Homework 4 – Due Thurs Feb 7, 6AM

There are 2 parts to this week's homework. The first part is the debugging exercise below.
The second part – I'd like each group of 3 to select a JavaScript library and do the following with it.

a) Please report on what the library is, and what functions it performs and how to use it. **Remember, you are teaching the class about a JavaScript library, so be very clear, give examples and really make sure everyone understands how to use the library.**
b) Please write an application using the library to demo to the class.

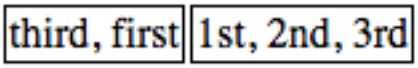
Libraries to select from: P5.js, Math.js, D3.js, React.js, Charts.js, video.js. Preferably each group will take a different one so we can all learn about all the JavaScript libraries listed here. If there's a particular library that I don't have listed that you would like to focus on, that's fine as well, but I'd like you to select a library and not a framework (we will study the difference later on in the course).

First part of the homework:
First part of this week's homework is all about debugging. There are ten small errors in the JavaScript file in your homework. Each error is either a typo (a misspelling, an incorrect symbol, or something with incorrect capitalization) or something missing (such as a closing parenthesis or part of the name of an object's properties or methods). Some of these errors are fairly simple and may be found just by proofreading the code. Others will require you to use the debugger and/or **console.log()** to solve.

There are no errors in the HTML or CSS. All errors are in the JavaScript. No errors involve moving lines of code. One line contains two errors, but in all other cases, there is only one error per line.

You should find exactly ten errors. At the end of each line where you find an error (or in one case multiple errors), write a single-line comment that explains the error. For example, you added a parenthesis, you might type: **// missing parenthesis at end of for() statement** (the // is used at the end of a line for a single-line comment in JavaScript). Do not just paste in the error message that you saw on the console; that does not show me that you understand the problem. If you are fixing a logic error (such as a **>** used when a **<** should be used), then explain why the change had to be made. For example: "Loop would not run because **i** is initially not greater than 10; changed to **i < 10** so that loop would count up to 10."

When you have correctly fixed all of the bugs, your page's output should look like this:



Check your output carefully against this. Are the commas and data exactly as shown here?

- I have added comments to sub-divide the code into a few sections and to tell you how many mistakes are in each section. Consider working from top to bottom, commenting out all sections of the code that you haven't yet debugged so that you can focus on one part at a time.
- Check your final work against the original buggy code to make sure none of your changes were too drastic. **DO NOT** blindly obey the errors reported to you in the JavaScript console. Remember that those errors are often a symptom of other errors that happened earlier in the script's execution. If you find yourself changing more than a word or a piece of punctuation per error, then you are making this too difficult.
- Follow the advice from the end of Chapter 10 on things to look for.

Grading:
For part A (debugging), you will receive 1/4 point for each error corrected and 1/4 point for each correct explanation of the error. I will accept alternative corrections for some errors, but only within the constraints I've given here -- e.g., don't move lines of code around or edit the CSS or HTML. Please remove all debugging statements before turning in the homework.
For part B, the libraries, you will receive an extra 5 points.
So total score for perfect homeworks is 10 points this week!