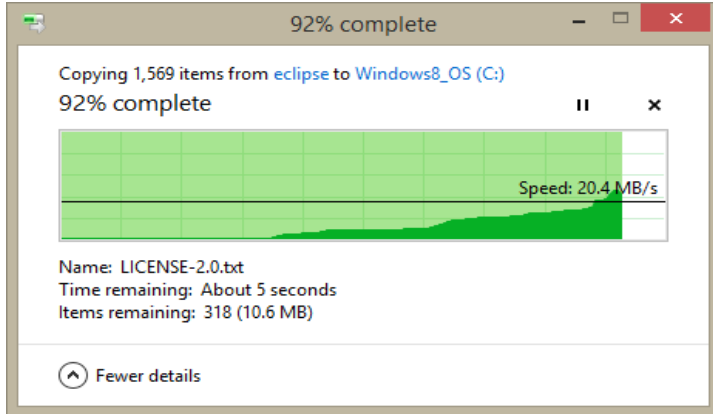
### Eclipse Installation (Windows)

Now let's install Eclipse. You should have a .zip file that needs to be extracted as shown below. For extraction you can use any available zip tool such as winzip.



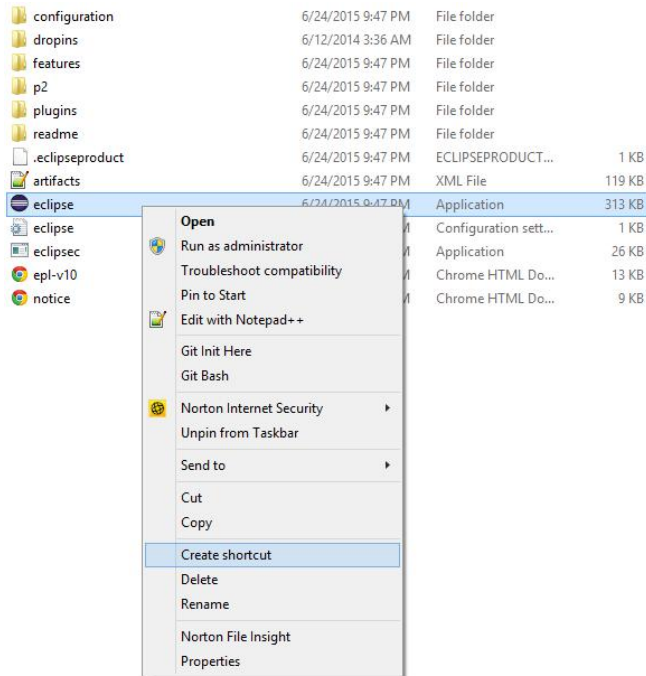


After extraction is completed copy the extracted folder to a place closer to the root of C: folder. Note: For some people, weird issues come up unless the folder is extracted into C:. If your desired directory doesn't work out, try extracting the folder right into the root of your C: drive.



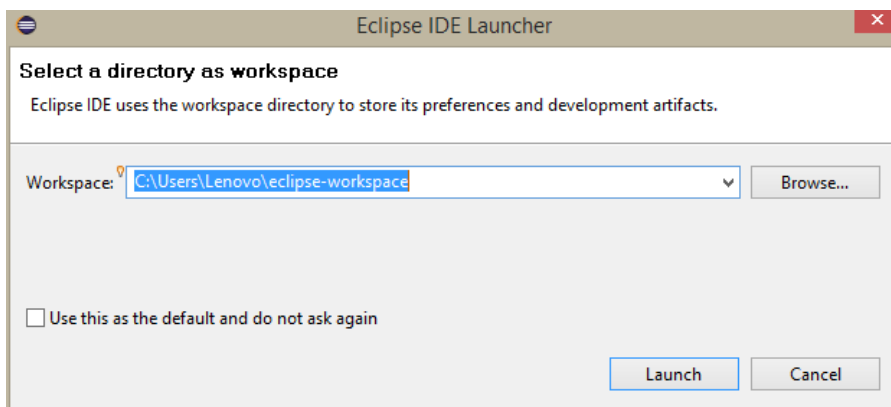
You should now have an “eclipse” folder. Make a shortcut to “eclipse.exe” and place it on your desktop if you wish.





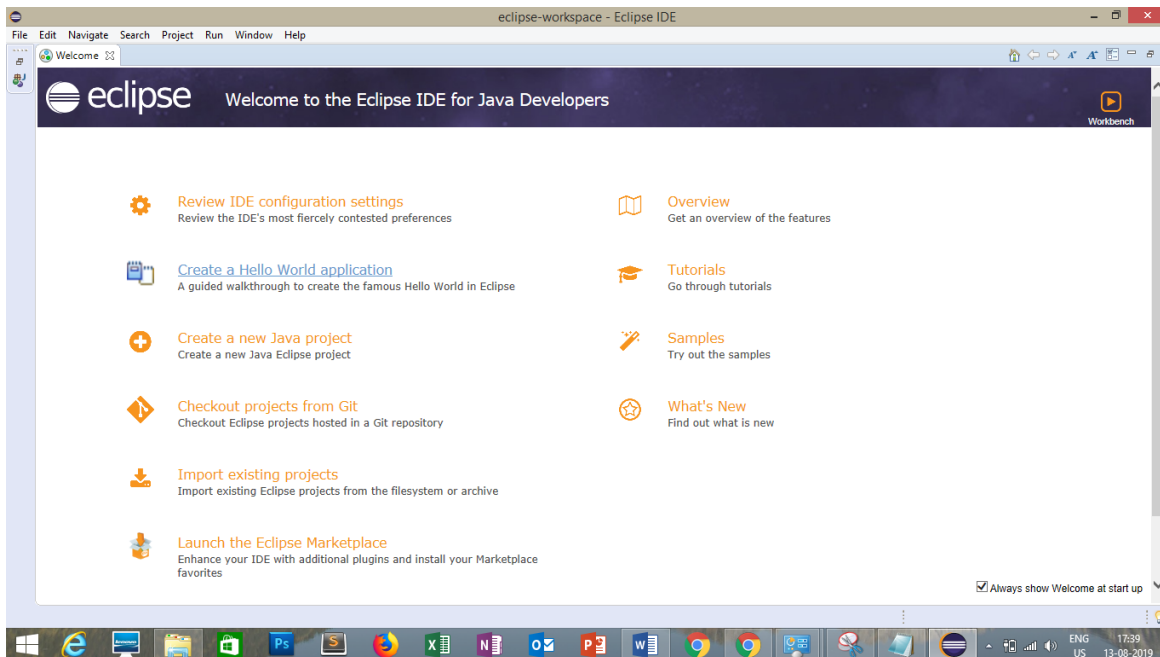
## Run Eclipse!

