Module 2 – Frontend – HTML

HTML Basics

• Question 1: Define HTML. What is the purpose of HTML in web development?

Ans - HTML (Hypertext Markup Language) is the standard language used to create and structure content on the web. It defines the elements of a webpage such as headings, paragraphs, links, images, and other content.

Purpose of HTML in web development: HTML provides the foundational structure of a webpage, allowing developers to organize and display content. It ensures that browsers can interpret and render content correctly, creating a structured and accessible web experience for users. Without HTML, web pages wouldn't be able to display any content in a readable format.

Question 2: Explain the basic structure of an HTML document. Identify the mandatory tagsand their purposes.

Ans -

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Page Title</title>

</head>

<body>

<!-- Content goes here -->

</body>

</html>

Question 3: What is the difference between block-level elements and inline elements in HTML? Provide examples of each

Ans - Block-level elements take up the full width of their container and start on a new line. Examples include <div>, <p>, and <h1>. Inline elements only take up as much width as necessary and do not start on a new line. Examples include <span>, <a>, and <strong>. Block elements are used for larger structures, while inline elements format smaller portions of content.

Question 4: Discuss the role of semantic HTML. Why is it important for accessibility and SEO? Provide examples of semantic elements.

Ans - Semantic HTML uses meaningful tags to structure content clearly, improving accessibility and SEO. It helps screen readers interpret content for users with disabilities and ensures search engines better understand page context. This leads to improved user experience and search engine rankings. Examples of semantic elements include <header>, <article>, <nav>, <section>, and <footer>.

Task:

•Create a simple HTML webpage that includes:

Ans -

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Simple Webpage</title>

</head>

<body>

<!-- Header Section -->

<header>

<h1>Welcome to My Simple Webpage</h1>

<nav>

<ul>

<li><a href="#">Home</a></li>

<li><a href="#">About</a></li>

<li><a href="#">Contact</a></li>

</ul>

</nav>

</header>

<!-- Main Content Section -->

<main>

<h2>Main Section</h2>

<p>This is the main content of the webpage. It contains the most important information.</p>

</main>

<!-- Aside Section -->

<aside>

<h3>Related Information</h3>

<p>This section contains related content, such as links or ads.</p>

</aside>

<!-- Footer Section -->

<footer>

<p>&copy; 2024 My Simple Webpage. All rights reserved.</p>

</footer>

</body>

</html>

•A paragraph with some basic text.

Ans -

<p>This is a simple paragraph with some basic text. It can be used to describe information, tell a story, or convey any type of content. Paragraphs are essential for structuring text and making it readable on a webpage. </p>

• A list (both ordered and unordered).

Ans -

unordered

<ul>

<li>Apple</li>

<li>Banana</li>

<li>Cherry</li>

</ul>

ordered

<ol>

<li>First item</li>

<li>Second item</li>

<li>Third item</li>

</ol>

•A link that opens in a new tab

Ans -

<a href="https://www.example.com" target="\_blank">Visit Example Website</a>

HTML Forms

Question 1: What are HTML forms used for? Describe the purpose of the input, textarea, select, and button elements

Ans - HTML forms are used to collect user input, allowing interaction with a webpage. Forms enable the submission of data, like login credentials, feedback, or contact information, to a server for processing.

•The <input> element is used for user input fields such as text, password, or checkboxes. It allows a variety of data types like text, numbers, and emails.

•The <textarea> element is for multi-line text input, allowing users to provide longer responses, such as comments or messages.

•The <select> element creates a dropdown menu, enabling users to choose from a list of predefined options.

• The <button> element is used to create clickable buttons for submitting forms or triggering actions, such as submitting data to the server.

Question 2: Explain the difference between the GET and POST methods in form submission. When should each be used?

Ans - The GET method appends form data to the URL as query parameters, making it visible in the address bar. It is suitable for retrieving data or performing non-sensitive actions, such as search forms, and has a data size limit due to URL restrictions.

The POST method sends data in the request body, making it more secure for sensitive information like passwords. It is ideal for submitting forms that alter server data, such as login or registration forms, and can handle larger amounts of data.

Use GET for non-sensitive data retrieval and POST for sensitive data submission or when data changes the server state.

Question 3: What is the purpose of the label element in a form, and how does it improve accessibility?

Ans - The <label> element in a form provides a description for form controls. It improves accessibility by linking the label text to the input, making it easier for screen readers to announce the input's purpose. It also allows users to click the label to focus on the associated input, improving usability, especially for users with motor impairments.

