Installing/Configuring Java & Eclipse

If at any point during the installation/set-up process you are having difficulty, please post on Piazza. For something like this, we strongly encourage you to post publicly. Often times, an install problem that you are having is a problem another student might be having as well.

Part 1: Install Java

- In order to use Java, you need to first install the **Java Development Kit (JDK)**
  - This is the package of tools for *developing* Java-based software
- You'll also need the **Java Runtime Environment (JRE)** which includes **the Java Virtual Machine (JVM)**
  - This is the environment for *running* Java applications
    - The **JVM** is what actually runs compiled Java bytecode
- Download and install the **JDK**, which includes the **JRE**: https://www.oracle.com/technetwork/java/javase/downloads/index.html
  - Download the latest version of the JDK for your OS

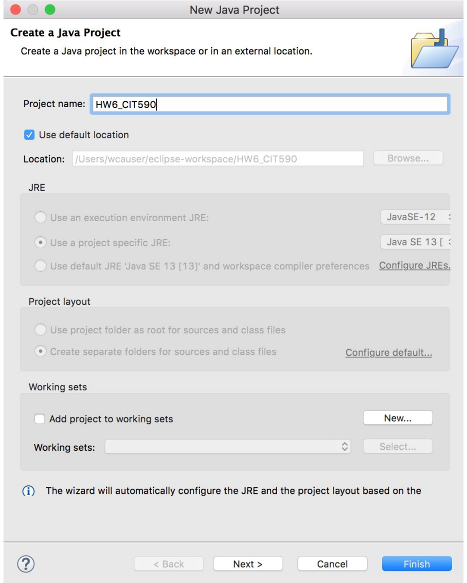
Part 2: Install Eclipse

- Install Eclipse via https://www.eclipse.org/downloads/
  - Scroll down to locate and download the latest version of Eclipse.
  - Clicking on the link will take you to a final screen where you can download the actual file for installation.
- Once the file has finished downloading, extract the compressed files with the default software on your computer. This will probably happen automatically if you double click the downloaded file.
- Run the Eclipse Installer by double-clicking it or right-clicking and choosing “Open”.
- You will be asked what you want to install. Choose “Eclipse IDE for Java Developers”.
- Once the installation is complete, launch Eclipse.
- Please pick the default workspace option (unless you have a really strong need to change it and know what you're doing).
- If necessary, close the welcome screen.

Part 3: Create a Project

If you closed Eclipse after Part 2, re-open it and if necessary, close the welcome screen.

- Create a new project: File → New → Java Project
- For example, name the project “HW6_CIT590”
- Use the default output folder. Do not edit any of the other project settings in the New Java Project pop-up window -- confirm all of the options match below.



Create a Java Project

Create a Java project in the workspace or in an external location.

Project name: HW6_CIT590

☑ Use default location

Location: /Users/wcauser/eclipse-workspace/HW6_CIT590

JRE

○ Use an execution environment JRE: JavaSE-12

● Use a project specific JRE: Java SE 13 [

○ Use default JRE 'Java SE 13 [13]' and workspace compiler preferences

Project layout

○ Use project folder as root for sources and class files

● Create separate folders for sources and class files

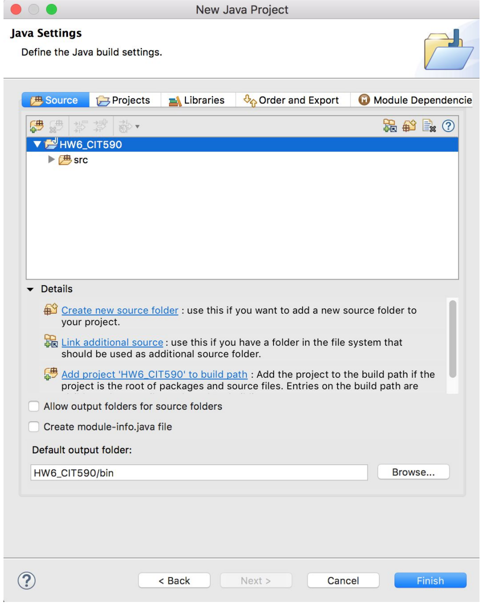
Working sets

□ Add project to working sets

Working sets:

The wizard will automatically configure the JRE and the project layout based on the

- Click Next
- Uncheck “Create module-info.java file”



Java Settings

Define the Java build settings.

