Java Bootcamp
111B 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-jdk16-downloads.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
  - 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:
  - Canvas 2.0 https://www.jgrasp.org/tutorials200/jGRASP_12_Canvas.pdf

111B YOUR MISSION , SHOULD YOU DECIDE TO ACCEPT IT :

1 Write a Java program to:

      a. open this file: colleges1.csv   https://github.com/lsyip/MCCC-Java-Bootcamp-Winter21/tree/main/Week%201

      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.

Remember a *.csv file is a comma separated file that you can open in Excel, or read with your own Java program.

You may also use another dataset you find online. Google has a whole bunch of datasets here:
https://datasetsearch.research.google.com/

Here's how we found our college coronavirus case dataset. Let's search for datasets on coronavirus covid-19

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

Coronavirus (Covid-19) Data in the United States

Explore at github.com   **Explore at www.nytimes.com**

📄 CSV

Dataset provided by

The New York Times

License

https://github.com/nytimes/covid-19-data/blob/master/LICENSE

Description

The New York Times is releasing a series of data files with cumulative counts of coronavirus cases in the United States, at the state and county level, over time. We are compiling this time series data from state and local governments and health departments in an attempt to provide a complete record of the ongoing outbreak.

Since late January, The Times has tracked cases of coronavirus in real time as they were identified after testing. Because of the widespread shortage of testing, however, the data is necessarily limited in the picture it presents of the outbreak.

We have used this data to power our maps and reporting tracking the outbreak, and it is now being made available to the public in response to requests from researchers, scientists and government officials who would like access to the data to better understand the outbreak.

The data begins with the first reported coronavirus case in Washington State on Jan. 21, 2020. We will publish regular updates to the data in this repository.

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.

We took the file colleges.csv from Github and cleaned up the data a little bit to make the colleges1.csv file for this project.

Use the Jgrasp Canvas to debug/watch the data as you scan it into your program. How does it display an array? What features did you find helpful about the debugging process? Send us your questions on Discord!