Lab 1 - Web Systems review(-ish): HTML5, CSS3, JavaScript, JSON

Due: Friday, January 19, before class. ***Whatever is on GitHub at that time will be graded. Committing after the due date will result in the lab being marked late!***

This should help get your brain to think in code again, and perhaps spur some ideas for your projects.

A long time ago (in a galaxy far far away…), we made a Tweet ticker for Lab 1. I provided pre-scraped Tweets in JSON format. But they're old now, and mostly broken. We can do better.

We are going to create a news ticker. You will still be using pre-scraped data, but it will be up to you from where you will scrape that data. Yes, you may use multiple news sites. Many news sites have an RSS feed, which will give you XML descriptions of news articles. I bet there are some free tools out there that can convert XML to JSON… **YOU DO NOT HAVE TO USE ANYTHING THAT GIVES YOU BACK XML, BUT IF YOU HAPPEN TO USE SOMETHING THAT GIVES YOU BACK XML THEN YOU SHOULD CONVERT IT TO JSON.**

You should aim to scrape **at least 200 articles** for the lab. This may take several news sites to accomplish. Again, that's fine. Concatenate all the news items into a single JSON file. You should run your finalized JSON file through a JSON linter: https://jsonlint.com/

Need a refresher on JSON? Find the official documentation here: https://json.org/

Like I mentioned before, you get to use all the fancy things right from the beginning now. Bootstrap would be quite handy for this lab. Read up on its documentation here: https://getbootstrap.com/

Use your VM to host your site.

You may not use PHP for this lab! You can (and must) use HTML, CSS, and JavaScript. Nothing else! Pretty much anything that was fair game for HTML, CSS, and JavaScript in Web Sys is fair game for this lab.

You will design this app together as a group and devise some sort of specification guide together. After that, each of you will individually implement those things specified in the specification guide. So yes, it might be the case that each of your apps look and feel very similar. That's fine. The goal is to get you working together as a group for the first time (not unlike your resume lab last semester).

The lab:
Create a news ticker, which will show the news items from the JSON file, five articles at a time. The ticker must slowly cycle through the articles no faster than once every three seconds. How you choose to cycle is up to you: you could replace all five articles every three seconds, replace one every three seconds, or anything in between.

Use CSS3 transitions and animations (or jQuery animations, if you prefer) to make the articles cycle through the ticker smoothly.

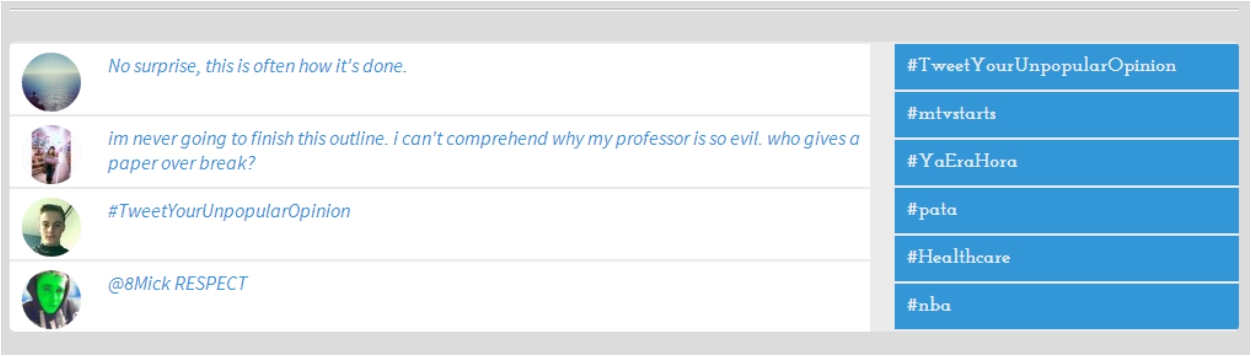
Make the site responsive and clean using Bootstrap. Ideally, it should look good on both desktop and mobile. Remember the dev tools built into Chrome and Firefox! There are buttons that squeeze everything down to phone-screen size. Things like @media-queries might be useful to getting everything right (if you're not going to go the Bootstrap route).

Please write a README.md file that documents your thinking throughout the development process. I want to know where you got stuck, how you got unstuck, what was easy, what was difficult, etc. You should also document your individual creativity there. Remember too that you're allowed to use whatever you want, but those things have to be cited in the README.md file. **If you don't cite your sources, you will get a 0 for the lab, no exceptions no apologies later**.

You must put a copy of the specification guide in your README.md file. That way I can be sure everyone in the group used the same one 🙂

Did you remember to invite me and the TA to your private lab repo? We can't grade what we don't have access to.

Potential example (from back when this was a Tweet ticker):



Remember: if you copy this exactly, you get a C. Creativity is key! Study other news ticker apps out there: see what you like and what you don't (and then cite the news ticker apps you studied in your README.md file!).

Grading rubric:

Formatting and code style:	10 points
Objective 1, processing JSON/XML:	10 points
Objective 2, displaying output:	10 points
Creativity:	10 points
README.md:	10 points
Total:	**50 points**

Extra credit

For an additional 5 points, use API calls to get your news items. ***Do not use any APIs that cost money!!!***