HTML Basic Assignment

Theory Assignment

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

-HTML (Hyper text markup language) It is the standard language used to create and design the structure of web pages. HTML provides the basic building blocks for displaying content on the web, such as text, images, links, and multimedia.

-The purpose of HTML in web development is to structure and define the content of web pages, such as text, images, and multimedia, while enabling the creation of links and navigation. It serves as the foundation for styling with CSS and adding interactivity with JavaScript, allowing developers to build accessible and functional websites.

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

The basic structure of an HTML document includes tags:

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<!-- Content goes here -->
</body>
</html>
```

<!DOCTYPE html>: Declares the document as HTML5.
<html>: The root element of the document.
<head>: Contains metadata about the document (e.g., title, styles).
<title>: Sets the title of the webpage displayed in the browser tab.
<body>: Contains the content that will be displayed on the webpage (e.g., text, images, videos).

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

Block-level element:

These Elements occupy the full width irrespective of their sufficiency.Block-level Element always start in new line. These elements doesn't allow other elements to sit behind.

Examples:

<table>
<h1> to <h6>
<p>

Inline Element:

These Elements occupy only sufficient width required. Inline elements don't start in new line. Inline elements allow other inline elements to sir behind. Thse elements don't have top and bottom margin.

Examples:

<a>

<img>
<button>

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

-Role of semantic HTML:using HTML tags that cleary describe the meaning of the content they contain. This helps both humans and machines understand the contact more effectively. Semantic tags help screen readers and other assistive devices understand the content's structure, making websites easier to navigate for people with disabilities.

-Importance for Accessibility and SEO :

Semantic HTML tags allow search engines to better understand the content and its relevance. Semantic HTML helps screen readers interpret the structure of the page more accurately. This helps prioritize important content and improve indexing accuracy.

-Example of semantic elements:

<header>: Represents the page or section header.
<footer> : Represents the page or section footer.
<article>: Represents self-contained content.
<nav>: Represents navigation links.
<section>: Groups related content.

HTML Form

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

HTML forms are used to collect information from users on a website. They allow users to input data, like filling out a contact form, signing up for an account, or making a purchase, and then send that data to a server for processing.

KEY ELEMENTS OF HTML FORMS :

1. Input element:<input>
The element is used to create interactive controls in a form. It can be used for various types of data entry, such as text, passwords, checkboxes, radio buttons, and file uploads.
2. Textarea element:<textarea>
The element is used to create a multi-line text field, allowing users to enter longer pieces of text, like comments or descriptions.
3.Select element:<select>
The element is used to create a dropdown menu, allowing users to choose one or more options from a predefined list.
4.Button element:
The element creates a clickable button that can trigger an action in the form, such as submitting the form or resetting fields.

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

Difference Between GET and POST Methods in Form Submission:

1. Get method:
Data Handling:Get sends form data as part of the URL and information is visible in the browser address bar.
Size limitation:Limited in the amount of data it can send (depends on the URL length, typically around 2000 characters).
Security: Less secure as the data is exposed in the URL, making it unsuitable for sensitive information like passwords.

2. Post method:
Data Handling:POST sends form data in the body of the HTTP request and information is not visible in the URL.
Size limitation:Can send larger amounts of data compared to GET.
Security: More secure for transmitting sensitive information, though encryption (like HTTPS) is still recommended.

When to Use Each:

Get : Use for non-sensitive data retrieval or actions where the result can be bookmarked or shared, such as search queries.
Post: Use for sensitive or large data submissions and when performing actions that modify server-side resources.

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

The <lable> element is used to define a label for an input element in a form, such as a text field, checkbox, or radio button. Its primary purpose is to associate descriptive text with a specific form control, improving usability and accessibility.

How <lable>Improves Accessibility:

1.Association with Input Fields:
-Using the <for> attribute, the <lable>is explicitly linked to the corresponding input element via its id.
For example:
<label for="username">Username:</label>
<input type="text" id="username" name="username">

2.Improved Screen Reader Support:
Screen readers read the label text aloud when the associated input field is focused, helping visually impaired users understand the purpose of the field.

HTML TABLE

Question 1: Explain the structure of an HTML table and the purpose of each of the following elements: <table>, <tr>, <th>, <td>, and <thead>.

1.<table>
Purpose**:** The <table> element serves as the container for all the rows, columns, and content within a table. It defines the start and end of the table.
Example:
```
<table>
  <!-- Table content goes here -->
</table>
```

2.<tr>
Purpose**:** The <tr> element defines a row within a table. Each row can contain one or more cells (<th> or <td>).

Example:

```
<table>
  <tr>
    <!-- Cells go here -->
  </tr>
</table>
```

3.<th>

Purpose**:** The <th> element is used to define a header cell in a table. Header cells typically appear bold and centered by default and are used to describe the content in their corresponding column or row.

Example:

```
<table>
  <tr>
    <th>Name</th>
    <th>Age</th>
    <th>City</th>
  </tr>
</table>
```

4.<td>

Purpose**:** The <td> element is used to define a standard data cell in a table. It holds the actual content of the table, such as text, numbers, or links.

Example:

```
<table>
  <tr>
    <td>John</td>
    <td>25</td>
    <td>New York</td>
  </tr>
</table>
```

5.<thead>

Purpose**:** The <thead> element groups the header rows (<tr> with <th>) of a table, helping to organize and style the table's header section.

Example:

```
<table>
  <thead>
    <tr>
      <th>Name</th>
      <th>Age</th>
      <th>City</th>
    </tr>
  </thead>
```

```
</table>
```

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

1.colspan:
The colspan attribute in an HTML <td> or <th> element is used to merge or span a single cell across multiple columns in a table. It helps organize table layouts by creating cells that extend over two or more columns.
Example:

```
<table border="1">
    <tr>
        <th colspan="3">Monthly Sales Report</th>
    </tr>
    <tr>
        <th>Product</th>
        <th>Sales</th>
        <th>Profit</th>
    </tr>
    <tr>
        <td>Product A</td>
        <td>$200</td>
        <td>$50</td>
    </tr>
    <tr>
        <td>Product B</td>
        <td>$300</td>
        <td>$100</td>
    </tr>
</table>
```

2.rowspan:
The rowspan attribute in an HTML <td> or <th> element is used to merge or span a single cell across multiple rows in a table. It helps to organize table data where a single value applies to multiple rows.
Example:

```
<table border="1">
    <tr>
        <th rowspan="2">Product</th>
        <th colspan="2">Sales Data</th>
    </tr>
    <tr>
        <th>Sales</th>
        <th>Profit</th>
```

```
    </tr>
    <tr>
        <td>Product A</td>
        <td>$200</td>
        <td>$50</td>
    </tr>
    <tr>
        <td>Product B</td>
        <td>$300</td>
        <td>$100</td>
    </tr>
</table>
```

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

1.Lack of Semantic Meaning:
purpose:Tables are meant to display data, not structure a page. Using tables for layout confuses browsers, screen readers, and search engines, making your page less accessible and harder to understand.
2.Accessibility Issues:
purpose:Screen readers may misinterpret layout tables as data tables, making navigation harder for visually impaired users.
3.Poor Responsiveness:
purpose:Tables are rigid and do not adapt well to different screen sizes, making them unsuitable for modern, responsive designs.
4.Difficult to Maintain:
purpose:Table-based layouts are hard to modify or update because small changes often require restructuring the entire table.

Better Alternative: CSS for Layout
- CSS (Cascading Style Sheets) is a styling language used to create flexible, responsive, and accessible web layouts. It separates content from design, allowing developers to structure and style web pages without using rigid table-based layouts.
- CSS provides modern layout tools like Flexbox (for 1D layouts) and Grid (for 2D layouts), which adapt easily to different screen sizes and devices, making it ideal for responsive web design.