

1. Introduction to HTML

- 👉 HTML, which stands for **HYPERTEXT MARKUP LANGUAGE** , is the standard markup language used to create and design web pages.
- 👉 It provides a structure for the content on the web, allowing browsers to interpret and display information in a readable format.
- 👉 HTML consists of various elements and tags that define the structure and content of a webpage.

2. HTML Elements

- 👉 HTML documents are built using various elements.
- 👉 An element typically consists of an opening tag, content, and a closing tag.

Here's an example of a simple paragraph element.

```
<p>This is a simple paragraph.</p>
```

In this example :

`<p>` is the opening tag.

THIS IS A SIMPLE PARAGRAPH . is the content.

`</p>` is the closing tag.

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3. HTML Syntax

- 👉 HTML has a simple and straightforward syntax.
- 👉 It consists of tags and content, where tags are enclosed in **ANGLE BRACKETS (< >)** .
- 👉 Tags are used to define elements, and most HTML elements have **OPENING AND CLOSING TAGS** to surround the content.
- 👉 The basic structure of an HTML document looks like this:

```
<!DOCTYPE html>
<html>
<head>
<title>Document Title</title>
</head>
<body>
<h1>This is a Heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

Let's break down the structure :

`<!DOCTYPE html>` : This declaration defines the document type and **VERSION OF HTML** . In this case, it's HTML5.

`<html>` : This is the root element of an HTML document.

`<head>` : This section contains meta-information about the document, such as the title.

`<title>` : This tag specifies the title of the HTML document, which appears in the browser's title bar or tab.

`<body>` : This is the main content of the HTML document.

`<h1>` to `<p>` : These are example tags representing various HTML elements like headings and paragraphs.

4. HTML Tags

- 👉 HTML tags define the structure and formatting of content on a webpage.
- 👉 Tags are keywords surrounded by angle brackets.
- 👉 Some tags don't have a closing tag and are **CALLED EMPTY OR VOID TAGS** .

Here are a few examples :

HEADINGS

```
<h1> This is a Heading 1 </h1>
<h2> This is a Heading 2 </h2>
<h3> This is a Heading 3 </h3>
<h4> This is a Heading 4 </h4>
<h5> This is a Heading 5 </h5>
<h6> This is a Heading 6 </h6>
```

LINKS

```
<a href="https://www.Code10TB.com" > Visit Code10TB.com </a>
```

IMAGES

```

```

1. DOCTYPE Declaration

- 👉 This declaration defines the document type and **VERSION OF HTML** being used.
- 👉 It helps browsers understand how to interpret the document.
- 👉 The declaration usually comes at the very beginning of the HTML document.

```
<!DOCTYPE html>
```

2. HTML Element

- 👉 The **<HTML>** element is the root element of an HTML document
- 👉 It wraps all the content on the page.

```
<!DOCTYPE html>
<html>
<!-- Content goes here -- >
</html>
```

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3. Head Section

- 👉 The **<HEAD>** section contains meta-information about the HTML document, such as the title, character set, linked stylesheets, and scripts.
- 👉 It doesn't contain the actual content visible to users.

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> My HTML Document </title>
</head>
<body>
<!-- Content goes here -->
</body>
</html>
```

4. Title

- 👉 The **<TITLE>** element inside the **<HEAD>** section specifies the title of the HTML document, which is typically displayed in the browser's title bar or tab.

```
<!DOCTYPE html>
<html>
<head>
<title> My HTML Document </title>
</head>
<body>
<!-- Content goes here -- >
</body>
</html>
```

5. Body Section

- 👉 The **<BODY>** section contains the actual content of the HTML document, such as text, images, links, and other elements visible to users.

```
<!DOCTYPE html>
<html>
<head>
<title> My HTML Document </title>
</head>
<body>
<!-- Content goes here -- >
<h1> Hello, World! </h1>
<p> This is a sample HTML document. </p>
</body>
</html>
```

1. Headings <h1> to <h6>

👉 Headings are used to define headings in HTML.

