

TAPAS SONI

FRONTEND:
PART-1:-HTML



Frontend: -

Frontend development is the task of becoming the user interface of a website.

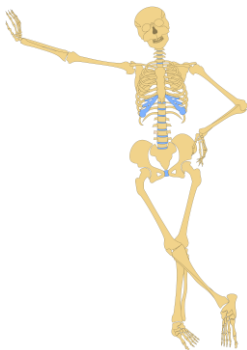
Technologies such as HTML, CSS, and JavaScript have been used for this. It is the job of the front-end developer to give the user a visual appealing and user-friendly experience, so that the user can easily interact with the website. Graphics, layouts, buttons, navigation, and text are designed in the front end. In short, Frontend is the part of the website that the user sees and interacts with.

HTML: - HTML (Hypertext Markup Language) is the markup language to create the structure of a website. It is used to organize and display elements of the website (such as headings, paragraphs, links, images, ETC.).

CSS: - CSS (Cascading Style Sheets) is used to style HTML elements, which include colors, fonts, layouts, and spacing inclusions. This helps in setting up a design and presentation to make the website visually appealing.

JavaScript: - JavaScript is a programming language used to add interactivity and dynamic content to a website. This helps create functionalities by going through user interactions, animations, and real-time updates.

HTML: -



CSS: -



JavaScript: -



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For creating HTML File: - File_name.HTML or File_name.html.

HTML is not case-sensitive. This means that tag names, attributes, and attribute values can be written in either capital letters or small letters, and they will have the same effect on the website.

BASIC STRUCTURE OF HTML: -

```
<!DOCTYPE html>
<html lang="en">

  <head>

    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Page Title</title>
  </head>

  <body>

    <h1>Hello, World! </h1>
    <p>This is a paragraph. </p>
  </body>
</html>
```

Explanation of basic structure: -

- <!DOCTYPE html>: This document is defended in the latest HTML5 version.
- <html lang="en" >: The antyre of this tag website defines the HTML document, and sets the lung attribute language.
- <head>: This section contains metadata, which includes document titles and styles.
- <meta charset="UTF-8" >: This sets the UTF-8 standard for encoding the character in the fourset document.

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- `<meta name="viewport" content="width=device-width, initial-scale=1.0">`: This sets viewport settings for responsive design.
- `<title>Page Title</title>`: The title of this page is displayed in the browser tab.
- `<body>`: This tag includes the main content of the website, which the user sees.

Basic Tags of HTML

COMMENTS IN HTML: - Comments in HTML have been used to add notes to codes that are not displayed in the browser. This helps the developer understand the code and can also be useful for hydeing the temporary code.

```
<!-- This is a comment -->  
<!-- ..... -->
```

HEADING TAGS: - Heading tags in HTML have been used to create headings and subheadings. This `<h1>` `<h6>` ranges from tag to, of which `<h1>` there is the highest (large) level heading and `<h6>` the lowest (small) level heading.

```
<h1>hello</h1>  
<h2>hello</h2>  
<h3>hello</h3>  
<h4>hello</h4>  
<h5>hello</h5>  
<h6>hello</h6>
```

PARAGRAPH TAG: - The tag in HTML <p> has been used to create a paragraph. It is possible to keep the text content in this tag, and this paragraph is displayed in a separate line.

<p> this is my first paragraph. </p>

ANCHOR TAG: -A tag in HTML <a> is an anchor tag, which has been used to create hyperlinks. With the help of this tag, you get to link from one page to another, website, or external URL.

Visit Example Website

IMAGE TAG: - In HTML , the tag has been used to insert images. This helps to display the tag image file on the web page.

BR TAG: - In HTML `
` , the tag has been used to insert a line break. This tag helps to start the text in the new line.

`<p>`This is a paragraph. `
`And this text is on a new line within the same paragraph. `</p>`

BOLD, ITALIC & UNDERLINE TAG: - Bold, italic, and underline tags can be used for text formatting in HTML. This tag helps in changing the appearance of the text.

- ``: This tag makes the text bold. It is used for strong emphasis but does not imply any specific importance or semantic meaning.
- `<i>`: This tag makes the text italic. It is used for text that should be emphasized, such as foreign words or technical terms.
- `<u>`: This tag underlines the text. It was traditionally used for underlined text, but nowadays it is better used for hyperlinks (using the `<a>` tag) or specific emphasis.

