Fundamentals of web technologies
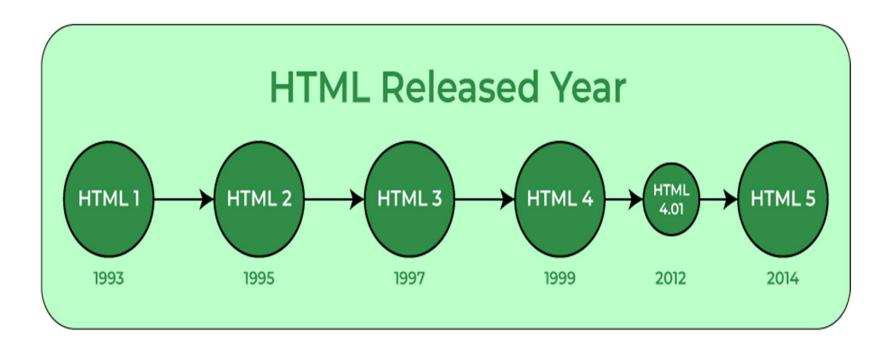
UNIT – 1

HTML introduction:

- **HTML** stands for Hyper Text Markup Language.

- It is used to design web pages using a markup language.

- HTML is the combination of Hypertext and Markup language.

- Hypertext defines the link between web pages.

- A markup language is used to define the text document within the tag which defines the structure of web pages.

- This language is used to annotate (make notes for the computer) text so that a machine can understand it and manipulate text accordingly.

- Most markup languages (e.g. HTML) are human-readable.

- The language uses tags to define what manipulation has to be done on the text.

☐ HTML is a markup language used by the browser to manipulate text, images, and other content, in order to display it in the required format.

HTML Released Year

HTML 1	HTML 2	HTML 3	HTML 4	HTML 4.01	HTML 5
1993	1995	1997	1999	2012	2014

Tags and elements:

☐ HTML uses predefined <u>tags</u> and <u>elements</u> which tell the browser how to properly display the content.

Tag Element

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Opening Tag   ClosingTag

Remember to include closing tags. If omitted, the browser applies the effect of the opening tag until the end of the page.

HTML structure:

```
<!DOCTYPE html>          Tells the document type
<html>            The Root Element
    <head>            Contains the header information
        <title>Title of the Page</title>          Defines Title of
                                                   the Page
    </head>
    <body>        Holds the Content of the Page
    Tags related to layout and formatting
    </body>
</html>
```

- **<!DOCTYPE html>**: This is the document type declaration (not technically a tag). It declares a document as being an HTML document. The doctype declaration is not case-sensitive.

- **<html>**: This is called the HTML root element. All other elements are contained within it.

- **<head>**: The head tag contains the "behind the scenes" elements for a webpage. Elements within the head aren't visible on the front-end of a webpage.

- **<body>**: The body tag is used to enclose all the visible content of a webpage. In other words, the body content is what the browser will show on the front-end.

Features of HTML

- It is easy to learn and easy to use.

- It is platform-independent.

- Images, videos, and audio can be added to a web page.

- Hypertext can be added to the text.

- It is a markup language.

Why we learn HTML?

- It is a simple markup language. Its implementation is easy.

- It is used to create a website.

- Helps in developing fundamentals about web programming.

- Boost professional career.
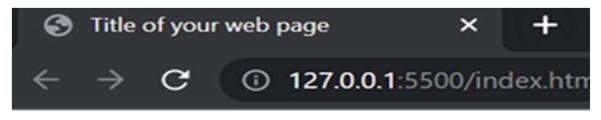
Advantages and disadvantages

Advantages	Disadvantages
□ HTML is used to build websites.	□ HTML can only create static web pages. For dynamic web pages, other languages have to be used.
□ It is supported by all browsers.	□ A large amount of code has to be written to create a simple web page.
□ It can be integrated with other languages like CSS, JavaScript, etc.	□ The security feature is not good.

<html>

<head>

<title>Title of your web page</title>

</head>

<body>HTML web page contents </body>

</html>

HTML web page contents

Head tag:

- It is used to define the heading of an HTML document.

<h1>Heading 1 </h1>

<h2>Heading 2 </h2>

<h3>Heading 3 </h3>

<h4>Heading 4 </h4>

<h5>Heading 5 </h5>

<h6>Heading 6 </h6>

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

Paragraph tag:

- It is used to define paragraph content in an HTML document.

  <p>Paragraph you want to put</p>

HTML tags:

- **Bold tag:** It is used to specify bold content in an HTML document.

  ** Statements... **

- **Italic tag:** It is used to write the content in italic format.

  <i> Statements... </i>

- **Underline tag:** It is used to set the content underline.

  <u> Statements... </u>

- **Deleted text tag:** It is used to represent deleted text. It crosses the text content.

  <strike>Trese</strike>Trees

- **Anchor tag:** It is used to link one page to another page.

