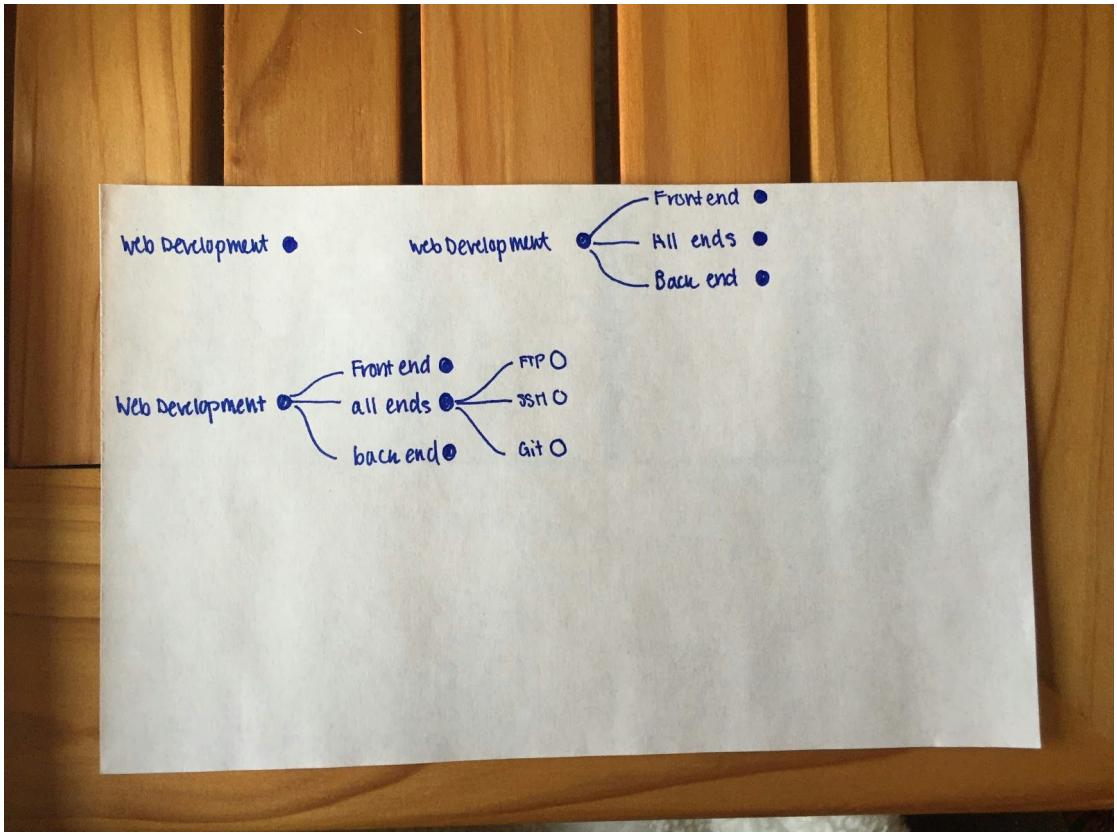
Creating Interactive Visualization Software

The dataset I choose for this assignment was really small and simple. It is a set of hierarchical set of data about what web developers need to know for whichever web route they want to take. I found this data from a video I watched a couple years ago. (link : https://www.youtube.com/watch?v=zXqs6X0lzKI) This video was really helpful for me when starting out as a web developer. The data presented in the video is outdated since it is from 2014 so I updated and added some things to the dataset myself. The supplemental data was found on various website and some of the data also came from developers that I know personally.

In the video the data is presented in a tree. I think this was an excellent way to present this kind of data since it is highly hierarchical. The data visualization is the video did not have interaction so I wanted a tree-like structure with interaction to be my chosen visualization for this domain. The interaction would be applied to each root and it would toggle the visibility of the root's children. Since there is a lot of information, this interactivity would be useful to provide the user with a sense of focus in two different ways. One, focus in what the user wants to learn from the data. For example, maybe they already know front end web development and want to learn back end web development. They would be able to hide the front end information and focus on the backend information. And the second way is that the user wouldn't be cognitively overwhelmed by all the data. They have the ability to pay attention to only one section of the visualization at a time requires less cognitive work.



For the implementation, I went on D3's website and found a spot-on example of the kind of interactive visualization I wanted to do. It is found at this link:
http://mbostock.github.io/d3/talk/20111018/tree.html
I made some small changes in my page but the rest of the code is almost exactly the same. In my javascript file I commented the lines of code to display my understanding of what is happening and how d3 is rendering and animating the page.

My Tree ended up being a little different from the tree in the story boards. Instead of a tree that expands horizontally, I made my tree expand vertically. The colors and text placement in my visualization differ from the storyboards as well. I made these slight changes to differentiate my visualization from the example that Mike Bostock wrote for the D3 site.
The main goal of my visualization was to provide the user with an organized way of seeing which skills and libraries they need to master for each subset of web development. The hierarchical structure was very natural from this dataset and provides the majority of the organization. To interact with this visualization, you must click on the roots of the tree. The root nodes that are filled in with purple color are the roots that have children. The root nodes in this domain represent a concept or subsection of web development and the children nodes will either be a more specific concept or a specific language or library to learn.

The development process for this assignment was challenging but overall was a good experience. The longest part of the development process was trying to understand the example code and then trying tweak parts of it. D3 is a complicated language and the code is not very intuitive when you haven't developed in it much. After I understood the majority of it, I took a few hours to change some things around and make it a little more unique. One problem that I unfortunately did not get to was dynamically changing the allowed width of the node labels. You will notice that if you open a few of the parent nodes, the labels get a little squished and unreadable. I think the original tree layout is horizontal for this reason.