`<p>`This text is bold. `</p>`
`<p><i>`This text is italic. `</i></p>`
`<p><u>`This text is underlined. `</u></p>`

BIG & SMALL TAG: - In HTML `<big>` and `<small>` tags have been used to adjust the size of the text. This tag helps to make the text comparatively larger or smaller.

`<p>`This is a normal text. `</p>`
`<p><big>`This text is bigger. `</big></p>`
`<p><small>`This text is smaller. `</small></p>`

HR TAG: - The tag in HTML `<hr>` has been used to create a horizontal rule. This tag creates a horizontal line in the page, which helps in visually separating the content.

`<p>`This is the first section of content. `</p>`

`<hr>`

`<p>`This is the second section of content, separated by a horizontal line. `</p>`

SUBSCRIPT & SUPERScript TAG: - In HTML `<sub>` and `<sup>` tags have been used to display text in subscript and superscript formats.

- `<sub>`: This tag displays the text in a subscript, which falls at the bottom of the line. In example, `_{H2O}` is the formula of water, in which 2 comes in the subscript.
- `<sup>`: This tag displays the text in a superscript, which falls at the top of the line. Example ma, a = `^{mc2}` is einstein's equation, in which 2 comes in the superscript.

`<p>`This is normal text. `</p>`

`<p>`H`₂`O is the chemical formula for water. `</p>`

`<p>`E = mc`²` is Einstein's famous equation. `</p>`

PRE-TAG: - In HTML `<pre>` , the tag is used to display preformed text. This tag displays the text in exactly the format in which it is written, including space and line breaks.

`<pre>`

This is preformatted text.

It retains spaces and

line breaks.

`</pre>`

SEMANTIC TAGS: -In HTML, semantic tags have been used to logically group the content of a page, which improves the structure of the website and

enhances accessibility. Semantic tags define the meaning of content, thereby increasing page understanding for search engines and screen readers.

Common Semantic Tags:

1. `<header>`:

Purpose: The `<header>` tag represents the header section of a page or section. It typically contains header content such as the site logo, navigation links, or the page title.

```
<header>
  <h1>Website Title</h1>
  <nav>
    <ul>
      <li><a href="#home">Home</a></li>
      <li><a href="#about">About</a></li>
      <li><a href="#contact">Contact</a></li>
    </ul>
  </nav>
</header>
```

2. `<nav>`:

Purpose: Used to group navigation links.

```
<nav>
  <ul>
    <li><a href="#home">Home</a></li>
    <li><a href="#services">Services</a></li>
    <li><a href="#contact">Contact</a></li>
  </ul>
</nav>
```

3. `<main>`:

Purpose: The `<main>` tag contains the primary content of a page. It defines the part of the site's content that is directly related to the main purpose of the page.


```
<main>
  <section>
    <h2>Main Article</h2>
    <p>This is the main content of the page. </p>
  </section>
</main>
```

4. <section>:

Purpose: The <section> tag divides the thematic content of a page into sections. Each section can have its own heading.

```
<section>
  <h2>About Us</h2>
  <p>Information about the company. </p>
</section>
```

5. <article>:

Purpose: Self-contained content, such as an article, blog post, news story, etc..

```
<article>
  <h2>News Title</h2>
  <p>News content goes here. </p>
</article>
```

6. <footer>:

Purpose: The <footer> tag represents the footer content of a page or section. It can include contact information, copyright notices, and additional links.

```
<footer>
```

`<p>© 2024 Your Company. All rights reserved. </p>`
`</footer>`

7. `<aside>`:

Purpose: Represents sidebar or additional content that provides supplementary information relevant to the context of the main content.html

```
<aside>
  <h3>Related Links</h3>
  <ul>
    <li><a href="#link1">Related Article 1</a></li>
    <li><a href="#link2">Related Article 2</a></li>
  </ul>
</aside>
```

8. `<figure>`:

Purpose: Represents media content such as images, diagrams, or illustrations. The `<figcaption>` tag describes the content.

```
<figure>
  
  <figcaption>Caption for the image. </figcaption>
</figure>
```

Benefits of Using Semantic Tags:

- **Improved Accessibility:** Helps screen readers understand the structure of the content.
- **Better SEO:** Assists search engines in understanding the meaning of the content.
- **Clearer Code:** Makes HTML code more organized and readable.

