

# **HTML**

## **HTML Definition:**

HTML (Hyper Text Markup Language) is the standard language used to create and structure webpages.

( Or)

**H---->hyper**

**T---->text**

**M---->markup**

**L---->language**

- Html is the backbone of any website.
- It tells the browser what to display and how the contents is arranged on a webpage.

### **Key points about html:**

- It is a markup language, not a programming language.
- It uses tags to structure content.
- Html files have the extension .html or .htm
- Html works together with:

Css-->for styling

Javascript--->for functionality

### **Example of HTML Code**

```
<!DOCTYPE html>

<html>

<head>

<title>My First Webpage</title>

</head>
```

```
<body>  
    <h1>Hello, World!</h1>  
    <p>This is my first webpage.</p>  
</body>  
</html>
```

### Interview Purpose Answer

HTML is a markup language used to create the structure of web pages using tags and elements. It tells the browser how content like text, images, links, and forms should be displayed.

### What is a Heading Tag in HTML?

**Heading tags** in HTML are used to create **titles and headings** on a webpage.

They help to structure the content and make it easy for users and search engines to understand.

### Types of Heading Tags

HTML provides **6 heading tags**:

Tag	Meaning	Size
<h1>	Main heading	Largest
<h2>	Sub heading	Smaller than h1
<h3>	Sub-sub heading	Smaller
<h4>	Topic heading	Smaller
<h5>	Small heading	Smaller
<h6>	Smallest heading	Smallest

- <h1> is used **only once** on a page (main title).
- Headings create a **hierarchy** for the content.
- They improve **SEO (Search Engine Optimization)**.

## ✓ What are Text Formatting Tags in HTML?

- Text formatting tags are used to change the appearance of text in a webpage.  
They help make text bold, italic, underlined, highlighted, small, big, etc.
- These tags give **style**, meaning, and emphasis to the text.

### Common Text Formatting Tags:

Tag	Meaning	Example
<b>	Bold (no importance)	<b>Bold Text</b>
<strong>	Important text (bold + meaningful)	<b>Important Text</b>
<i>	Italic	<i>Italic Text</i>
<em>	Emphasized text (important italic)	<i>Emphasized Text</i>
<u>	Underline	Underlined Text
<mark>	Highlight text	Highlighted
<small>	Small text	Small Text
<big>	Big text (deprecated)	Big Text
<sup>	Superscript (top text)	x <sup>2</sup>
<sub>	Subscript (bottom text)	H <sub>2</sub> O
<del>	Deleted text	Deleted
<ins>	Inserted/added text	Inserted
<code>	Code text (monospace)	code sample
<pre>	Preformatted text (keeps spaces/line breaks)	Text

## ✓ Behavior of Elements in HTML:

In HTML, every element behaves in a certain way on the webpage. This behavior decides how the element takes space, how it appears, and how it interacts with other elements.

There are **three main behaviors**:

1. Block-Level Elements

2. Inline Elements
3. Inline-Block Elements

## 1. Block-Level Elements:

### Behavior

- Always start on a **new line**
- Take the **full width** of the page (100% width)
- Height and width **can be changed**
- Margin and padding work on all sides

### Examples

<div>, <p>, <h1>–<h6>, <section>, <article>

## 2. Inline Elements

### Behavior

- Do NOT start on a new line
- Take only the required width (content width)
- Height and width cannot be changed directly
- Margin/padding works partially (left-right works, top-bottom limited)

### Examples

<span>, <a>, <b>, <i>, <em>, <strong>

## 3. Inline-Block Elements

### Behavior

- Do NOT start on a new line (like inline)
- Height and width can be changed (like block)
- Take only the required width

## Examples

<input>, <button>, <img>, <select>

### ✓ What is an Anchor Tag in HTML:

The anchor tag (**<a>**) is used to create hyperlinks in HTML.

Hyperlinks allow users to:

- ✓ Go to another webpage
- ✓ Open a file
- ✓ Jump to another section of the same page
- ✓ Make a phone call
- ✓ Send an email

The anchor tag uses the href attribute to define the link destination.

<a href="URL">Link Text</a>

<a> → anchor tag

href → tells where the link should go

Link Text → clickable text

### Important Attributes of <a> Tag:

Attribute	Meaning	Example
href	URL or link destination	href="https://google.com"
target	Where to open the link	_blank, _self, _parent, _top
download	Download file	download
title	Shows tooltip	title="Click to open"
rel	Relationship of link	rel="noopener"

### ✓ 1. What is href:

It defines the destination of the link.

## 2. What is **target=" \_blank"**?

`target=_blank` tells the browser to open the link in a new tab.

- ✓ `_blank` → open in **new tab/window**
- ✓ `_self` → open in the **same tab** (default)

## What is a Relative Path?

A relative path is the location of a file relative to the current file or folder, not from the root of the system.

