GEOG 178/258:

Conceptual Modeling and Programming for the Geo-Sciences

Week 1: March 31st, 2020

mike johnson

Week 1

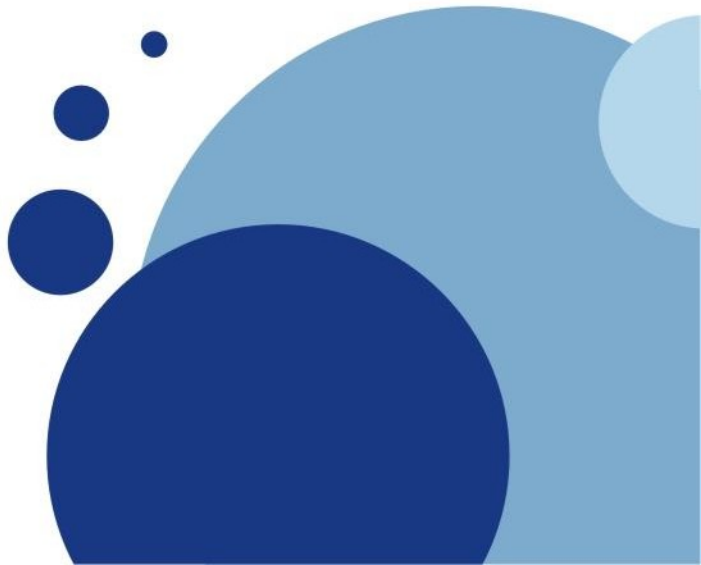
Logistics

- **Instructor:** Krzysztof Janowicz
  - Lecture/Lab: Friday 9:00 – 11:50
  - Office hours:
    - Monday 10:30am – 11:30am
    - jano@ucsb.edu

- **TA:** Mike Johnson
  - Section: Tuesday 11:00 – 12:50
  - Office hours:
    - TBD
    - jmj00@ucsb.edu

- Section Website:
  - https://mikejohnson51.github.io/geog178

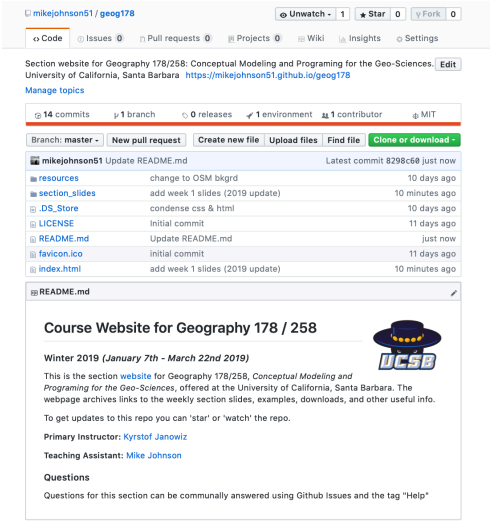
1. Getting the Class Website on your machines…



Getting started with GitHub

Section repository:

https://github.com/mikejohnson51/geog178



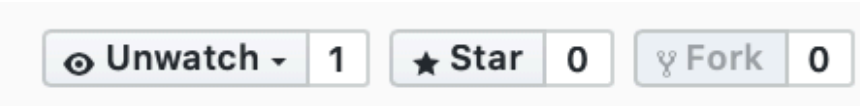
Reasons for this:

* build familiarity (for you as developing programmers),
* force getting started with version control, open coding
* host a class community,
* longevity of material,
* improve group work in second half of class,

Getting started with GitHub

This is all optional and not needed to complete the class but will hopefully make your life easier in the long run…

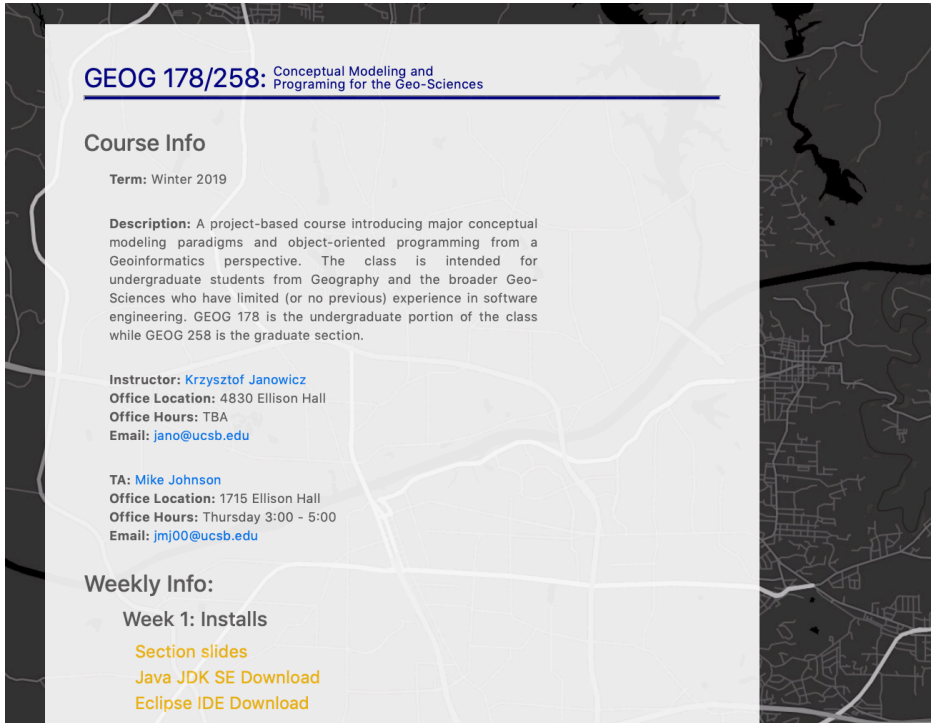
1. Make a GitHub account at: https://github.com
2. Find the class repository searching for ‘geog178’
3. ‘**Star**’ to be easily found and to easily find the repo
4. **‘Watch’** to be notified of changes such as new issues, new content, ect.
5. ‘**Fork**’ to make a copy of the repo in your own account

