HW 3: Building Out Clickable Templates in HTML & CSS

GITHUB REPO & WEBSITE URL

Github: https://github.com/ryanweng24/cse134b
Website: https://moviedex-99d1a.firebaseapp.com/

TEAM EFFORT

Our team decided to split up the HTML files of our website and added our CSS styling into one file called style.css. Ryan added CSS styling to the explore.html and team.html, Kenneth designed moviedescription.html and playlistdescription.html, and Lucky worked on index.html and profile.html. We decided to add vanilla CSS first to get a basic understanding on how to write in CSS and then moved onto styling with Bootstrap when we were more familiar with the language.

Ryan Weng
Bootstrap has built-in classes such as the grid system to make it very easy for users to layout and style their HTML. This reduces the number of lines of code needed in the CSS files but demands that the user create more structure within their HTML file with the appropriate Bootstrap css classes. In general, vanilla CSS requires more lines of CSS but less lines of HTML while Bootstrap boasts the opposite. Ryan usually styles his files with Bootstrap, which would also account for the disparity in time taken to complete the styling.

File Name (vanilla)	Lines of Code	Hours Taken
style.css	140-150	< 2 hours
explore.html	10-15	< 1 hour
team.html	10-15	< 1 hour
File Name (bootstrap)	**Lines of Code**	**Hours Taken**
style.css	70-80	< 1 hour
explore.html	35-40	< 1 hour
team.html	30-35	< 1 hour

Kenneth Vu
From the time spent working on the project, the functional differences that I experienced between the vanilla version and the Bootstrap, is the form in which each tool allows us to design the code. While the Bootstrap version was more intuitive and easier to understand, the vanilla version offered more ways to design the application in finer detail. An example of this is how bootstrap would have its columns structurally divided into 12 segments. Essentially, you can only divide evenly by 12. The vanilla version has two ways to adjust size, one is by pixels and the other and more adaptable way is by the percentage. The percentage way allows you to specify a more pinpoint size if you are especially particular about details. The Bootstrap version also automatically styles small details such as margins and padding certain ways for you. As for performance, the vanilla version requires more coding as its CSS file is larger than that of the Bootstrap version. This is due to the fact that Bootstraps has many predefined templates for users to utilize, which also has its disadvantages because developers would have to include the large libraries that go in hand with Bootstrap or link them to the file. The overall time spent on the code was not as significant as the time was spent learning, experimenting, and setting up CSS. I personally programmed the vanilla style first, as recommended, and for some reason, I found it easier to learn than the Bootstrap version. Definitely, the Bootstrap version would be much more powerful in tackling more labor-intensive tasks.

File Name (vanilla)	Lines of Code	Hours Taken
PlaylistDescription	70	1 hour

MovieDescription	61	< 0.5 hour
style.css	48	< 0.5 hour
File Name (bootstrap)	Lines of Code	Hours Taken
PlaylistDescription	76	< 1 hour
MovieDescription	64	< 0.5 hour
style.css	20	< 0.5 hour

Lucky Nguyen

Combined together, profile.html, index.html, and style.css took Lucky about 10 hours to complete, contributing to 350 lines of code for style.css, 100 lines of code for profile.html, and 50 lines of code for index.html. Lucky usually styles her html files using Bootstrap, so it took her some time to adjust to vanilla CSS, which explains why it took almost twice the time to style index.html and profile.html. The lines of code slightly differ between vanilla and css. Because Bootstrap has built in classes for certain components such as “row”, “container”, and “col”, the html files increased in the number of lines of code. Bootstrap also has built in css for its components, therefore it required more lines of styling to either override or remove Bootstrap css, with the use of “important!”.

File Name (vanilla)	Lines of Code	Hours Taken
style.css	330	< 5 hours
index.html	45	< 1 hour
profile.html	120	< 1 hour
File Name (bootstrap)	Lines of Code	Hours Taken
style.css	350	< 3 hours
index.html	50	< 1 hour
profile.html	140	< 1 hour

USER IMPACT

***We used a Nexus 5, with a throttling of regular 3G.**

File Name	Vanilla load time	Vanilla byte count	Bootstrap load time	Bootstrap byte count
index.html	4.22 s	363 KB	4.7 s	395 KB
explore.html	874 ms	1.5 KB	31.56 s	2.8 MB
profile.html	24.02 s	2.1 MB	18.44 s	1.6 MB
MovieDescription.html	276 ms	1.25 KB	775 ms	1.6 KB
PlaylistDescription.html	140 ms	461 KB	10.6 s	837 KB
team.html	6.17 s	535KB	6.3 s	535 KB

BOOTSTRAP vs VANILLA CSS

Bootstrap is an open-source framework that comes with a number of benefits. It offers the developer design features that are responsive, such as grids, navigation bars, buttons, and drop-downs, which can making designing a lot easier and faster to implement. Because it already provides code to developers, one of the advantages is consistency across all pages of your website. In addition, Bootstrap is widely-used among developers, which means that there are a number of resources to help people learn, just by simply typing "how to ____ bootstrap". Although Bootstrap comes with a lot of advantages, there are times when you shouldn't use Bootstrap due to some disadvantages. It may be not be favorable to use Bootstrap because of the fact that it is a framework, meaning that is extremely bloated with lines of code that you as a developer may not use. It would defeat the purpose of using a framework if you are constantly using "important!" to override Bootstrap's default code, and it would be better to just build something from the ground up (vanilla CSS). Another thing that contributes to Bootstrap bloating is that the structure of the DOM is also affected. For example, if the developer wants to use Bootstrap's grid component, a lot of divs are required in your DOM. In addition, because it is an open-source framework, Bootstrap is constantly under development by bugs found by the community. This leads to frequent updates to the framework, which can be frustrating when developing a site because then you will need to update your website as well. When creating a quick, functional, and responsive website, it would be better to use Bootstrap because saves time and is easy to use and provides consistency and main browser compatibility. In addition, developing a website with Bootstrap would be great for new web developers because Bootstrap has an impressive documentation, providing users demos and examples so that they don't have to waste time playing around with the framework. Bootstrap is not ideal when wanting to create a unique website because websites that use Bootstrap all tend to look alike, and they are all bloated with a great number of CSS lines. Because of these reasons, it may be better to use vanilla CSS. Vanilla CSS is just plain CSS, and the benefits of not using frameworks like Bootstrap, is that there is less chances of running into the bloating issue resulting in any bandwidth issues. When creating a simple website, one CSS file without any frameworks would be ideal because it is short and simple, requiring no extra downloads of files from Bootstrap. Another advantage of using vanilla CSS is that it gives more control to the developer. Unlike with Bootstrap where you would have to update or override CSS with "important!", the developer does not need to worry about someone else's code. However, there are disadvantages to vanilla CSS as well. For example, styling a grid may take too much time, especially if the developer is not familiar with CSS. It would be better to use Bootstrap because they provide code for you on how to create grids, and also other widely used features of a website like navigation bars and buttons. Developers who worried about slow loading time and battery usage would prefer vanilla CSS because it is not bloated in the way that Bootstrap is. This method would also be better if the developer wanted more control over their stylesheets, without depending on Bootstrap CSS. The results from our tests via a Nexus 5 phone indicate that generally, the byte size for vanilla is lower which consequently causes the load time to be lower. This means that overall, even though Bootstrap may be useful in shortening code development time, it has it drawbacks when we compare its loading time against that of vanilla CSS. This exact aspect that we tested brings up the question mentioned in class: If you are using a framework, for what reason and implementation detail do you need to use it for? The purpose of a framework is to assist in solving problems that would otherwise be difficult without its use.