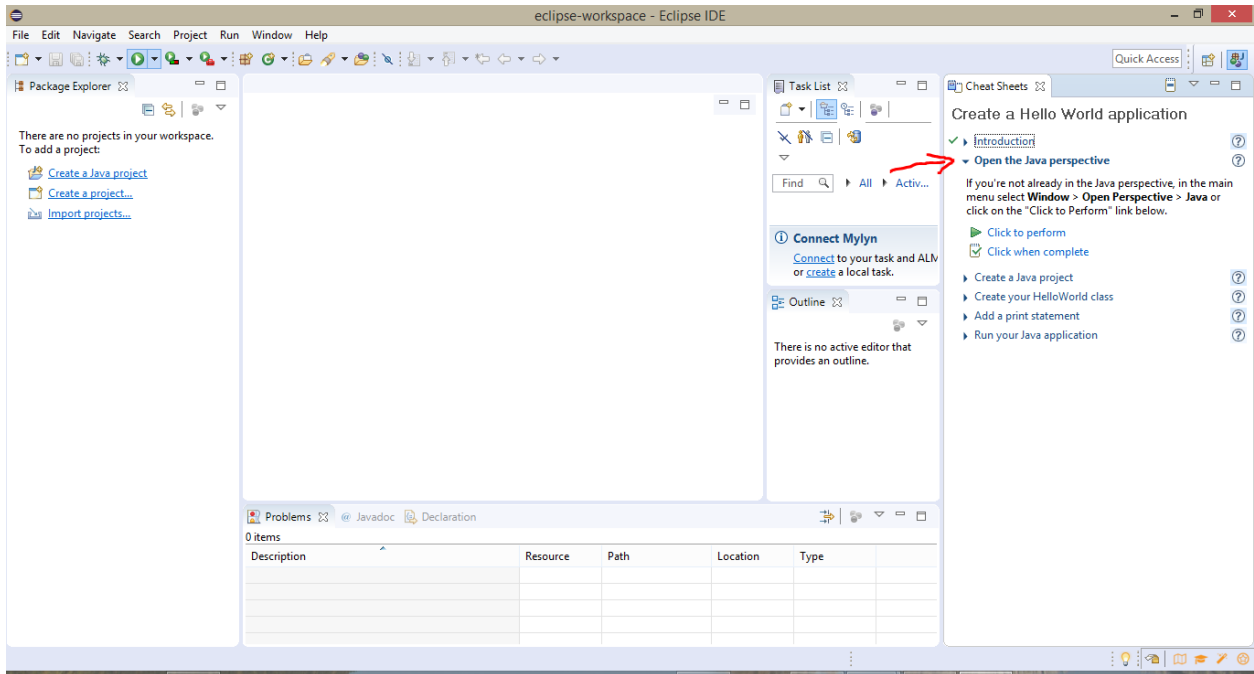
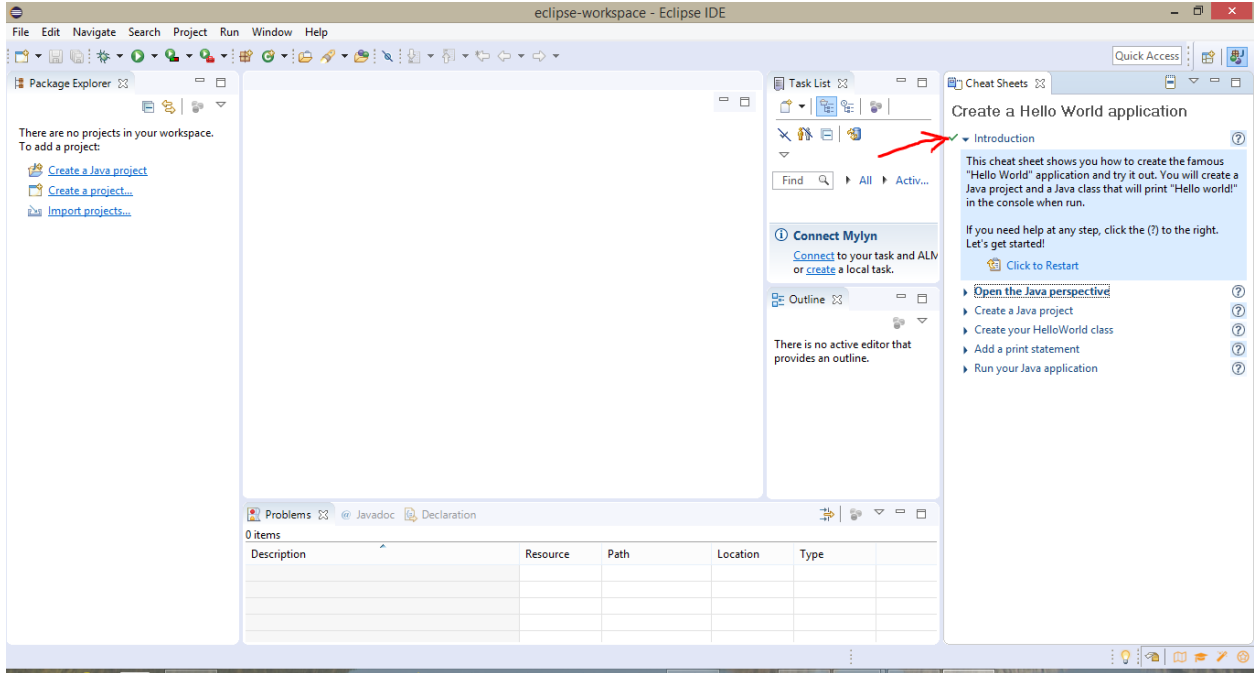
Pick a folder to be your 'workspace'. This will be the directory that contains ALL of your projects and code. Make sure to remember where you put this, but as long as you don't check that box that says, "Use this as the default and do not ask again," you will be prompted for the workspace directory every time you run Eclipse.

