Introduction to Basics of HTML

What is HTML?

HyperText Markup Language is the **basic building block** of the web. It is used to **create and structure web pages**. Every website you see on the internet is built using HTML.

HTML is not a programming language. It is a **markup language**, which means it tells the browser how content should be displayed, not how to perform calculations or logic.

What does HTML do?

HTML helps to:

- Display text (headings, paragraphs)
- Add images
- Create links (to other pages)
- Make lists
- Create forms (login, signup, contact forms)
- Structure a webpage (header, footer, sections)

Basic Structure of an HTML Page

```
<!DOCTYPE html>
<html>
<head>
    <title>My First Page</title>
</head>
<body>
    <h1>Welcome</h1>
    <p>This is a simple HTML page.</p>
</body>
</html>
```

Explanation:

- **<!DOCTYPE html>:** Tells the browser this is HTML5
- **<html>:** Root of the page
- **<head>:** Page info (title, meta data)
- **<body>:** Visible content on the page

Why HTML is Important?

- It is the first thing you must learn in web development
- Without **HTML**, no website can exist
- It works together with:
    - **CSS** → for styling
    - **JavaScript** → for interactivity

Real-Life Example

Think of a website as a house:

- **HTML** → Structure (walls, rooms)
- **CSS** → Design (paint, decoration)
- **JavaScript** → Functionality (lights, doors)

What is an HTML Tag?

An HTML tag is a keyword written inside **angle brackets < >** . Tags tell the browser what type of content it is.

Example: <p> This is a simple HTML page. </p>

Here:

- **<p>** → opening tag
- **</p>** → closing tag

Types of HTML Tags

- **Opening Tag**: Starts the element
        Example: <p>

- **Closing Tag**: Ends the element (has /)
    - Example: \</p>
- **Self-Closing (Empty) Tag**: Does not need a closing tag
    - Example: \
, \<img>, \<hr>

What is an HTML Element?

An HTML element is the complete structure, including:

- Opening tag
- Content
- Closing tag

Example: \<p>This is a simple HTML page. \</p>

This whole thing is a HTML element.

What are HTML Attributes?

HTML attributes give extra information about an HTML element. They modify the behavior or appearance of an element.

Attributes are always written:

- Inside the opening tag
- Attribute name = "value"

Basic Syntax of an Attribute

\<tagname attribute="value">Content\</tagname>

Example: \<p color="red"> Hello World \</p>

- color → attribute name
- red → attribute value

Why Attributes are Used?

Attributes help to:

- Add links
- Add images
- Set colors, size, width, height
- Provide extra meaning to elements
- Improve accessibility

Common HTML Attributes

1. **href (Used with <a>)**: Specifies the link address.
   Go to Google

2. **src (Used with <img>)**: Specifies the image path
   <img src="photo.jpg">

3. **alt (Used with <img>)**: Shows text if image does not load
   <img src="photo.jpg" alt="My Photo">

4. **title**: Shows tooltip text on hover
   <p title="This is paragraph">Hover me</p>

5. **style** : Used for inline CSS
   <p style="color:red; font-size:20px;">Red Text</p>

6. **id**: Gives a unique identity to an element
   <p id="para1">Hello</p>

7. **class**: Used to group multiple elements.
   <p class="text">para 1</p>
   <p class="text">para 2</p>

8. **width and height**: Mostly used with images to set their height and width
   <img src="photo.jpg" width="200" height="150" alt="My Photo">

Global Attributes: These attributes can be used with almost all HTML elements:

- id
- class
- style
- title

Boolean Attributes: Attributes that do not need a value
        Examples : <input type="text" disabled> <input type="checkbox" checked>

Multiple Attributes in One Tag: You can use more than one attribute in a tag
        Exapmle : <img src="img.jpg" alt="Image" width="100" title="Sample Image">

Important Rules

- Attributes are written in opening tag only
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- Attributes are case-insensitive (lowercase preferred)