Revisiting Anchor Tag:

- In HTML, the `<a>` tag with the `target="_blank"` attribute opens the link in a new window or tab. This attribute helps users view external links or different pages in a separate tab, keeping the current page session intact.

```
<a href="https://www.example.com" target="_blank">Visit Example Website</a>
```

- To create a clickable picture, the <a> tag can be used with the tag. The <a> tag creates a hyperlink, and the tag displays the image.

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

DIV Tag:

- In HTML, the <div> tag is a container element used to group content on a page. It helps in dividing content into logical sections, which aids in layout design and styling.

```
<div>  
  <h2>Section Title</h2>  
  <p>This is a paragraph inside the div element. </p>  
</div>
```

SPAN Tag:

- In HTML, the tag is an inline container element used to group content, especially small sections of text or elements for styling purposes. The tag allows modifications to inline content without creating line breaks.

```
<p>This is a <span style="color: red;">highlighted</span> word in a sentence. </p>
```

ADVANCE TAGS:

LIST IN HTML: - In HTML, lists have been used to display content in an organized format. HTML has the top 3 types of lists:

1. Unordered List ():

Purpose: Displays items with bullet points.

```
<ul>
  <li>Item 1</li>
  <li>Item 2</li>
  <li>Item 3</li>
</ul>
```

- **Explanation:**

- : Unordered list container tag.
- : List item tags, which define list .

2. Ordered List ():

Purpose: Displays items in a numbered list format.

```
<ol>
  <li>First item</li>
  <li>Second item</li>
  <li>Third item</li>
</ol>
```

- **Explanation:**

- : Ordered list container tag.
- :List item tags, which define list .

3. Description List (<dl>):

Purpose: Term and that have been used to list the description of the term.

```

<dl>
  <dt>Term 1</dt>
  <dd>Description of Term 1</dd>
  <dt>Term 2</dt>
  <dd>Description of Term 2</dd>
</dl>

```

- **Explanation:**

- <dl>: Description list container tag.
- <dt>: Term tag, which defines the term.
- <dd>: Description tag, which provides the description of a term.

TABLES IN HTML: - The tag in HTML <table> has been used to display the tabular donor. <table> Inside the tag are the main 3 tags: <tr>, <th>, and <td>, which define the rows, headers, and cells of the table.

- **Basic Structure:**
- <table>:
- **Purpose:** Table container tag that defines the overall table structure.
- <tr> (Table Row):
- **Purpose:** Defines a row in the table.
- <th> (Table Header):
- **Purpose:** Defines the header cells of the table. By default, the text is bold and center-aligned.
- <td> (Table Data):
- **Purpose:** Defines the data cells of the table.
- html
- Copy code
- <table border="1">


```

        <thead>
          <tr>
            <th>Header 1</th>
            <th>Header 2</th>
            <th>Header 3</th>
          </tr>
        </thead>
        <tbody>

```

```

        <tr>
            <td>Row 1, Cell 1</td>
            <td>Row 1, Cell 2</td>
            <td>Row 1, Cell 3</td>
        </tr>
        <tr>
            <td>Row 2, Cell 1</td>
            <td>Row 2, Cell 2</td>
            <td>Row 2, Cell 3</td>
        </tr>
    </tbody>
    <tfoot>
        <tr>
            <td>Footer 1</td>
            <td>Footer 2</td>
            <td>Footer 3</td>
        </tr>
    </tfoot>
</table>

```

- **Additional Attributes:**
- **colspan:** Used to extend a single cell across multiple columns.
- `html`
- Copy code
- `<td colspan="2">This cell spans two columns</td>`

- **rowspan:** Used to extend a single cell across multiple rows.
- `html`
- Copy code
- `<td rowspan="2">This cell spans two rows</td>`

- **CAPTION IN TABLES:** - The `<caption>` tag in HTML provides a descriptive title for the table. This tag is used to clearly identify the table and help users understand the content of the table.
- `html`
- Copy code
- `<table border="1">`
 `<caption>Monthly Sales Report</caption>`

```

    <thead>
      <tr>
        <th>Month</th>
        <th>Sales</th>
      </tr>
    </thead>
    <tbody>
      <tr>
        <td>January</td>
        <td>5000</td>
      </tr>
      <tr>
        <td>February</td>
        <td>6000</td>
      </tr>
    </tbody>
  </table>