Details

Create new source folder : use this if you want to add a new source folder to your project.

Link additional source : use this if you have a folder in the file system that should be used as additional source folder.

Add project 'HW6_CIT590' to build path : Add the project to the build path if the project is the root of packages and source files. Entries on the build path are

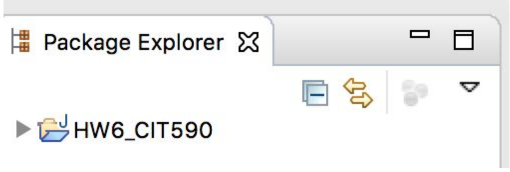
□ Allow output folders for source folders

□ Create module-info.java file

Default output folder:

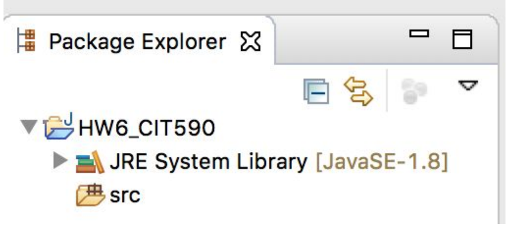
HW6_CIT590/bin

- Click Finish
- The project will appear in the Package Explorer on the left hand side:

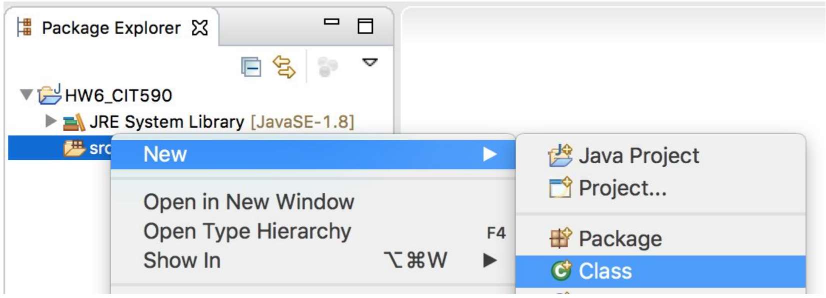


Part 4: Create a Class

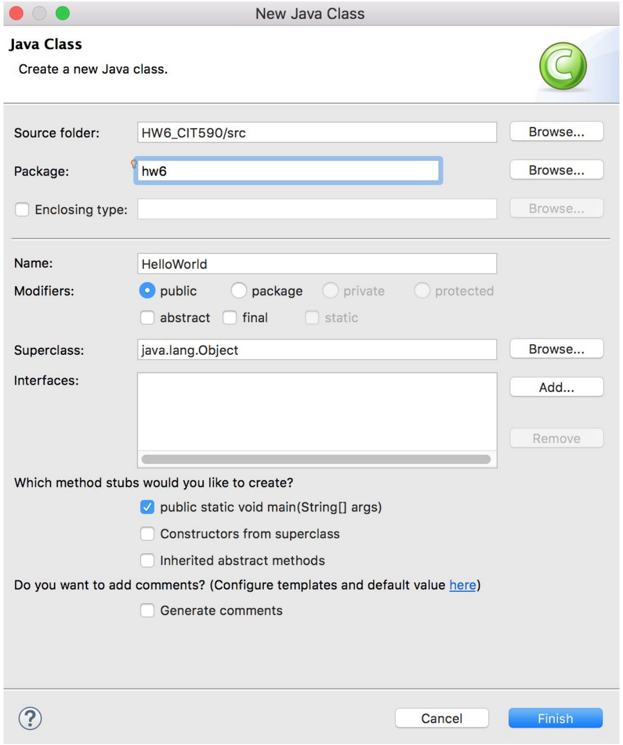
- Click the arrow on the left of the project name to open its contents.



- Right click on the src folder. “src” is short for source.
- Select New → Class



- Create a new Class using the New Java Class pop-up window.
  - For example, name the class “HelloWorld”
  - For example, name the package “hw6”
    - Please enter the class name and package exactly as we have written them. If you change the capitalization or spelling, you will lose points.
  - Check the box that says “public static void main(String[] args)”
  - Uncheck the box that says “Inherited abstract methods”, if it is checked.
  - Confirm all of the options match below.



