Java Bootcamp 112 Week 1: Debugging

You may or may not have used the integrated debugger in your last Java class but let's make sure you are up to speed on all its power before you dive into your next Java class!

Installation

First, install Java, then Jgrasp. If you have any questions, just dive into the discord and ask away. We can help!

If you are entering CIS 112, we imagine you may have explored other IDE tools that are more helpful than Jgrasp. Two that we recommend are IntelliJ by Jetbrains and Eclipse which is open source. Both of these can now install the Jgrasp Canvas viewer as a plugin *because it is just that awesome*! So follow the directions on the site for IntelliJ or Eclipse and get the Jgrasp plugin working with your IDE.

REMEMBER: Taylor and Lynn are here to help you do this! Do not waste time getting frustrated – just ask for help!

Next we are going to take a look at the built-in visual debugger called the Canvas Viewer.

The Canvas is a visual kind of debugger. You must first have a program that compiles, i.e. has no syntax errors like typos or missing braces. Then you can compile and execute the program but of course it still may have errors!

So let's explore the Jgrasp Canvas this week:

- Download the Java SE Development Kit. This will allow you to write and run Java programs on your computer.
 - https://www.oracle.com/java/technologies/javase-jdk16downloads.html
- Make sure you have the latest version of Jgrasp installed.
 - Jgrasp https://www.jgrasp.org/
- Or of your favorite IDE
 - IntelliJ IDEA https://www.jetbrains.com/idea/
 - Eclipse https://www.eclipse.org/ide/

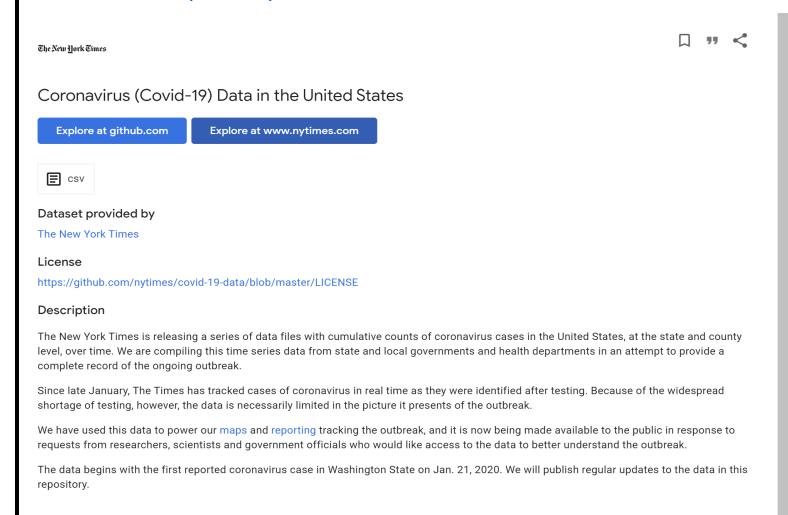
- If you are working with Eclipse or IntelliJ, install the Jgrasp plugin
 - IntelliJ https://www.jgrasp.org/ij plugin.html
 - o Eclipse https://www.jgrasp.org/eclipse_plugin.html
- Take a quick tour of what you can do with the Canvas by watching some examples:
 - Canvas Viewer https://www.youtube.com/watch?v=D-zrayZQj6w
- You can always refer to the complete introduction and explanation here:
 - o Canvas 2.0 https://www.igrasp.org/tutorials200/jGRASP 12 Canvas.pdf

112 YOUR MISSION, SHOULD YOU DECIDE TO ACCEPT IT:

1 Find some important data. Our first stop will be the dataset search from Google. https://datasetsearch.research.google.com/

Let's search for datasets on coronavirus covid-19

https://datasetsearch.research.google.com/search?query=coronavirus%20covid=19&docid=L2cvMTFqOWNianljMw%3D%3D



This is a good source because you have a choice. You can look at the data graphically at the NY Times site OR you can go to github.com and download the files yourself to do your own exploration. Remember a *.csv file is a comma separated file that you can open in Excel, or read with your own Java program.

We will take a look at the file colleges.csv. Download that csv file to your local computer (you may want to install Github desktop.)

2 Write a Java program to:

111B: a. open the file

- b. use a loop to scan in the name of the College and the number of Covid cases.
- c. keep track of the largest and smallest numbers you see in the file.
- d. finish by reporting the colleges with most and the fewest cases of Covid.

112: Do the same as the above but store the data in a way that keeps it around to process again later in the program. You may want to use 2 arrays, or a multidimensional array, or a HashMap. Or try them all out! Lynn and Taylor will show you how!

In either case, use the Jgrasp Canvas to debug/watch the data as you scan it into your program. How does it display an array? How does it display other data structures like HashMaps?