



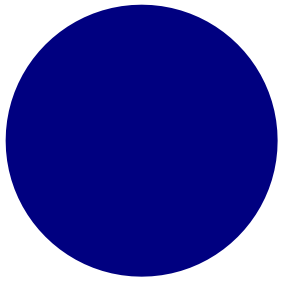
GEOG 178/258:

Conceptual Modeling and Programming for the Geo-Sciences

Week 1: January 8th, 2019

mike johnson





Week

1

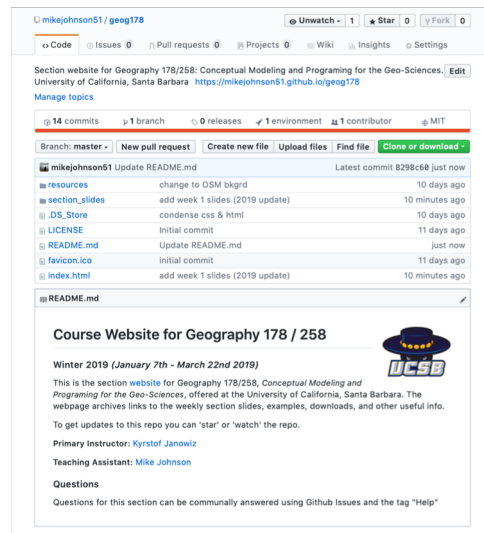
Logistics

- **Instructor:** Krzysztof Janowicz
 - Lecture/Lab: Thursdays 12:00 – 2:50
 - Ellison 3620
 - Office hours:
 - Ellison 4830
 - Monday 10:30am – 11:30am
 - jano@ucsb.edu
- **TA:** Mike Johnson
 - Section: Tuesday 2:00 – 3:50
 - Ellison 3620
 - Office hours:
 - Ellison 1715
 - Thursday 3:00-5:00 pm
 - jmj00@ucsb.edu
- **Section Website:**
 - <https://mikejohnson51.github.io/geog178>

Getting started with GitHub

Section repository:

<https://github.com/mikejohnson51/geog178>



The screenshot shows the GitHub repository page for 'mikejohnson51/geog178'. The repository is titled 'Section website for Geography 178/258: Conceptual Modeling and Programming for the Geo-Sciences'. It is located at the University of California, Santa Barbara. The repository has 14 commits, 1 branch, 0 releases, 1 environment, and 1 contributor. The latest commit is by 'mikejohnson51' updating the README.md file. The repository includes files such as resources, section_slides, .DS_Store, LICENSE, README.md, favicon.ico, and index.html. The README.md file contains information about the course website for Geography 178 / 258, including the winter 2019 dates (January 7th - March 22nd 2019) and the primary instructor, Kyrstof Janowitz.

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



 Unwatch ▾

1

 Star

0

 Fork

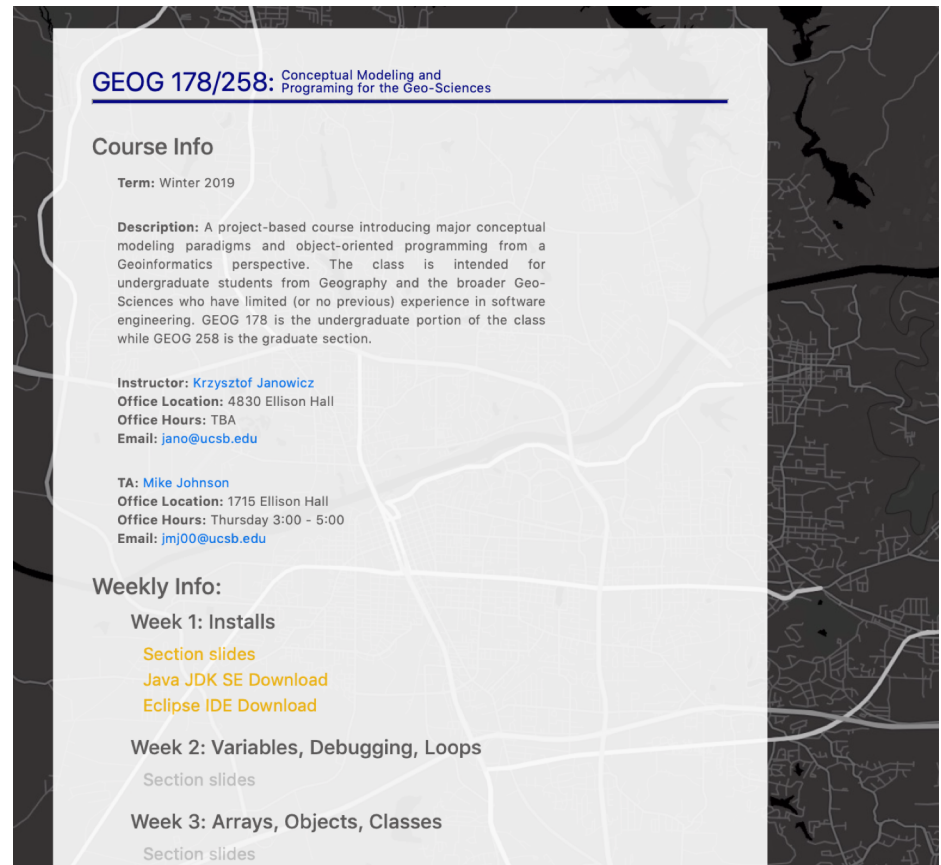
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Getting started with Github

All GitHub repo's can host a static website...