  ** Statements... **

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HTML elements:

- An HTML element is defined by a start tag, some content, and an end tag.

- The HTML element is everything from the start tag to the end tag:

  <tagname>Content goes here...</tagname>

- HTML elements can be nested (this means that elements can contain other elements).

- All HTML documents consist of nested HTML elements.

- The following example contains: Basic HTML structure

HTML attributes:

- HTML attributes provide additional information about HTML elements.

- All HTML elements can have **attributes**

- Attributes are always specified in **the start tag**

- Attributes usually come in name/value pairs like: **name="value"**

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HTML formatting:

Formatting elements were designed to display special types of text:

- - Bold text
-   - Important text
- <i> </i>- Italic text
-   - Emphasized text (typically displayed in Italic)
- <mark> </mark>- Marked text (marked or highlighted)
- <small> </small> - Smaller text (smaller text size)
- <del> </del>- Deleted text (crossed line over text)
- <ins> </ins>- Inserted text (text inserted into document)
- <sub> </sub>- Subscript text
- <sup> </sup>- Superscript text

Grouping content:

- Grouping plays a vital role in our web page because it helps the developer to target specific classes and id which makes it easier to position, style, or manipulate the web page with the help of HTML.

□ **\<div\>**: It is a block-level tag that groups various HTML tags into a single block.

\<html\>

\<head\>   \</head\>

\<body\>   In DIV1

\<div class="div1"\>

\<h1\>In Div1\</h1\>   In DIV2

\</div\>

\<div class="div2"\>

\<h1\>In Div2\</h1\>

\</div\> \</body\> \</html\>

□ **\<header> :**This tag contains the tagline or we can say it contains the main heading or the navigation links of our web page and is placed at the top of our web page.   (written inside body)

\<header>

\<h1>This is Heading..\</h1>

\<p>This is paragraph in the header group\</p>

\</header>

- **<footer>** : This tag contains copyright information, contact information, back-to-top link, and several other related documents and is placed at the bottom of our web page.

<footer>

<h1>Thank you</h1>

<p>You rechaed to the last page</p>

</footer>

☐ **\<section>** : This tag is used to define the section in the document.

\<section id="sectionID">

\<p>This content belongs to section group.\</p>

\<p>HTML is a hypertext markup language which is used to design the web pages\</p>

\</section>

Example

This is heading

This is paragraph in header group

This content belongs to section group.

HTML is a hypertext markup language which is used to design the web pages

CSS is used to design the web pages.

Javascript helps us to manipulate our data on a webpage.

Section group ends here..

This is footer information.

Email

HTML fonts:

❑ **Font tag:** It is used to specify the font size, font color, and font family in an HTML document.

Example

HTML Colors:

- HTML colors are specified with predefined color names.

- **Background color:**

  <h1 style="background-color:DodgerBlue;">SEC G</h1>
  <p style="background-color:Tomato;">Having FWT subject</p>

- **Text color:**

  ```
  <h1 style="color:DodgerBlue;">SEC G</h1>
  <p style="color:Tomato;">Having FWT subject</p>
  ```

- **Border color:**

  ```
  <h1 style="border:2px solid Tomato;">SEC G</h1>
  <h1 style="border:2px solid Violet;">Hello World</h1>
  ```

HTML image:

- The HTML **<img>** tag is used to embed an image in a web page.

- The **<img>** tag has two required attributes:

src - Specifies the path to the image

alt - Specifies an alternate text for the image

<img src="img_chania.jpg" alt="Flowers in Chania">

- Image height and width

  <img src="img_girl.jpg" alt="Girl sitting" style="width:500px;height:600px;">

- Image in another sub folder

  <img src="/images/html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;">

HTML Lists:

- **List tag:** It is used to list the content.

  List item 1

  List item 2

- List item 1
- List item 2

Types of Lists:

❑**Unordered list:** It is used to list the content without order.

```
<ul>
<li>List item 1</li>
<li>List item 2</li>
<li>List item 3</li>
<li>List item 4</li>
</ul>
```

- List item 1
- List item 2
- List item 3
- List item 4

□ **Ordered List tag:** It is used to list the content in a particular order.

```
<ol>
<li>List item 1</li>
<li>List item 2</li>
<li>List item 3</li>
<li>List item 4</li>
</ol>
```

1. List item 1
2. List item 2
3. List item 3
4. List item 4

- **Comment tag:** It is used to set the comment in an HTML document. It is not visible on the browser.

  <!--Comment section-->

- **Center tag:** It is used to set the content into the center.

  <center>SAIKIRAN</center>

- **Line break tag:** It is used to break the line.

  This is BSH**
**not CSE

HTML Table:

- **Table tag: A table** tag is used to create a table in an HTML document.

- **td tag:** It defines the standard cell in a HTML document.

- **tr tag:** It is used to define a row of an HTML table.

