Mernstack – HTML

HTML Basics:-

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

Answer: HTML stands for Hypertext Markup Language and is a code to structure and define the content of a web page.

The purpose of HTML (Hypertext Markup Language) in web development is to structure and define the content and layout of a web page.

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

Answer:

The basic structure of an HTML document is made up of five elements:

- DOCTYPE: Identifies the document as HTML
- HTML: Defines the document as an HTML file
- Title: The title of the webpage
- Head: Contains meta tags, content type, and connections to external pages
- Body: Contains the document's actual content

The four mandatory tags in HTML are:

- <html>: The root element that defines an HTML document
- <title>: Defines the page title, which appears in the browser's title bar and in search engine results
- <head>: Contains metadata and other information about the document
- <body>: Contains the content of the page

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

Answer:

Block elements always start from a new line. Inline elements never start from a new line. Block elements cover space from left to right as far as it can go. Inline elements only cover the space as bounded by the tags in the HTML element.

- **Block-level elements**
  Start on a new line, take up the full width of the page, and can contain other block-level or inline elements. Examples of block-level elements include , <nav>, <header>, <section>, <footer>, and <ul>.

- **Inline elements**
  Do not start on a new line, only take up the space needed for their content, and can only contain other inline elements. Examples of inline elements include , <input>, <label>, <select>, and <anchor>.

  Question 4: Discuss the role of semantic HTML. Why is it important for accessibility and SEO? Provide examples of semantic elements.
  Answer:
  - Semantic HTML refers to syntax that makes the HTML more comprehensible by better defining the different sections and layout of web pages. It makes web pages more informative and adaptable, allowing browsers and search engines to better interpret content.
  - Accessibility and SEO are important because they can improve a website's performance and increase its audience

  Example of semantic elements:
  - **<header>**: Specifies the role of the content on the page
  - **<footer>**: Specifies the role of the content on the page
  - **<article>**: Specifies the role of the content on the page
  - **<main>**: Specifies the main content of a document
  - **<summary>**: Used as a summary, label, or caption for the <details> element

HTML Forms:-

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

Answer:

HTML forms are used to collect user input and send it to a server for processing:

- Input: It is used to get input data from the form in various types such as text, password, email, etc by changing its type.
- Textarea: It is used to get input long text content.
- Select: It is used to create a drop-down list.
- Button: It defines a clickable button to control other elements or execute a functionality.

Question 2: Explain the difference between the GET and POST methods in form submission.

When should each be used?

Answer:

GET Method

- Data in URL: GET sends form data as part of the URL and Information is visible in the browser's address bar.
- Bookmarking and Caching: Form submissions with GET can be bookmarked and cached easily and it is useful for sharing links but not suitable for sensitive data.
- Limit on Data Size: Using GET Limited data size for submission (typically up to 2048 characters) and this is ideal for small amounts of non-sensitive data.

POST Method

- Data in Request Body: POST sends form data in the body of the HTTP request and Information is not visible in the URL.
- Security and Sensitivity: It is suitable for sensitive data like passwords and it is more secure as data is not exposed in the URL.
- No Data Size Limit: No strict size limit for data submission and it is suitable for large amounts of information.

The key difference between GET and POST HTTP methods is that GET only retrieves data from a server while POST can modify or update server-side resources.

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

accessibility?

Answer:

- The <label> HTML element represents a caption for a form element in a user interface. It improves accessibility by linking text to form elements. When a user clicks on the label, it automatically focuses on or activates the associated input, such as text fields, checkboxes, or radio buttons. This helps make forms more user-friendly and easier to navigate.
- Semantic HTML helps developers create more meaningful and structured content. This makes content more accessible and usable for all users, especially those who rely on assistive technologies. Plus, semantic HTML elements ensure web design elements are used appropriately, improving content accessibility and inclusivity.

HTML Tables:-

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

Answer:

- <table>: The table element that contains all the other elements that define the table
- <tr>: The row element that represents a row of cells in the table
- <th>: The header element that defines a cell that contains header information
- <td>: The data element that defines a cell that contains data

- <thead>: The header section element that contains the table's header information

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

Answer:

HTML Table with Colspan allows you to merge or combine adjacent table cells horizontally, creating a single, wider cell that spans across multiple columns.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>HTML Table with Colspan</title>
  <meta name="viewport" content="width=device-width,
                initial-scale=1.0">
  <title>HTML Table</title>
  <style>
    table {
      width: 100%;
      border: 1px solid #100808;
      border-collapse: collapse;
    }
    th,
    td {
      padding: 10px;
      border: 2px solid black;
    }
  </style>
</head>
<body>
  <table>
    <thead>
```

```
        <tr>
          <th colspan="2">Name</th>
          <th>Class</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td>Mahima</td>
          <td>Gupta</td>
          <td>1</td>
        </tr>
        <tr>
          <td>Sri</td>
          <td>Krishn</td>
          <td>3</td>
        </tr>
        <tr>
          <td>Shivika</td>
          <td>Goyal</td>
          <td>5</td>
        </tr>
      </tbody>
    </table>
</body>
</html>
```

The HTML attribute rowspan determines how many rows a specific cell in a table should cover. When a cell spans multiple rows, it occupies the space of those rows within the table.

```
<!DOCTYPE html>
<html>
<head>
```

```
    <title>HTML rowspan</title>
    <style>
        body {
            display: flex;
            flex-direction: column;
            justify-content: center;
            align-items: center;
        }
        table {
            width: 70%;
        }

        table,
        th,
        td {
            border: 1px solid black;
            border-collapse: collapse;
            padding: 6px;
        }
    </style>
</head>
<body>
    <table>
        <tr>
            <th>Name</th>
            <th>Class</th>
            <th rowspan="3">MVM School</th>
        </tr>
        <tr>
```

```
      <td>Radha</td>
      <td>10</td>
    </tr>
    <tr>
      <td>Ankur</td>
      <td>11</td>
    </tr>
  </table>
</body>
</html>
```

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

Better alternative?

Answer:

- Tables Are Not Accessible: Most search engines read the webpage as they read HTML and it becomes difficult for the search engine to render the table layout. This is the main reason why we follow the HTML5 format.
- Tables Are Tricky: When you perform nesting in tables then it is difficult to maintain it. When you want to change something after some days then it will become complicated for the developer to debug the code.
- Tables Are Inflexible: When you want to create the table layout with specified widths then it will become a rigid layout or not flexible and then it will take some extra time to load your page properly. The flexible layout always looks good on any device.
- Tables Hurt Search Engine Optimization: Many developers create the navigation on the left-hand side and the rest of the content on the right side. If you use tables the search engine will load the content first then the navigation will start to load without navigation, the content will look not so good.
- Tables Don't Always Print Well: When you try to print the table layout the printer will change the interface because the table layout is too wide. The printer will then try to cut down some content or show extra content to the next page which will make it complicated.
- Tables for Layout Are Invalid in HTML 4.01: You can't create the table layout when you use HTML 4.01 because you can only be allowed to create a simple table. For example spreadsheets or databases. Another reason is that other browsers find it tough to render through the table layout.

CSS Grid:: Browser Compatibility: CSS Grid is widely supported in all modern browsers, making it a reliable choice for web development. Flexibility: CSS Grid allows for complex layouts that were previously difficult to achieve with traditional layout methods.