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



GEOG 178/258. Conceptual Modeling and Programming for the Geo-Sciences

Course Info

Term: Winter 2019

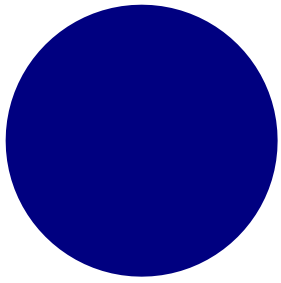
Description: A project-based course introducing major conceptual modeling paradigms and object-oriented programming from a Geoinformatics perspective. The class is intended for undergraduate students from Geography and the broader Geo-Sciences who have limited (or no previous) experience in software engineering. GEOG 178 is the undergraduate portion of the class while GEOG 258 is the graduate section.

Instructor: Krzysztof Janowicz
Office Location: 4830 Ellison Hall
Office Hours: TBA
Email: jano@ucsb.edu

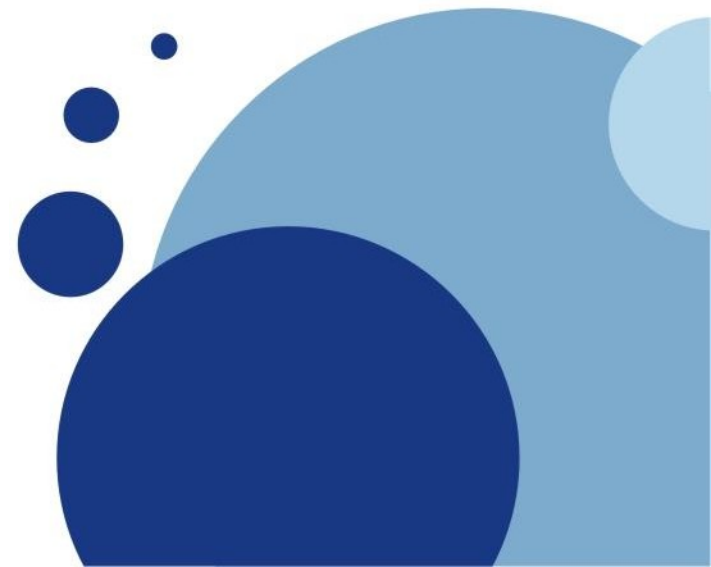
TA: Mike Johnson
Office Location: 1715 Ellison Hall
Office Hours: Thursday 3:00 - 5:00
Email: jmj00@ucsb.edu

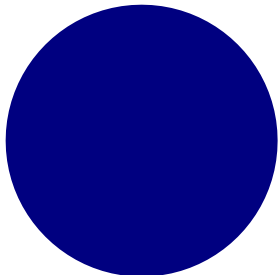
Weekly Info:

- Week 1: Installs
 - [Section slides](#)
 - [Java JDK SE Download](#)
 - [Eclipse IDE Download](#)
- Week 2: Variables, Debugging, Loops
 - [Section slides](#)
- Week 3: Arrays, Objects, Classes
 - [Section slides](#)



1. Introduction to the Eclipse IDE...





Writing, compiling and executing a Program

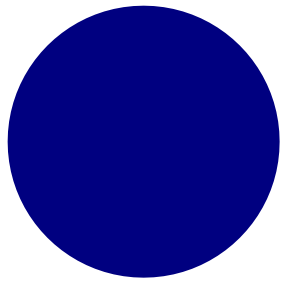
Week

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Getting Started with Eclipse



- There are two methods for compiling and running a Java Program
 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

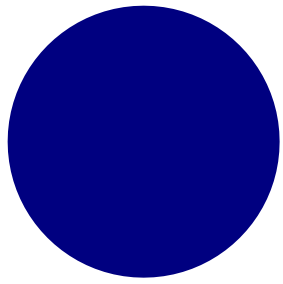
Week

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Getting Started with Eclipse

Suggestions:

- On your **flash drive** create a new folder called
GEOG_178
- In that folder create a sub-folder called
Week0
- And one another called
Week1




