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Summary of Weekly Reading

**Roadmap to Becoming a Web Developer**

Embarking on a journey to become a web developer can be exhilarating, yet daunting given the diverse range of skills and knowledge required. However, a structured roadmap can help chart the course towards proficiency. This article lays out the foundational steps to equip you with the essentials of web development.

Understanding the Internet

Before diving into coding, it's crucial to understand what the internet is and how it works. The internet is a global network of computers communicating with each other, following certain protocols like HTTP (Hypertext Transfer Protocol). It is the medium over which all the web data travels.

Learning HTML

HTML, or HyperText Markup Language, is the backbone of any website. It provides the structure and content of a webpage, including headings, paragraphs, images, and links. Learning HTML is like learning the grammar of a new language, crucial for constructing meaningful sentences.

Mastering CSS

CSS (Cascading Style Sheets) compliments HTML by providing the design elements of a webpage. This includes layouts, colors, fonts, and animations. Mastering CSS enables you to create aesthetically appealing and responsive websites that adapt to different device screens.

Implementing JavaScript

JavaScript is what makes a website interactive and dynamic. From form validation to creating complex single-page applications, JavaScript powers the behavior of web pages. It's the third pillar of web development, working alongside HTML and CSS.

Version Control Systems

Version Control Systems (VCS) track changes to your codebase, allow you to revert changes, and make collaboration seamless. Git, a popular version control system, enables multiple developers to work on a project simultaneously without overriding each other's changes. It's an essential tool for any developer's toolkit.

Web Hosting Services

Once you've built a website, you'll need a hosting service to make it available to the world. Web hosts store your site's files and serve them to users when your domain name is entered into a browser. Understanding the basics of hosting services will help you select the right one for your needs.

Usage of Git

Git is the most widely used version control system and is integral to managing and storing versions of your project. It's crucial for collaboration, as it allows multiple developers to work on different features concurrently without affecting the work of others. Furthermore, Git's branching and merging features make testing new features easy and efficient, while reducing the risk of bugs being introduced into the codebase.

Web Security

As a web developer, it's imperative to have a fundamental understanding of web security. This includes knowing how to protect a website against common security threats like Cross-Site Scripting (XSS) and SQL injection. Encrypting user data, securely storing sensitive information, and managing user permissions are also essential aspects of web security.

In conclusion, becoming a proficient web developer is a journey that involves continuous learning and practice. It starts with understanding the internet and builds on the core pillars of HTML, CSS, and JavaScript. Mastering version control with Git, navigating web hosting services, and understanding the importance of web security are also key steps in this roadmap. Remember, each developer's journey is unique and while this roadmap provides a general guideline, your path may vary based on your interests and goals.

**A Guide to Becoming a Full-Stack Developer in 2017**

This article outlines the essential skills required to become a successful Full-Stack Web Developer, including the ability to work with both the front-end and back-end portions of an application. Here's a brief summary:

HTML/CSS:

These are the building blocks of the web, with HTML allowing the addition of content to a website and CSS enabling the styling of this content.

JavaScript:

The most popular language in full-stack, front-end, and back-end development, crucial for making websites interactive.

Back-End Language:

Familiarity with a back-end language is required to handle operations like database interactions, user authentication, and application logic. Languages could be Node.js, Ruby, Python, Java, or PHP.

Databases & Web Storage:

You need to understand how to store and access data using SQL and NoSQL databases, in-memory data stores, and web storage for sessions, cookies, and cached data.

HTTP & REST:

Understanding how HTTP allows clients to communicate with servers is important, as is knowing best practices for designing a RESTful API.

Web Application Architecture: This involves learning how to structure your code and understanding best practices for designing complex applications. Understanding platforms like Heroku and AWS, and concepts like MVC is helpful.

Git:

Git is a version control system crucial for tracking changes made to a codebase when working on a team.

Basic Algorithms & Data Structures:

Understanding basic algorithms and data structures, along with concepts like Big-O analysis, can help in writing efficient code and using the right tools.

The article encourages aspiring full-stack developers to engage in practical projects, read about best practices, and learn from experienced developers. Additionally, practicing algorithms and understanding data structures are also recommended.

**Web Development In 2022 - A Practical Guide**

The YouTube video is a comprehensive guide to web development, focusing on essential tools, technologies, skills, and potential career paths. The speaker initially introduces the distinct roles within web development such as front-end, back-end, and full-stack developers and the varying paths one can take in the field. They then delve into the basic tools required for web development including a computer with a web browser, a text editor or integrated development environment (IDE), and command line tools.

The speaker further discusses essential web technologies, starting with HTML and CSS, and the importance of CSS preprocessors like SAS. They also highlight popular CSS frameworks such as Bootstrap and Tailwind. The necessity of JavaScript knowledge before moving to front-end frameworks is stressed, with a focus on different data types, functions, loops, and the DOM.

The video transitions to the crucial concepts and tools for front-end developers like DOM, asynchronous programming, JSON, git, npm, and browser development tools. Various platforms for deploying projects are mentioned, with Netlify and Versel among the recommended ones. Custom domain names are also suggested, with Namecheap being a good option.

Front-end frameworks such as React, Vue.js, Angular, and Svelt are examined, with the speaker emphasizing their significance in the job market. Other critical elements of modern web development like testing, server-side rendering, and static site generators are addressed as well.

The video touches on back-end technologies, discussing programming languages like Node.js, Python, PHP, C sharp, Golang, and Ruby. It also covers different web frameworks such as Express, Fastify, Koa, NestJS for Node.js, Django, and Flask for Python, and Laravel for PHP. Overall, the video serves as a holistic guide for anyone interested in web development.

The speaker discusses a broad range of topics related to advanced web development skills and the future trends in the field. They discuss different frameworks for various programming languages, including Laravel for PHP, ASP.NET for C#, Gin for Golang, Ruby on Rails for Ruby, Spring and Struts for Java, Play for Scala, and Rocket and Actix for Rust. The speaker also elaborates on the use of databases in web development, particularly PostgreSQL, MySQL, Microsoft SQL Server, SQLite, MongoDB, Firebase, Supabase, and Redis.

They emphasize the importance of back-end development skills, such as understanding and building REST APIs and GraphQL, along with authentication methods using JSON web tokens, cookies, sessions, OAuth, and password hashing. In this regard, the speaker talks about various ORM tools and libraries that can help streamline the authentication process.

Moving forward, the speaker highlights the use of WordPress as a headless CMS and the deployment of full-stack applications to hosting platforms like AWS, Heroku, and DigitalOcean. They also touch on the importance of containers and virtualization tools, such as Docker and Kubernetes.

The speaker then addresses other essential skills for web developers, including the use of image and video upload services, creating REST APIs with authentication, using terminal, deploying applications, and mobile app development using tools like React Native, Flutter, Ionic, and Xamarin. They also introduce Web 3.0 technologies, including blockchain and Ethereum smart contracts, and the role of WebAssembly for building high-performance applications.

Finally, the video ends with a look at the future of web development, focusing on the significant role of artificial intelligence (AI) and machine learning. They note the use of machine learning APIs for applications like chatbots, spam filters, and product recommendations, and predict that these technologies will be increasingly used for user engagement and analytics. The speaker concludes by noting that AI tools like GitHub Co-pilot are likely to have a positive impact on the daily tasks of programmers.