

HTML Introduction

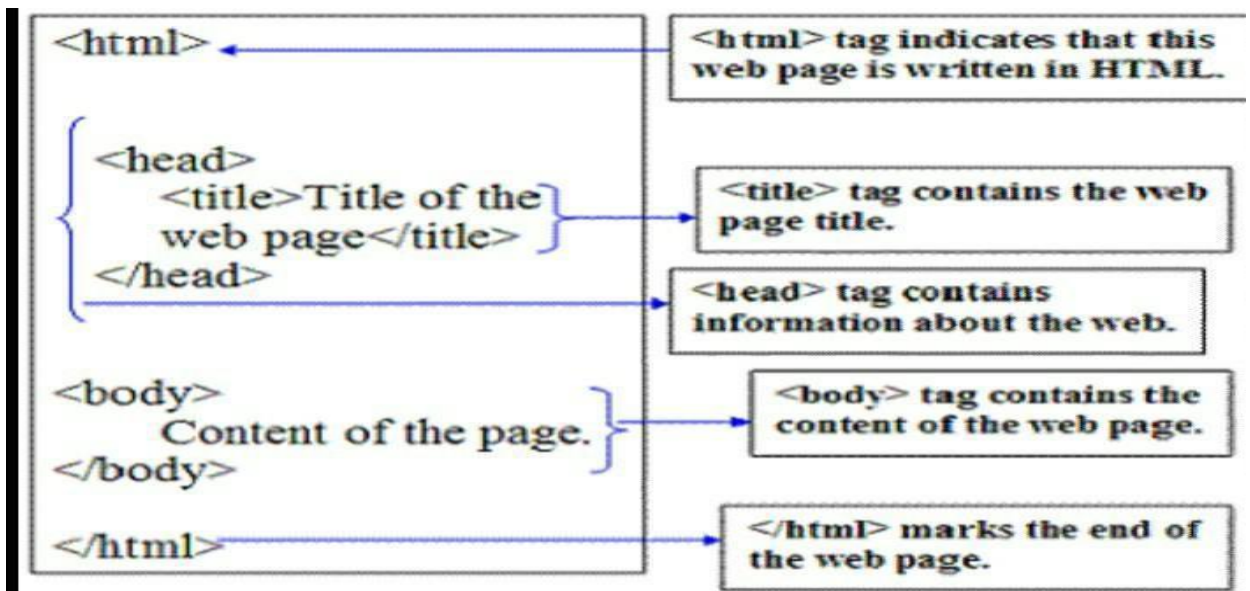
- **HTML** stands for **HyperText Markup Language**
- It's used to **create and structure** content on the web (text, images, links, etc.)
- HTML files have the **.html** or **.htm** extension.
- It is used to create the structure of web pages.
- HTML is Not Case Sensitive

Hypertext - Hypertext refers to text that contains links or hyperlinks to other content, such as images, videos, audio files, web pages, or other documents. It allows users to navigate from one content to another just by clicking the links.

Markup - It consists of a set of tags, elements, and attributes which is used to create the structure of web pages.

Language - Computer system understands and uses to Render commands.

Basic HTML Structure



HTML – Head

Head element is a container for all meta tags. It contains -

`<title>`, `<style>`, `<meta>`, `<link>`, `<script>`, and `<base>`.

HTML Page Title

The HTML page title is a text that appears in the title bar or tab of a web browser when a web page is opened.

It is defined within the `<title>` element, which is placed within the `<head>` section of an HTML document.

Code Example:

```
<!DOCTYPE html>
<html>
  <head>
    <title>First Page title>
  </head>
  <body>
    <!-- add content here-->
  </body>
</html>
```

HTML – Basic Tags

<!DOCTYPE html>	Document type
<html>	Main element of HTML document
<head>	Contains Metadata like title, keywords, author
<title>	Title for the document
<body>	Content of the document
<h1>-<h6>	HTML Headings
<p>	HTML Paragraph
<a>	used for hyperlink to another webpage
	used to add images in the document
 and 	used to create ordered or unordered list
	used list items
<table>	used to create tables
<tr>	used to create tables row
<td>	used to create tables column
<form>	Used for HTML form for user input
<input>	Used for input control
<select>	Used for drop-down list
<option>	Used for option in a drop-down list
<button>	Used for clickable button

HTML – Elements

- HTML elements are used to create the structure, content, and layout of a web page.
- HTML elements are represented by tags, which are enclosed in angle brackets (< >).