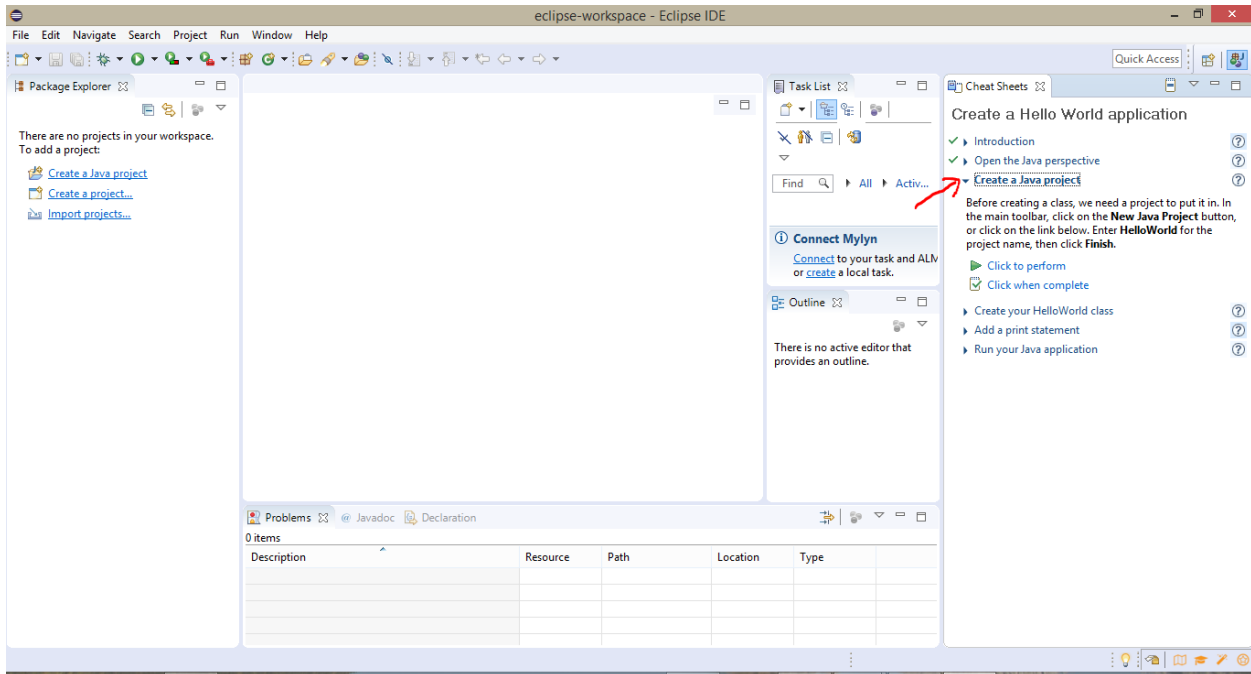




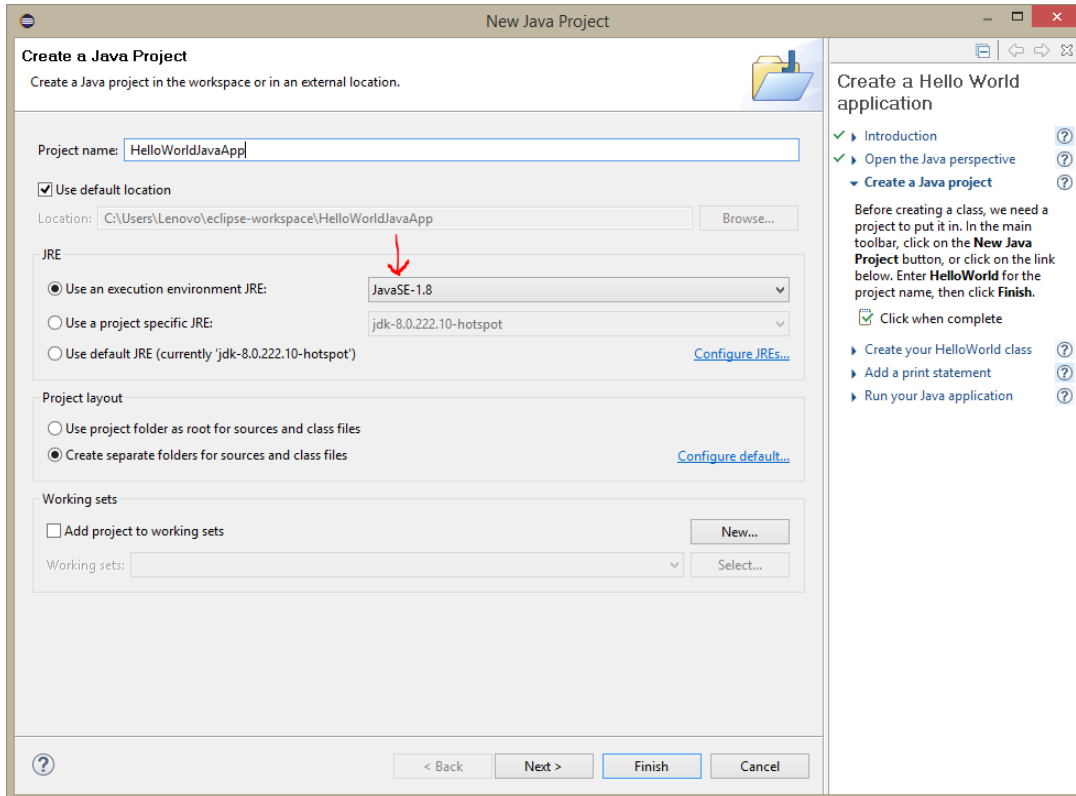
Once the eclipse starts a window with several options will be shown such as creating java projects or creating a sample Hello World Application. We will use the feature of creating a sample Hello World Application to see how a java project is created and run it using Eclipse in Windows. Keep on following the step to step guide in cheat sheets that opens up when you select the **Create a Hello World application** option