- **th tag:** It defines the header cell in a table. By default, it set the content with the bold and center property.

- ```html
  <table>
  <tr>
  <th>Month</th>
  <th>Savings</th>
  </tr>
  <tr>
  <td>January</td>
  <td>$100</td>
  </tr>
  </table>
  ```

Month Savings

January $100

- <table border="4" cellpadding="2" cellspacing="2" width="50%">

  <tr> <td>Column 1</td>

  <td>Column 2</td>

  </tr>

  </table>

| Column 1 | Column 2 |

- **Cell padding** is the space between the cell edges and the cell content.

- **Cell spacing** is the space between each cell.

☐ **Column span**

specifies the number of columns a cell should span.

It allows the single table cell to span the width of more than one cell or column.

It provides the same functionality as "merge cell" in a spreadsheet program like Excel.

It can be used with **<td>** and **<th>** element while creating an HTML Table.

<td colspan = "value">table content...</td>

- ```
  <table>
  <tr>
  <th colspan="2">Name</th>
  <th>Age</th>
  </tr>
  <tr>
  <td>Jill</td>
  <td>Smith</td>
  <td>43</td>
  </tr>
  </table>
  ```

- **Row span**

  The rowspan attribute in HTML specifies the number of rows a cell should span.

  That is if a row spans two rows, it means it will take up the space of two rows in that table.

  It allows the single table cell to span the height of more than one cell or row.

  It provides the same functionality as "merge cell" in the spreadsheet program like Excel.

  It can be used with **\<td>** and **\<th>** element in an HTML Table.

- ```
  <table>
   <tr>
   <th>Name</th>
   <th>Group</th>
  <th>Section</th>
   </tr>
   <tr>
   <td>Jill</td>
   <td rowspan="2">G</td>
   </tr>
   </table>
  ```

HTML text links:

- A webpage can contain various links that take you directly to other pages and even specific parts of a given page. These links are known as hyperlinks.

- Hyperlinks allow visitors to navigate between Web sites by clicking on words, phrases, and images. Thus you can create hyperlinks using text or images available on a webpage.

Link Text

example

- <html>

  <head>

  <title>Hyperlink Example</title> </head>
  <body>

  <p>Click following link</p>

  <a href = "https://www.tutorialspoint.com"
      target = "_self">Tutorials Point

  </body>

  </html>

- **_blank**

  Opens the linked document in a new window or tab.
- **_self**

  Opens the linked document in the same frame.
- **_parent**

  Opens the linked document in the parent frame.
- **_top**

  Opens the linked document in the full body of the window.

HTML frames:

- HTML **\<frame\>** tag define the particular area within an HTML file where another HTML web page can be displayed.

  - A **\<frame\>** tag is used with **\<frameset\>** , and it divides a webpage into multiple sections or frames, and each frame can contain different web pages.

- **< frame src = "URL" >**
- Two types of frames:
  - Vertical frames
  - Horizontal frames

Horizontal frame:

- ```html
  <html>
  <head>
  <title>Frame tag</title>
  </head>
  <frameset rows="30%, 40%, 30%">
  <frame name="top" src="1.html" >
  <frame name="main" src="2.html">
  <frame name="bottom" src="3.html">
  </frameset>
  </html>
  ```

Vertical frames:

- ```html
  <html>
  <head>
  <title>Frame tag</title>
  </head>
  <frameset cols="25%,50%,25%">
  <frame src="1.html" >
  <frame src="2.html">
  <frame src="3.html">
  </frameset>
  </html>
  ```

HTML iframes:

- HTML Iframe is used to display a nested webpage (a webpage within a webpage). The HTML **<iframe>** tag defines an inline frame, hence it is also called as an Inline frame.

- An HTML iframe embeds another document within the current HTML document in the rectangular region.

- The webpage content and iframe contents can interact with each other using JavaScript.

- **<iframe src="URL"></iframe>**

- <iframe src="https://www.javatpoint.com/" height="300" width="400"></iframe>

- <iframe src="https://www.javatpoint.com/" height="50%" width="70%"></iframe>

- <iframe src="https://www.javatpoint.com/" style="border:none;"></iframe>

HTML header:

- **HTML \<header\> tag** is used as a container of introductory content or navigation links. Generally a \<header\> element contains one or more heading elements, logo or icons or author's information.

- You can use several \<header\> elements in one document, but a \<header\> element cannot be placed within a \<footer\>, \<address\> or another \<header\> element.

- **\<header\>**

  \<h2\>ABCOnline.com**\</h2\>**

  \<p\> World's no.1 shopping website**\</p\>**

  \</header\>

Marquee tag:

- The **Marquee HTML** tag is a non-standard HTML element which is used to scroll a image or text horizontally or vertically.

- In simple words, you can say that it scrolls the image or text up, down, left or right automatically.

- **<marquee** width="100%" behavior="scroll" bgcolo r="pink"**>**

  This is an example of a scroll marquee...

  </marquee>

- Slide and alternate

- **<marquee** width="100%" direction="right"**>**

  This is an example of a right direction marquee...

  </marquee>