Examples -

<h1>--<h6>, <p>, , <a>, , , <table>, <form>, etc

HTML Elements:

1) They are represented by the tags

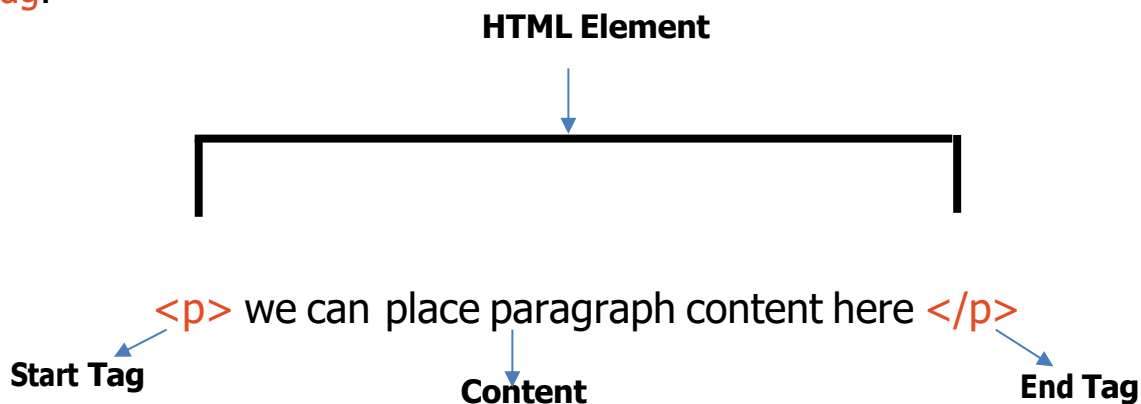
2) The full structure: tag + content

HTML Tags:

1) Used to define HTML elements.

2) Opening or closing instruction

Note: An HTML element is started by a **starting tag**. then contains content, it ends with a **closing tag**.



HTML – Attributes

- HTML attribute is used for additional information
- Attributes are placed in the start tag
- Attribute have name and value.

Examples -

<div width = "100%">this is div element</div>

In the above example

width ---> name

100% --> value

Note - Attribute values should always be enclosed in quotation marks.

Some Core Attribute

- **id** - Unique identifier for an HTML element.
- **href** - Specifies the URL of the page the link
- **class** - Specifies one or more class names for an HTML element.
- **style** - Specifies inline CSS styles for an HTML element.
- **lang** - Specifies the language of the content inside an HTML
- **height** - Used to set the height
- **width** - Use to set the width
- **alt** - Used to set the alternative text of the image

HTML – Heading

- HTML Heading is used to add the heading in the web page.
- There are 6 heading h1, h2, h3, h4, h5, h6
- Each heading has default size
- <h1> defines the most important heading and h6 defines the least important heading.

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

Examples -

<h1>Heading 1</h1>

<h2>Heading 2</h2>

<h3>Heading 3</h3>

<h4>Heading 4</h4>

<h5>Heading 5</h5>

<h6>Heading 6</h6>

- Always use <h1> headings for main page heading, <h2> for sub heading

HTML – Paragraphs

- HTML paragraph <p> element is used to add paragraph text
- It is block level element
- A paragraph always starts on a new line

Examples -

<p>This is a paragraph of text.</p>

Let's see how its output looks like -->

<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam</p>

<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam</p>

Output -

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam

NOTE: If you want to break the line in between paragraph then you can use
 tag

Example - <p>This is
a paragraph
with line breaks.</p>

HTML – Formatting

- HTML formatting is used to style the text to make it more presentable.
- These tags are used to define how text should be displayed on a web page
- used to change the appearance of text, such as making it bold, italic, underlined, or applying other formatting styles.

