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CS 482

Active Learning Assignment

The topic I chose to research for the SPIKE assignment is the Bootstrap framework, used for designing responsive and mobile-first webpages via JavaScript and CSS plugins and libraries. The specific version of Bootstrap I worked with is Bootstrap 5.0.2. One of the main draws to using bootstrap is its ability to dynamically rearrange and rescale HTML elements depending on the screen size of the device being used to view the web page. It is open source and projects can include the bootstrap stylesheets in their projects as they wish. Accessing bootstraps main functionality is done through using their HTML class names when creating HTML objects and likewise applying additional CSS or SASS over the default class stylings. The scalability aspect for different screen sizes is handled primarily through breakpoints and media handling tags specified in CSS. Bootstrap by default sets breakpoint values labeled: xs, sm, md, lg, xl, but the specific values of these breakpoints can be customized. Tagging elements with these breakpoint tags allows special behaviors to be attributed only elements with specific tags once certain screen size conditions are met. For example, converting a grid of images on a wide display to a single column of images on mobile. In addition to functionality benefits like so, Bootstrap offers styling for many common HTML display elements like forms, popups, carousels, etc.

As for my practical exercise, I used the bootstrap documents to experiment with and implement several types of elements on a dummy home page for our websites. The Bootstrap elements I incorporated were the navbar, collapsible toggle menu, carousel, modal, and card elements. I also made use of flex containers to house elements like the site logo. The navbar

elements sits along the top with the site name and navigation links (These links don't go anywhere in the build I did the practice work in). When the window shrinks to a certain size, the links disappear, and a hamburger menu appears in their place. This toggles a drop-down menu with the links from before. The carousel element contains three temp products with an image, description, and a button that would take you to the product page in the final website. Attempting to click on the "Learn more" button prompts a modal to appear over the sites focus and alert the user that they must login to perform that action. Additionally, I added some dynamic sizing to elements like the logo and carousel to scale better on smaller screens.

I think Bootstrap is valuable to our project in creating elegant and functional web elements that require very little scripting to function. In this test build, the user is always assumed to be logged out, so figuring out how to have the modal popup only when it can tell a logged in user from one that is not would be a problem that needs tackling in the backend. The carousel element I think looks really nice though, especially for what we are trying to accomplish as a showcase. I'm curious as to how many major websites use Bootstrap because while it is convenient for small teams to not have to script many of the functionalities it provides by default, I wonder if it becomes inefficient at scale or in more complicated websites.

I had used Bootstrap once in the past around 4 years ago, but I was mentoring in a web development studio after only having taken one high school java class, so I struggled to understand how it was working. While I also have more experience as a programmer now, I feel as if the documentation for Bootstrap 5 has significantly improved over what I had last used (presumably Bootstrap 4). It feels as if the framework is much more accessible now, and I am interested to see how much more functionality the developers can incorporate in the future.