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FUNDAMENTALS OF WEB TECHNOLOGY: A COMPREHENSIVE OVERVIEW OF HTML AND CSS

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Анотація

Ця стаття надає базовий огляд основних веб-технологій, зосереджуючись на мові розмітки гіпертексту (HTML) та каскадних таблицях стилів (CSS). HTML, стандартизована мова розмітки, визначає структуру та зміст веб-документів, тоді як CSS, мова стилів, контролює їхнє представлення та візуальний вигляд. У цій роботі досліджуються фундаментальні принципи цих технологій, включаючи їхні специфікації, категорії тегів, властивості та типи значень. Розглядаючи ролі HTML у структуруванні веб-контенту та CSS у визначенні його стилю, ця стаття має на меті забезпечити чітке розуміння основних компонентів, що лежать в основі сучасної веб-розробки.

Ключові слова: Веб-технології, HTML, CSS, веб-розробка, структура веб-сторінки, стилізація веб-сторінки, мова розмітки, мова стилів, властивості CSS, веб-дизайн, веб-браузери.

Abstract

This article provides a foundational overview of core web technologies, focusing on HyperText Markup Language (HTML) and Cascading Style Sheets (CSS). HTML, the standardized markup language, defines the structure and content of web documents, while CSS, the styling language, controls their presentation and visual appearance. This paper explores the fundamental principles of these technologies, including their specifications, tag categories, properties, and value types. By examining the roles of HTML in structuring web content and CSS in dictating its style, this article aims to provide a clear understanding of the essential components that underpin modern web development.

Keywords: Web Technologies, HTML, CSS, Web Development, Web Page Structure, Web Page Styling, Markup Language, Styling Language, CSS Properties, Web Design, Web Browsers.

Introduction

The internet has become an indispensable part of modern life, and at its core lies web technology. This domain encompasses a diverse array of tools and techniques that facilitate communication between devices across the globe. From accessing information through web browsers to the intricate design of web pages, web technology plays a pivotal role in shaping our digital experiences. This article provides an overview of the foundational elements of web technology, focusing on HyperText Markup Language (HTML) and Cascading Style Sheets (CSS), the cornerstones of web page creation.

Understanding Web Technology

Web technology essentially bridges the gap between various devices via the internet. It relies on a suite of interconnected components, including the World Wide Web (WWW), the global information system built upon web browsers, HTML, and Hypertext Transfer Protocol (HTTP). Web browsers are software applications that interpret and display web pages, enabling users to access hyperlinked resources. Web servers are programs that process network requests and deliver web page files using HTTP. Web pages are digital documents linked to the WWW, accessible to users with a web browser. Web development is the comprehensive process of building, creating, and maintaining websites, encompassing design, publishing, programming, and database management. [1]

HyperText Markup Language (HTML) Structuring Web Content

HTML is the standardized markup language that defines the structure and content of web pages. It allows developers to organize information using headings, paragraphs, lists, images, and videos. HTML also enables the creation of hyperlinks and interactive forms, facilitating data transfer and processing.

HTML Specification and Tag Categories

The HTML specification provides a detailed description of the language and its usage. It outlines various aspects, including general infrastructure, semantics, structure, and API of HTML documents, HTML elements, user interaction, web page loading, web application APIs, HTML and XML syntax, and page rendering. HTML tags are categorized based on their function, including metadata content, which provides information for browsers, search engines, and SEO; flow content, which specifies key elements of a web page; sectioning content, which defines sections with headings; heading content, which defines page headings; phrasing content, which presents textual content; embedded content, which includes external elements like images; and interactive content, which enables user interaction. Notably, some tags can belong to multiple categories.[2]

Cascading Style Sheets (CSS): Styling Web Pages

CSS controls the presentation and layout of web page elements. It enables developers to define the visual appearance of web pages, including object positioning, sizing and spacing, document flow, text formatting, element decoration, and animation and dynamic effects.

CSS Pseudoclasses and Properties

CSS pseudoclasses allow for conditional styling based on element states, enhancing selector functionality. Modern CSS3 standards offer a wide range of properties for web page design, categorized into sizing and spacing, flow control, text formatting and decoration, and animation and dynamic effects.

Basic CSS Value Types

CSS properties accept various value types, including absolute and relative numeric units, keywords, colors, functions, and strings. [3]

Conclusion

HTML and CSS are the fundamental building blocks of modern web development. HTML structures content, while CSS dictates its presentation. A deep understanding of these technologies is essential for anyone involved in creating and maintaining websites. As web technology continues to evolve, mastering these core principles will remain crucial for developing engaging and accessible digital experiences.

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