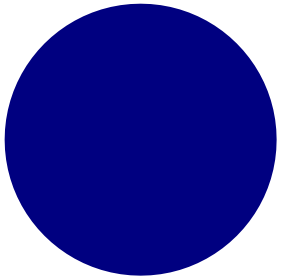


Getting started with Github

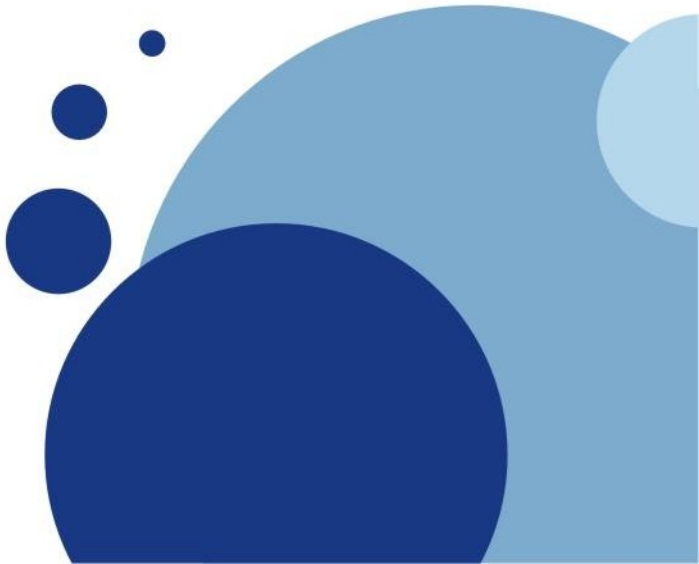
All GitHub repo's can host a static website…

Ours is here: https://mikejohnson51.github.io/geog178





2. Getting Eclipse set up on your machines…



Necessary Downloads:

Week 1

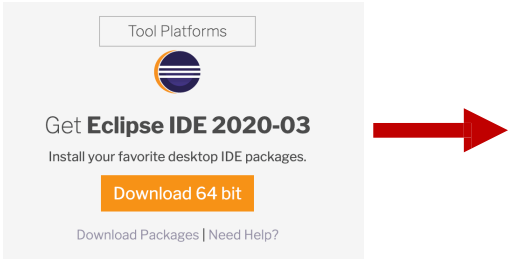
Getting Started with Eclipse

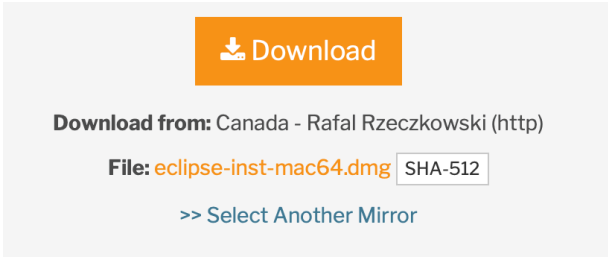
1. To get set up on a personal machine, you need the Eclipse Program files. They can be found here:

https://www.eclipse.org/downloads/

Or through the section website:

2. From the Eclipse main page download the zip file from the series of download buttons:

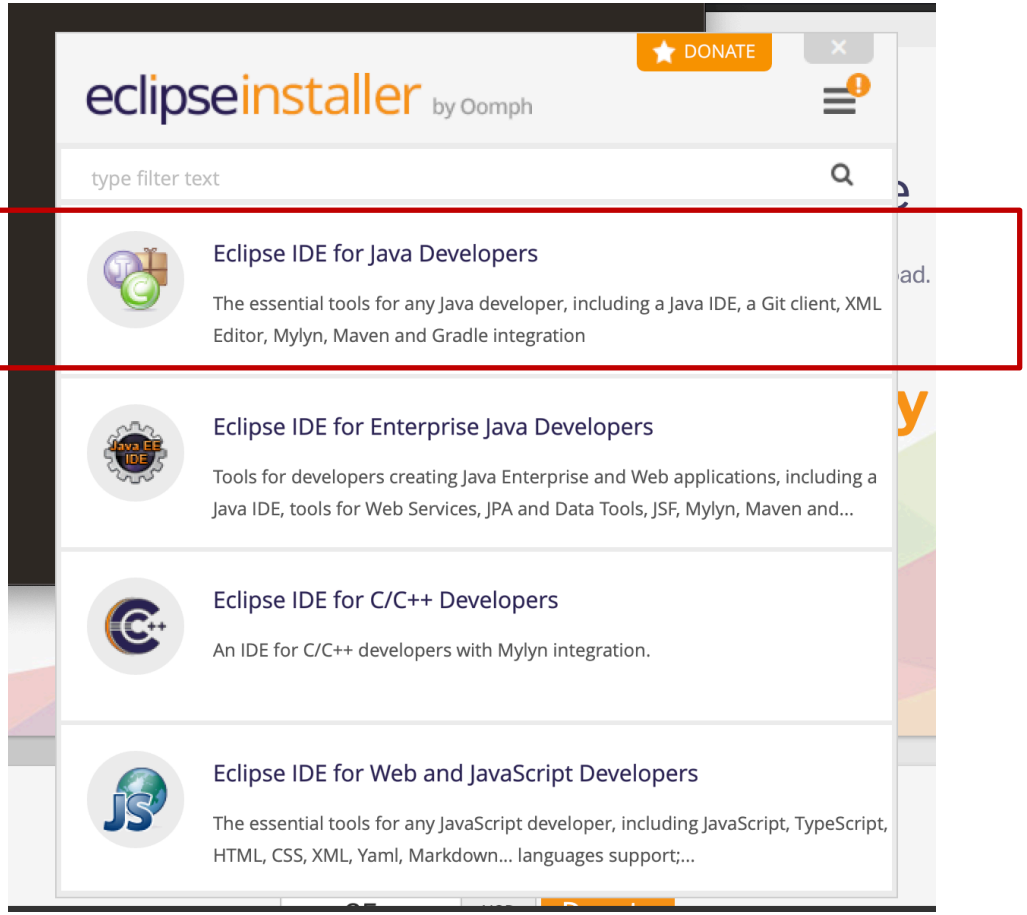




Eclipse “Flavor”:

