

Module 2 – Frontend – HTML

HTML Basics

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

HTML stands for **HyperText Markup Language**.

It is the **standard language** used to **create and structure** content on the web.

Purpose in Web Development:

- It provides the **skeleton** of a webpage.
 - Defines **headings, paragraphs, links, images, tables**, etc.
 - Works together with **CSS (for design)** and **JavaScript (for interactivity)**.
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Question 2: Explain the basic structure of an HTML document. Identify the mandatory tags and their purposes.

Basic Structure:

```
html
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<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>Hello World</h1>
    <p>This is a paragraph.</p>
  </body>
</html>
```

Mandatory Tags and Their Purposes:

Tag	Purpose
<code><!DOCTYPE html></code>	Declares the document type and version (HTML5 here)
<code><html></code>	Root element that wraps the entire HTML document

Tag	Purpose
<head>	Contains meta information (title, links, scripts, etc.)
<title>	Sets the title of the webpage (seen on the browser tab)
<body>	Contains the content that appears on the web page

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

Feature	Block-Level Elements	Inline Elements
Display	Start on a new line and take full width	Appear within a line and take only necessary width
Layout	Used for structuring the page	Used for formatting small parts of content
Examples	<div>, <p>, <h1>, , <table>	, <a>, , ,

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

Semantic HTML means using HTML tags that **clearly describe their meaning and content purpose**.

Importance:

- **Accessibility:** Helps screen readers understand the structure and content.
- **SEO:** Search engines can better index and rank your website.
- **Readability:** Makes code easier for developers to understand.

Examples of Semantic Elements:

Tag	Meaning
<header>	Defines the top section or navigation
<nav>	Represents site navigation
<main>	Represents the main content
<article>	Represents a self-contained piece of content
<section>	Groups related content
<footer>	Bottom section with contact info, links, etc.

Tag	Meaning
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HTML Forms

Question 1: What are HTML forms used for?

HTML **forms** are used to **collect user input** and send it to a server.

Examples: login forms, registration forms, search bars, feedback forms, etc.

Common Form Elements and Their Purpose:

Element	Purpose
<code><input></code>	Used to create various types of input fields like text boxes, checkboxes, radio buttons, etc.

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

Feature	GET	POST
Data Visibility	Data is visible in the URL	Data is hidden in the request body
Use Case	For searching, filtering (non-sensitive data)	For login, registration (sensitive data)
Bookmarking	Can be bookmarked	Cannot be bookmarked
Data Length	Limited (URL length restriction)	No major limit
Example	<code>example.com/search?query=html</code>	Sends data securely without showing it in the URL

✔ Use GET when:

- You're retrieving or searching for data (e.g., search form)

✔ Use POST when:

- You're sending sensitive or large data (e.g., login, feedback)

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

The `<label>` tag is used to **describe or identify** an input field in a form.

Why It's Important:

- It connects **text descriptions** with form fields.
- Improves **accessibility** by helping **screen readers** and users with disabilities understand what the input field is for.
- Clicking on the label also **activates the input**, improving usability.

Example:

```
html
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<label for="email">Email:</label>
<input type="email" id="email" name="email">
```

Here, the `for="email"` connects the label to the input with `id="email"`.

HTML Tables

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

An **HTML table** is used to display **tabular data** (rows and columns).

Key Elements and Their Purpose:

Tag	Purpose
<code><table></code>	The container element for all table content
<code><tr></code>	Stands for table row ; groups a row of cells

Tag	Purpose
<code><th></code>	Stands for table header ; used for headings (bold and centered by default)
<code><td></code>	Stands for table data ; used for normal data cells
<code><thead></code>	Groups the header rows of a table; improves structure and readability

Example:

```
html
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<table>
  <thead>
    <tr>
      <th>Name</th>
      <th>Age</th>
    </tr>
  </thead>
  <tr>
    <td>Ayush</td>
    <td>20</td>
  </tr>
</table>
```

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

Attribute	Purpose
colspan	Makes a cell span across multiple columns
rowspan	Makes a cell span across multiple rows

✔ Example of colspan:

```
html
CopyEdit
<tr>
  <td colspan="2">Name & Age</td>
</tr>
<tr>
  <td>Ayush</td>
  <td>20</td>
</tr>
```

The first row has one cell that spans two columns.

✔ Example of rowspan:

```
html
CopyEdit
<tr>
```

```
<td rowspan="2">Ayush</td>
<td>Math</td>
</tr>
<tr>
<td>Science</td>
</tr>
```

"Ayush" appears once but spans across two rows.

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

Better Alternative:

Use **CSS (Cascading Style Sheets)** with:

- **Flexbox** – for 1D layouts (rows or columns)
- **CSS Grid** – for 2D layouts (rows **and** columns)
- Semantic HTML for cleaner structure

Example using Flexbox:

```
html
CopyEdit
<div style="display: flex;">
  <div>Name</div>
  <div>Age</div>
</div>
```