

HTML

HTML is acronym which stands for Hypertext Markup Language which is used for creating web pages and web application.

Hypertext simply means "Text within Text". A text has a link within it, it's a hypertext. whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. Hypertext is a way to link two or more web pages with each other.

web page- A web page is a document, commonly written in HTML that is viewed in an internet browser. A web page contains text, graphics, and hyperlinks to other web pages & files.

The major points of HTML are given below-

- HTML stands for Hypertext Markup Language.
- HTML is used to create web page & web application
- HTML is widely used language on the web.
- we can create a static website by HTML only.

```
<!DOCTYPE>
<HTML>
<HEAD>
<TITLE> Web Page </TITLE>
</HEAD>
<BODY>
<h1> White Web Page </h1>
</BODY>
</HTML>
```

Description of HTML Example

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<!DOCTYPE> : It defines the document type or it instruct the browser about the version of HTML.

<html> : This tag informs the browser that it is an HTML document. Text between html tag describes the web document

<head> : It should be the first element inside the <html> element, which contains the metadata

<title> : As its name suggested, it is used to add title of the html page.

<body> : Text between body tag describes the body content of the page that is visible to the end users.

<h1> Text between <h1> tags describe the first level heading of webpage.

Use of commenting in HTML

Comments are some text or code written in your code to give an explanation about the code & not visible to the user. Comments which are used for HTML file are known as HTML comments. Comments of any code make code easy to understand and increase readability of code.

Text Style

(5)

(3)

Syntax:

<!-- write commented text -->

<Header>

The <header> HTML element represents introductory content, typically a group of introductory or navigational aids. It may contain some heading elements but also a logo, a search form, an author name, and other elements.

<header class = "page-header">

HTML Horizontal Rules

```

<header>
  <h1> Hello </h1>
  <h2> I am vivek </h2>
</header>
</article>

```

It covers text with line Eg <hr> this is my first page </hr> eg <p> A normal horizontal line </p> <hr>

HTML line break

output: A normal horizontal line

To add a line break to your HTML code, you use the
 tag. The
 tag does not have an end tag. You can also add additional lines between Paragraph by using the
 tags. Each
 tag you enter creates another blank line

Eg. Hello
 reena

HTML Images

The HTML tag is used to embed an image in a web page.

The tag has two required attributes

- src - specific the path to the image
- alt - specific an alternate text for image

Eg: ④

Create image as a link

Using <a> anchor tag we can create image link

<a href>

Special characters

The special characters are reserved in HTML. That is because these are the characters that make up the HTML language. If you see one of these characters in an article, the browser will try to interpret it as HTML. Therefore, you should use the entity name or entity number when you want to output any of these reserved characters. (", ;, \$, <, >)

File formats including image formats

- JPEG
- PNG
- GIF
- WebP
- AVIF
- SVG:
- Bitmap

Text Style

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A text style is a named collection of text setting that controls the appearance of text, such as font, line spacing, justification, and color. You create text style to specify the format of text quickly and to ensure that text conforms to industry or project standards.

- use the style attribute for stylish HTML elements
- use background-color for background colors
- use color for text colors
- use font-size for text sizes
- use text-align for text alignment.

Background Color

The CSS background-color Property defines the background color for HTML elements

```
<body style = "background-color: powderblue;">  
  <h1> This is heading </h1>  
  </body>
```

Text color

The CSS color Property defines the text color for an HTML element

```
<h1 style = "color: blue;"> This is heading </h1>
```

Fonts

The CSS font-family property defines the font to be used in HTML elements.

<h1 style = "font-family: verdana;"> Heading </h1>

Text Size

<h1 style = "font-size: 300%;> Heading </h1>

Text Alignment

The CSS text-align property defines the horizontal text alignment for an HTML elements

<h1 style = "text-align: center;"> Heading </h1>

HTML TABLE

A table in HTML consists of table cells inside rows and columns. The table tag are divided into rows & column and each row contains column inside we called <td> means table data.

