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

Answer:

HTML (Hyper Text Markup Language**)** is the standard markup language used to structure and design web pages. It defines how text, images, and multimedia content are displayed in a web browser.

The role of HTML in web development is to provide the backbone and structure of a web page. It defines the layout and organization of content on a web page.

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

Answer:

```
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="UTF-8" />
        <meta name="viewport" content="width=device-width, initial-scale=1.0" />
        <title>Structure of HTML Document</title>
    </head>
    <body>
        <h1>Hello World</h1>
        <p>how are you ?</p>
    </body>
</html>
```

1. <!DOCTYPE HTML>: It tells the browser that the document follows HTML5 standards.
2. <html> Tag: The <html> tag wraps the entire document.
3. <head> Section: The <head> section contains metadata, scripts, styles, and other information not displayed directly on the page but essential for functionality and SEO.
4. <body> Section: The <body> section contains all the visible content of the web page, including text, images, videos, links, and more. This is where you'll add the main elements to display on the page.

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

Answer:

A block-level element always starts on a new line, and the browsers automatically add some space before and after the element.

An inline element does not start on a new line. It takes up as much width as necessary.

Block level elements:

<address>

<dt>

<hr>

<section>

<header>

<form>

Inline elements:

<textarea>

<a>

<b>

<i>

<q>

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

Answer:

Its providing meaningful structure to a webpage by using tags that clearly describe the content within them.

Search engines use semantic HTML to better understand the content of a webpage. By using appropriate tags, developers can help search engines categorize and index content more effectively. For example, using <h1> for the main title and <h2> for subheadings provides a clear hierarchy that search engines can interpret.

Example of semantic HTML:

- <article>
- <aside>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <time>

Question: What are HTML forms used for? Describe the purpose of the input, textarea,

select, and button elements.

Answer:

HTML forms are used to collect information from users on websites.

<input>:

It can accept user input in different formats

<textarea>:

This element is used to create a multi-line text input field.

<select>:

This element creates a dropdown list from which users can select one or more options.

<button>:

This element is used to create a clickable button that can trigger actions when clicked.

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

Answer:

GET is used for retrieving data like searching, filtering, or paging, whereas POST is used for submitting forms, modifying data, or creating new resources.

- Use GET when:
  - The data is not sensitive and can be included in the URL.
- Use POST when:
  - You are submitting data.
  - The data is sensitive and should not be exposed in the URL.

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

Answer:

The <label> tag is used to name or describe a form input, like a text box or checkbox. It helps people understand what the input box is for. Makes forms easier to use.

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

Answer:

```
<table>
    <tr>
      <th>Firstname</th>
      <th>Lastname</th>
      <th>Age</th>
    </tr>
    <tr>
      <td>Priyank</td>
      <td>Patel</td>
      <td>24</td>
    </tr>
    <tr>
      <td>Arjun</td>
      <td>shah</td>
      <td>32</td>
    </tr>
    <tr>
      <td>Samar</td>
      <td>khan</td>
      <td>41</td>
    </tr>
  </table>
```

<table>:

Defines the structure for organizing data in rows and columns within a web page.

<tr>:

Represents a row within an HTML table.

<th>:

Shows a table header cell that typically holds titles or headings.

<td>:

Represents a standard data cell, holding content or data.

<thead>:

Defines the header section of a table, often containing column labels**.**

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

Answer:

Colspan allows you to merge or combine columns of table cells horizontally.

```
<table>
    <thead>
      <tr>
        <th colspan="2">Name</th>
        <th>Class</th>
      </tr>
    </thead>
    <tbody>
      <tr>
        <td>Mahesh</td>
        <td>patel</td>
        <td>1</td>
      </tr>
      <tr>
        <td>Sahil</td>
        <td>khan</td>
        <td>3</td>
      </tr>
```

```
      <tr>
        <td>Shivam</td>
        <td>jain</td>
        <td>5</td>
      </tr>
    </tbody>
  </table>
```

Rowspan allows you to merge or combine columns of table cells vertically.

```
<table>
    <tr>
      <th>Name</th>
      <th>Class</th>
      <th rowspan="3">PVM School</th>
    </tr>
    <tr>
      <td>Rajan</td>
      <td>10</td>
    </tr>
    <tr>
      <td>Anvar</td>
      <td>11</td>
    </tr>
  </table>
```

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

Answer:

Tables are made for showing tabular data, not for designing the layout of a page. Using tables for layout creates messy and complicated HTML that's difficult to edit or update.

CSS Grid is a two-dimensional layout system that allows for more complex layouts. It enables designers to create grid-based layouts with rows and columns, making it easier to design responsive interfaces.

Flexbox is a layout model that allows for responsive and flexible layouts. It provides a more efficient way to arrange items in a one dimensional . Flexbox is particularly useful for aligning items and distributing space within a container.