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CSD360; Interactive Development with JavaScript

Module 1 Assignment

JavaScript is a text-based programming language, used client-side and server-side, that allows you to make web pages interactive. It aids in turning a static webpage into an interactive webpage and is also the only programming language native to the web browser. This allows for additions like search bars, embedded videos, and shortcuts. JavaScript also helps to customize your webpage. You can do things like; showing and hiding information with the click of a button, changing the color of buttons upon hovering, a slide to work through a carousel of images, or playing audio and video from the webpage.

JavaScript also can be utilized to create web or mobile apps. JavaScript frameworks, collections of JavaScript code libraries, provide developers with pre-written code to use for routine programming features and tasks. Some of the more popular JavaScript frameworks are React, ReactNative, Angular, and Vue. JavaScript can also be used to build web servers and develop server applications. Using Node.js, developers can utilize JavaScript to build less-complex servers and develop the back-end infrastructure. The last, and most appealing ability that JavaScript provides, in my opinion, is the ability to develop video games.

JavaScript is super popular with Front-End developers as well. Due to its customization abilities and ability to efficiently format data, it is frequently used in front-end development. In combination with CSS and HTML, JavaScript is used to create the visible parts of a website or application. Because it does not require a compilation step before being used, it is extremely popular with front-end developers over other programming language alternatives. This allows for programmers to write code, refresh the browser, and see the changes they made instantly without the need for typing a command or running the program.

Personally, I hope to utilize JavaScript to create a Single Page Application for my personal project I am working on. I recently created a Golf database that houses my golf scores, courses played, and clubs used, that I have begun using to keep up with my performance. I would like to be able to input data to my database via an application instead of using Terminal, with the hope that I would not have to log onto my computer every time I want to input new data. I would also like to utilize the data formatting abilities afforded by JavaScript to map out my scores by course and time.

An example of a modern-day website that utilizes JavaScript is Google. When opening the developer tools on the Google homepage, you can see that JavaScript is utilized in both the <head> and <body> sections of the code. Within the <head> section, I counted eight <script> tags. Most seem to be referencing API’s or functions. Within the <body> section of the home page, I counted four different <script> tags, all referencing either API’s or functions, similar to the <script> tags within the <body> section.

In the example I used above of Googles homepage, the developers chose to use a TOP approach when implementing the <script> tags. TOP approach refers to placing the <script> tags and accompanying JavaScript code, within the <head> or top of the <body> tag within the code. A disadvantage to the TOP approach is that you can sometimes “put the horse before the cart.” Because of the placement, sometimes the <script> tag will load before the object it is functioning on has loaded which will cause some blocks when testing the code. When using the END approach, we place the <script> tag at the bottom of the <body> tag instead of the top, effectively making it the last tag to load and ensuring all other items it is intended to effect are loaded before then, bypassing any errors thrown.

References:

* Hack Reactor. “What Is JavaScript Used for?” *Hack Reactor*, 26 Aug. 2021, <https://www.hackreactor.com/blog/what-is-javascript-used-for>.
* “10 Things You Can Do with JavaScript.” *Top Software Outsourcing Company in Vietnam - Orient Software*, 16 Dec. 2021, <https://www.orientsoftware.com/blog/what-can-you-do-with-javascript/>.
* “Where Should We Use Script Tag in the HTML?” *GeeksforGeeks*, GeeksforGeeks, 12 Jan. 2023, <https://www.geeksforgeeks.org/where-should-we-use-script-tag-in-the-html/>.