



Design & Development of Web for NEWS (API)

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Abstract

Web development is a user interface which connect user with the server. Web developments are mainly divided into two parts -a) Frontend Development b) Backend Development. In Front end web development, the three main technologies that we can use are – HTML, CSS and Java Script. HTML is a basic structure of a web content, it contains the HTML elements which help the browser for displaying content. CSS consist of all the style such as color, font, images, videos, etc. It is used to present the document that is available in HTML format. Java Script is the functional part of the website; it is referred as a brain of the website. By combining all these technologies, I made the project on News website based on API which give the related news and articles to the users..

Keywords: HTML, CSS, Java Script, website, Web development, Web design, News site, API.

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1. Introduction

In the ever-evolving digital landscape, web development stands as the cornerstone of our online interactions, serving as the bridge between users and the remote servers which have stored data.[1] net development will vary from developing an easy single static page of plain text to complicated net applications, electronic businesses, and social network services. This paper gives you a brief exposure of the world of web development.

[7] Web development can be dissected into two primary components: Fronted Development and Backend Development. These two are responsible to create the seamless, interactive and dynamic websites and applications that have become integral to our digital lives. In this research, our focus primarily revolves around the former -Fronted Development. Frontend Development, as the name suggests, encompasses the elements of a website or web application that users directly interact with. It is the visual and interactive aspect of web development that engages and captivates users as they navigate through websites.[4] At the core of Frontend

Development lie three indispensable technologies: HTML (Hyper Text Markup Language), CSS (Cascading Style Sheets) and JavaScript.

HTML serves as the fundamental building block of web content, providing the structure and framework upon which digital information is organized and displayed.

Complementing HTML, CSS steps in to lend a visual identity to web content. It is through CSS that developers exercise control over elements like colour schemes,

typography, layout and multimedia presentation.

Lastly, JavaScript emerges as the function hear of web development, often referred to as the “brain” of a website, JavaScript is responsible for enabling interactivity, dynamic behaviour and responsiveness. With JavaScript, web developers can create interactive forms, implement real time updates and enhance user experience through animations and other engaging features.

To demonstrate the practical application of these fronted technologies, this research project showcases the development of News website, powered by external APIs.This website aims to provide users with timely and relevant news articles, seamlessly integrating HTML, CSS and JavaScript to deliver a user-friendly and content-rich digital platform

2. HTML in Web Development

[8]HTML (Hypertext Markup Language) is the foundation of web development. It is represents as show in [fig1] and serves as the backbone for creating the structure and content of web pages. HTML uses a markup language consisting of tags and elements to define the layout and organization of a webpage.



Figure

HTML documents consist of a hierarchical structure composed of various elements, each with a specific purpose. These elements are enclosed within tags,

- **HTML Elements:** HTML provides a wide range of elements to structure typically represented as opening <tag> and closing </tag> pairs. Here are some key aspects of HTML's structure and elements.

HTML Document Structure show in [fig2]:

- **An HTML document follows a standard structure, comprising a** <!DOCTYPE> declaration, an <html> element that encloses the entire document, and two main sections: <head> and <body>.
- **Head Section:** The <head> section contains metadata about the webpage, such as the document's title, character encoding, links to external stylesheets or scripts, and other essential information.
- **Body Section:** The <body> section contains the visible content of the webpage, including text, images, links, and other media. It is where you define the structure and layout of the page's content.

```

portfolio_site > research.html > html > body > nav > ul > li
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="UTF-8">
5 <title>My Web Page</title>
6 </head>
7 <body>
8 <header>
9 <h1>Welcome to My Web Page</h1>
10 </header>
11 <nav>
12 <ul>
13 <li><a href="#">Home</a></li>
14 <li><a href="#">About</a></li>
15 <li><a href="#">Contact</a></li>
16 </ul>
17 </nav>
18 <main>
19 <section>
20 <h2>About Me</h2>
21 <p>I am a web developer passionate about creating user-friendly websites.</p>
22 </section>
23 </main>
24 <footer>
25 <p>&copy; 2023 My Web Page.</p>
26 </footer>
27 </body>
28 </html>

```

Fig 2: Structure of a Web Page content. Common elements include headings (<h1>, <h2>, <h3>), paragraphs (<p>), lists (,), links(<a>), images(), and more. These elements play a crucial

3. CSS in Web Development

[8] Cascading Style Sheets (CSS) as show in [fig3] plays a pivotal role in web development by providing the means to style and format web pages. CSS separates content from presentation, allowing web developers to define

how HTML elements should appear on the screen or in print. The core responsibilities of CSS include:



Fig 3: CSS

- **Presentation Control:** CSS allows developers to control the layout,

Syntax: [9] CSS rules consist of a selector, a set of properties show in [Fig4], and their corresponding values.

```

css
p {
  font-size: 16px;
  color: #333;
  margin: 10px;
}

```

Fig 4: CSS Syntax

4. JavaScript in Web Development

[8] JavaScript plays a pivotal role in modern web development by enabling interactivity and dynamic behavior in websites. It serves as the "brain" of the website, allowing developers to create engaging user experiences. It is represent as shown in [Fig 5]. Role inorganizing and presenting information. typography, colors, spacing, and positioning of HTML elements. It transforms raw HTML content into visually appealing and structured web pages.

- **Cross-Browser Consistency:** CSS helps ensure that web pages render consistently across various web browsers and devices, providing a uniform user experience. It mitigates the differences in how browsers interpret and display HTML elements.

- **Accessibility:** CSS can be used to enhance the accessibility of web content, making it more usable for individuals with disabilities. Techniques like responsive design and proper semantic HTML/CSS coding contribute to a better user experience.

Its key roles in web development include:

- **User Interaction:** JavaScript enables user interactions such as form validation, button clicks, and mouse events. It allows for real-time feedback and responsiveness, enhancing the user experience.

- **Dynamic Content:** JavaScript can manipulate the Document Object Model (DOM), enabling the addition, removal, or modification of HTML and CSS elements on the fly..
- **Asynchronous Operations:** JavaScript is used for handling asynchronous tasks, such as fetching data from servers or APIs without blocking the user interface. This asynchronous behavior is crucial for modern web applications.



Fig5:JavaScript

5 API Integration

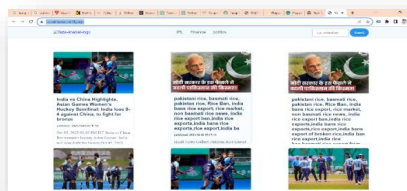
[10]API integration is a fundamental aspect of creating a news website that aggregates and displays news content from various sources.

Integrating news APIs into a website involves several steps:

- **API Selection:** The first step is to choose one or more news APIs that provide the desired content. Consider factors such as the breadth of news coverage, data format (JSON, XML, RSS), and the availability of features like real time updates and content categorization.
- **API Registration:** Most news APIs require registration to obtain an API key, which is used for authentication and access control. Register with the chosen APIs and obtain the necessary credentials.
- **API Requests:** Write code to make API requests based on your project's requirements. This involves constructing HTTP requests (typically using GET or POST methods) with the necessary parameters, including your API key.
- **Data Display:** Design and implement how the retrieved news data will be displayed on your website. This includes creating templates for articles, categories, and any other relevant information.

6. Conclusion

In this research paper, it highlights the importance of web development. It also elaborates the technologies which was used in fronted development that are-HTML, CSS and JavaScript along with API integration. By using these technologies I created a News website based on API which is shown in [Fig 6].



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