Week 1

Getting Started with Eclipse



Installing

Week 1

Getting Started with Eclipse

- From the unzipped download folder try and install Eclipse
  - On Windows → select the 'eclipse-inst-win64.exe' file
  - On Mac → select the 'eclipse-inst-mac64.tar.gz' file
- Follow all instructions
- ***…. Does it Error Out???***
- Eclipse is written in Java so you may need to download the **Java SE JDK**** if it is not already on your machine

**JDK: Java Development Toolkit which includes JRE (Java Runtime Environment), an interpreter/loader (java), a compiler (javac), an archiver (jar) and a documentation generator (javadoc)

Installing Java JDK

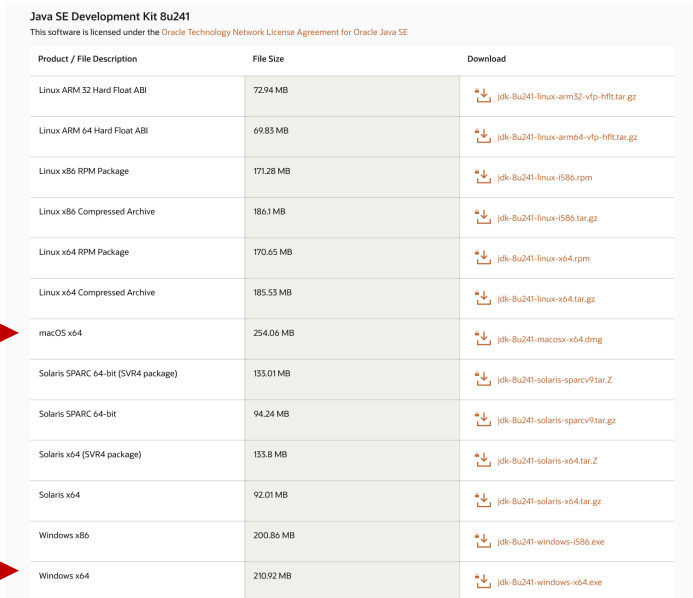
Week 1

Getting Started with Eclipse

1. The Java SE JDK download can be found here:
   https://www.oracle.com/java/technologies/javase-jdk8-downloads.html

Or on the section webpage:

2. Select the needed program file from the list of options:



macOS.x64

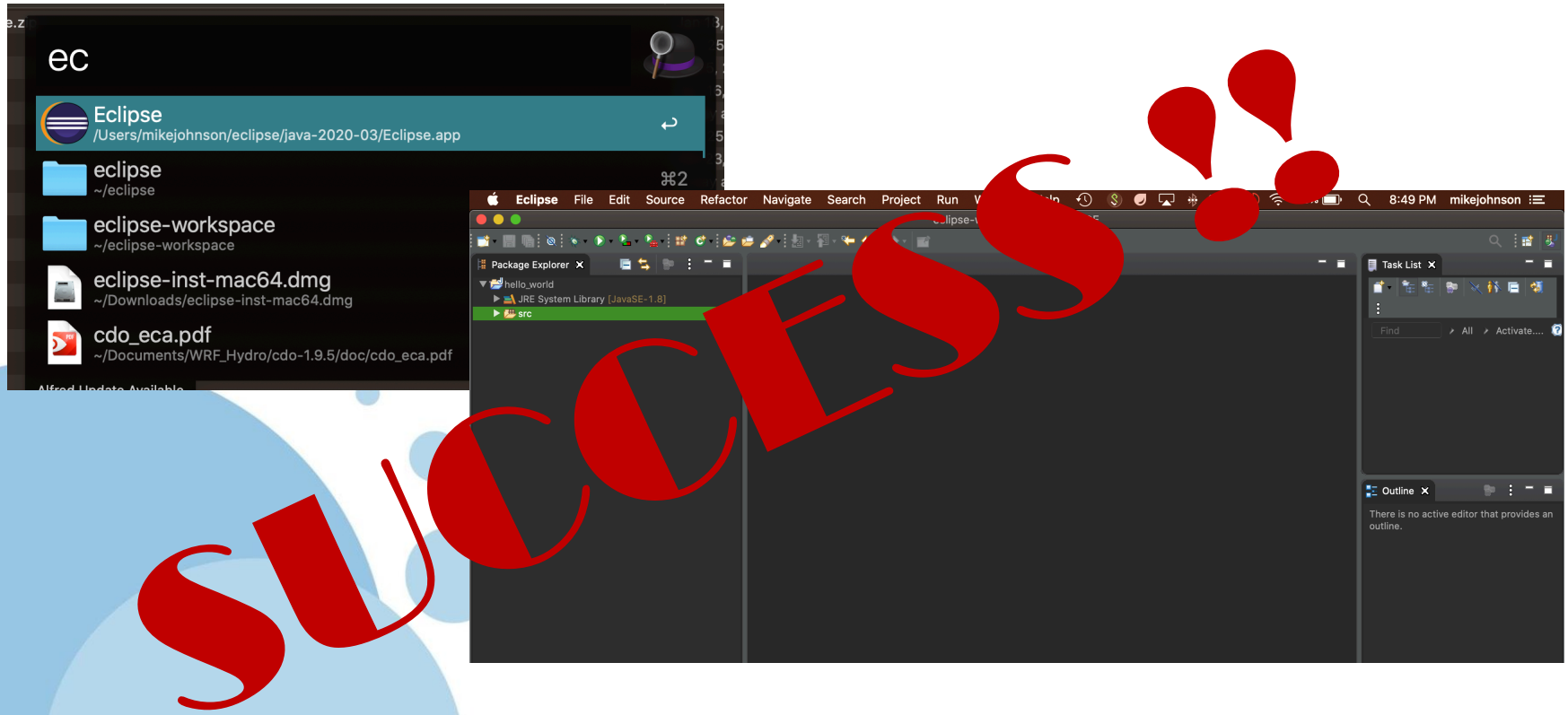
Windows.x64

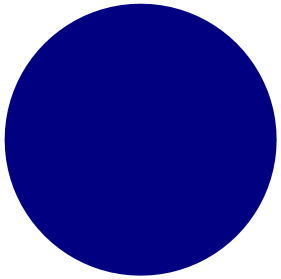
3. You will need to make an Oracle account, and sign in to start the download

