



Assignment - I

Describe the basic structure of an HTML document.

An HTML document has well-defined structure consisting of elements that define the content and layout of a webpage. Here's the basic structure:

Explanation of Key point:

- 1) `<!DOCTYPE html>`
 - Declares the document type and version of HTML (HTML 5 in this case)
 - Ensures proper rendering by browsers
- 2) `<HTML>`
 - The root element of the HTML document
 - All other elements are nested inside this tag
- 3) `<Head>`
 - Contains metadata about the document (not visible on the webpage).

Includes elements like:

`<meta>`

`<title>`

`<link>`

`<style>`

`<script>`



4) <Body>

- Contains the visible content of the webpage
- Includes text, images, links, button and other interactive elements.

Example :-

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="device-width, initial-scale = 1.0">
    <title> My first HTML page </title>
  </head>
  <body>
    <h1>Welcome to my website</h1>
    <p>This is a paragraph </p>
    <a href="https://example.com">
      Click here to visit example </a>
  </body>
</html>
```

2) What are HTML form elements and attributes?
Provide example of commonly used form elements and their attributes.

→ HTML form elements are the building blocks of a form on a web page. They allow users to input and submit data to a server. These elements are created using the <form> tag and its child elements. They often have attributes to define their behavior and properties.



Commonly used form Elements and their Attributes:

- 1) **<form>**: Container for the form with attributes like action and method (Get and Post).
- 2) **<input>**: For various inputs - e.g. type = "text", Password, email attributes : name, placeholder, required.
- 3) **<text area>**: multi-line text input Attributes : rows, cols, name
- 4) Discuss the importance of browser support in HTML development. How can developers ensure cross-browser compatibility?

Importance

Browser support is crucial in HTML Development because different Browsers - eg. Chrome, fire fox, Safari (Edge) may interpret and render HTML, CSS and Java Script differently. Ensuring consistent behavior across browsers is vital for providing a seamless user experience without proper browser support some features may not work as intended leading to usability issues, reduced accessibility and loss of potential users.

Ensure cross-browser

- Use standardized HTML and CSS : Stick to valid HTML5 and CSS 3 specifications to reduce browser inconsistencies.
- Test in multiple browsers: Regularly check how your



Website appears and functions in various because

- **Polyfills:** Use JS libraries (e.g. Modernizr) to add support for newer features in older browsers.
- **CSS prefixes:** Some CSS features (like flexbox or animations) need browser-specific prefixes for older browser versions (e.g.: -webkit - for Safari).
- **Responsive design:** Use media queries and flexible layouts (like flexbox or grid) to ensure a consistent experience on different screen sizes.

4) How can background colors and images be added to an HTML webpages? Provide code examples demonstrating both techniques.

Adding a Background Color:

You can add a background color using the `background-color` property in CSS.

HTML

```
<body style="background-color: lightblue;">  
  <h1> Welcome to My Website </h1>
```

css

```
body {
```

```
  background-color: lightblue;
```



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Adding a Background Image:

You can use the `background-image` property in CSS to set an image as the background.

HTML

```
<body style="background-image: url('background.jpg');">  
<h1>Welcome to My Website </h1>  
</body>
```

CSS

```
body {  
    background-image: url('background.jpg');  
    background-size: cover;  
    background-position: center;  
}
```

5) Explain `div` and `span` tag in details.

- `<div>`: A block-level element used to group content and apply styles or structure layouts. It can contain other block elements like paragraphs, images, or other `divs`.

HTML