HTML Table Tags

Tag	Description
<table>	It defines table
<tr>	It defines a row in table
<th>	It defines a header cell
<td>	It defines a cell in table
<caption>	defines the table caption

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Table Cells

- Each table cell is defined by a `<td>` and `</td>` tag
- `td` stands for table data.

Table row

Each table row starts with a `<tr>` and ends with `</tr>`
`tr` stands for table row

Table Header

Sometimes you want your cell to be header,
 in those case use the `<th>` tag instead of
 the `<td>` tag:

Example

```

<table>
  <tr>
    <th> Person 1 </th>
    <th> Person 2 </th>
    <th> Person 3 </th>
  </tr>
  <tr>
    <td> Computer </td>
    <td> Math </td>
    <td> Chemistry </td>
  </tr>
  <tr>
    <td> 16 </td>
    <td> 17 </td>
    <td> 18 </td>
  
```

</tr>
</table>

HTML FORM

An HTML form is section of a document which contains controls such as text fields, Passwords field, checkboxes, radio button, submit button, menus etc.

An HTML

The HTML <form> tag is used to create HTML form

<Form action = "Script URL" method = "GET/POST">
form elements
</Form>

HTML FORM TAGS

- <form> → All entries inputs by the user side
- <input> → It defines an input control
- <textarea> → It define a multi-line input control
- <label> → It define a label for an input element
- <fieldset> → It group the related elements in form
- <legend> → It defines a caption for a <fieldset> element
- <select> → It define a drop-down list
- <button> → It defines a clickable button

HTML <form> element

The HTML <form> element provide a document section to take input from user. It provides various interactive controls for submitting information to web server such as text field, textarea, password field etc.

Syntax: <form> form element </form>

HTML <input> elements

The HTML <input> element is fundamental form element. It is used to create form fields, to take input from user. We can apply different input field to gather different information from user.

HTML Textfield Control

The Type = "text" attribute of input tag creates textfield control as single line textfield control.

<form>

First Name: <input type = "text" name = "firstname"/>

</form>

HTML <textarea> tag in form

The <textarea> tag in HTML is used to insert multiple line text in form. The size of <textarea> can be specify either using "rows" or "cols" attributes or by CSS.

⑩
<form>

<textarea rows="2" cols="20">

</textareas>

</forms>

Label Tag in form

It is considered better to have label in form.
As it makes the code parser/browser/user friendly.

<form>

<label for="firstName"> FirstName </label>

<input type="text" id="firstName"
name="firstname"/>

</form>

HTML Password Field Control

The password is not visible to the user in
password field control

<form>

<label for="password"> Password: </label>

<input type="password" id="password" name="password"/>

</form>

Radio Button Control

The radio button is used to select one option from multiple options. It is used for selection of gender, quiz questions etc.

<form>

<label for="gender"> Gender: </label>

<input type="radio" id="gender" name="gender" value="male"/> Male &br/>

<input type="radio" id="gender" name="gender" value="female"/> Female &br/>

</form>

Checkbox control

The checkbox control is used to check multiple options from given checkboxes.

<form>

Hobby:

<input type="checkbox" id="cricket" name="cricket" value="cricket"/>

<label for="cricket"> Cricket </label>

<input type="checkbox" id="football" name="football" value="football"/>

<label for="football"> football </label>

</form>

Submit button control

HTML <input type="submit"> are used to add a submit button on webpage. When user clicks on submit button, then form get submit to server.

4. Document and Data File Formats

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Syntax: <input type="submit" value="Submit">

Example:

```
<!DOCTYPE html>
<html>
<head>
<title> form </title>
</head>
<body>
<h2> Registration Form </h2>
<form>
<fieldset>
<legend> User Personal Information </legend>
<label> Enter Full Name </label> <br>
<input type="text" name="name"> <br>
<label> Enter Email </label> <br>
<input type="password" name="pass"> <br>
<label> Enter gender </label> <br>
<input type="radio" id="gender" name="gender"
       value="male"/> Male <br>
<input type="radio" id="gender" name="gender"
       value="female"/> Female <br>
<br> Enter your Address: <br>
<input type="submit" value="Sign-up">
</fieldset>
</form>
</body>
</html>
```