```

- **CLASS & ID:** - In HTML, the class and id attributes are used to uniquely identify and style elements. Here are their main features and differences:
- **class Attribute**
- **Purpose:** The class attribute allows multiple elements to be assigned the same class, which can be used for common styling or JavaScript functionality.
- **Usage:** Used to apply common style or behavior to multiple elements.
- **Syntax:**
- `html`
- Copy code
- `<tag class="class-name">Content</tag>`
- **id Attribute**
- **Purpose:** The id attribute provides a unique identifier, which should be unique within a page. This attribute is used to select specific elements in CSS or JavaScript.
- **Usage:** Used to apply unique style or behavior to a single element on a page.
- **Syntax:**
- `html`
- Copy code
- `<tag id="unique-id">Content</tag>`

- **FORM IN HTML:** - The <form> tag in HTML is used to capture user input. Forms include text fields, buttons, checkboxes, radio buttons, and other controls to provide an interface for submitting user data to a server.

- **Basic Structure:**

- **<form>:**

- **Purpose:** The form container tag that encloses user input fields.

- **Attributes:**

- **action:** Specifies the URL to submit the form data to.

- **method:** Specifies the method to submit data (GET or POST).

- **Form Elements:**

- **<input>:** Used to capture various types of user inputs.

- **<textarea>:** Used to capture multi-line text input.

- **<select>:** Used to create a drop-down list.

- **<button>:** Used to create a button.

- `html`

- `Copy code`

- ```
<form action="/submit-form" method="post">
 <label for="name">Name:</label>
 <input type="text" id="name" name="name" required>

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

 <label for="message">Message:</label>
 <textarea id="message" name="message" rows="4" cols="50"
required></textarea>

 <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="newsletter">Subscribe to newsletter:</label>
```



```

 <input type="checkbox" id="newsletter" name="newsletter"
value="yes">

 <input type="submit" value="Submit">
</form>

```

- **Explanation:**
- **<form action="/submit-form" method="post">:** The form tag, where the action attribute specifies the URL to submit the form data, and the method attribute specifies the data submission method (POST).
- **<label for="name">Name:</label>:** The label tag describes the input field. The for attribute specifies the id of the input field.
- **<input type="text" id="name" name="name" required>:** Text input field that captures the user's name. The required attribute makes the field mandatory.
- **<textarea id="message" name="message" rows="4" cols="50" required></textarea>:** Multi-line text input field that captures the user's message.
- **<input type="radio" id="male" name="gender" value="male"> Male:** Radio buttons for selecting the user's gender.
- **<input type="checkbox" id="newsletter" name="newsletter" value="yes">:** Checkbox to provide an option for subscribing to a newsletter.
- **<input type="submit" value="Submit">:** Submit button that submits the form data to the server.
- **Additional Attributes:**
- **action:** Specifies the URL to submit the form data.
- **method:** Specifies the data submission method (GET or POST).
- **Form Submission Methods:**
- **GET:** Data is appended to the URL, included as URL parameters. Suitable for small amounts of data.
- **POST:** Data is submitted in the HTTP request body, suitable for large amounts of data.
- **IFRAME TAGS:** - The <iframe> tag in HTML is used to embed one webpage within another. This tag can be used to display external content, such as videos, maps, or other web content.
- **Basic Structure:**
- html
- Copy code

- `<iframe src="URL" width="width" height="height" frameborder="border" allowfullscreen></iframe>`
- **Attributes:**
  - **src:**
    - **Purpose:** Specifies the URL of the content to be embedded. This URL is the address of the external content to be displayed in the iframe.
    - **Example:**
      - html
      - Copy code
      - `<iframe src="https://www.example.com"></iframe>`
  - **width:**
    - **Purpose:** Specifies the width of the iframe.
    - **Example:**
      - html
      - Copy code
      - `<iframe src="https://www.example.com" width="600"></iframe>`
  - **height:**
    - **Purpose:** Specifies the height of the iframe.
    - **Example:**
      - html
      - Copy code
      - `<iframe src="https://www.example.com" height="400"></iframe>`
  - **frameborder:**
    - **Purpose:** Used to display the border of the iframe. (Outdated in HTML5; border styling can be done with CSS.)
    - **Example:**
      - html
      - Copy code
      - `<iframe src="https://www.example.com" frameborder="0"></iframe>`
  - **allowfullscreen:**
    - **Purpose:** Allows the iframe to enter fullscreen mode.
    - **Example:**