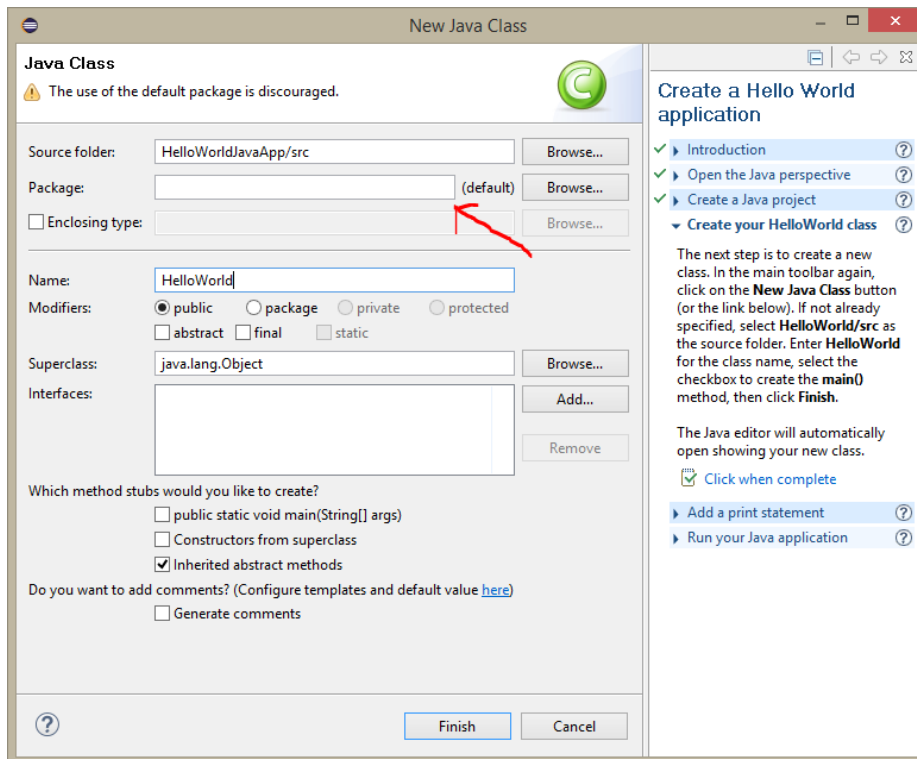
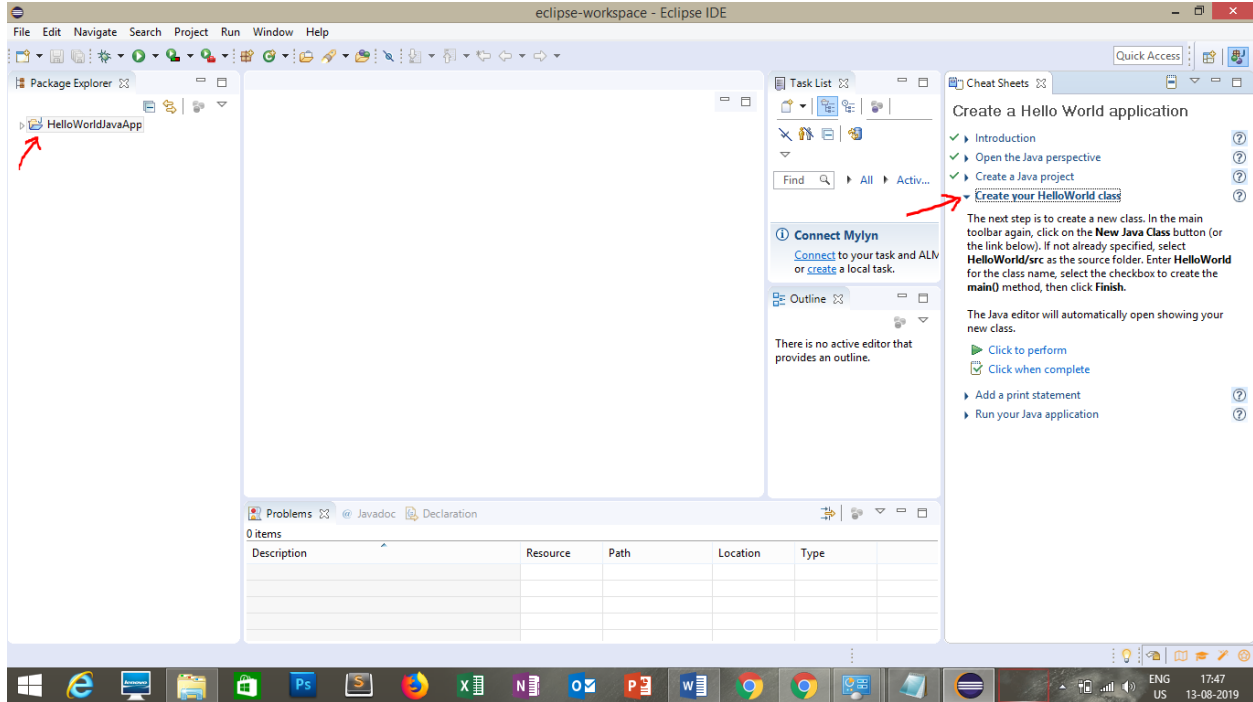


Once you reach **Create a Java project** step and click on **Click To Perform** icon, the below window pop ups. Give an appropriate project name for the application and make sure the execution environment JRE as highlighted is set to **JavaSE-1.8**.

