Orange Digital Center – Codding School

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Introduction to Web Development

Week-1 Lesson

Overview of Web Development

Web development is the process of creating websites and web applications. It involves several disciplines including web design, web content development, client-side/server-side scripting, and network security configuration. Web development can be divided into two main categories:

- **Frontend Development**: This deals with everything that the user interacts with directly in the browser. It involves HTML, CSS, and JavaScript.
- **Backend Development:** This involves the server-side of the application, including databases, server logic, and APIs.

Setting up the Development Environment (VS Code)

Step 1: Install Visual Studio Code (VS Code)

1. Go to the Visual Studio Code website (https://code.visualstudio.com/).
2. Download the version appropriate for your operating system.
3. Follow the installation instructions.

Step 2: Install Extensions

Extensions enhance the functionality of VS Code. Here are some useful extensions for web development:

- **Live Server:** Launch a local development server with live reload feature.
- **HTML Snippets:** Provides quick HTML snippets for faster coding.
- **Prettier - Code Formatter:** Automatically formats your code.

To install extensions:

1. Open VS Code.
2. Click on the Extensions icon on the sidebar.
3. Search for the extension you want to install and click the "Install" button.

Step 3: Open Your Project

1. Open VS Code.
2. Select “File” > “Open Folder...”.
3. Choose the folder where you want to create or open your project.

HTML Syntax and Structure

HTML (HyperText Markup Language) is use to structure content on a webpage, it is the standard language for creating web pages. Here's a basic structure of an HTML document:

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>My First Web Page</title>
</head>
<body>
   <h1>Hello, World!</h1>
   <p>This is my first web page.</p>
</body>
</html>
```

Explanation:

- **<!DOCTYPE html>:** Declares the document type and version of HTML.
- **<html lang="en">:** The root element of an HTML page with a language attribute set to English.
- **<head>:** Contains meta-information about the document that the browser understands and interprets. (e.g., charset, viewport, title).
- **<title>:** Specifies the title of the document shown in the browser's title bar or tab.
- **<body>:** Contains the content of the document (e.g., headings, paragraphs).

Basic Tags and Elements

HTML elements are the building blocks of HTML pages. Here are some common tags and their purposes:

- **Headings:** <h1>, <h2>, <h3>, <h4>, <h5>, <h6>

```
<h1>This is a heading</h1>
<h2>This is a sub-heading</h2>
```

- **Paragraph:** <p>

```
<p>This is a paragraph.</p>
```

Block and Inline Elements

HTML elements can be either inline element or block element.

- **Inline elements** are elements that don't take up more space than their content needs. They are line up side by side in the browser. Eg. , <img>, , etc.

- **Block elements** are elements that take up the whole width of a page regardless of the content. Eg. , <p>, <h2>, <ul>, <li>, etc.

HTML Attributes:

Attributes are added to the opening tag of an element to provide more information to the browser about that element. Below are some elements with attributes.

- **Links:** <a>

```
<a href="https://www.example.com">This is a link</a>
```

- **Images:** <img>

```
<img src="image.jpg" alt="Description of image">
```

- **List:** (unordered), <ol> (ordered), and <li> (list item)

```
<ul>
  <li>Item 1</li>
  <li>Item 2</li>
  <li>Item 3</li>
</ul>
```

Forms and Input Elements

HTML forms are used to collect users' information. Here are some basic form elements:

```
<form action="/submit" method="post">
    <label for="name">Name:</label>
    <input type="text" id="name" name="name">

    <label for="email">Email:</label>
    <input type="email" id="email" name="email">

    <label for="password">Password:</label>
    <input type="password" id="password" name="password">

    <input type="submit" value="Submit">
</form>
```

Explanation:

- **<form>:** Defines a form that can be submitted to a server.
- **<label>:** Defines a label for an input element.
- **<input>:** Defines an input field where the user can enter data. The type attribute specifies the type of input (e.g., text, email).
- **<input type="submit">:** Creates a submit button.

Semantic HTML5 Elements

Semantic HTML5 elements provide meaning to the structure of your web page. They make your HTML more readable and accessible.

- **Header:** <header>

```
<header>
  <h1>My Website</h1>
  <nav>
    <a href="home">Home</a>
          <a href="about">About</a>
    <a href="contact">Contact</a>
  </nav>
</header>
```

- **Footer:** <footer>

```
<footer>
  <p>&copy; 2024 My Website</p>
</footer>
```

- **Article:** <article>

```
<article>
  <h2>Article Title</h2>
  <p>This is an article.</p>
</article>
```

- **Section:** <section>

```
<section>
  <h2>Section Title</h2>
  <p>This is a section.</p>
</section>
```

Explanation:

- **<header>:** Represents a container for introductory content or navigational links.
- **<footer>:** Represents a container for footer content.
- **<article>:** Represents a self-contained composition in a document, page, or site.
- **<section>:** Represents a thematic grouping of content.

References:

1. Introduction to HTML: https://developer.mozilla.org/en-US/docs/Web/HTML

2. HTML Basics: https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/HTML_basics

3. HTML Semantic Elements: https://www.w3schools.com/html/html5_semantic_elements.asp

3. Visual Studio Code User Guide: https://code.visualstudio.com/docs

Week-1 Task:

Build a product landing page using only HTML that looks similar to the image in the week1 task PDF document.