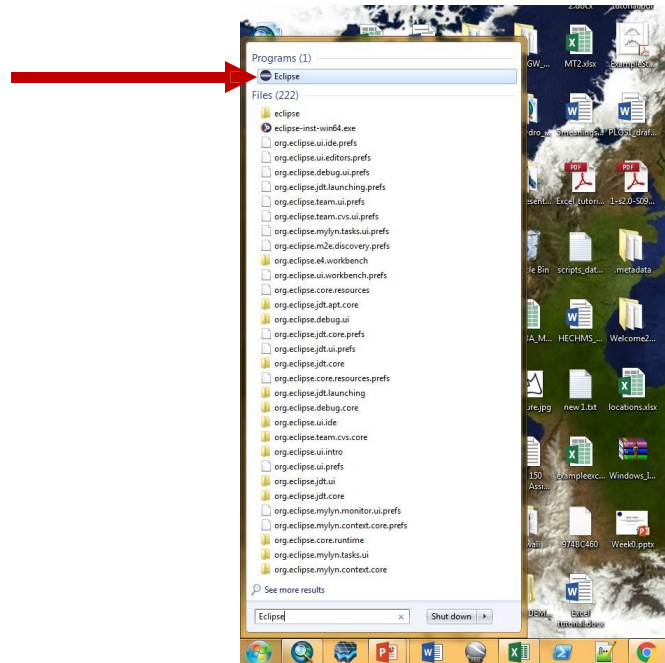
Opening Eclipse in the Lab

Week

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Getting Started with Eclipse

- On the lab machines, hit the home button 
- Type 'Eclipse' in the search bar
- Click on the Eclipse Program File



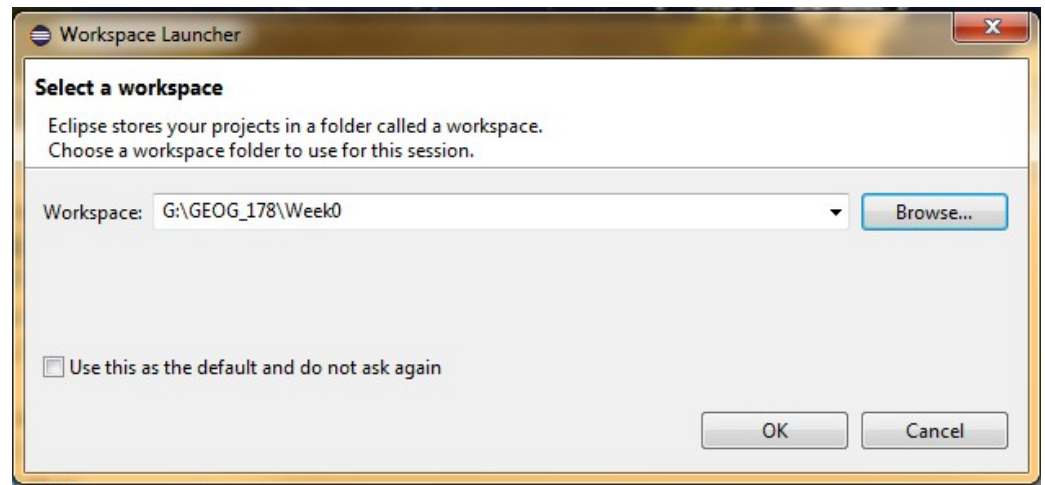
Starting a New Project:

Week

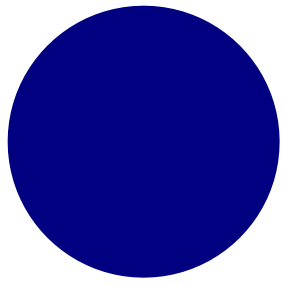
1

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 Week0 using the '*Browse...*' button