It tells the browser where a file is located based on the current page's location.

**Simple definition:**

👉 A relative path shows the location of a file based on the current folder, not from the root.

## What is an Absolute Path?

An absolute path gives the full address of a file from the root

## 3. Difference Between Absolute and Relative URL

Relative Path	Absolute Path
Depends on current file	Starts from root
Short and flexible	Long
Best for websites	Mostly used in system files
Example: images/pic.jpg	Example: C:\Users\img\pic.jpg

## Bookmarking (in HTML)

Bookmarking means creating a **jump link** that takes you to a **specific part of the same webpage**.

## target Attribute Different Values:

### 1. \_self

Opens the link in the **same tab**.

(*Default behavior*)

### 2. \_blank

Opens the link in a **new tab**.

### 3. \_parent

Opens the link in the **parent frame**.

(Used only when frames/iframes exist)

### 4. \_top

Opens the link in the **full window**, removing all frames.

## Iframe:

An iframe is a tag that shows another webpage inside your webpage.

### Example

```
<iframe src="https://google.com" width="400" height="300"></iframe>
```

## Multimedia:

Multimedia means using more than one type of media such as text, images, audio, video, and animations together.

### ✓ Example:

A website that has **text**, **pictures**, and a **video** is multimedia.

## 1. Images

- **Definition:** Pictures or graphics used to make content more attractive.
- **Example:** Photos, drawings, logos.

### Attributes:

- `src` → image path
- `alt` → alternate text
- `width` → width of image
- `height` → height of image
- `title` → tooltip text
- 
- **HTML Tag Example:**

```

```

## 2. Audio

- **Definition:** Sound elements like music, voice, or effects.
- **Example:** Songs, podcasts, sound effects.

### Common Attributes:

- `controls` → show play/pause buttons
- `autoplay` → start automatically
- `loop` → repeat automatically
- `muted` → start muted
- `preload` → load before playing

- **HTML Tag Example:**

```
<audio controls>  
  <source src="song.mp3" type="audio/mp3">  
</audio>
```

## 3. Video

- **Definition:** Moving images, usually with sound, to show action or story.
- **Example:** Movie clips, tutorials, advertisements.

### Attributes:

- `controls` → show play/pause buttons
- `autoplay` → start automatically

- `loop` → repeat video
- `muted` → start muted
- `width / height` → size of video
- `poster` → placeholder image before video plays

- **HTML Tag Example:**

```
<video controls>
  <source src="movie.mp4" type="video/mp4">
</video>
```

 **Definition of Attribute**

An attribute is extra information added to an HTML tag to change its behavior or appearance.

**Example:**

```

```

- `src` and `alt` are **attributes** of the `<img>` tag.

 **What is a List**

- Lists are used to display a group of related items on a webpage.
- List is a collection of data.

List is main three types

1.order list → `ol`

2.unordered list → `li`

3.description list → `dl`

*Data item  
Data definition*

 **ORDERED LIST (`<ol>`)**

An **Ordered List** displays items in a **specific order** like:

- Numbers (1, 2, 3...)
- Alphabet (A, B, C...)
- Roman Numbers (i, ii, iii...)
- **Attributes:** type, start

**✓ Syntax:**

```
<ol>
  <li>Item 1</li>
  <li>Item 2</li>
</ol>
```

## **2 UNORDERED LIST ( <ul> )**

Unordered list displays bullets (dots) before each item.

**✓ Syntax:**

```
<ul>
  <li>Red</li>
  <li>Blue</li>
</ul>
```

### **◆ Unordered List Bullet Types**

Use the **type** attribute:

**type    Bullet Style**

disc    ● (default)

circle    ○

square    ■

## **3 DESCRIPTION LIST ( <dl> )**

Used for definitions, meaning, glossary, FAQs.

- **<dt>** → term / name
- **<dd>** → description / definition

### ✓ Syntax:

```
<dl>  
  <dt>HTML</dt>  
  <dd>Hyper Text Markup Language</dd>
```

```
  <dt>CSS</dt>  
  <dd>Cascading Style Sheets</dd>  
</dl>
```

### What is a Table?

👉 A table is an HTML element used to display data in rows and columns using table tags.

#### Important Tags:

- <table> – defines table
- <tr> – table row.
- <th> – defines heading
- <td> – data cell.