4. Unzip the downloaded zip, follow all instructions, and try to install Eclipse …

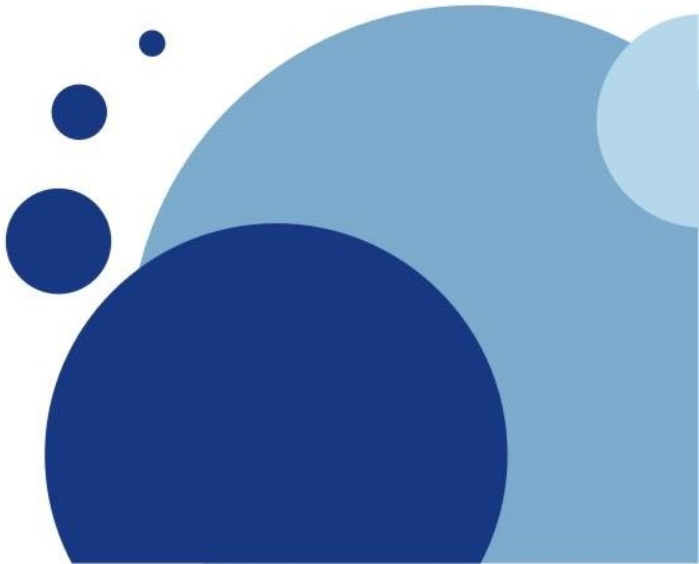
Launch Eclipse !!

Find the application on your machine and launch it. You should see som





3. Introduction to the Eclipse IDE…



Writing, compiling and executing a Program

Week 1

Getting Started with Eclipse

- There are two methods for compiling and running a Java Program. Remember (loosely **source code** is what you write, source code is **compiled**, your machine executes compiled code)

1. Using a text editor such as Atom or Notepad, and your Terminal (Mac) / Powershell (Windows)
   - This is the approach the textbook takes
2. Using a dedicated platform such as Eclipse
   - That is the approach we will use in this class
   - This is a IDE which stands for an **I**ntegrated **D**evelopment **E**nvironment
   - IDE's provide tools for coding, building, running and debugging applications

Setting up a Workspace

Week 1

Getting Started with Eclipse

Suggestions:

- On your **computer** create a new folder called

  GEOG178

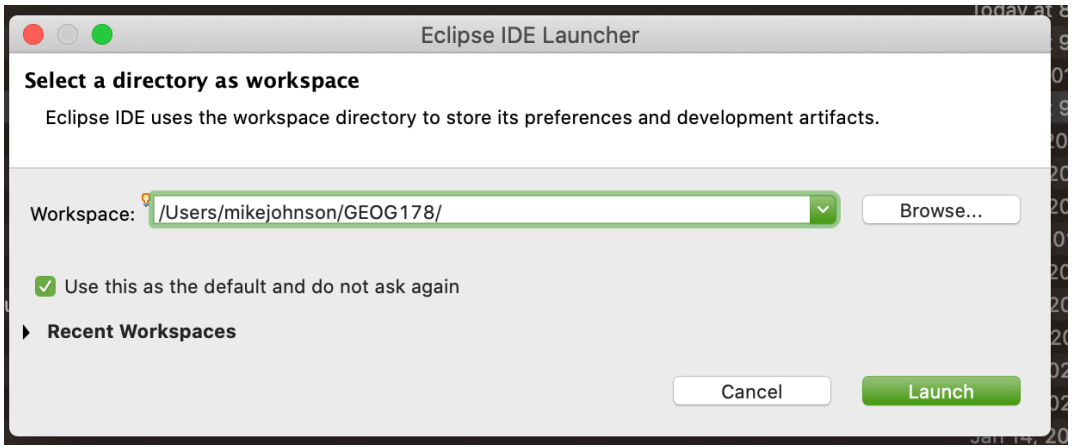
Think of this folder as a default working directory…

Starting a New Project:

Week 1

Getting Started with Eclipse

- When you launch Eclipse it will ask you to define a **workspace**.
- A **workspace** is where your source code and output will be stored
- Direct your workspace to GEOG178 using the '*Browse…*' button



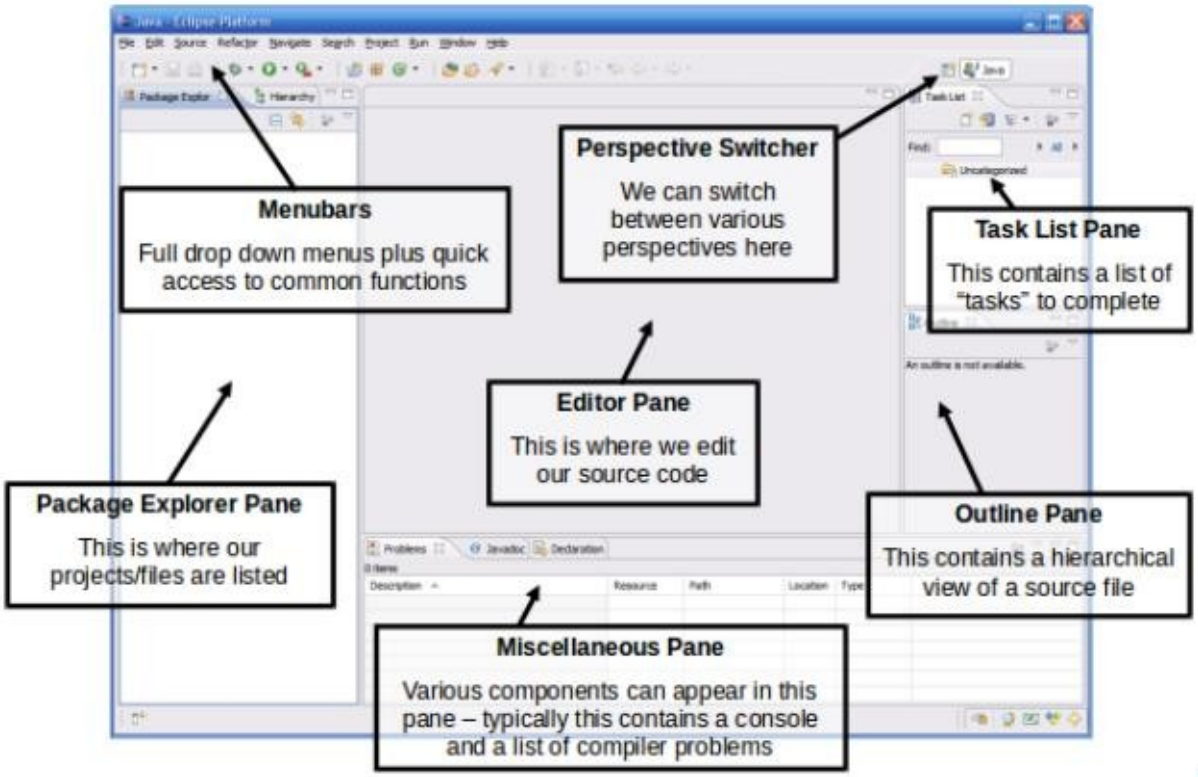
- Hit '*OK*' when you are done.