New Java Class

Java Class

Create a new Java class.

Source folder: HW6_CIT590/src

Package: hw6

□ Enclosing type:

Name: HelloWorld

Modifiers: ● public ○ package ○ private ○ protected

□ abstract □ final □ static

Superclass: java.lang.Object

Interfaces:

Which method stubs would you like to create?

☑ public static void main(String[] args)

□ Constructors from superclass

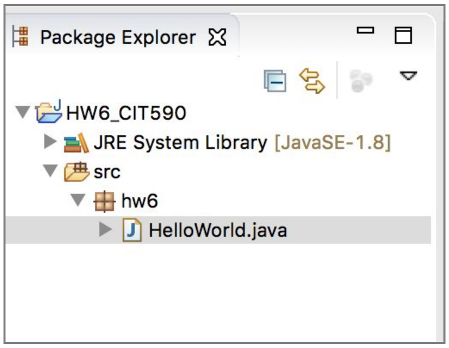
□ Inherited abstract methods

Do you want to add comments? (Configure templates and default value here)

□ Generate comments

- Click Finish.

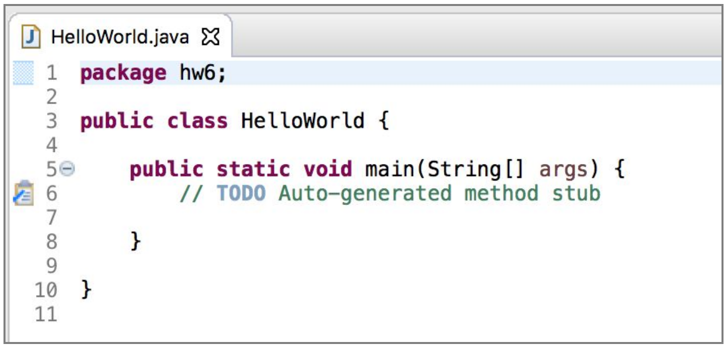
- Now, the Package Explorer should look like this:



Package Explorer

HW6_CIT590
JRE System Library [JavaSE-1.8]
src
hw6
HelloWorld.java

- And there should be a file open, ready to edit, that looks like this:



```java
package hw6;

public class HelloWorld {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

    }

}

```

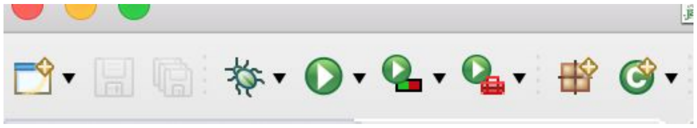
Part 5: Writing Code in Java

- Inside the *main* method, remove the comment that says:
  // TODO Auto-generated method stub

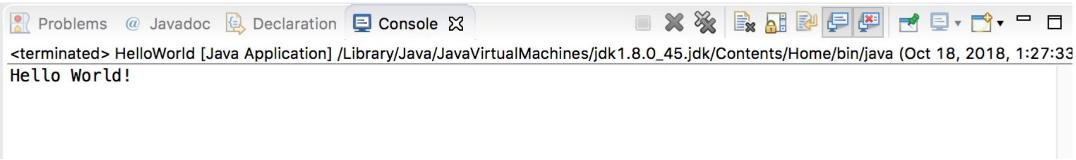
- Inside the *main* method, write the following line of code:
  System.out.println("Hello, World!");

- Save the file (using the Command-S or Ctrl-S shortcut should work fine).

- In the upper left hand corner, click Run. It's the green circle with the play button.

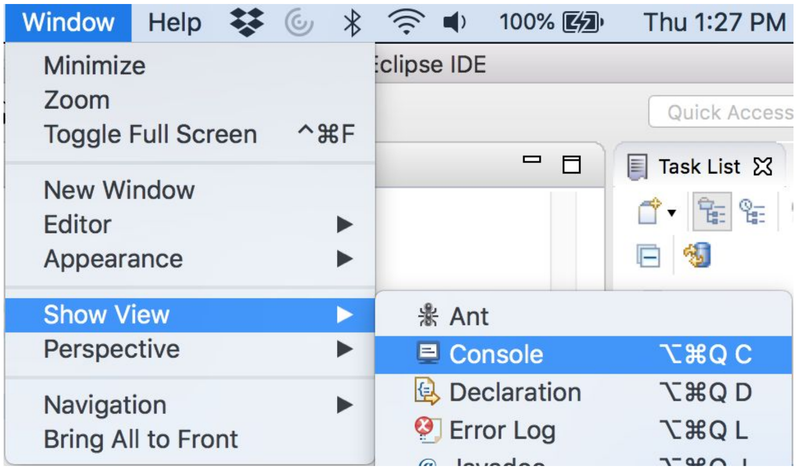


- The Console should appear in the bottom panel and Hello, World! should be printed there.



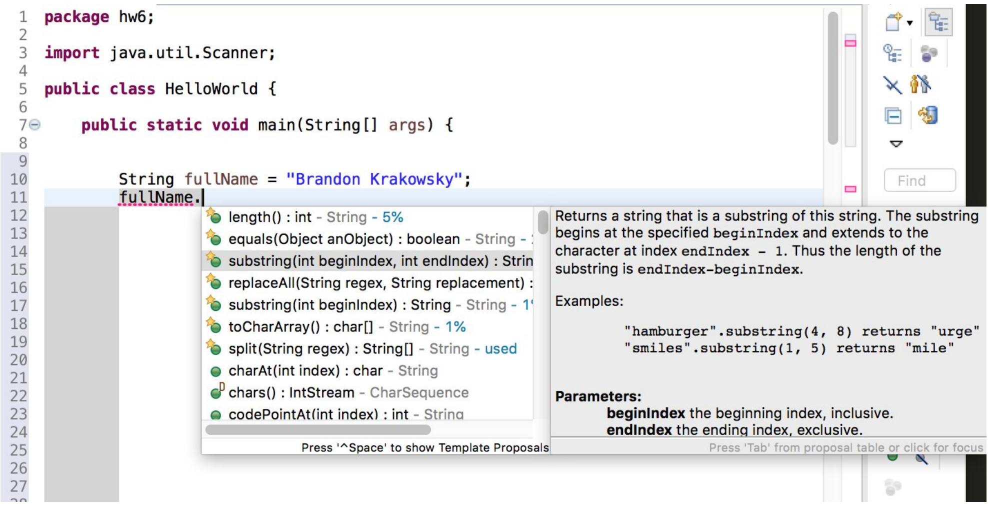
```
<terminated> HelloWorld [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_45.jdk/Contents/Home/bin/java (Oct 18, 2018, 1:27:33
Hello World!
```

    o If you don't see the console, go to Window ▯ Show View ▯ Console



Getting Help

For some of the code, you may need to look up documentation. The best place to start is in Eclipse itself. If you're coding with a particular type of Object, you can start typing your code and utilize code assist to look up method documentation.



```
package hw6;

import java.util.Scanner;

public class HelloWorld {

    public static void main(String[] args) {


        String fullName = "Brandon Krakowsky";
        fullName.
```

length() : int - String - 5%
equals(Object anObject) : boolean - String -
substring(int beginIndex, int endIndex) : Strin
replaceAll(String regex, String replacement) :
substring(int beginIndex) : String - String - 1
toCharArray() : char[] - String - 1%
split(String regex) : String[] - String - used
charAt(int index) : char - String
chars() : IntStream - CharSequence
codePointAt(int index) : int - String
Press '^Space' to show Template Proposals
Find

Returns a string that is a substring of this string. The substring begins at the specified `beginIndex` and extends to the character at index `endIndex - 1`. Thus the length of the substring is `endIndex-beginIndex`.

Examples:

```
"hamburger".substring(4, 8) returns "urge"
"smiles".substring(1, 5) returns "mile"
```

Parameters:
beginIndex the beginning index, inclusive.
endIndex the ending index, exclusive.

Press 'Tab' from proposal table or click for focus

You can also reference the online Java API Specification. For example, here's the documentation for the String class:
https://docs.oracle.com/en/java/javase/13/docs/api/java.base/java/lang/String.html