HTML Formatting Elements --> Here are HTML formatting tags given below:

- `` - Bold text
- `` - Important text
- `<i>` - Italic text
- `` - Emphasized text
- `<mark>` - Marked text
- `<small>` - Smaller text
- `` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text

`` Tag - It is used to make text bold.

Example - ``This text is bold.``

Output - **This text is bold.**

`` Tag - It is used to define text with strong importance.
The output is the same as bold.

Example - ``Important text``

Output - **Important text**

<i> Tag - It is used to make the text italic

Example - `<i>`This text is italic`</i>`

Output - *This text is italic*

** Tag** - It is used to emphasize text. The output of the text is italic

Example - ``This text is emphasized``

Output - *This text is emphasized*

<mark> Tag - The `<mark>` tag is an HTML element used to highlight or mark a specific portion of text on a webpage.

Example - `<p>`This is used for`<mark>`highlighted text`</mark>``</p>`

Output - This is used for highlighted text

<small> Tag - This element is used for smaller text

Example - `<p>`This is some `<small>`smaller text.`</small>``</p>`

Output - This is some smaller text.

** Tag** - This element is used to delete text

Example - `<p>`Example of `` delete `` tag `</p>`

Output - Example of ~~delete~~ tag

<sub> Tag - Subscript text appears half a character below the normal line, and is sometimes rendered in a smaller font. Subscript text can be used for chemical formulas

Example - `<p>H ₂O</p>`

Output – H₂O

<sup> Tag - Superscript text appears half a character above the normal line.

Example - `<p>X ²</p>`

Output – X²

HTML Comments

HTML comments are the most important part of the code. HTML comments are not displayed in the browser.

Comments are basically used for clean code so that if the new person checks your code then he/she can easily understand your code.

In HTML, comments are denoted by the `<!-- and -->` delimiters. Anything **between these delimiters is considered a comment** and is ignored by the web browser when rendering the page.

Example:

```
<!DOCTYPE html>
<html>
<body>

<!-- This is a comment -->
<p>This is a paragraph.</p>
<!-- Comments are not displayed in the browser -->

</body>
</html>
```

HTML – Meta Tags

HTML meta tags are special elements used to provide additional information about an HTML document.

These are placed in the head section

```
<head>  
.  
.  
</head>
```

Meta tags are not visible to the users. These are used by **search engines, social media platforms, and web browsers** to gather information about a webpage.

It is used to specify the **character set, page description, keywords, author of the document, and viewport settings**

Here are some commonly used meta tags:

<meta charset="UTF-8">

Specifies the character **encoding** for the HTML document. **UTF-8** is the most common character encoding.

<meta name="viewport" content="width=device-width, initial-scale=1.0">

Sets the **viewport** properties for **responsive web design**, ensuring proper rendering on various devices and screen sizes.

<meta name="description" content="Description of the page">

Provides a brief summary or **description of the webpage's** content. **Search engines** often display this description in search results

<meta name="author" content="Author name">

Specifies the **author** of the webpage.

**<meta http-equiv="refresh" content="5"
URL=http://example.com/">**

Redirects the user to another page after a specified time interval (in seconds). means in **5 sec**

<meta name="keywords" content="keyword1, keyword2, ...">

Define **keywords** for search engines

Example :

```
<head>
  <meta charset="UTF-8">
  <meta name="description" content="Learn Free Frontend">
  <meta name="keywords" content="HTML, CSS, JavaScript">
  <meta name="author" content="Designwithrehana">
</head>
```


HTML Links

HTML links are used to navigate from one page to another. It is also known as a hyperlink.

They allow users to click on a text or an image and be redirected to another page or location on the web.

HTML links are created using `<a>` tag

```
<a href="https://WWW.GOOGLE.COM">CLICK </a>
```

Output: [CLICK](https://WWW.GOOGLE.COM)

In above example, if you click on click then you will navigate to the ["www.google.com"](https://WWW.GOOGLE.COM) page.

href attribute, which indicates the link's destination.

HTML – Images

HTML images are used to display images on the web page.

The `` tag is a self-closing tag, meaning it doesn't require a closing tag.

Example:

```

```

In the above example -

`src` attribute is used to mention the path of the image

`alt` text is alternative text, which is displayed if the image cannot be loaded or for accessibility purposes.