👉 There are six levels of headings, with **<H1>** being the highest level and **<H6>** the lowest.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Headings </title>
</head>
<body>
<h1>This is a Heading</h1>
<h2>This is a Heading</h2>
<h3>This is a Heading</h3>
<h4>This is a Heading</h4>
<h5>This is a Heading</h5>
<h6>This is a Heading</h6>
</body>
</html>
```

2. Paragraphs <p>

👉 Paragraphs are used to define blocks of text.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title>Document Title</title>
</head>
<body>
<p>
This is a paragraph of text. It can contain multiple sentences and even include <strong> formatted </strong> text.
</p>
<p> Another paragraph goes here. </p>
</body>
</html>
```

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3. Bold and Italic

👉 The **** element is used to define important text that should be bold, while **** is used for emphasizing text, making it italic.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> My HTML Document </title>
</head>
<body>
<p> This is <strong> important </strong> text. </p>
<p> This is <em> emphasized </em> text. </p>
</body>
</html>
```

4. Line Breaks < br >

👉 The **
** element is used to insert a line break within text.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> My HTML Document </title>
</head>
<body>
<p> This text will have a line break <br> right here. </p>
</body>
</html>
```

5. Horizontal Line < hr >

👉 The **<HR>** element is used to create a horizontal line, typically used to separate content.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> My HTML Document </title>
</head>
<body>
<!-- Content goes here -- >
<p> This is some content above the horizontal line. </p>
<hr>
<p> This is some content below the horizontal line. </p>
</body>
</html>
```

1. Anchor Tag <a>

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

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Anchor Tag </title>
</head>
<body>
<a href="https://www.code10tb.com" > Visit CODE10TB.COM Website </a>
</body>
</html>
```

2. Linking to External Websites

👉 To link to an external website, use the `href` attribute with the full URL.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title>Document Title</title>
</head>
<body>
<a href="https://www.code10tb.com" target="_blank" > Go to Code 10TB </a>
</body>
</html>
```

In this example, the `target="_blank"` attribute opens the link in a new tab or window.

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3. Internal Page Links

👉 You can create links within the same website using relative URLs.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> My HTML Document </title>
</head>
<body>
<a href="/about" > About Us </a>
<a href="/contact" > Contact </a>
</body>
</html>
```

In this case, `"/about"` and `"/contact"` are assumed to be internal pages of the same website.

4. Creating Navigation Menus

👉 Navigation menus are often created using lists `` for unordered lists or `` for ordered lists with list items `` containing anchor tags.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Creating Navigation Menus </title>
</head>
<body>
<ul>
<li> <a href="/home"> Home </a> </li>
<li> <a href="/about"> About </a> </li>
<li> <a href="/services"> Services </a> </li>
<li> <a href="/contact"> Contact </a> </li>
</ul>
</body>
</html>
```

This example creates an unordered list for a simple navigation menu.

1. Ordered Lists

- 👉 Ordered lists are used when the order of items is important.
- 👉 Each list item is numbered sequentially.
- 👉 You create an ordered list using the `` tag, and each list item within it is represented by the `` tag.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Ordered Lists </title>
</head>
<body>
<ol>
<li> First item </li>
<li> Second item </li>
<li> Third item </li>
</ol>
</body>
</html>
```

This will render as:

1. First item
2. Second item
3. Third item

2. Unordered Lists

- 👉 Unordered lists are used when the order of items is not important.
- 👉 Each list item is represented by a bullet point.
- 👉 You create an unordered list using the `` tag, and each list item within it is represented by the `` tag.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Unordered Lists </title>
</head>
<body>
<ul>
<li> Red </li>
<li> Green </li>
<li> Blue </li>
</ul>
</body>
</html>
```

This will render as:

- Red
- Green
- Blue

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3. List Items

- 👉 The `` tag is used to define each item within a list, whether it's an ordered or unordered list.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> List Items </title>
</head>
<body>
<ul>
<li> Apple </li>
<li> Orange </li>
<li>
<ol>
<li> Small </li>
<li> Medium </li>
<li> Large </li>
</ol>
</li>
<li> Grapes </li>
</ul>
</body>
</html>
```

This will render as:

- Apple
- Orange
- 1. Small
 - 2. Medium
 - 3. Large
- Grapes

In this example, there's an unordered list `` containing items "Apple", "Orange" and "Grapes".