<P>Form

```

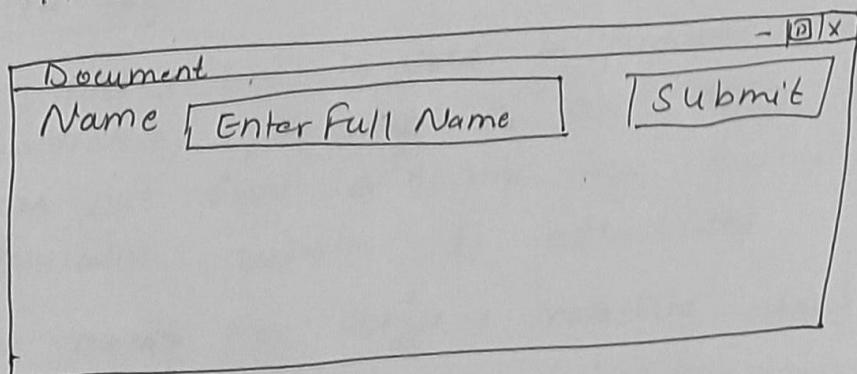
<form name= "myform" id= "my form"
      class = "Sample" action = "" method = "Get"
      enctype = "multipart/form-data">

    < Label for = "name" > Name </Label>
    < input type = "text" > name = "name"
      id = "name" class = "sample example"
      min-length = "3" maxlength = "100" required
      placeholder = "Enter Full Name" >

    < button type = "submit" > Submit </button>

  </form>
</body>
</html>

```



HTML Image Map

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The HTML `<map>` tag defines an image map. An image map is an image with clickable areas.

```


<map name="workmap">
  <area shape="rect" coords="34,44,270,355"
        alt="computer" href="computer.html">
  <area shape="rect coords="290,172,333,250" alt="Phone"
        href="Phone.html">
  <area shape="circle" coords="337,300,44" alt="coffee"
        href="coffee.html">
</map>
```

Meta tags

The `<meta>` tag is used to provide such additional information. This tag is an empty elements & does not have a closing tag but it carries information within its attributes.

The `<meta>` tag defines metadata about an HTML document. Metadata is data (information) about data. `<meta>` tag always go inside the `<head>` element, and are typically used to specify character set, page description, keywords, author of the document and viewport settings. Metadata is used by browser, search engine and other web services.

Meta tag Example

<head>

<meta charset = "UTF-8">

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

<meta http-equiv = "X-UA-Compatible" content = "ie=edge">

<meta name = "description" content = "This is
description">

<meta name = "keyword" content = "html, Phyton">

<title> Document </title>

</head>

Frames

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HTML frames are used to divide your browser window into multiple sections where each section can load a separate HTML document. A collection of frames in the browser window is known as a frameset. The window into frames in a similar way the tables are organized: into rows and columns.

Creating frames

To use frames on a page, we use `<frameset>` tag instead `<body>` tag. The `<frameset>` tag defines how to divide the window into frames. The `rows` attribute of `<frameset>` tag defines horizontal frames and `cols` attribute defines vertical frames.

Formatting text with font

(P)

HTML Formatting Elements

 - 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

Frameset

HTML frames allows authors to present document in multiple views, which may be independently window or subwindow. Multiple views offer designers a way to keep certain information visible; while other views are scrolled or replaced.

The <frameset> Tag Attributes

Following are important attributes of the <frameset> tag

cols

Specifies how many columns are contained in the frameset and the size of each columns. You can specify the width of each column in one of the four ways

Absolute values in pixels. For example, to create three vertical frames, use cols = "100, 500, 100".

A Percentage of the browser window. For example, to create three vertical frames use cols = "10%, 80%, 10%".

rows

The attribute work just like the cols attribute and takes the same value, but it is used to specify the row in the frameset. For example, to create two horizontal frames use rows = "10%, 90%".

Border

This attribute specifies the width of the border of each frame in pixels. For example, border = "5". A value of zero means no border.