- `html`
- Copy code
- `<iframe src="https://www.example.com" allowfullscreen></iframe>`
- **title:**
- **Purpose:** Describes the content of the iframe for accessibility improvement.
- **Example:**
- `html`
- Copy code
- `<iframe src="https://www.example.com" title="Example Website"></iframe>`
- **Example:**
- `html`
- Copy code
- `<iframe src="https://www.example.com" width="800" height="600" frameborder="0" allowfullscreen title="Example Website"></iframe>`
- **Explanation:**
- **src="https://www.example.com":** Specifies the URL of the content to be embedded.
- **width="800":** Width of the iframe is 800 pixels.
- **height="600":** Height of the iframe is 600 pixels.
- **frameborder="0":** Removes the border of the iframe.
- **allowfullscreen:** Provides the option to enter fullscreen mode.
- **title="Example Website":** Describes the content of the iframe for accessibility.
- **Usage:**
- **Embedding Videos:**
- `html`
- Copy code
- `<iframe src="https://www.youtube.com/embed/dQw4w9WgXcQ" width="560" height="315" frameborder="0" allowfullscreen></iframe>`
- **Embedding Maps:**
- `html`
- Copy code

- `<iframe  
src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3153.1  
17108646165!2d-  
122.0842493846816!3d37.42199977982503!2m3!1f0!2f0!3f0!3m2!1i1024!  
2i768!4f13.1!3m3!1m2!1s0x808fb7d2c5c6c9b1%3A0x7f47d7a8b5ad05dc!2s  
Googleplex!5e0!3m2!1sen!2sus!4v1631541234567" width="600"  
height="450" frameborder="0" allowfullscreen></iframe>`

- **VIDEO TAG:** - The `<video>` tag in HTML is used to display video content on a webpage. This tag provides controls for playing, pausing, volume adjustment, and fullscreen options.

- **Basic Structure:**

- `html`
- Copy code
- `<video src="video-file.mp4" width="640" height="360" controls>  
Your browser does not support the video tag.  
</video>`

- **Attributes:**

- **src:**
- **Purpose:** Specifies the URL of the video file.
- **Example:**
- `html`
- Copy code
- `<video src="example.mp4"></video>`

- **width:**

- **Purpose:** Specifies the width of the video player.
- **Example:**
- `html`
- Copy code
- `<video src="example.mp4" width="800"></video>`

- **height:**

- **Purpose:** Specifies the height of the video player.
- **Example:**
- `html`
- Copy code

- `<video src="example.mp4" height="600"></video>`
- **controls:**
  - **Purpose:** Displays play, pause, volume, and fullscreen controls in the video player.
  - **Example:**
    - `html`
    - `Copy code`
    - `<video src="example.mp4" controls></video>`
- **autoplay:**
  - **Purpose:** Automatically plays the video when the page loads.
  - **Example:**
    - `html`
    - `Copy code`
    - `<video src="example.mp4" autoplay></video>`
- **loop:**
  - **Purpose:** Replays the video automatically after it ends.
  - **Example:**
    - `html`
    - `Copy code`
    - `<video src="example.mp4" loop></video>`
- **muted:**
  - **Purpose:** Mutes the video sound when it plays.
  - **Example:**
    - `html`
    - `Copy code`
    - `<video src="example.mp4" muted></video>`
- **poster:**
  - **Purpose:** Specifies a default image to display before the video loads.
  - **Example:**
    - `html`
    - `Copy code`

- `<video src="example.mp4" poster="poster-image.jpg" controls></video>`

- **Example:**

- html
- Copy code
- `<video src="example.mp4" width="800" height="450" controls autoplay loop muted poster="poster-image.jpg">`  
     Your browser does not support the video tag.  
`</video>`

- **Explanation:**

- **src="example.mp4"**: Specifies the URL of the video file.
- **width="800"**: Width of the video player is 800 pixels.
- **height="450"**: Height of the video player is 450 pixels.
- **controls**: Displays controls for the video player.
- **autoplay**: Automatically plays the video when the page loads.
- **loop**: Replays the video automatically after it ends.
- **muted**: Mutes the sound of the video when it plays.
- **poster="poster-image.jpg"**: Displays the default image before the video loads.

- **Multiple Sources:**

- **Purpose**: Specifies different formats to ensure compatibility across all browsers.
- html
- Copy code
- `<video width="640" height="360" controls>`  
     `<source src="video.mp4" type="video/mp4">`  
     `<source src="video.webm" type="video/webm">`  
     `<source src="video.ogv" type="video/ogg">`  
     Your browser does not support the video tag.  
`</video>`

- **Explanation:**

- **<source>**: Used to specify different formats. The browser will play the first compatible format it finds.