The third item in the list is itself an ordered list `` with items "Small", "Medium" and "Large".

1. Image Tag

👉 The **** tag is used in HTML to embed images in a web page.

👉 It is a self-closing tag, meaning it does not have a closing tag.

👉 Here's the basic syntax.

```

```

👉 **src** Specifies the source (URL or path) of the image.

👉 **alt** Provides alternative text for the image. This is important for accessibility and SEO.

👉 **height** and **width** Optional attributes to specify the dimensions of the image.

👉 If not specified, the image will be displayed in its original size.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Image </title>
</head>
<body>

</body>
</html>
```

2. Alt Text

👉 The **alt** attribute in the **** tag is used to provide alternative text for the image.

👉 This text is displayed if the image cannot be loaded or if the user is using a screen reader.

👉 It's crucial for accessibility and improves the user experience.

Example :

```

```

In this example, if the image fails to load, the user will see "Code 10TB profile picture" instead.



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3. Image Maps

👉 Image maps allow you to define clickable regions on an image, turning different parts of the image into links.

👉 This is achieved using the **<map>** and **<area>** tags.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Image Maps </title>
</head>
<body>

<map name="worldmap">
<area shape="rect" coords="0,0,200,100" href="north-america.html" alt="North America">
<area shape="rect" coords="200,0,400,100" href="europe.html" alt="Europe">
<!-- Additional areas for other regions -->
</map>
</body>
</html>
```

In this example, the image has been divided into clickable rectangles, each corresponding to a different region.

Clicking on these regions will navigate the user to the specified URLs.

1. Form Tag <form>

- ✦ The **<form>** tag is used to create an HTML form that allows users to input data.
- ✦ It is a container for various input elements such as text fields, radio buttons, checkboxes, and more.
- ✦ Here's the basic syntax.

```
<form action="submit-url" method="post/get">
<!-- form elements go here -->
</form>
```

- ✦ **action** Specifies the URL where the form data will be submitted.
- ✦ **method** Specifies the HTTP method (either "post" or "get") used when sending form data.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Form </title>
</head>
<body>
<form action="submit-url" method="post/get">
<!-- form elements go here -->
</form>
</body>
</html>
```

2. Input Elements

- ✦ Input elements are used within a form to gather user input.
- ✦ Here are some common types.

TEXT INPUT : **< input type="text" >**

```
<label for="username">Username:</label>
<input type="text" id="username" name="username">
```

PASSWORD INPUT : **< input type="password" >**

```
<label for="password">Password:</label>
<input type="password" id="password" name="password">
```

RADIO BUTTONS : **< input type="radio" >**

```
<label for="male">Male:</label>
<input type="radio" id="male" name="gender" value="male">

<label for="female">Female:</label>
<input type="radio" id="female" name="gender" value="female">
```

CHECKBOXES : **< input type="checkbox" >**

```
<label for="subscribe">Subscribe to newsletter</label>
<input type="checkbox" id="subscribe" value="yes">
```

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3. Textarea <textarea>

- ✦ Textarea allows users to input multi-line text.
- ✦ It is often used for comments or longer messages.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Textarea </title>
</head>
<body>
<label for="message">Message :</label>
<textarea id="message" name="message" rows="4" cols="50"></textarea>
</body>
</html>
```

4. Select Dropdown <select> and <option>

- ✦ Select dropdowns provide a list of options for the user to choose from.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Select Dropdown </title>
</head>
<body>
<label for="country">Country:</label>
<select id="country" name="country">
<option value="usa">United States</option>
<option value="canada">Canada</option>
<option value="uk">United Kingdom</option>
</select>
</body>
</html>
```

5. Submit Button <input type="submit">

- ✦ The submit button is used to send the form data to the server.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Submit Button </title>
</head>
<body>
<input type="submit" value="Submit">
</body>
</html>
```