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



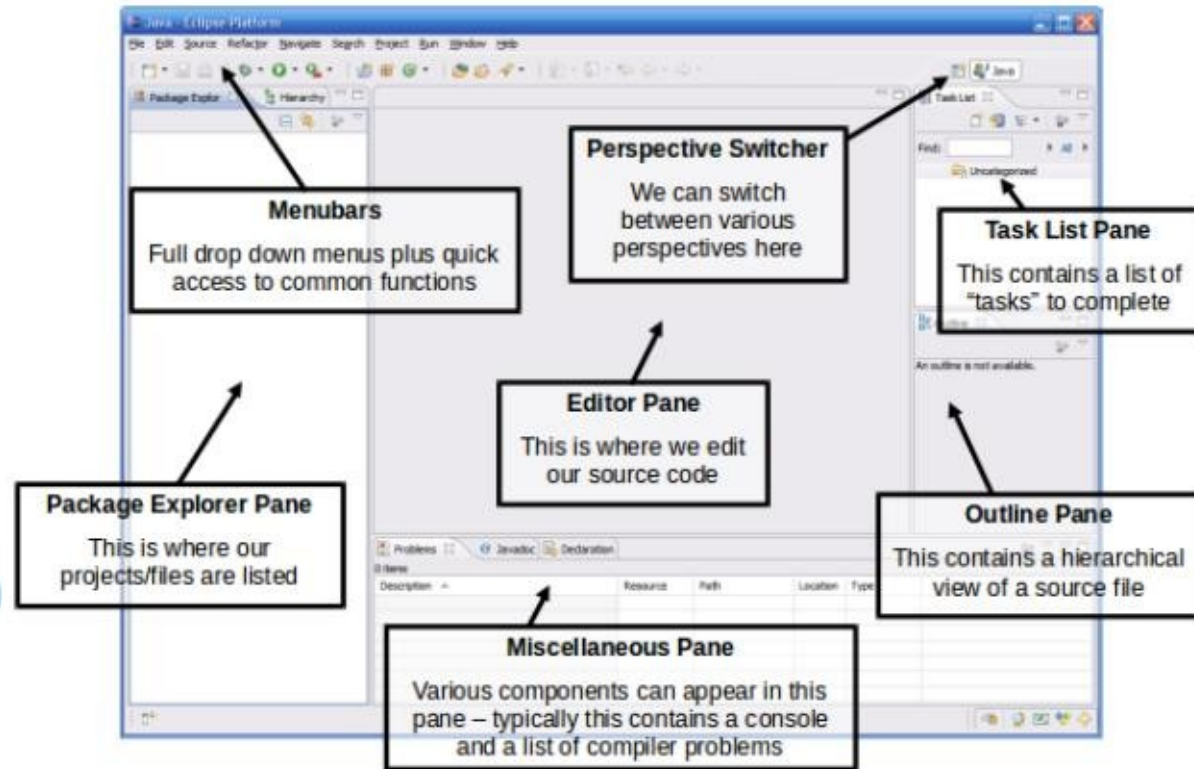
IDE Components:

Week

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Getting Started with Eclipse

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



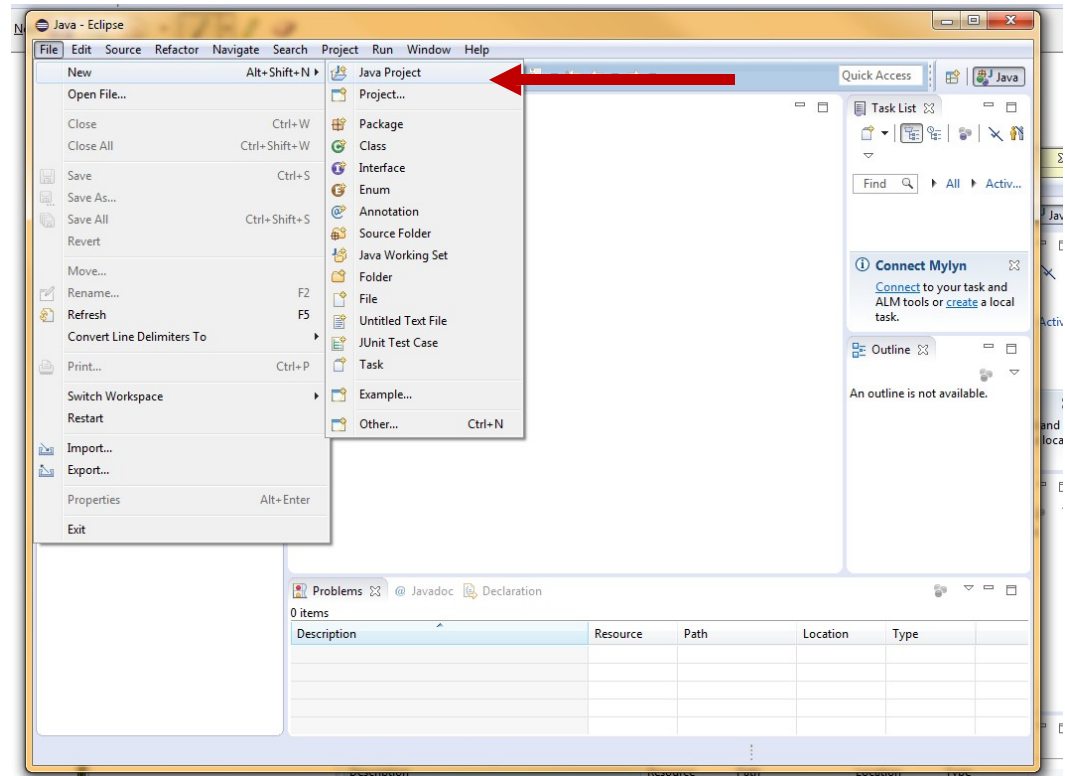
Create a new project

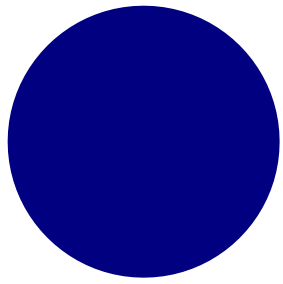
Week

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Getting Started with Eclipse