```
<div class="container">  
<h1> Header Inside a Div </h1>  
<p> This is a paragraph inside a div </p>  
</div>
```

- ``: An inline element used to style a portion of text or group inline elements without



affecting their flow. It does not break the content into a new line, unlike `<div>`.

(html) : `<p>This is
important text. </p>`

Differences:

- `<div>` is used for grouping block-level elements (like paragraphs, images, or other divs) and can be used to structure the layout of a webpage.
- `` is used for inline elements or small portions of text within a block-level element without disrupting the flow of the content.

Both `<div>` and `` are often used with CSS to control layout, design, and structure.



Assignment

Unit-2

Explain the difference between headings (`h1-h6`) and paragraphs (`< p >` tag) in HTML. Provide examples of when each should be used and describes their semantic significance.

Difference

- **Heading (`<h1>` to `<h6>`)**: These are used to define heading or titles in a webpage. Headings range from `<h1>` (most important) to `<h6>` (least important), and they provide a hierarchical structure for the content, making it easier for users to navigate and for search engines to index the content.
- **Semantic Significance**: Headings help convey the structure and hierarchy of the content. `<h1>` is typically used for the main title of the page, while `<h2>` to `<h6>` are used for subheadings. They provide meaning to the content, which is important for SEO (Search Engine Optimization) and accessibility (such as for screen readers).

html
`<h1>` Main Heading of the Page `</h1>`
`<h2>` Sub-Heading `</h2>`
`<h3>` Sub-Sub-Heading `</h3>`



When to use

- Use `<h1>` for the main title of the page.
- Use `<h2>` for section titles, `<h3>` for subsections and so on for further divisions.
- Paragraph (`<p>`) : The `<p>` tag is used to define a paragraph of text. It is a block-level element, meaning it will create space before and after paragraph, and it is typically used for general text content.
- Semantic Significance : The `<p>` tag represents a block of text, and its purpose is to organize the text into logical sections. While headings organize content into sections, paragraphs group related sentences within those sections.

(HTML)

`<p>` This is a paragraph of text, providing more detailed information about the topic.

When to use

Use `<p>` for body text or any content that is presented as a paragraph.

- Q) Discuss the use of Subscript (``) and Superscript (``) tags in HTML. Provide examples demonstrating their applications in text formatting.



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- Subscript (`<sub>`): The `<sub>` tag is used to define text that appears slightly below the normal text baseline. It is commonly used for chemical formulas, mathematical expressions, or footnotes.

html] $H ₂ O$

This renders as "H₂O" with the "2" below the baseline.

- Superscript (`<sup>`): The `<sup>` tag is used to define text that appears slightly above the normal text baseline. It is commonly used for exponents, mathematical powers, or footnotes.

html] $E=mc ²$

This renders as "E=mc²" with the "2" above the baseline.

- Q) How can you create a horizontal rule (`
` tag) in HTML? Describe its purpose and provide an example of its usage.

- Purpose: The `
` tag is used to create a horizontal rule, or a line, that visually separates sections of content on a webpage. It is often used to indicate a thematic break or a change in the content.

- Syntax: The `
` tag is an empty (self-closing) tag, meaning it does not have any content.



inside it.

HTML example :-

`<h1> Section 1 </h1>`

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

`<hr>`

`<h2> Section 2 </h2>`

`<p> This is the second section of content after the horizontal rule </p>`

4) Describe the process of aligning text in HTML using CSS. What are some CSS properties and values you can use to achieve text alignment?

To align text in HTML using CSS, you can use the `text-align` property, which controls the horizontal alignment of text within a block-level element (like a `<div>`, `<p>` or `<header>`).

Common CSS properties for text alignment:

- `text-align: left;` - Aligns the text to the left
- `text-align: right;` - Aligns the text to the right
- `text-align: center;` - Centers the text horizontally
- `text-align: justify;` - Stretches the lines so that they are aligned along both the left and right edges

HTML example

`<p style = "text-align: center;"> This text is centered </p>`

`<p style = "text-align: right;"> This text is right-aligned </p>`

`<p style = "text-align: justify;"> This text is justified, meaning it will stretch across </p>`



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• center-text {

text-align: center; }

• right-text {

text-align: right; }

• justify-text {

text-align: justify; }

my `<p class="center-text">This text is centered using an external css class.</p>`

Compare and contrast unordered lists (``), ordered lists (``), and definition lists (`<dl>`) in HTML.

• Unordered List (``): Used to create a list of items where the order does not matter. Each list item is enclosed in an `` tag.

example

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

This creates a bulleted list.

• Ordered List (``): Used to create a list of items where the order does matter. Each item is also enclosed in an `` tag, but the list items are numbered.



example

 first item

 Second item

 Third item

This creates a numbered list (1, 2, 3)

- **Definition List (<dl>):** Used to define a list of terms and their corresponding definitions. It consists of <dt> (definition term) and <dd> (definition description) tags.

example

<dl>

<dt> HTML </dt>

<dd> Hyper Text Markup Language ; used for structuring web content </dd>

<dt> CSS </dt>

<dd> Cascading Style Sheets , used for styling web content . </dd>
</dl>

This creates a list of terms with their definitions.

Difference,

- : Bulleted list where order doesn't matter.
- : Numbered list where order matters.
- <dl>: A list of terms and definitions, useful for glossaries, dictionaries, or other similar content.

Assignment

Unit - 3

Explain the Structure of an HTML table. Provide an example of a basic table structure.

An HTML table is used to display tabular data organized into rows and columns. The table structure consists of several key elements:

- `<table>` : The main container for the table.
- `<tr>` : Represents a table row.
- `<th>` : Defines a table header cell, typically bold and centered by default.
- `<td>` : Defines a table data cell, which contains the content of the table.
- `<thead>`, `<tbody>`, `<tfoot>` : Optional elements used to group table content for better structure and accessibility.

`<table border="1">`

..... `<thead>`

..... `<tr>`

..... `<th> Header 1 </th>`

..... `<th> Header 2 </th>`

..... `<th> Header 3 </th>`

..... `</tr>`

..... `</thead>`



<+body>
</+>
<+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 colspan="3">Footer Content</+td>
</+tr>
</+tfoot>
</+tbody>
</+table>

2) How can you align a table and its cell contents in HTML? Describe the CSS properties or HTML attributes used for alignment, and provide example demonstrating their application.

To align tables and their cell contents in HTML you can use CSS properties or HTML attributes.

Table alignment using CSS:

- margin: Aligns the entire table with respect to container (left, right, center)
- text-align: Aligns the content inside each cell

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example

< style >

< table >

margin-left: auto;

margin-right: auto;

</ style >

< table >

< tr >

< td > Table aligned to center </ td >

</ tr >

</ table >

Cell Content Alignment

text-align: Aligns text horizontally in table cells (left, center, right)

vertical-align: Aligns content vertically within the cell (top, middle, bottom)

example

< style >

< td >

text-align: center;

vertical-align: middle;

{

</ style >

< table >

< tr >

< td > Centered Text </ td >

< /tr >

</ table >



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HTML Attributes for Alignment

- align attribute for `<table>`, `<td>` and `<th>`: Affects the content (though this is now considered outdated and is replaced by CSS).

html