6. Practice

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Putting it all together Code 10TB </title>
</head>
<body>
<form action="submit.php" method="post">
<label for="username">Username:</label>
<input type="text" id="username" name="username">
<label for="password">Password:</label>
<input type="password" id="password" name="password">
<label for="gender">Gender:</label>
<input type="radio" id="male" name="gender" value="male">
<label for="male">Male</label>
<input type="radio" id="female" name="gender" value="female">
<label for="female">Female</label>
<label for="subscribe">Subscribe to newsletter</label>
<input type="checkbox" id="subscribe" name="subscribe" value="yes">
<label for="message">Message:</label>
<textarea id="message" name="message" rows="4" cols="50"></textarea>
<label for="country">Country:</label>
<select id="country" name="country">
<option value="usa">United States</option>
<option value="canada">Canada</option>
<option value="uk">United Kingdom</option>
</select>
<input type="submit" value="Submit">
</form>
</body>
</html>
```

Output :

Username:

Password:

Gender:

☐ Male

☐ Female

This is a basic example of an HTML form with various input elements.

☐ Subscribe to newsletter

Message:

Country:

United States

Submit

This is a basic example of an HTML form with various input elements.

1. Table Structure

- 👉 In HTML, a table is created using the `<table>` element.
- 👉 The basic structure of an HTML table consists of the following components.
- 👉 `table` This is the main container for the entire table.
- 👉 `thead` This section is used to define the header of the table.
- 👉 `tbody` This section contains the body of the table, where the actual data rows are placed.
- 👉 `tfoot` This section is optional and is used to define the footer of the table.

Here's an example of a simple table structure

```
<!DOCTYPE html>
<html>
<head>
<title> Table Structure </title>
</head>
<body>
<table>
<thead>
<!-- Header row goes here -->
</thead>
<tbody>
<!-- Data rows go here -->
</tbody>
<tfoot>
<!-- Footer row goes here -->
</tfoot>
</table>
</body>
</html>
```

2. Table Headers <th>

- 👉 In the `thead` section of the table, header cells are defined using the `<th>` table header element.
- 👉 The content within `<th>` is typically bold and centered by default.
- 👉 Header cells are used to label the columns of the table.

Example of a table with headers :

```
<!DOCTYPE html>
<html>
<head>
<title> Table Headers </title>
</head>
<body>
<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<!-- Data rows go here -->
</tbody>
</table>
</body>
</html>
```

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3. Table Rows and Cells <tr> and <td>

- 👉 The actual data in the table is placed within the `<tbody>` section.
- 👉 Rows are defined using the `<tr>` (table row) element, and individual cells within the rows are defined using `<td>` (table data) elements.

Example of a table with data :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Table Rows and Cells </title>
</head>
<body>
<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Doe</td>
<td>25</td>
<td>New York</td>
</tr>
<tr>
<td>Jane Smith</td>
<td>30</td>
<td>Los Angeles</td>
</tr>
</tbody>
</table>
</body>
</html>
```

In this example, there are two rows in the `<tbody>` section, each containing three cells corresponding to the columns defined in the `<thead>` section.

4. Practice

Example of a table

```
<!DOCTYPE html>
<html>
<head>
<title> Practice </title>
</head>
<body>
<table class="table table-bordered">
<thead class="thead-dark">
<tr>
<th scope="col">Name</th>
<th scope="col">Age</th>
<th scope="col">City</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Doe</td>
<td>25</td>
<td>New York</td>
</tr>
<tr>
<td>Jane Smith</td>
<td>30</td>
<td>Los Angeles</td>
</tr>
</tbody>
<tfoot>
<tr>
<td colspan="3" class="text-center">Footer Row</td>
</tr>
</tfoot>
</table>
</body>
</html>
```

Output :