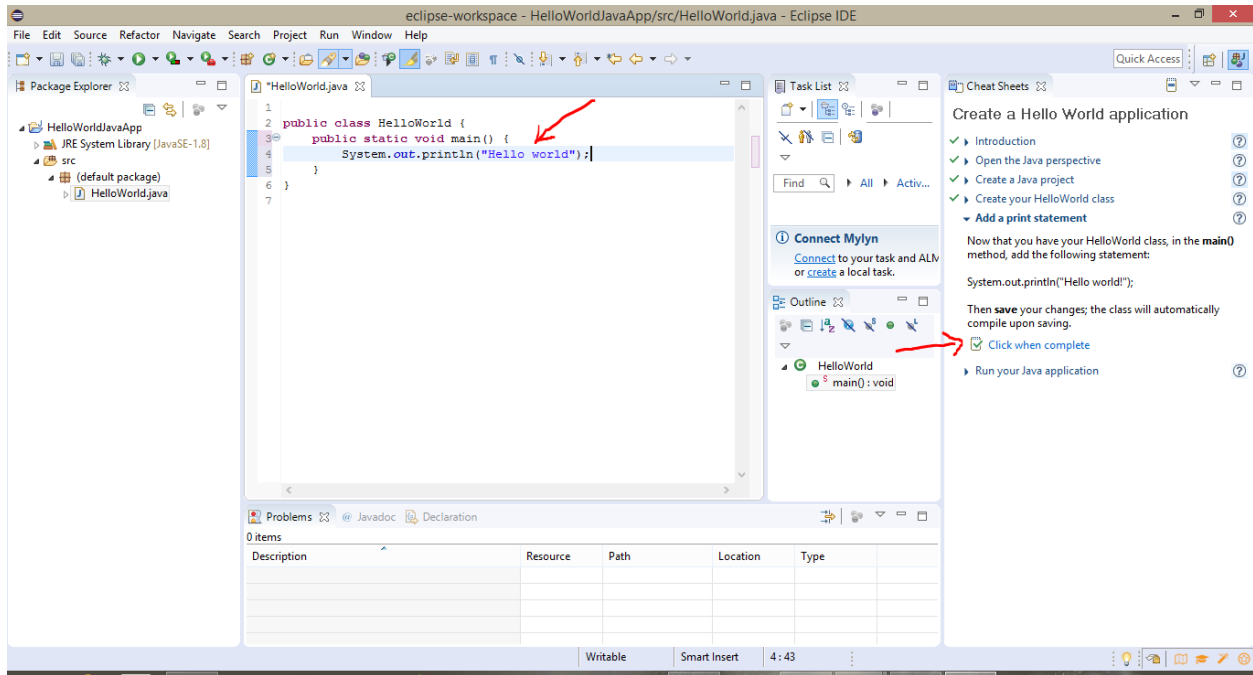


Once project is created, we need to proceed with creating a main class which will have the running program that will print “Hello world” in the eclipse console window.

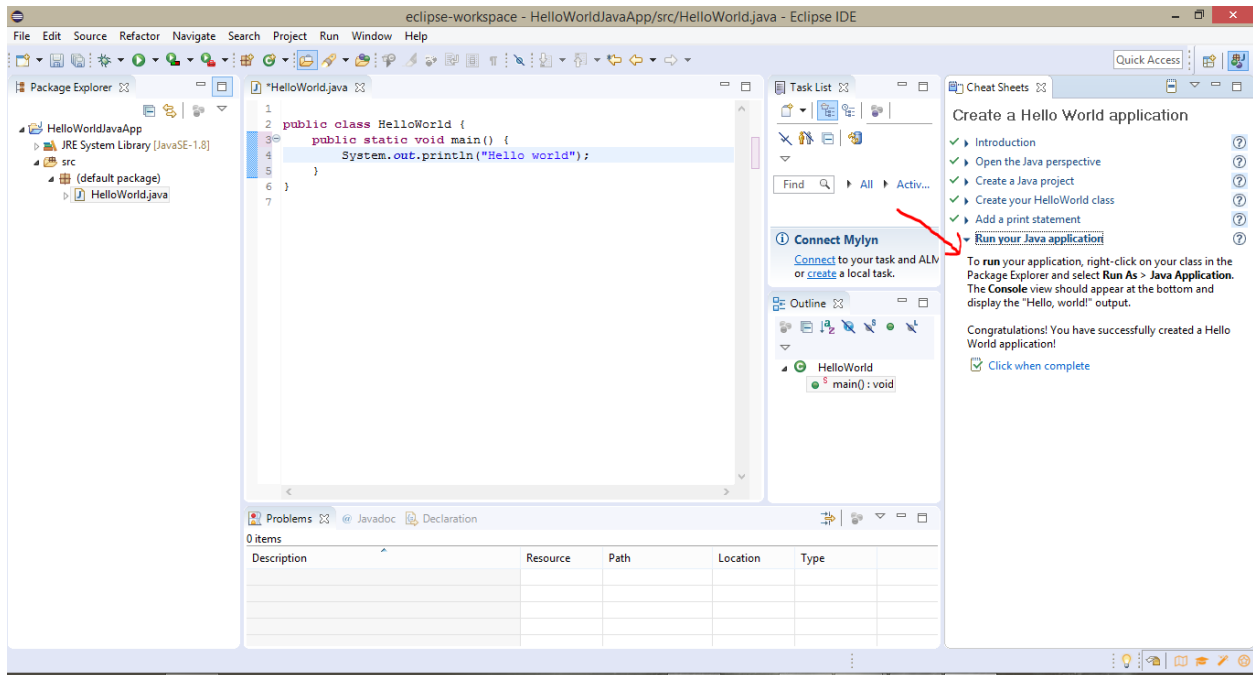
For this course we will always use the default package for our projects. So make sure the textbox pointed by the red arrow in the screenshot is blank.

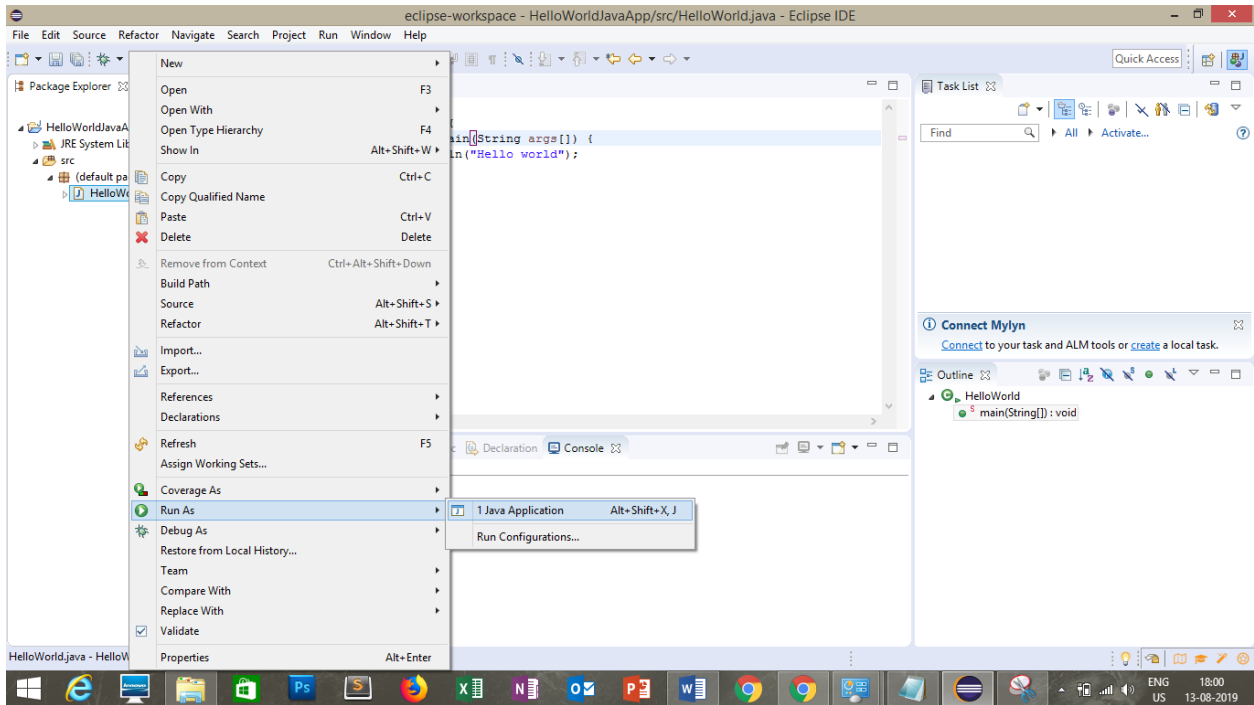


Once the java main class **HelloWorld** is created add the main method and a print statement as showcased below in the screenshot.