So always try to use meaning image name in the alt text.

you can use height and width attributes also to define the height and width of the image.

HTML – Tables

HTML table is used to create tables. It helps you to arrange the data in the rows and columns

Table Example :

Term	Definition
HTML	HyperText Markup Language - the standard for web pages.
CSS	Cascading Style Sheets - used to style HTML content.
JavaScript	A programming language used to make web pages interactive.

In the above table, first row in the table header. And rest of the row and column come under table body.

All HTML Table tags

<table>	Used to create table.
<th>	Used for header cell in the table.
<tr>	Used for creating row in the table.
<td>	Used for creating column in the table
<caption>	Used for table caption
<colgrop>	Group of one or more columns in a table for formatting.
<col>	Column properties for each column within a <colgroup> element
<thead>	Used to create header content in the table.
<tbody>	Used for grouping body content of the table.
<tfoot>	Used for table footer.

All HTML Table Attributes

border	Used to add border in the table
cellpadding	Specifies the space between the cell content and the cell borders.
cellspacing	Specifies the space between cells
width	Used to adjust the width of the table.
height	Used to adjust the height of the table.
summary	Provides a summary or description of the table's purpose and structure
align	Specifies the horizontal alignment of the table on the page
bgcolor	Sets the background color of the table.
colspan	Specifies the number of columns a cell should span.
rowspan	Specifies the number of rows a cell should span.

Table Hierarchy:

<table>

<thead>

<th> </th>

</thead>

<tbody>

<tr>

<td>

Table data

</td>

</tr>

</tbody>

</table>

HTML – List

List is a way to organize and display a collection of related items.

There are two types of HTML lists.

HTML – List

Ordered List

Example:

1. Item one
2. Item two
3. Item three

Unordered List

Example:

- Item one
- Item two
- Item three

Unordered HTML List

It uses tag. Each item list uses tag

The list items will be marked with bullets

Code Example:

```
<ul>
  <li>Item1</li>
  <li>Item2</li>
  <li>Item3</li>
</ul>
```

Output:

- Item1
- Item2
- Item3

Ordered HTML List

It uses tag. Each item list uses tag

The list items will be marked with numbers

Code Example:

```
<ol>  
  <li>Item1</li>  
  <li>Item2</li>  
  <li>Item3</li>  
</ol>
```

Output:

1. Item1
2. Item2
3. Item3

Other Lists

HTML Description Lists

It is a list with a description. It uses `<dl>`, `<dt>` and `<dd>`

The main tag is `<dl>` then items are wrapped with `<dt>` tag.
`<dd>` tag is used for description.

Code Example:

```
<dl>
  <dt>HTML </dt>
  <dd>Hypertext Markup Language </dd>

  <dt>CSS </dt>
  <dd>Cascading style sheets </dd>

  <dt>PHP </dt>
  <dd>Personal Home Page </dd>
</dl>
```

Output:

```
HTML
  HyperText Markup Languag.
CSS
  Cascading Style Sheets .
PHP
  Personal Home Page.
```

HTML Block and Inline Elements

The HTML , all elements have default value how they display

There are two display values:

Inline element **block element**

Inline element: , <a>, , , ,
 <input>,
, and <button>.

Block element: <div>, <p>, <h1> to <h6>, , , ,
 <header>, <footer>, <nav>, <section>,
 and <article>.

Inline element:

Inline elements do not start on a new line

They occupy only the space necessary to display their content.

Code Example:

```
<span style="background-color: #adff2f">  
element 1  
</span>  
<span style="background-color: aqua">  
element 2  
</span>  
<span style="background-color: orange">  
element 3  
</span>
```

Output:

element 1 element 2 element 3

Block element:

Block-level elements start on a new line

It take up the full available width of their parent container.

Code Example:

```
<p>This is a simple HTML document.</p>  
<p>It contains a paragraph element with some text.</p>  
<p>You can add more content here as needed.</p>  
<p>You can also include other HTML elements like headings, lists, links, and images to enhance  
the content of your document.</p>
```

Output:

This is a simple HTML document.