```
<table align = "center">
```

```
  <tr>
```

<td align = "center"> Centered content

```
  </td>
```

```
</tr>
```

3)

Describe the process of nesting tables in HTML. Provide an example illustrating nested table. Nesting tables refers to placing one table inside another. This is useful for creating more complex layouts or when one section of a table needs to be subdivided further.

html

```
<table border = "1">
```

```
  <tr>
```

<td> Main Table, Row-1, Cell-1 </td>

```
  <td>
```

```
    <table border = "1">
```

```
      <tr>
```

<td> Nested Table, Row-1, Cell-1 </td>

```
    </tr>
```

```
  <tr>
```

<td> Nested Table, Row-2, Cell-1 </td>

```
  </tr>
```

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<1 table >

<1 td >

<tr>

<td>

<td> Main Table , Row 2 , Cell 1 </td>

<td> Main Table , Row 2 , Cell 2 </td>

</tr>

</table >

What are frames in HTML, and how are they created? Explain the purpose of the <frameset> and <frame> tags.

Frames are used to display multiple HTML pages in the same browser window. They are created using the <frameset> and <frame> tags.

<frameset>: Defines a set of frames within the browser window. It replaces the <body> tag in a document and allows the content to be divided into multiple sections.

<frame>: Defines individual frames within a <frameset>. Each frame can contain a separate HTML document.

example

<frameset cols="25% , 75%">

<frame src="menu.html" name="menu">

<frame src="content.html" name="content">

</frameset>



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In this example.

- `<frameset>` defines two columns, one taking up 25% of the width and the other 75%.
- `</frame>` tags are used to load the menu.html and content.html pages into each frame.

Purpose:

Frames allow a webpage to display multiple sections of content simultaneously. For instance, one frame can display a menu, while another displays content. However, frames are outdated and have been replaced by more modern techniques like CSS layouts and iframes.

5) Discuss the concept of applying hyperlink targets to frames.

In HTML, you can apply hyperlink targets to frames using the target attribute in anchor (`<a>`) tags. The target attribute specifies where the 'linked' document will open. For links within frames, the target can be set to the name of the frame.

- `target = "self"`: Opens the link in the same frame (behavior).
- `target = "blank"`: Opens the link in a new tab or window.
- `target = "frame-name"`: Opens the link in the specified frame by name.

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example