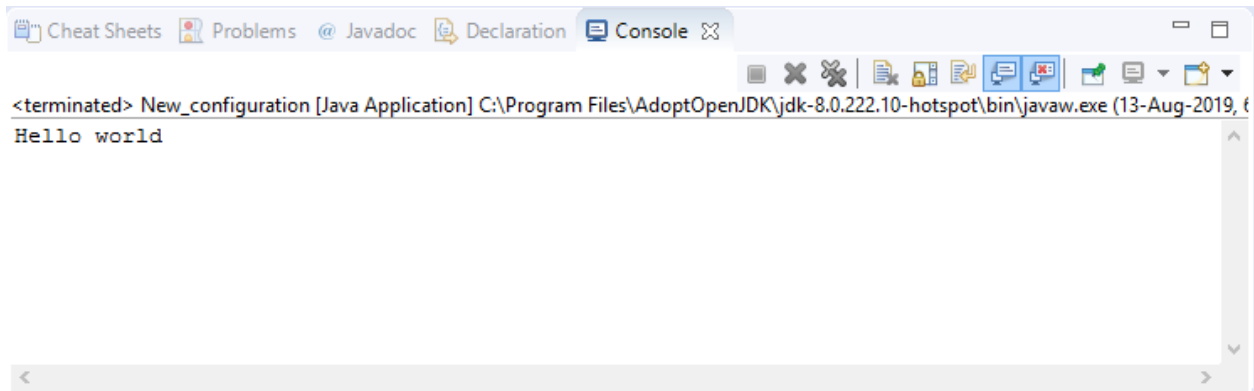


Now we are ready to run the Hello World application as instructed below by right clicking the main class file **HelloWorld** and selecting the **Run As** option for executing the app as Java Application.





If the run is successful you can see the result in the console window as shown below:



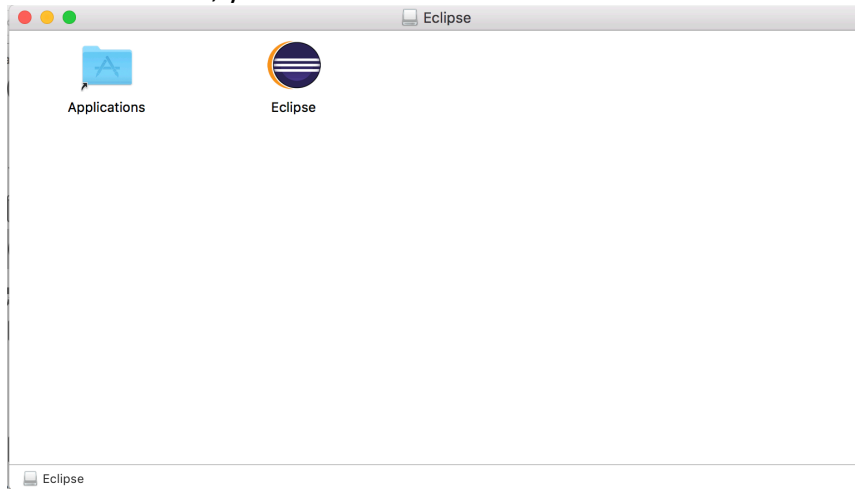
## **Mac OSX Installation:**

Based on the instructions in Part 1, you should have a downloaded install file for OpenJDK8. Double-click that JDK installation file (.pkg) and follow the directions to install. It should install it in /Library/Java/JavaVirtualMachines/adoptopenjdk-8.jdk

Now let's install Eclipse.

Double click the downloaded installer file (.dmg).

When it is done, you will see this:

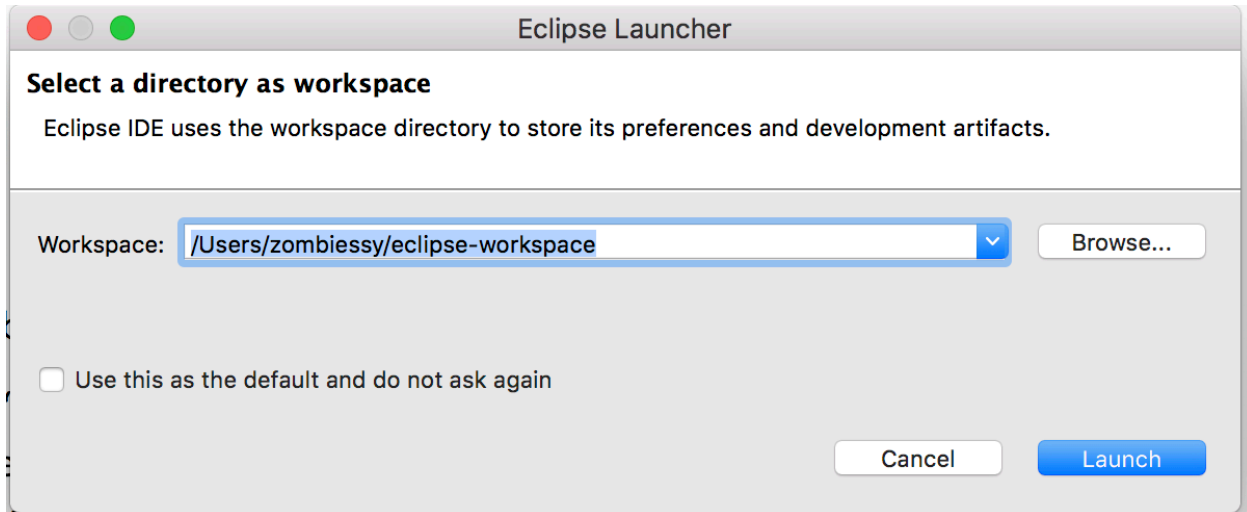


Drag Eclipse to the Applications folder first to make it easy to find in the future.

Run the eclipse executable!