The <frame> Tag Attributes

1. src

This attribute is used to give the file name that should be loaded in the frame its value can be URL. For example `src = "/html/top-frame.htm"` will load an HTML file available in html directory.

2. Name

This attribute allows you to give a name to a frame. It is used to indicate which frame a document should be loaded into. It overrides the value given in the frameborder attribute on the <frameset> tag. If one is given and this can take value either 1 (Yes) or 0 (No).

4. marginwidth:

This attribute allows you to specify the width of the space between the left and right of the frame borders and the frame content.

5. Marginheight

This attribute allows you to specify the height of the space between the top and bottom of the frame border and its contents.

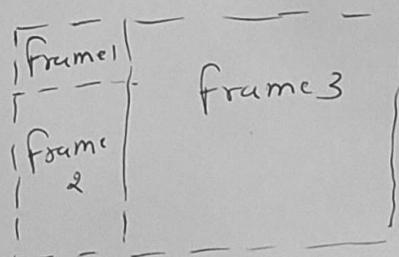
Example

```

<Html>
<Head>
<Title> A simple frameset </Title>
</head>
<FRAMESET cols="20%,80%">
<FRAMESET rows="100,200">
  <FRAME src="content_of_frame1.html">
  <FRAME src="content_of_frame2.gif">
</FRAMESET>
<FRAME src="content_of_frame3.html">
</NOFRAMES>
<p> This document contains :</p>
<UL>
  <LI> <A href="content_of_frame1.html"> content </A>
  <LI> <IMG src="content_of_frame2.gif" alt="neat image">
  <LI> <A href="content_of_frame3.html"> other </A>
</UL>
</NOFRAMES>
</FRAMESET>
</HTML>

```

Output



Important Question / Previous Year Question ②

Q: What do you mean by CSS. What are the advantages of CSS. How many ways are there to specify style information in a document?

Sol: CSS (Cascading Style Sheet) is a style sheet language used to describe the presentation of an HTML document. CSS defines how elements on a webpage should look, including aspects like color, font, layout & spacing.

ADVANTAGE OF CSS

- 1) Separation of content and design:
CSS allows HTML to focus on structure & content, while CSS handles all styling aspects.
- 2) Reusability:
CSS allows styles to be applied across multiple pages of websites. Once a style is defined in an external CSS file, it can be reused on multiple pages without redefining code.
- 3) Easier Maintenance:

By centralizing style, updating a design can be as simple as editing one CSS file.

4) Improved Loading Speed:

with CSS, style are loaded once in external file, reducing HTML file size and enabling faster load time due to cached stylesheets.

5) Responsive Design:

CSS offers media queries that allows webpages to adjust their design based on the device, making websites responsive & adaptable to different screen sizes.

Ways to specify style information in CSS

CSS can be added to HTML documents in three primary ways.

1) Inline CSS

2) Internal CSS

3) External CSS

Inline CSS: CSS styles are applied directly within HTML elements using style attribute.

↑
(2)
<p style="color: blue; font-size: 16px;">
This is an inline CSS </p>

2) External CSS:

Styles are defined in a separate .css file and linked to the HTML document using the <link> tag. This is most efficient method, especially for larger sites.

```
<head>
<link rel="stylesheet" href="style.css">
</head>
```

3) Internal CSS:

css style are defined within the <style> tag inside the <head> section of the HTML document. This approach is used when styles apply in single page.

```
<head>
<style>
{
    color: blue;
    font-size: 16px;
}
</style>
</head>
```

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Question 2 What is JavaScript? Differentiate between Java and JavaScript. Give the supportive example also.

Answer: JavaScript is a powerful programming language used to add interactivity, dynamic content and functionality to websites. It is a client-side language, meaning it runs on the user browser rather than on a server. This allows us to create real time updates, handles user interactions, and control the browser DOM, which represents the structure of an HTML documents

differentiation between Java and JavaScript
Java is a server side language and is used for developing enterprise level applications.
JavaScript is a client side language and is used for creating dynamic web pages.