```
<frameset cols="25%, 75%">
```

```
  <frame src="menu.html" name="menu">
```

```
  <frame src="content.html" name="content">
```

```
</frameset>
```

```
<a href="new_content.html" target="content">
```

Open new content

The `<a>` tag has a `target="content"`, which means the link will open in the content frame (the second frame). This allows you to dynamically update the content frame without reloading the entire page.

Note

Frames are now largely deprecated in modern web development due to issues with usability, accessibility, and search engine optimization (SEO). Techniques like CSS Grid, Flexbox, and `<iFrame>` are preferred for creating layouts and embedding external content.

Assignment

Unit - 4

Explain the different ways to create hyperlinks in HTML.

Hyperlinks in HTML are created using the `a` tag.

Which allows users to navigate from one page to another. There are different ways to create hyperlinks depending on the destination and the context.

Basic hyperlink : Linking to another webpage or URL

``

Visit Example Website ``

Link to an internal page (within the same website):

` About us `

Link to a Specific section within the same page: Use an anchor link with an `id` attribute.

` Go to Contact Section `

Define the target Section in the page :

`<h2 id="contact"> Contact Us </h2>`

Link to an email address : Use the `mailto` protocol.

` Send an email `



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- Open the link in a new windows or tab: Use the target = "blank" attribute.
``
Open Example in New Tab

- Link to a telephone number: Use the tel: protocol.
`Call Us`

2) How can you style hyperlinks in HTML to change their color?

Hyperlinks can be styled using CSS to change their appearance, such as color, font, hover effects.

There are several states of a hyperlink that you can target with CSS.

- a:link : Style for unvisited links.
- a:visited : Style for visited links.
- a:hover : Style for when the user hovers over the link.
- a:active : Style for when the link is clicked.

Example

```
<style>
    a:link {
        color: blue;
    }
    a:visited {
        color: purple;
    }
    a:hover {
        color: green;
    }
```

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a. active : S

Color : green ; }

</style>

La href = "https://www.example.com" > Visit
Example

Describe the process of inserting an image on a web page using the img tag in HTML.

The img tag is used to embed images on a webpage. The tag does not have a closing tag and uses the src attribute to specify the path to the image file. You can also use the alt attribute to provide an alternative text for the image. (Important for accessibility and SEO)

Syntax:

example

<img src = "https://www.example.com/image.jpg" alt = "A beautiful scenery" width = "500" height =

Src : Specifies the path to the image file.

alt : Provides alternative text for the image

if it cannot be displayed.

width and height : Specify the size of the image.

4) Discuss the steps involved in creating an HTML form with various input elements like textboxes, buttons, checkboxes, dropdowns, and date fields. Provide example demonstrating each type of form element.



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An HTML form allows users to submit data to a web server. It uses the `<form>` tag and various input elements like textboxes, buttons, checkboxes, dropdowns, and date fields.

Basic form structure:

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

`</form>`

Different example

Textboxes - for single-line text input

`<label for="name"> Name : </label>`

`<input type="text" id="name" name="nam`

Checkbox - Allows user to select multiple options

`<label for="subscribe" > subscribe to newsletter : </label>`

`<input type="checkbox" id="subscribe" name="subscrive" >`

Dropdown (select) : Allows user to choose from a list

`<label for="country"> choose your country : </label>`

`<select id="country" name="country">`

`<option value="USA"> United States </option>`

`<option value="UK"> United Kingdom </option>`

`<option value="India"> India </option>`

Date field : for selecting a date

`<label for="dob"> Date of Birth : </label>`

`<input type="date" id="dob" name="do`

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Submit Button: To submit the form
`<button type="Submit"> Submit </button>`

Explain how multimedia content can be embedded on a webpage using HTML5. `<video>` and `<audio>` tags. HTML5 provides the `<video>` and `<audio>` elements to embed multimedia content directly into web page without needing plugins.

Embedding a Video:

The `<video>` tag is used to display video content. It supports multiple video formats and can include optional attributes such as controls, autoplay, loop, and muted.

Syntax:

```
<video width="600" height="360" controls>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
</video>
```

Your browser does not support the video tag.

Controls: Adds playback controls (play, pause, volume, etc.)

autoplay: Starts the video automatically when the page loads.

loop: Loops the video once it finishes.

muted: Mutes the video by default.

Embedding an Audio:

The `<audio>` tag is used for audio content. It also supports multiple file formats and optional attributes such as controls,



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autoplay and loop.

Syntax

Audio controls >

<source src="audio.mp3" type="audio/mp3"/>

<source src="audio.ogg" type="audio/ogg"/>

Your browser does not support the audio

</audio>

- Control : Adds audio controls (play, pause, volume)
- autoplay : Starts the audio automatically
- loop : Loops the audio.

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