Pick a folder to be your 'workspace'. This will be the directory that contains ALL of your projects and code. Make sure to remember where you put this, but as long as you don't check that box that says, "Use this as the default and do not ask again," you will be prompted for the workspace directory every time you run Eclipse.



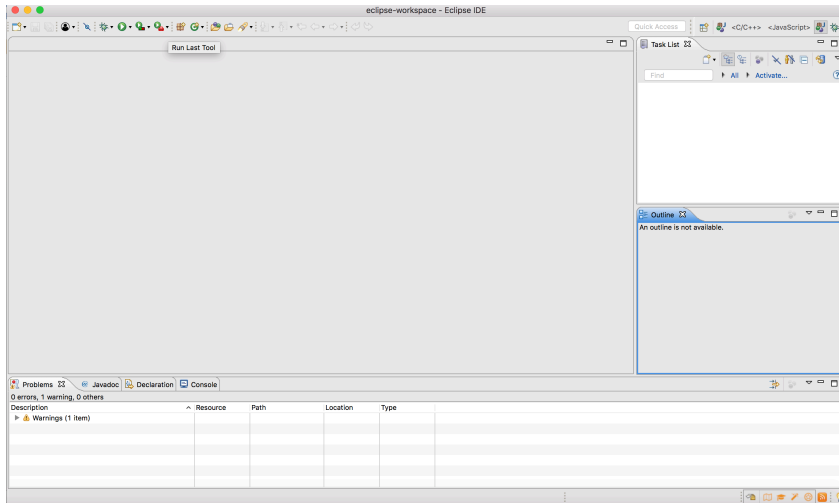


### Part 3 – Creating a project

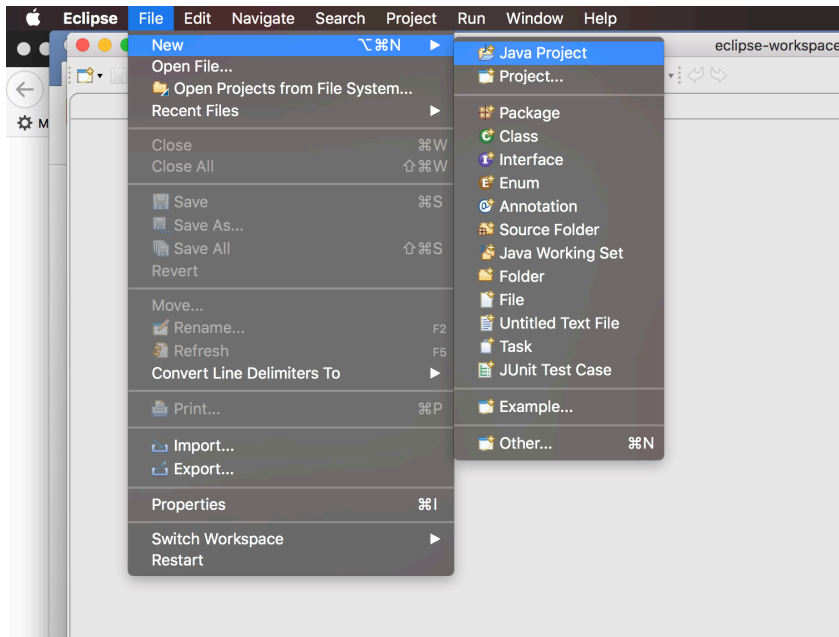
This tutorial will use a Mac, though everything is the same for Windows or Linux. Close out of the Welcome menu.



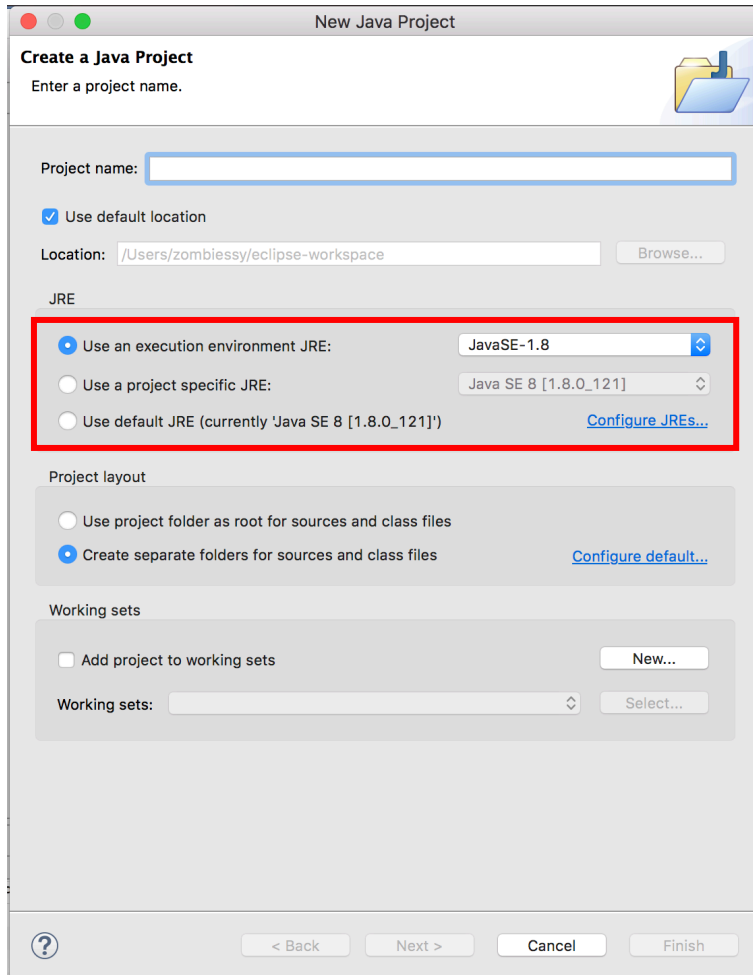
You should see the following screen:



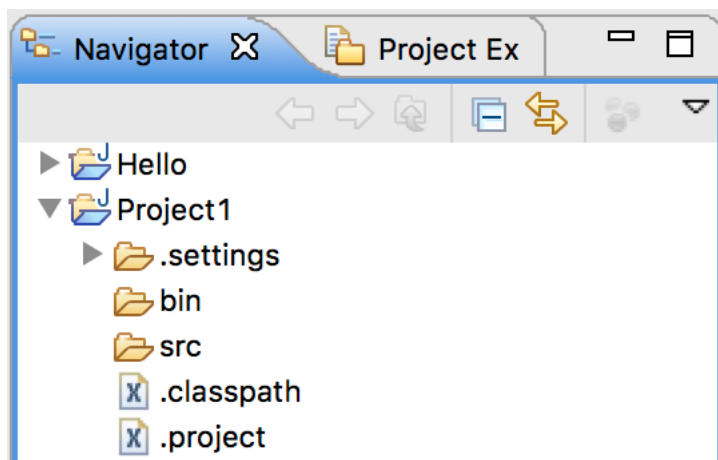
Go to File->New...->Java Project.