<head>
<script>
</script>
<body>
<table border="1">
| old value | new value |
| old value | new value |
| old value | new value |

</body>

JAVA

1. Java is a strongly typed language and variables must be declared first to use in the program. In Java, the type of a variable is checked at compile time.

2. Java is an OOPS language primarily used for developing complex enterprise application.

3. Java application can run in any virtual machine (JVM) or browser.

4. Objects of Java are class-based, even we cannot make any program in Java without creating a class.

5. Java is mainly used for backened.

6. Java uses more memory.

JAVASCIPT (25)

1. Javascript is a loosely type language and has a more relaxed syntax and rules.

2. JS is scripting language used for creating interactive & dynamic web pages.

3. JS code used to run only in the browser, but now it can run on the server via Node.js.

4. Javascript objects are Prototype based.

5. Javascript is used for the frontend and backened both.

6. JS uses less memory.

Syntax of java

Class Hello

```
{  
public static void main(String[] args)  
{  
System.out.println("Hi");  
}}
```

Syntax of java script

```
console.log("Welcome to javascript");
```

Examples of Java Program

Class Add

```
{  
public static void main (String[] args)  
{  
int num1=10, num2=20, sum;  
sum= num1 + num2;  
System.out.println (sum);  
}}
```

Output: 30

Example of JavaScript

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```
<html>
<body>
  <h1> JavaScript Example </h1>
  <p> Adding of two string </p>
  <b id = "demo"> </b>
  <script>
    let x = "John" + " " + "Doe";
    document.getElementById("demo").innerHTML = x;
  </script>
</body>
</html>
```

File formats including image format

In HTML, files are linked or embedded in various formats, depending on the type of content.

1. Image File Formats

Images can be added to HTML using the `` tag or as background image in CSS. Here are some commonly used image formats.

- JPEG / JPG (.jpeg, jpg)
 - great for photographs and images with lots of colors.
 - Does not support transparency
 - It reduces file size
- PNG (.png)
 - Best for images requiring transparency.
 - Preserving high quality.
 - Often used for logos, icons.
- GIF (.gif)
 - Supports simple animations.
 - Limited to 256 colors, so best for simple graphics, not photographs
 - Can have transparency.

2. Audio file Formats

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Audio files can be embedded in HTML using the `<audio>` tag.

- MP3 (.mp3)

- Most commonly used audio format.
- Compressed, with good quality.

`<audio controls>`

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

`</audio>`

- WAV (.wav)

- High quality, uncompressed format.
- Typically large file size.

`<audio controls>`

`<source src="sound.wav" type="audio/wav">`

`</audio>`

- OGG (.ogg)

- Open-source format, often used as an alternative to MP3.

`<audio controls>`

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

`</audio>`

3. Video File format

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video files are embedded in HTML using the <video> tag. Common formats are:

- MP4 (.mp4)

<video controls>

<source src="video.mp4" type="video/mp4">

</video>

→ Most widely supported video format.

→ offers good quality and compression

- webM (.webm)

→ Open source and efficient, designed for web.

→ Typically smaller in size

<video controls>

<source src="movie.webm" type="video/webm">

</video>

- Ogg (.ogg)

→ Another open source video format

<video controls>

<source src="movie.ogg" type="video/ogg">

</video>

4. Document and Data File Formats

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Documents and data files can be linked in HTML or embedded using plugins and iframe tags:

- PDF (.pdf)
 - often used for documents, forms and downloadable content
 - Download Pdf
- Text Files (.txt)
 - Basic text file, often used for raw data or notes
 - Download Text File
- CSV (.csv)
 - Plain text format used for spreadsheets and databases.
 - Download

5. Font File formats

Custom fonts can be added to HTML through CSS using these formats:

- WOFF / WOFF2 (.woff, .woff2)
 - compressed font formats supported by most browsers.

@font-face {

```
font-family: 'myFont';
src: url('myFont.woff2') format('woff2');
```

- TTF (.ttf) and OTF (.otf)

→ common font formats, although less optimized for web

@font-face

```
{  
font-family: 'myFont';
src: url('myFont.ttf') format('trueType');
```