**Rowspan:** Rowspan is used to **merge multiple rows** into one single cell (**vertical merge**).

**Colspan:** Colspan is used to **merge multiple columns** into one single cell (**horizontal merge**).

**Border:** Border adds a **visible outline** around the table, rows, and cells

**Cellspacing:** Cellspacing is the **space between two table cells** (gap outside each cell).

**Cellpadding:** Cellpadding is **the space inside a cell between the text and the cell border.**

### Basic Table Example Program

```
<!DOCTYPE html>

<html>
  <head>
    <title>Simple Table Example</title>
  </head>
  <body>

    <h2>Student Details</h2>

    <table border="1" cellspacing="5" cellpadding="10">
      <tr>
        <th>Name</th>
        <th>Roll No</th>
        <th>Marks</th>
      </tr>

      <tr>
```

```
<td>Aneela</td>
<td>101</td>
<td>95</td>
</tr>

<tr>
<td>Ravi</td>
<td>102</td>
<td>88</td>
</tr>

<tr>
<td>Sana</td>
<td>103</td>
<td>92</td>
</tr>
</table>

</body>
</html>
```

## 1. What is a Form?

- A form in HTML is used to collect user input and send that data to a server for processing.
- Example: Login form, registration form, search form, contact form, payment form.

- A form is created using the <form> tag.

### ✓ **Form:**

A form is a section in HTML used to collect user input.

### ✓ **Label:**

A label is a text name for an input box that tells the user what to enter.

### ✓ **Input:**

An input is a box or button where the user can type or select information.

## ★ **Simple Example**

```
<form>  
  <label>Name:</label>  
  <input type="text">  
</form>
```

### **1. Radio Button (Simple Definition)**

A **radio button** lets the user **select only ONE option** from a group.

Example uses:

✓ Gender (Male/Female)

### **2. Checkbox (Simple Definition)**

A checkbox lets the user **select multiple options** at the same time.

Examples:

✓ Skills (HTML, CSS, JS)

### **3. Search Input (Simple Definition)**

A search input is a text box **used for searching** something on a website.

Example:

```
<input type="search">
```

## ★ 1. Form Validation:

☞ Form validation is the process of checking user input to make sure it is correct and complete before submitting the form.

### Quick Interview Notes

- **Form Validation:** Checks user input before submission
- **required:** Field must not be empty
- **minlength:** Minimum characters required
- **maxlength:** Maximum characters allowed
- **pattern:** Input must match a regex
- **fieldset:** Groups related form elements
- **legend:** Title for a fieldset

## ★ metatags:

- Meta tags are HTML elements that provide information about a web page to browsers and search engines.
- webpage information of data.
- only meta tag head
- Example
- <meta charset="UTF-8">
- <meta name="description" content="This is a sample webpage">
- <meta name="viewport" content="width=device-width, initial-scale=1.0">

### What is Viewport? (Simple / Interview Answer)

- The viewport is the visible area of a webpage on a device screen.

## 5. Short Notes (Exam / Interview)

- **Meta tag:** Provides information about the web page
- Placed inside `<head>` tag
- Does **not display content** on page
- Important for **SEO, responsiveness, browser behavior**

### ★ 1. What is an HTML Entity?

An HTML entity is a special code used to represent reserved characters,symbols,or non\_standard characters

That either:

- 1.connot be typed directly in html
- 2.would be confused with html symbols

#### Use:

- ❖ Same characters(like `<` ,`>` ,`&` ,`“”`) are reserved in html because they are part og the code structure. If you want to display them on the page, you must use entities.

### ★ Reserved Character Entities

To display reserved characters safely, we use **HTML entities**:

Character	Entity	Description
<code>&lt;</code>	<code>&amp;lt;</code>	Less than
<code>&gt;</code>	<code>&amp;gt;</code>	Greater than
<code>&amp;</code>	<code>&amp;amp;</code>	Ampersand

Character	Entity	Description
"	&quot;	Double quote
'	&apos;	Single quote (apostrophe)

## ★ Non-English Characters or Symbols:

### A. Named Entities

- Use **predefined names** for symbols or letters.

Symbol	Entity
é	&eacute;
ñ	&ntilde;
ü	&uuml;
©	&copy;
®	&reg;
™	&trade;
♥	&hearts;
→	&rarr; right arrow

## ★ what is Favicon :

A favicon is a small icon that represents a website.

- It appears in the browser tab, bookmarks, and history.
- Helps users recognize the website quickly.

### How to Add a Favicon

```
<link rel="icon" type="image/png" href="favicon.png">
```

- rel="icon" → tells browser it's a favicon
- type="image/png" → type of image
- href="favicon.png" → path to your icon

## ★ 1. Semantic Elements

### **Definition:**

Semantic elements clearly describe their meaning and purpose in the HTML document.

- Browser and developer can understand the content just by looking at the element.
- Improves SEO, accessibility, and readability.

### **Examples of Semantic Elements:**

<header>, <footer>, <article>, <section>, <nav>, <aside>, <main>

## ★ 2. Non-Semantic Elements

### **Definition:**

Non-semantic elements do not describe their content.

- Browser doesn't know what type of content it is.
- Used mainly for layout and styling purposes.

### **Examples of Non-Semantic Elements:**

<div>, <span>