- All code in Eclipse needs to live under a project
- To create a project: File → New → Java Project





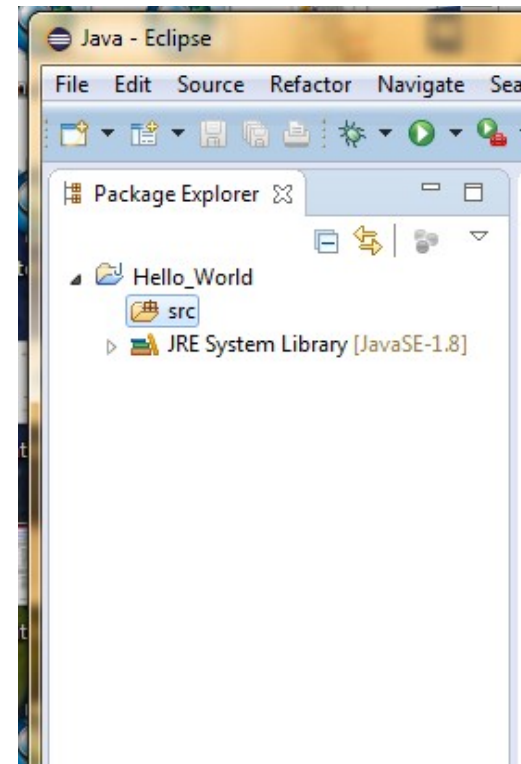
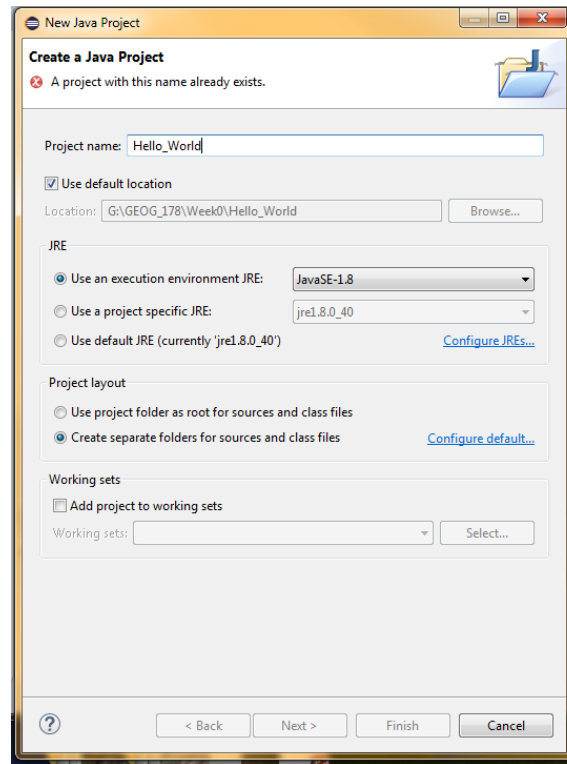
Create a new project

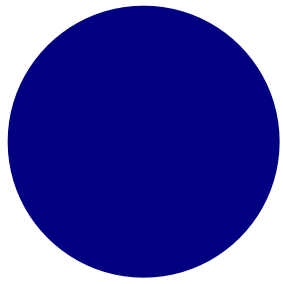
Week

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Getting Started with Eclipse

- Enter a Name for the Project (**Hello_World**)
- Click “*Finish*”
- The new Project will appear in the **Package Explorer**