IDE Components:

Week 1

Getting Started with Eclipse

- When your workspace is loaded, you will be presented with the following interface:

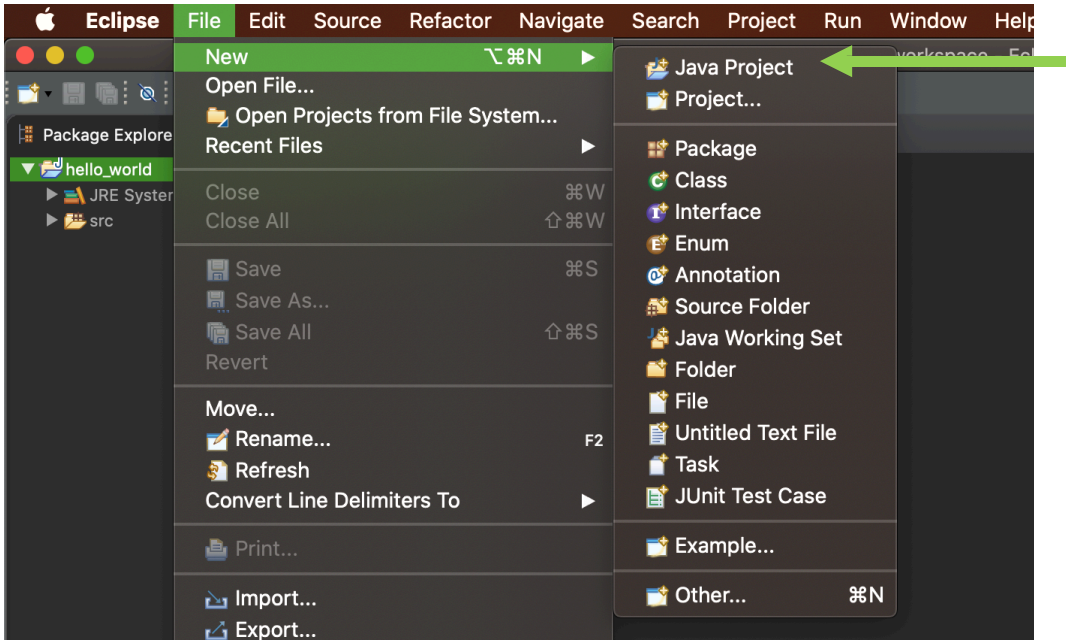


Create a new project

Week 1

Getting Started with Eclipse

- All code in Eclipse needs to live under a **project**, remember that **projects** live in **workspaces**
- To create a project: File → New → Java Project

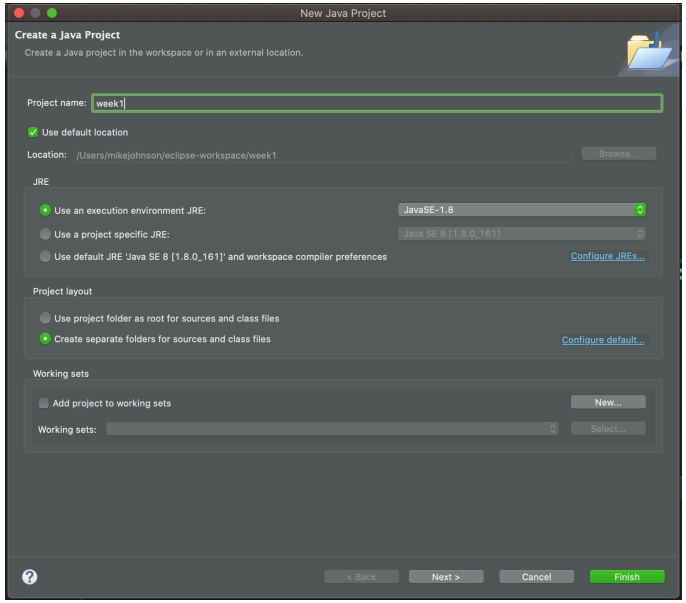


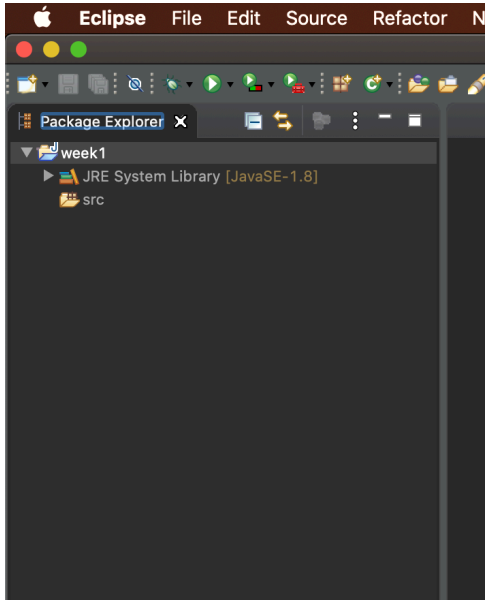
Create a new project

Week 1

Getting Started with Eclipse

- Enter a Name for the Project (week1)
- Click "*Finish*"
- The new Project will appear in the **Package Explorer**
- The **src** (source) folder is where all your scripts will live before they are compiled!

