

The computer science of web coding

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5/8/20

Ever wondered how this webpage came to be? How images are loaded onto the page, links, or text? It all stems from webpage design. I will go over some basics to introduce you to web design in case you are not familiar.

There are four main types of coding 'languages' that are used within web design. Those being HTML, CSS, JavaScript, and React. Each of these are different in many ways, but all reach the same finish line being it puts out a webpage. The developer writes hundreds and most of the time thousands of lines of code to create a webpage. Code is written in various text editors and later exported and uploaded to website hosts to later go live to the public. Lines of code you can think of as instructions for the website to follow. You could think of this as a cookbook recipe, it must follow each step one after another as the next step will not work if it does not execute the one prior. There are many different types of lines of code to write, each performing a different action. The developers also must make this code error proof. Let us say an image uploaded to the websites source is taken away from the owner for whatever reason. The code is required to have a fail-safe for these types of things to keep the webpages up and running.

A library is another core aspect to any semi-complex webpage. Think of a library as being quite literally what a library means outside of coding. A library holds multiple unique sections of a webpage. For instance, Facebook has a home page, profile page, settings page, etc. Each individual page must be written on its own, but the library is the backbone that holds all of these together. A framework is similar to a library and potentially even more vital to the structuring of a webpage. The framework is the entire skeleton of a website, holding libraries which holds everything else in the code. The framework also creates what one could think of as a path for libraries to follow. This is for two reasons, the first being organization for developers and other being for logical code pathing. Organization is huge for code, as developers very often have to update code with website changes throughout the years. Think about all the changes that have been made to any website you have been visiting throughout the years.

Any time a change is made to a website, a developer has to go through the code and add, remove, or change lines of code. It is the responsibility of the developers to organize their code and make it 'clean' for the sole purpose of making it easier on them/future developers of that code to read or understand. The second reason is more straightforward and concrete, going back to the Facebook example, you go to your profile page, which you can then go and change your profile picture, which then leads you to choosing a photo, and then leading you to saving or declining the profile picture update. One could think of this process as multiple funnels, you need to go through one to reach the next, which would lead to the next, and the last funnel in the process is the end.

These are the basic fundamentals of web page coding. Everything I touched on could go into pages and pages of specifics and intricacies, but I hope to teach you on the general ideas and topics that involve web page coding.

References

- Begin Web Development with a Head Start. (2017, November 15). Retrieved from <https://www.geeksforgeeks.org/begin-web-development-with-a-head-start/>
- DivyanshGupta1Check out this Author's contributed articles., DivyanshGupta1, & Check out this Author's contributed articles. (2019, May 22). CSS Introduction. Retrieved from <https://www.geeksforgeeks.org/css-introduction/>
- JavaScript Tutorials. (n.d.). Retrieved from <https://www.geeksforgeeks.org/javascript-tutorial/#basics>