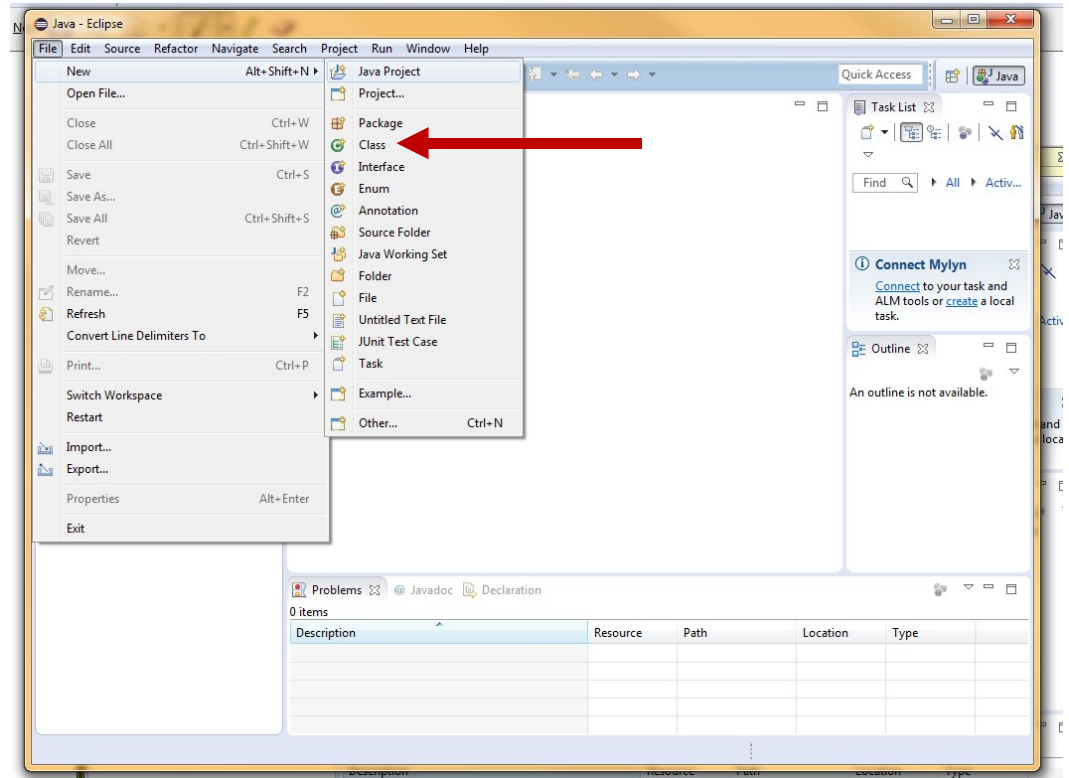
Create a new class

Week

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Getting Started with Eclipse

- You will now create your first class within the Java Project



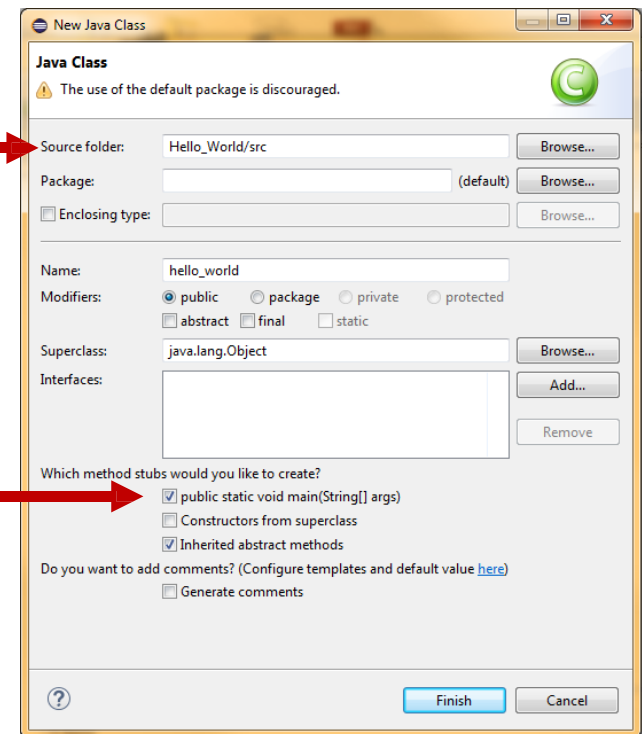
Create a new Class

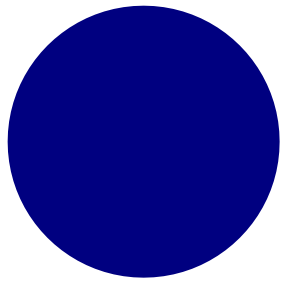
Week

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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..
- Fill in necessary information
- Click “Finish”





Interface:

Week

1

Getting Started with Eclipse

- You should see the following

Source is loaded into the editor panel, already stubbed out

```
public class locations {  
4:     public static void main(String[] args) {  
5:         // TODO Auto-generated method stub  
6:     }  
7:  
8:  
9: }  
10:
```

Directory structure for package and actual java file created automatically

Source is displayed in hierarchical fashion listing each method name

- Be sure to always have your file name match the public class name!

Enter Basic Command

- In your program type the command

System.out.print("Hello World!");

- It should look like this:

```
public class hello_world {  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
        System.out.print( "Hello World!");  
    }  
}
```

- After typing the code, hit the 'run' button:

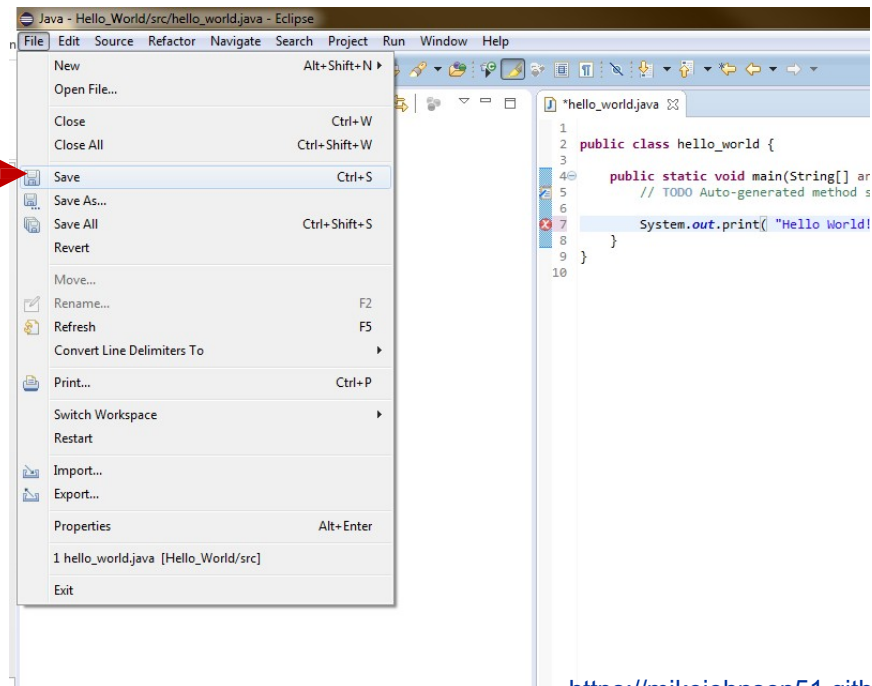


- You should see the following output!

```
<terminated> hello_world [Java Application] C:\Program Files (x86)\Java\jre1.8.0_40\bin\javaw.exe (Jan 10, 2017, 12:14:17 PM)  
Hello World!
```

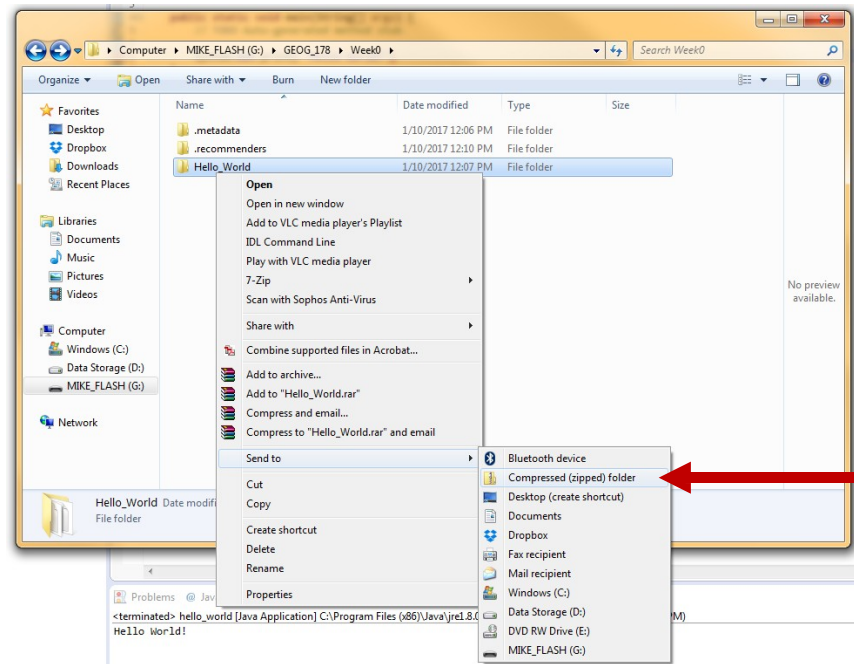
Saving your Program

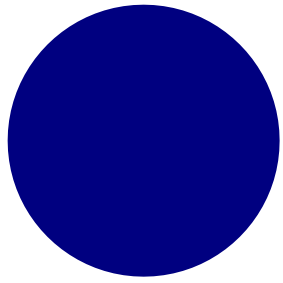
- Running your program will automatically save it
- In cases where you want to save manually go:
- File → Save



Zip Program Folder

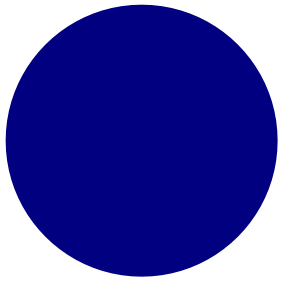
- Program files can be zipped to make them smaller and easier to share!
- ON WINDOWS:
 - Go to your flash drive → GEOG_178 → Week0
 - Right Click on the Folder 'Hello_World'
 - Click 'Send To' → 'Compressed (zipped) folder'