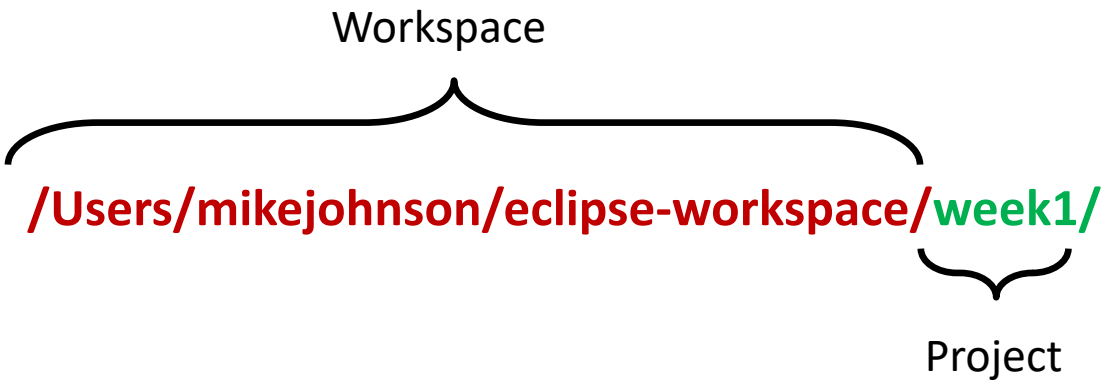




Workspace and Projects
(Think of your file paths!)

Week 1

Getting Started with Eclipse

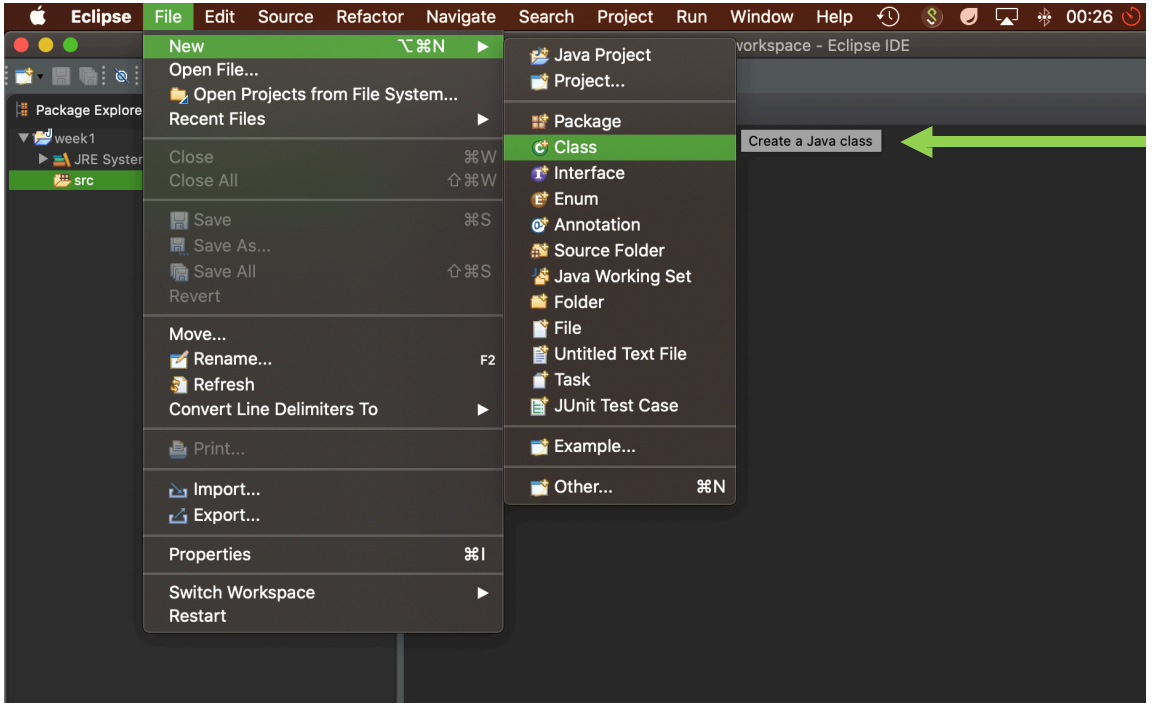


Create a new class

Week 1

Getting Started with Eclipse

- You will now create your first **class** within the Java **Project** (that lives in your **workspace**)



Create a new Class

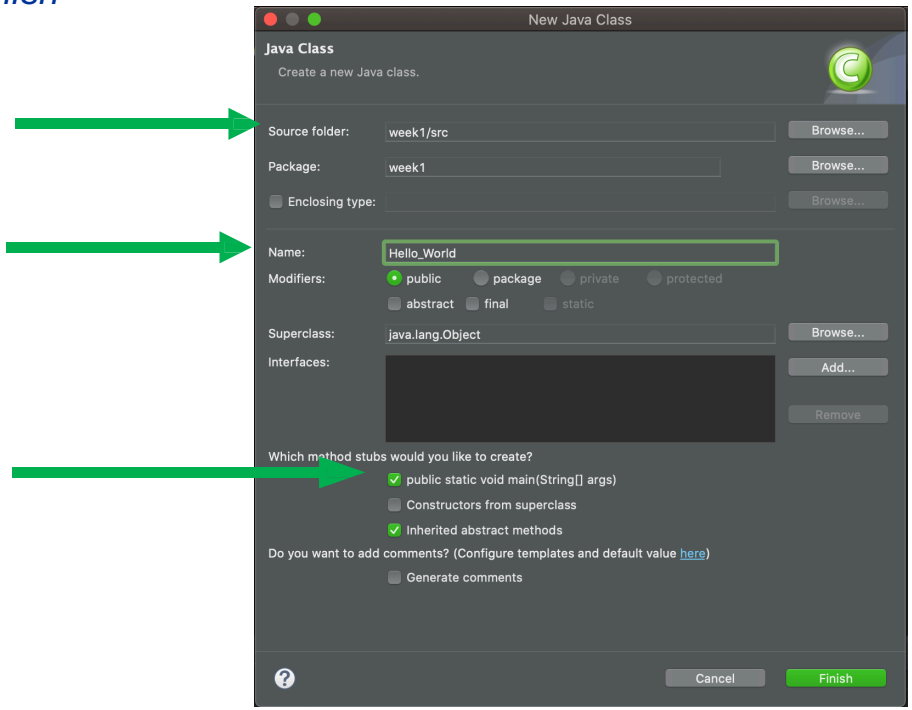
Week 1

Getting Started with Eclipse

- Enter a Name for the class (Hello_World)
- You can also specify:
  - package
  - Superclass
  - Whether or not to include a main
  - Etc..