It contains a paragraph element with some text.

You can add more content here as needed.

You can also include other HTML elements like headings, lists, links, and images to enhance the content of your document.

HTML - Forms

HTML forms are very important part of web development, allowing users to input and submit data to a server.

They are used for a wide range of purposes, such as user registration, contact forms, search boxes, and more.

Syntax:

```
<form action="" method="">  
</form>
```

Inside the <form>

Label

The <label> element, which provides a text description for the input field.

Syntax:

```
<label> .... </label>
```

Input

The `<input>` element is used so that user can enter information. Input field is created using `input` tag. It is self closing tag

NOTE: The `<form>` element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

Form attributes



Action:

The action attribute specifies the URL or server-side script to which the form data should be submitted when the user clicks the submit button.

The value of the action attribute is typically a **URL or a relative path**.

Method:

Defines the HTTP method to be used when submitting the form data to the server.

It can be either **"GET" or "POST"**

GET

When the method is set to "GET", the form data is appended to the URL as query parameters and sent as part of the URL string. In this method, form data is visible in the URL.

POST

When the method is set to "POST", the form data is sent in the body of the HTTP request. This method is suitable for sending sensitive or large amounts of data that should not be exposed in the URL.

It is commonly used for submitting forms that create, update, or delete data on the server.

The HTML <form> Elements

<form>	Used for HTML form for user input
<input>	Used for input control
<textarea>	Used for multiline input control (text area)
<label>	Used for label for an <input> element
<fieldset>	Groups related elements in a form
<legend>	Used for caption for a <fieldset> element
<select>	Used for drop-down list
<optgroup>	a group of related options in a drop-down list
<option>	Used for option in a drop-down list
<button>	Used for clickable button
<datalist>	Used for list of pre-defined options for input controls
<output>	Used for result of a calculation.

HTML Input Types

<input type="button">

Button

<input type="checkbox">

☒ Are you agree?

<input type="color">



<input type="date">

Meeting :

<input type="email">



Enter you emai...

<input type="file">

Select a file : No file chosen

<input type="hidden">

The hidden field is not shown to the user.

But we can save data of the user

<input type="image">

<input type="month">

Meeting (month & Year) :

<input type="number">

<input type="password">



<input type="radio">



<input type="range">



<input type="reset">



<input type="search">



<input type="submit">



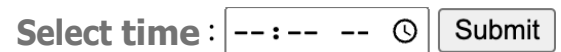
<input type="tel">



<input type="text">



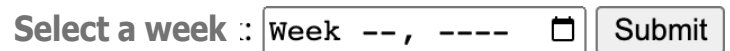
<input type="time">



<input type="url">



<input type="week">



HTML Semantic Elements

HTML semantic elements are special elements introduced in HTML5 that provide meaningful structure to web pages.

Here are some commonly used HTML semantic elements:

- <header>** container for a group of introductory content at the top of a section.
- <nav>** Used for the navigation section
- <main>** Specifies the main content of a document and it is unique.
- <table>** Used to create tables
- <form>** used to create forms
- <article>** Defines independent, self-contained content. Used for blogs, new articles, etc.
- <section>** Defines a standalone section of content within a document
- <aside>** used for sidebar content
- <footer>** Used to create footer

HTML Media

These are the elements which allow you to include images, audio files, videos, and other multimedia elements within your HTML documents.

Multimedia files have formats and different extensions like: [.wav](#), [.mp3](#), [.mp4](#), [.mpg](#), [.wmv](#), and [.avi](#).

HTML Media



Here are HTML media elements:

HTML Video

HTML video element is used to show the video on the web page.

For this `<video>` tag is used.

Example:

```
<html>
  <body>
    <video controls autoplay muted>
      <source src="movie.mp4" type="video/mp4">
    </video>
  </body>
</html>
```

How it Works

- Controls:** With the help of control you can add play, pause and volume.,
- Height:** It is used to set the height of the element
- Width:** It is used to set the width of the element
- <source>** It allows you to provide multiple sources for the media content, allowing the browser to choose the most appropriate source based on its supported formats.

HTML Audio:

HTML video element is used to show the audio file on the web page.