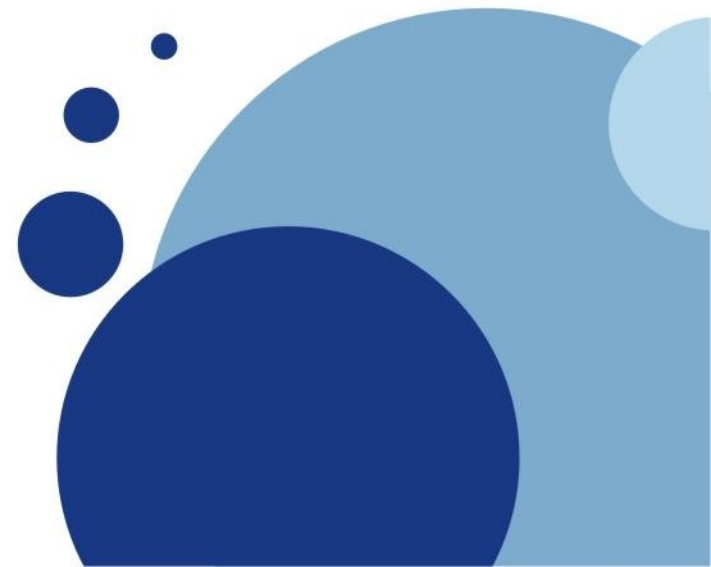


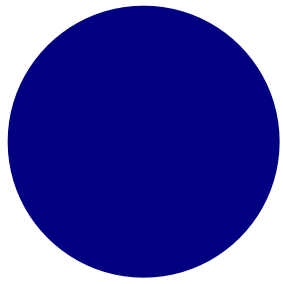
Zip Program Folder

- ON MAC:
 - Go to your flash drive → GEOG_178 → Week0
 - Right Click on the Folder 'Hello_World'
 - Click 'Compress "Hello_World"'
- You now have a zipped folder that will be easier to share with others!



2. Getting set up on your machines...





Necessary Downloads:

Week

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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:

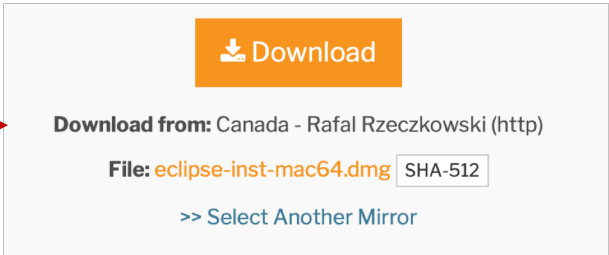
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2. From the Eclipse main page download the zip file from the series of download buttons:



Get **Eclipse IDE 2018-12**
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[Download](#)

Download from: Canada - Rafal Rzczkowski (<http>)
File: [eclipse-inst-mac64.dmg](#)
[>> Select Another Mirror](#)

Installing

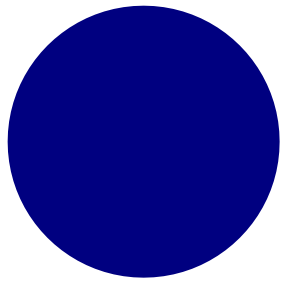
Week

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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/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

Or on the section webpage:

Weekly Info:

Week 1: Installs

[Section slides](#)

[Java JDK SE Download](#)

[Eclipse IDE Download](#)

2. Be sure to accept the License Agreement and download:

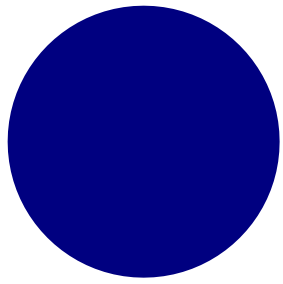
Java SE Development Kit 8u191

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

Accept License Agreement Decline License Agreement

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	72.97 MB	jdk-8u191-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	69.92 MB	jdk-8u191-linux-arm64-vfp-hflt.tar.gz
Linux x86	170.89 MB	jdk-8u191-linux-i586.rpm
Linux x86	185.69 MB	jdk-8u191-linux-i586.tar.gz
Linux x64	167.99 MB	jdk-8u191-linux-x64.rpm
Linux x64	182.87 MB	jdk-8u191-linux-x64.tar.gz
Mac OS X x64	245.92 MB	jdk-8u191-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	133.04 MB	jdk-8u191-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	94.28 MB	jdk-8u191-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	134.04 MB	jdk-8u191-solaris-x64.tar.Z
Solaris x64	92.13 MB	jdk-8u191-solaris-x64.tar.gz
Windows x86	197.34 MB	jdk-8u191-windows-i586.exe
Windows x64	207.22 MB	jdk-8u191-windows-x64.exe

3. Unzip, follow all instructions, and then install Eclipse again ...



Launch Eclipse !!

SUCCESS!

```
1 public class point {
2
3     public static void main(String[] args) {
4         // TODO: Generated method
5         double d1d2 = 1.0;
6         double d1d3 = 1.0;
7         double d1d4 = 1.0;
8
9         if(d1d2 >= 1.0) {
10            System.out.println("d1d2");
11        } else {
12            System.out.println("d1d3");
13        }
14    }
15 }
```

Bonus

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

<https://stackoverflow.com/questions/21473308/integrating-eclipse-and-github>

<https://www.youtube.com/watch?v=ptK9-CNms98>

Check out GitHub Desktop for a GUI interface: <https://desktop.github.com>



See you Thursday at 12:00 noon!