Ignore these for now…

- Fill in necessary information as seen below
- Click "*Finish*"

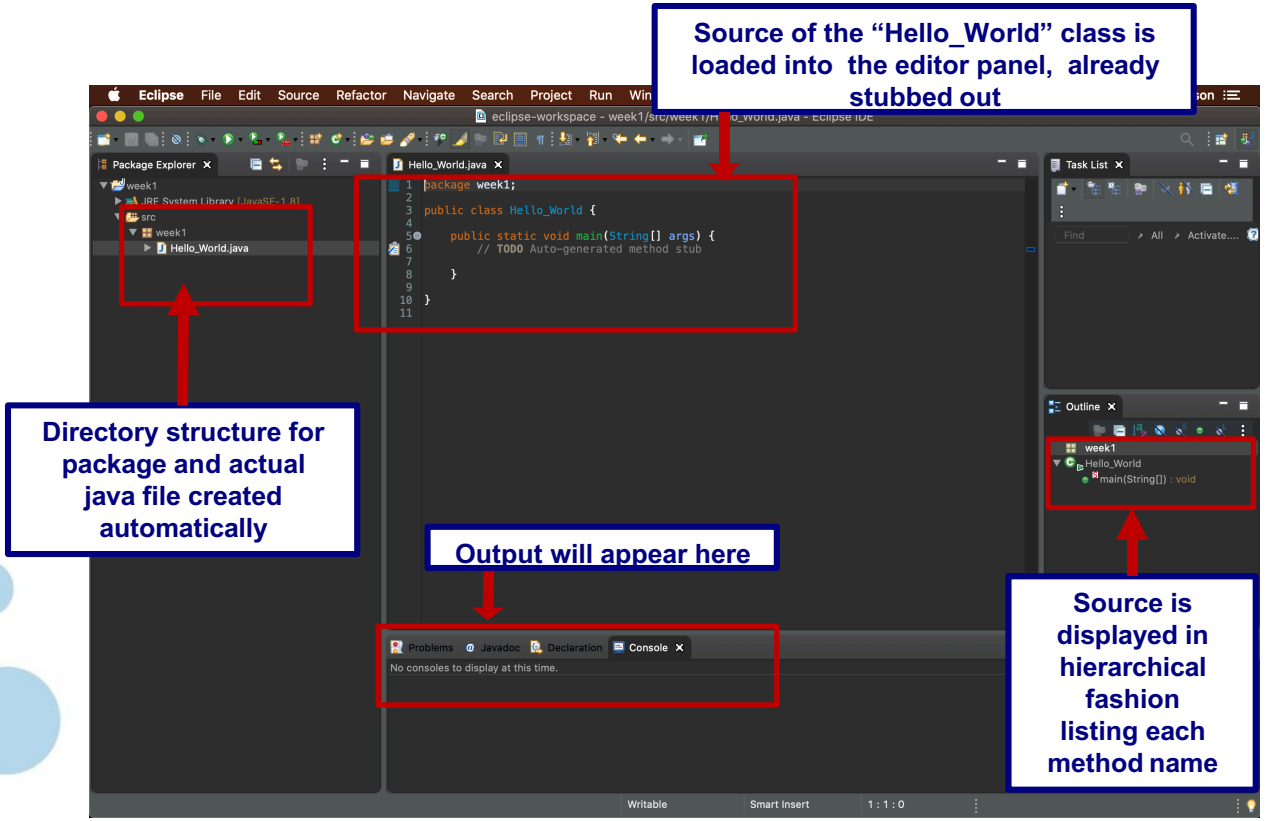


Interface:

Week 1

Getting Started with Eclipse

- You should see the following



- *Be sure to always have your file name match the public class name! (in this case hello_world == hello_world.java*

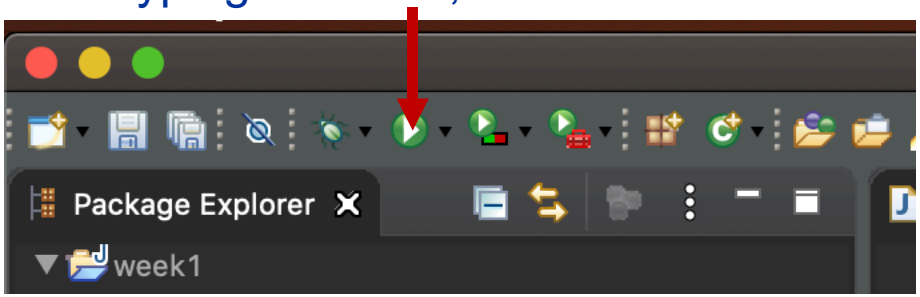
Enter Basic Command

- In your program type the command

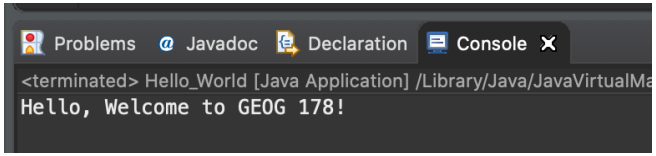
System.out.println(“Hello, Welcome to GEOG 178!”);

- It should look like this:

- After typing the code, hit the ‘run’ button:

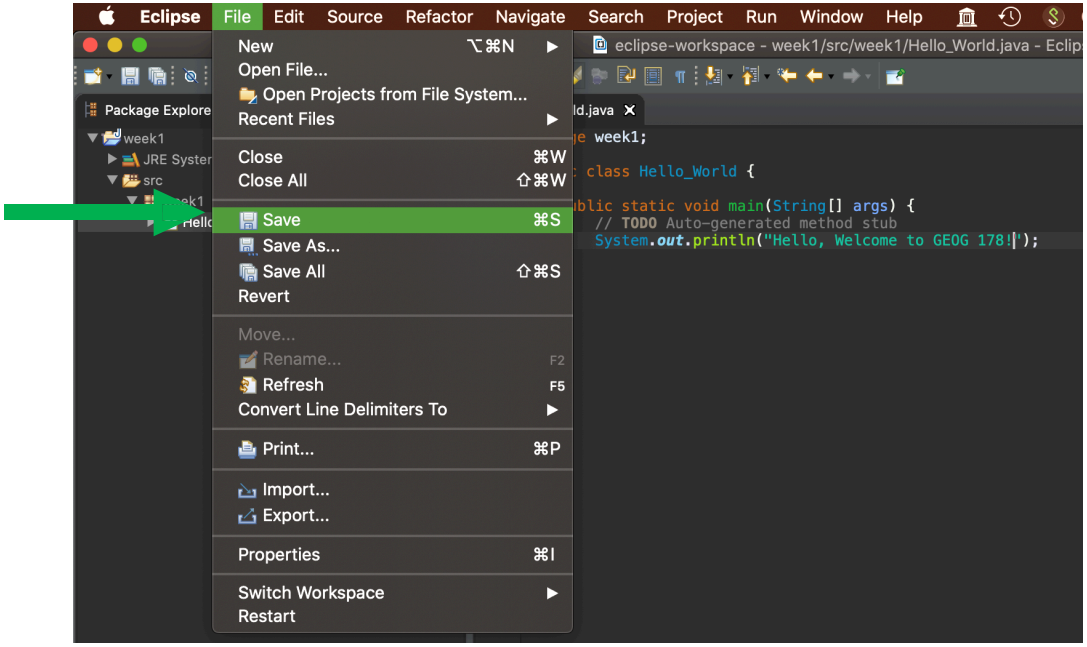


- You should see the following output!



Saving your Program

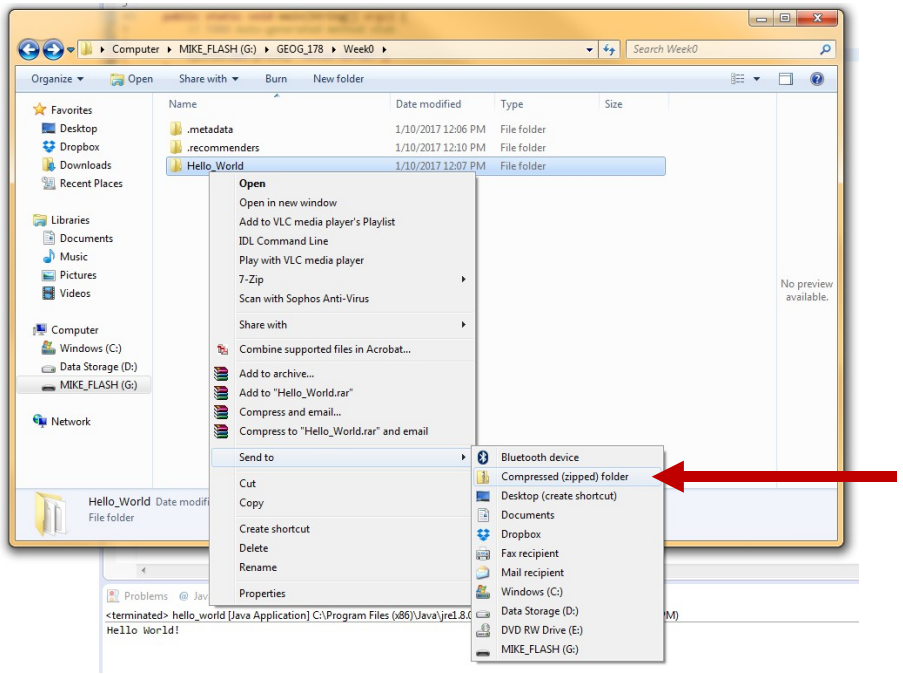
- Running your program will automatically save it
- In cases where you want to save manually go:
- File → Save



Zip Program Folder

- Program files can be zipped to make them smaller and easier to share!

- ON WINDOWS:
  - Go to your flash drive → GEOG_178 → Week0
  - Right Click on the Folder ‘Hello_World’
  - Click ‘Send To’ → ‘Compressed (zipped) folder



Zip Program Folder

- ON MAC:
  - Go to your GEOG178
  - Right Click on the Folder ‘Week1’
  - Click ‘Compress
- You now have a zipped folder that will be easier to share with others!
- For lab turn in, you will be able to send me zip files OR share links to a Github repository

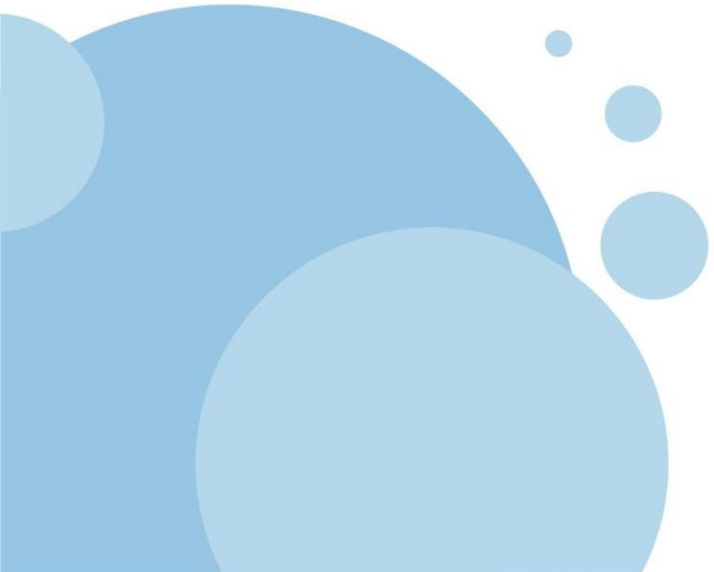
Bonus

Read here to learn how to connect a GitHub account/repo to Eclipse:

https://www.vogella.com/tutorials/EclipseGit/article.html

Check out GitHub Desktop for a GUI interface:

https://desktop.github.com



See you Friday at 9:00 am!