MERN-STACK-HTML:

* HTML BASIC:

(1)Define HTML. What is the purpose of HTML in web development?

**What is HTML?**

**HTML (HyperText Markup Language)** is the **main language** used to make **web pages**.

**🎯 Purpose of HTML:**

* HTML gives **structure** to a web page.
* It tells the browser **what to show** – like **headings, text, images, links**, etc.
* HTML uses **tags** (like <h1>, <p>, <img>) to mark different parts of the page.

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

<!DOCTYPE html>

<html>

<head>

<title>My Web Page</title>

</head>

<body>

<h1>Welcome!</h1>

<p>This is my first website.</p>

</body>

</html>

| **Tag** | **Purpose** |
| --- | --- |
| <!DOCTYPE html> | Tells the browser that the document is written in **HTML5**. |
| <html> | The **root tag**. It wraps the entire HTML document. |
| <head> | Contains **meta information**, like title, CSS links, etc. (not visible). |
| <title> | Sets the **title** of the web page (shown on browser tab). |
| <body> | Contains all the **visible content** (text, images, links, etc). |

(3) What is the difference between block-level elements and inline elements inHTML? Provide examples of each.

| **Block-level Elements** | **Inline Elements** |
| --- | --- |
| Take up **full width** of the page | Take up **only the space** they need |
| Start on a **new line** | Do **not start** on a new line |
| Used to build the **main structure** | Used **inside** block elements |

**Block-level Elements (Examples):**

* <div> – general container
* <p> – paragraph
* <h1> to <h6> – headings
* <ul> / <ol> – lists
* <li> – list items
* <table>, <section>, <article>, etc.

**Inline Elements (Examples):**

* <span> – general inline container
* <a> – link
* <strong>, <em> – bold/italic
* <img> – image
* <input>, <label>, etc

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

**What is Semantic HTML?**

* **Semantic HTML** means using HTML tags that **clearly describe their meaning**.
* These tags tell both the **browser** and the **people reading the code** what kind of content is inside.

**🎯 Why is Semantic HTML Important?**

1. **For Accessibility:**
   * Screen readers (used by visually impaired people) rely on semantic tags to understand and read the page correctly.
   * For example, a <nav> tag tells the screen reader, “This is the navigation menu.”
2. **For SEO (Search Engine Optimization):**
   * Search engines like Google use semantic tags to better understand the page content.
   * This helps your page rank higher in search results because search engines know which parts are important.

| **Tag** | **Meaning** |
| --- | --- |
| <header> | The header or top part of the page |
| <nav> | Navigation links/menu |
| <main> | The main content area |
| <article> | A self-contained article or blog post |
| <section> | A section of the page |
| <footer> | The bottom part or footer |
| <aside> | Sidebar or related content |

* HTML FORM:

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

**HTML forms** are used to get information from people using a website, like when you fill out your name or send a message.

* **<input>**: This is a small box where you can type things like your name, email, or choose things like checkboxes or buttons.
* **<textarea>**: This is a big box where you can write more words, like a message or a comment.
* **<select>**: This is a dropdown list where you can pick one option from many, like choosing your country.
* **<button>**: This is a button you can click, for example, to send the form or clear the form.

(2) Explain the difference between the GET and POSTmethods in form submission. When should each be used?

**GET method:**

* Sends data in the URL (you can see it in the web address).
* Good for small amounts of data.
* Used when you want to **search** or **get** information.
* Example: Searching on Google.

**POST method:**

* Sends data hidden from the URL.
* Good for large or private data.
* Used when you want to **send** or **save** data to the server.
* Example: Logging in or uploading a file.

**When to use:**

* Use **GET** if the data is small and it’s okay to show it in the URL.
* Use **POST** if the data is big or private and should be hidden.

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

The **<label>** element in a form is used to give a clear description or name to a form control (like an input box, checkbox, or dropdown). It tells the user what information they need to enter in that field.

**Purpose:**

* It connects text (the label) with a specific form input.
* Helps users understand what each input is for.

**How it improves accessibility:**

* Screen readers (used by people with visual impairments) read the label aloud when the user focuses on the form input, so they know what to enter.
* Clicking on the label also focuses or activates the related input, making the form easier to use.
* EXAMPLE:

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

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

* HTML TABLE:

(1) Explain the structure of an HTML table and the purpose of each of the following elements:

|  |  |
| --- | --- |
|  |  |

<table>,<tr>,<td>,and<thread>.

An HTML table is used to display data in **rows and columns**, like a spreadsheet.

| **Element** | **Purpose** |
| --- | --- |
| **<table>** | The main container that holds the entire table. It defines that this content is a table. |
| **<tr>** *(table row)* | Represents a **row** in the table. It contains table headers or data cells. |
| **<th>** *(table header)* | Defines a **header cell** in the table. Usually bold and centered. It's used in the first row or in <thead>. |
| **<td>** *(table data)* | Defines a **normal data cell** in the table. It holds actual content like text, numbers, etc. |
| **<thead>** | Groups all the **header rows** together. It helps with structure and is useful for styling or accessibility. |

(2)What is the difference between colspan and rowspan in tables? Provide examples.

COLSPAN:

**Used to merge multiple columns** into one cell (horizontally).

It makes a single cell span across multiple **columns**.

Example:

<table border="1">

<tr>

<th colspan="2">Student Info</th>

</tr>

<tr>

<td>Name</td>

<td>Ravi</td>

</tr>

</table>

ROWSPAN:

 **Used to merge multiple rows** into one cell (vertically).

 It makes a single cell span across multiple **rows**.

Example:

<table border="1">

<tr>

<th rowspan="2">Name</th>

<td>Ravi</td>

</tr>

<tr>

<td>Seema</td>

</tr>

</table>

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

Tables are made to show **data**, not to design or arrange a webpage layout. Using tables for layout can cause problems.

**❌ Problems with using tables for layout:**

1. **Not good for screen readers**  
   People with disabilities use screen readers. Tables can confuse them if used for layout.
2. **Hard to edit**  
   Table layouts are complicated. If you want to change something, it’s not easy.
3. **Not mobile-friendly**  
   Tables don’t adjust well on small screens like phones.
4. **Slow page loading**  
   Tables have more code, which can make pages slower.
5. **Bad for SEO**  
   Search engines can get confused if tables are used for design instead of data.

**✅ Better option: Use CSS for layout**

Modern websites use **CSS (Cascading Style Sheets)** to design pages.

**CSS layout tools:**

* **Flexbox** – For rows or columns.
* **Grid** – For full page layouts (rows and columns).