And get the following screen:



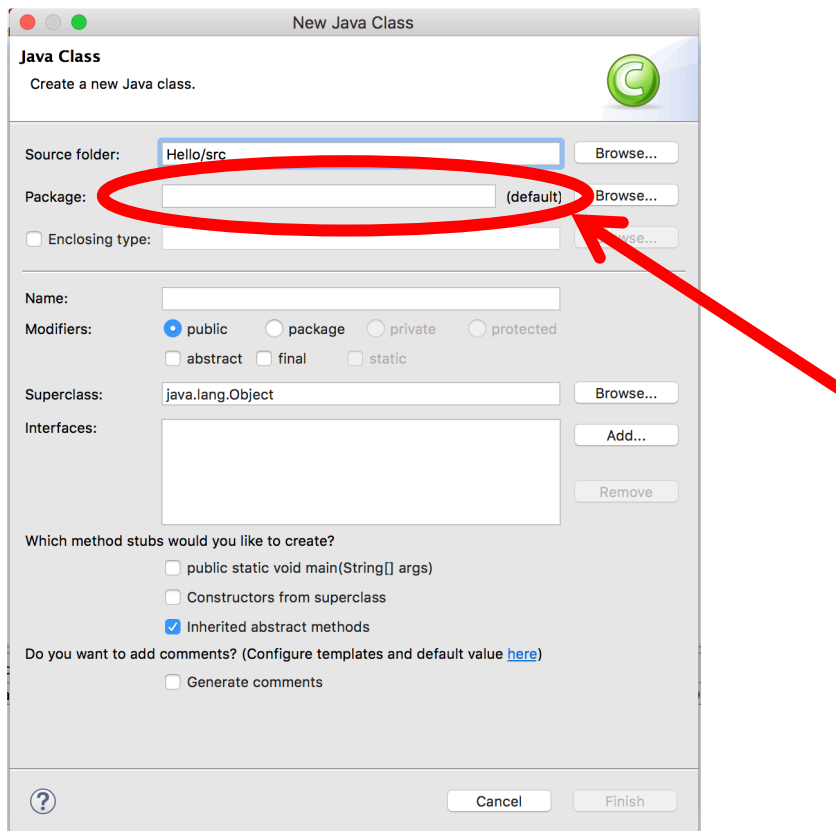
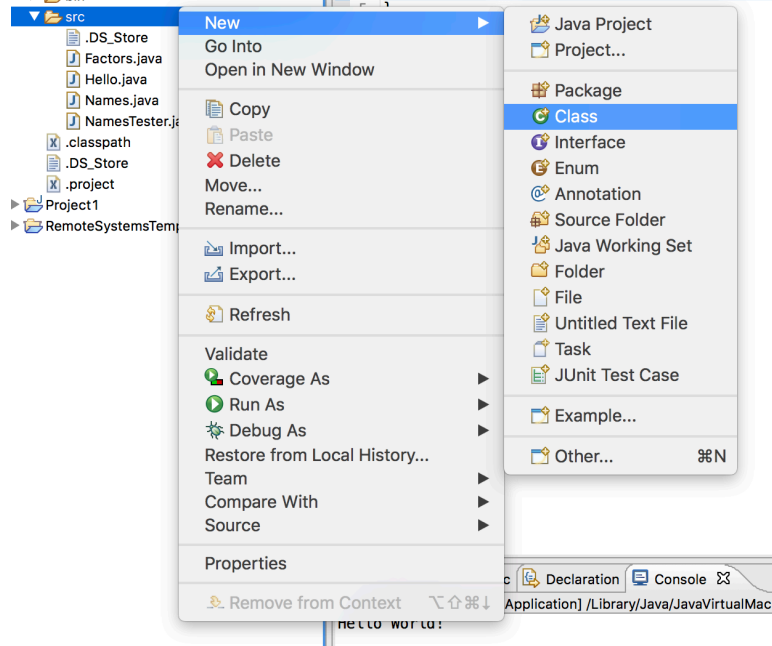
**Make sure that 1.8 is selected under the execution environment.**  
For now, go ahead and name the project *Project1*. Press 'Finish'.



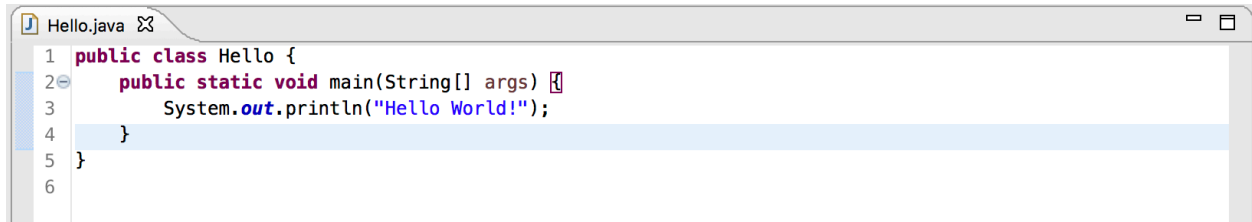
## Part 4 – Hello World

The time has finally come to write a program.

Go to File->New...->Class or just right-click src folder->New->Class



For this course we will always use the default package for our projects. So make sure the textbox circled in red in the screenshot is blank. We're going to make a Hello class, just a simple program to print out "Hello World!".



```
1 public class Hello {
2     public static void main(String[] args) {
3         System.out.println("Hello World!");
4     }
5 }
6
```

Now press the 'Run' button to execute the program!



You should get the output in the Console tab at the bottom of the window.



```
<terminated> Hello [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_121.jdk/Contents/Home/bin/java (Aug 24, 2018, 10:30:54 AM)
Hello World!
```

## For more information about Eclipse

There are many more involved Eclipse tutorials on the web. But to learn a few more techniques, such as how to change some useful settings (e.g., how much indentation) and how to start a project from an existing program, see the "Java Compiler Tutorial" page linked from the CS 455 Documentation page. That document covers a few different compilers, so search for "Eclipse" to find the right section.

We will discuss how to use the Eclipse debugger in a lab later in the course.