Task:

Create a contact form with the following fields:

 Full name (text input)

 Email (email input)

 Phone number (tel input)

 Subject (dropdown menu)

 Message (textarea)

 Submit button

Ans -

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Contact Form</title>

</head>

<body>

<h1>Contact Us</h1>

<form action="#" method="post">

<label for="fullname">Full Name:</label>

<input type="text" id="fullname" name="fullname" required minlength="2" maxlength="50"><br><br>

<label for="email">Email:</label>

<input type="email" id="email" name="email" required><br><br>

<label for="phone">Phone Number:</label>

<input type="tel" id="phone" name="phone" required pattern="[0-9]{10}"><br><br>

<label for="subject">Subject:</label>

<select id="subject" name="subject" required>

<option value="">Select a subject</option>

<option value="inquiry">Inquiry</option>

<option value="feedback">Feedback</option>

<option value="support">Support</option>

</select><br><br>

<label for="message">Message:</label>

<textarea id="message" name="message" required minlength="10" maxlength="500"></textarea><br><br>

<button type="submit">Submit</button>

</form>

</body>

</html>

•Additional Requirements:

•Use appropriate form validation using required, minlength, maxlength, and pattern

Ans-

<form>

<label for="username">Username </label>

<input type="text" id="username" name="username" required minlength="5" maxlength="15">

<br><br>

<label for="email">Email:</label>

<input type="email" id="email" name="email" required>

<br><br>

<label for="phone">Phone </label>

<input type="text" id="phone" name="phone" required>

<br><br>

<label for="password">Password</label>

<input type="password" id="password" name="password" required minlength="8">

<br><br>

<button type="submit">Submit</button>

</form>

•Link form labels with their corresponding inputs using the for attribute.

Ans -

<form>

<label for="username">Username:</label>

<input type="text" id="username" name="username" required>

<br><br>

<label for="email">Email:</label>

<input type="email" id="email" name="email" required>

<br><br>

<label for="password">Password:</label>

<input type="password" id="password" name="password" required>

<br><br>

<button type="submit">Submit</button>

</form>

HTML Tables

Theory Assignment

Question 1: Explain the structure of an HTML table and the purpose of each of the following

elements: <table>, <tr>, <th>, <td>, and <thead>.

Ans -

<table>

<thead>

<tr>

<th>Header 1</th>

<th>Header 2</th>

<th>Header 3</th>

</tr>

</thead>

<tbody>

<tr>

<td>Data 1</td>

<td>Data 2</td>

<td>Data 3</td>

</tr>

<tr>

<td>Data 4</td>

<td>Data 5</td>

<td>Data 6</td>

</tr>

</tbody>

</table>

Question 2: What is the difference between colspan and rowspan in tables? Provide

examples.

Ans -

<table border="1">

<tr>

<td colspan="2">Header spanning two columns</td>

<td rowspan="2">Cell spanning two rows</td>

</tr>

<tr>

<td>Row 2, Cell 1</td>

<td>Row 2, Cell 2</td>

</tr>

</table>

Question 3: Why should tables be used sparingly for layout purposes? What is a better

alternative?

Ans -

Tables should be used sparingly for layout purposes because they are not semantically appropriate for structuring web content, which can negatively impact accessibility, search engine optimization (SEO), and responsiveness. Tables were designed for displaying tabular data, not for page layout. A better alternative is using CSS (Cascading Style Sheets) for layout, which provides more flexibility, ensures better accessibility, and allows for responsive designs across different devices. CSS layouts such as Flexbox and Grid are widely used and more efficient.

Task:

•Create a product catalog table that includes the following columns:

 Product Name

 Product Image (use placeholder image URLs)

 Price

 Description

 Availability (in stock, out of stock)

Ans -

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Product Catalog</title>

<style>

table {

width: 100%;

border-collapse: collapse;

}

th, td {

border: 1px solid black;

padding: 8px;

text-align: left;

}

th {

background-color: #f2f2f2;

}

</style>

</head>

<body>

<h1>Product Catalog</h1>

<table>

<thead>

<tr>

<th>Product Name</th>

<th>Product Image</th>

<th>Price</th>

<th>Description</th>

<th>Availability</th>

</tr>

</thead>

<tbody>

<tr>

<td>Product 1</td>

<td><img src="https://via.placeholder.com/100" alt="Product 1"></td>

<td>$10.00</td>

<td>Basic description of Product 1</td>

<td>In stock</td>

</tr>

<tr>

<td>Product 2</td>

<td><img src="https://via.placeholder.com/100" alt="Product 2"></td>

<td>$20.00</td>

<td>Basic description of Product 2</td>

<td>Out of stock</td>

</tr>

<tr>

<td>Product 3</td>

<td><img src="https://via.placeholder.com/100" alt="Product 3"></td>

<td>$30.00</td>

<td>Basic description of Product 3</td>

<td>In stock</td>

</tr>

</tbody>

</table>

</body>

</html>

•Use thead for the table header

ANS:-

<table>

<thead>

<tr>

<th>Name</th>

<th>Age</th>

<th>Country</th>

</tr>

</thead>

<tbody>

<tr>

<td>John Doe</td>

<td>30</td>

<td>USA</td>

</tr>

<tr>

<td>Jane Smith</td>

<td>25</td>

<td>Canada</td>

</tr>

</tbody>

</table>

•Use colspan or rowspan to merge cells where applicable

ANS:-

<table>

<thead>

<tr>

<th>Name</th>

<th>Age</th>

<th>Country</th>

</tr>

</thead>

<tbody>

<tr>

<td>John Doe</td>

<td>30</td>

<td>USA</td>

</tr>

<tr>

<td>Jane Smith</td>

<td>25</td>

<td>Canada</td>

</tr>

</tbody>

</table>