For this `<audio>` tag is used.

Example:

```
<html>
  <body>
    <audio controls autoplay muted>
      <source src="audio.mp3" type="audio/mp3">
    </audio>
  </body>
</html>
```

How it Works

Controls: With the help of control you can add play, pause and volume.,

<source> It allows you to provide multiple sources for the media content, allowing the browser to choose the most appropriate source based on its supported formats.

Add **muted** after **autoplay** to your audio to start playing audio automatically but the video will be muted.

HTML Iframe

- The `<iframe>` is an Inline Frame.
- This element in HTML is used to embed content from another source within a web page.
- It creates a window or frame within the current document where external content can be displayed, such as a webpage, video, map, or document.

Syntax:

`<iframe src="url" title="description" > </iframe>`

iframe Attributes

height:	It is used to set the height of the element
hidth:	It is used to set the width of the element
src:	It is used to add the file path
title:	Used to define the content the content of the iframe and it is used by the reader.
frameborder:	Used to add the border to the iframe
style:	Used to add the style to the iframe.

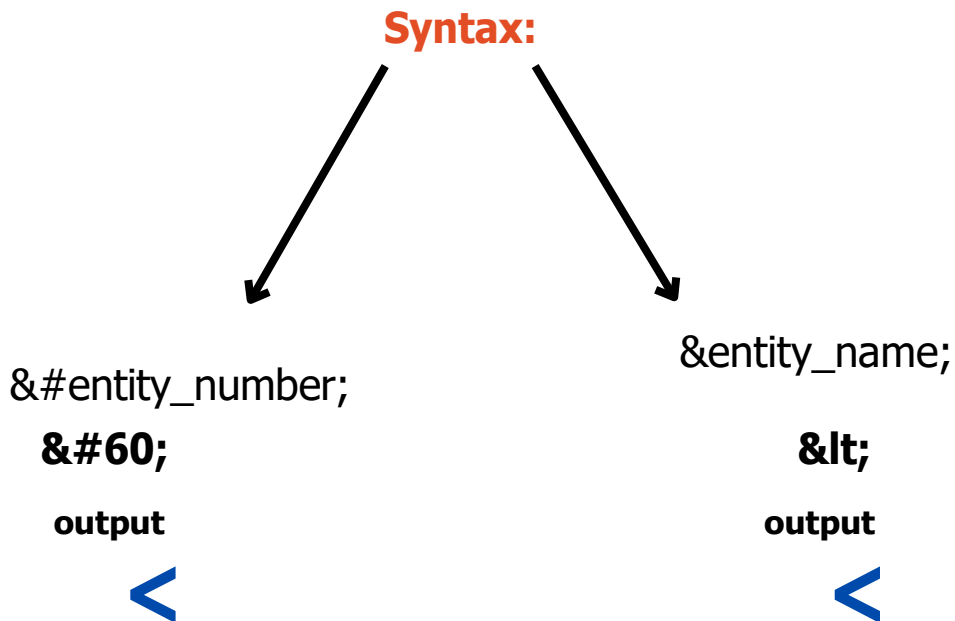
HTML Entities

HTML entities are special character codes used to represent reserved characters and symbols in HTML.

If you use < or > sign so may be borwser will treat them as a tag.

These entities are used to ensure proper rendering

HTML entities start with an "&" and ends with a semicolon ";"



Here are a few commonly used HTML entities:

<	less-than sign (<) - <
>	greater-than sign (>) - >
&	ampersand (&) - &
"	double quotation mark (") - "
'	single quotation mark (') - '
 	non-breaking space -
©	copyright symbol (©) - ©
®	registered trademark symbol (®) - ®
™	trademark symbol (™) - ™
°	degree symbol (°) - °
µ	micro symbol (μ) - µ
£	pound sterling symbol (£) - £
€	euro symbol (€) - €
¥	yen symbol (¥) - ¥
¢	cent symbol (¢) - ¢
$	dollar sign (\$) - $
✓	checkmark symbol (✓) - ✓
✗	cross mark symbol (X) - ✗
§	section symbol (§) - §
¶	paragraph symbol (¶) - ¶