Name	Age	City
John Doe	25	New York
Jane Smith	30	Los Angeles
Footer Row		

1. Audio Embedding

👉 To embed audio in a webpage, you can use the `<audio>` element.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Audio Embedding </title>
</head>
<body>
<audio controls>
<source src="example.mp3" type="audio/mp3">
Your browser does not support the audio element.
</audio>
</body>
</html>
```

The `controls` attribute adds play, pause, and volume controls to the audio player.

The `<source>` element specifies the audio file (example.mp3) and its type.

2. Video Embedding

👉 For embedding videos, you can use the `<video>` element.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Video Embedding </title>
</head>
<body>
<video width="640" height="360" controls>
<source src="example.mp4" type="video/mp4">
Your browser does not support the video element.
</video>
</body>
</html>
```

The `height` and `width` attributes set the dimensions of the video player.

The `controls` attribute adds play, pause, and volume controls.

The `<source>` element specifies the video file (example.mp4) and its type.

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3. <iframe> for Embedding External Content

👉 The `<iframe>` tag is used to embed external content, such as videos, maps, or other webpages, within an HTML document.

Example of Embedding a YouTube Video :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Example of Embedding a YouTube Video </title>
</head>
<body>
<iframe width="560" height="315" src="https://www.youtube.com/embed/your_video_id" frameborder="0" allowfullscreen>
</iframe>
</body>
</html>
```

The `height` and `width` attributes set the dimensions of the iframe.

The `src` attribute specifies the source URL of the external content (replace "your_video_id" with the actual YouTube video ID).

The `frameborder="0"` removes the iframe border.

The `allowfullscreen` attribute allows the content to be viewed in fullscreen mode.

Example of Embedding a Google Map :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Example of Embedding a Google Map </title>
</head>
<body>
<iframe src="https://www.google.com/maps/embed" width="600" height="450" style="border:0;" allowfullscreen=""
loading="lazy"></iframe>
</body>
</html>
```

1. Email Input Type

- 👉 The `<input>` element with the `type="email"` attribute is used for capturing email addresses.
- 👉 It provides built-in validation for ensuring that the entered value is in a valid email format.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Email Input Type </title>
</head>
<body>
<label for="email">Email:</label>
<input type="email" id="email" name="email" required>
</body>
</html>
```

The `required` attribute ensures that the field must be filled out before submitting the form.

2. Tel Input Type

- 👉 The `<input>` element with the `type="tel"` attribute is used for capturing telephone numbers.
- 👉 It is suitable for both landline and mobile phone numbers.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Tel Input Type </title>
</head>
<body>
<label for="phone">Phone:</label>
<input type="tel" id="phone" name="phone" required>
</body>
</html>
```

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3. Date Input Type

- 👉 The `<input>` element with the `type="date"` attribute allows users to select a date from a date picker.

Example :

```
<!DOCTYPE html>
<html>
<head>
<!-- Meta-information and linked resources go here -->
<title> Date Input Type </title>
</head>
<body>
<label for="birthdate">Birthdate:</label>
<input type="date" id="birthdate" name="birthdate" required>
</body>
</html>
```

4. Form Validation

- 👉 HTML5 introduced client-side form validation, which means the browser can validate the user's input before submitting the form.
- 👉 This helps in reducing server requests and providing real-time feedback to users.
- 👉 As shown in the examples above, the `required` attribute is used to make a form field mandatory.
- 👉 If the user tries to submit the form without filling out a required field, they will receive an error message.
- 👉 The `pattern` attribute allows you to specify a regular expression for the expected input format.

Example :

```
<!DOCTYPE html>
<html>
<head>
<title> Form Validation </title>
</head>
<body>
<label for="password">Password (at least 8 characters, one uppercase, one lowercase, one digit):</label>
<input type="password" id="password" name="password" pattern="^(?=.*\d)(?=.*[a-z])(?=.*[A-Z]).{8,}$" required>
</body>
</html>
```

In this example, the pattern enforces that the password must be at least 8 characters long and contain at least one uppercase letter, one lowercase letter, and one digit.