

Homework 3

Most importantly you will also need to provide a write up that discusses your findings with the two methods employed. You should provide numbers in terms of work effort (lines of code, hours taken, etc.) as well as user impact (load times, byte count, etc.).

Introduction

For this week's homework assignment, our team worked on bringing our idea to life. Specifically, we turned all the templating into HTML/CSS code and added navigational functionality to our web app. By going this process once once the 'Vanilla' way and once using Bootstrap, we realized how much quicker it was to develop in Bootstrap. It took us some time to learn how to navigate the libraries and utilize their classes, but once that was out of the way, creating layout and buttons was very quick. However with the Vanilla approach, we felt that we had a much deeper understanding of the code behind our website.

Vanilla Approach

In using the Vanilla approach, our team ended up with the following data for each of our files:

Filename	Size (KB)	Lines	Hours	Load (s)
Homepage.html	468	453	4	5.79
LoginPage.html	331	62	1.5	3.75
ProfilePage.html	551	128	1	4.28
RegisterPage.html	332	96	1	3.82

Thoughts

Overall, our team agrees that we appreciate the skills and understanding that coding from scratch taught us. Coding this way forced us to understanding details such as padding and margin that Bootstrap does for you. In this way, we felt that we had a much stronger grasp on each part of our project, so if we wanted to modify a certain part we would be able to. However, we felt that we spent a large amount of time trying to position and style the elements to match our prototype. Because of this, at time we felt like we weren't making good progress. Also, even though we didn't notice it, we believe that load times would be faster because we won't have to load the Bootstrap and JQuery Libraries. Our Vanilla Homepage.html file was especially much larger than our Bootstrap file because we had to handwrite the modal functionality, whereas Bootstrap already provided that functionality. Overall, we noticed that load times were about ~1 Second less with the Vanilla approach.

Bootstrap Approach

In using the Bootstrap approach, our team ended up the following data for each of our files.

Filename	Size (KB)	Lines	Hours	Load (s)
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Homepage.html	558	318	2	6.38
LoginPage.html	413	61	.5	4.94
ProfilePage.html	432	108	.5	4.88
RegisterPage.html	413	76	.5	4.68

Thoughts

We felt that learning Bootstrap was a fun and valuable experience because of how quickly layouts and design can be completed. Learning the grid system helped us quickly create layouts, that would take much longer using Vanilla tables. However, at times we felt that there were too many div tag everywhere with multiple classes and that we were essentially trading complex CSS rules for divs within divs within divs. Overall, once we learned how to navigate the Bootstrap library, we felt very productive with our code - often times adding a simple class would accomplish the same thing as multiple lines of CSS code. Because of this, the overall lines in code generally decreased - especially with HomePage.html decreasing from 453 to 318 lines. Also, although the raw byte count of the files themselves decreased due to fewer lines of code, the user will have to load the libraries, increasing total load time and total load size by the user. Overall, we noticed that load times were about 1 second longer than with the Vanilla approach.

Comparison Analysis - When to Choose What Approach

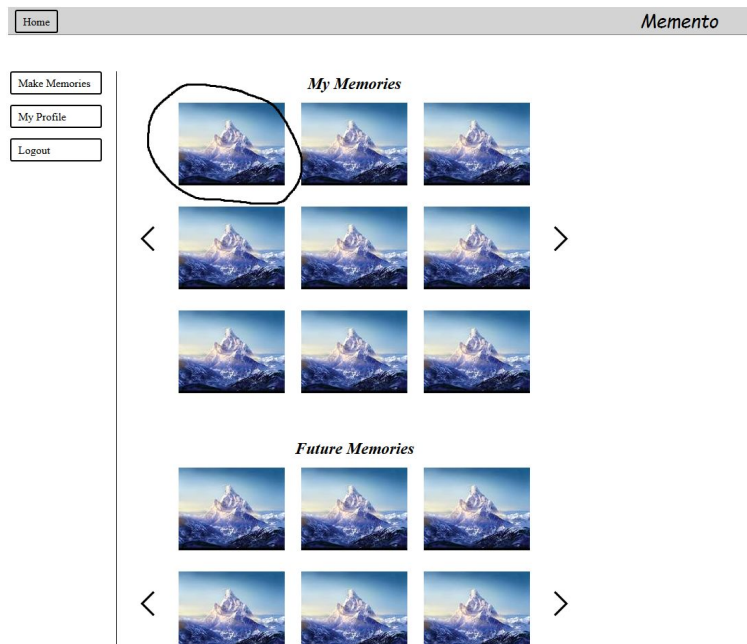
After doing the website with both vanilla CSS and Bootstrap, we realized the main tradeoffs of vanilla CSS vs. Bootstrap was speed vs. write-ability. Since vanilla CSS does not require loading the extensive Bootstrap library, file sizes are smaller in bytes and load times are faster. This comes at the cost of taking longer for developers to write the code, especially to make a site look as clean as one developed with Bootstrap. Bootstrap definitely saves developer effort and time in exchange for longer load times, but what we learned is that many Bootstrap users, include ourselves with our limited knowledge of the framework, hardly utilize the full scope and power of the Bootstrap library and mostly stick to some of the “basics” such as using pre-made stylized classes and using the grid system to layout the website. There are many other aspects of Bootstrap that we didn’t touch and many users do not use, yet every time a user loads our site they have to incur the costs of loading the entire library. Another potential downside of Bootstrap is that the stylized classes may make our page look too similar to other ones made with Bootstrap. In conclusion, we believe that in general Bootstrap (and CSS frameworks) is a better approach when developer ease of use (and saving costs on the manpower/hours spent) is more important than the faster load time for users, while a focus on speed and load time would favor the vanilla CSS approach. Perhaps different pages on the same site can employ different approaches, since load time is really important for the first page the user sees, and then background loading may be employed to load the Bootstrap library. However we also think that it is a waste to load the entire Bootstrap library if the developer doesn’t use much of its features, and that choosing to use a framework depends on the wireframe and whether the developer thinks that the use of a certain framework would speed things up enough in making that page to make incurring higher load times worth it. Some pages may greatly benefit from the use of libraries while other would not, for example our LoginPage and RegisterPage barely benefitted in

terms of looks and ease of development from Bootstrap since they are pretty simple in nature, while other pages like our HomePage greatly benefitted because of our use of the grid system.

Note:

For proof of concept of the modal, please click where we have drawn a circle around the image. We would implement this proof of concept with every single thumbnail on the real app instead of just the first one.

Vanilla Version:



Bootstrap Version:

