Web Development

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Course Outline

- **Static Websites**

  - HTML

  - CSS

  - JAVASCRIPT

- **Dynamic Websites**

  - Server side programming Language (PHP)

  - Databases (Mysql)
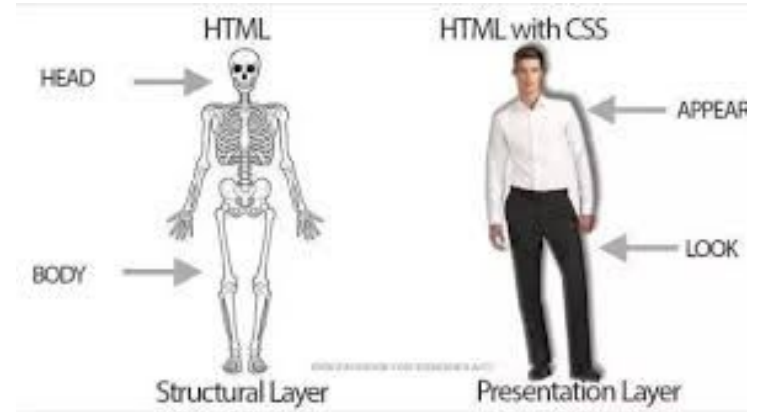
Course Breakdown

- **12** weeks
- **9** topics
- **1** topic/week
  - Topic explanation
  - Short demo
  - Hands on session (class work)
- Homework would be given after each session and submitted before the next class.
- Screencast would be provided after each session.
- Personal Project - week **10** and **11**
- Project Presentation - week **12**
- Certificates would be given to students who scored 70% and above.

Course Prerequisites

- Experience with any text editor like notepad, notepad++, or Edit plus etc.

- How to create directories and files on your computer.

- How to navigate through different directories.

- How to type content in a file and save them on a computer.

- Understanding about images in different formats like JPEG, PNG format.

INTRODUCTION

- Web Page Structure
  - HTML - Skeleton
  - CSS - Styling
  - JAVASCRIPT - Functionality

Topic 1: HTML Tags, Elements, Attributes, Formatting, Comments

HTML - HyperText Markup Language created by Berners Lee in 1991

Basic HTML Document

```html
<!DOCTYPE html>
<html>

    <head>
        <title>This is document title</title>
    </head>

    <body>
        <h1>This is a heading</h1>
        <p>Document content goes here....</p>
    </body>

</html>
```

Topic 1: HTML Tags

HTML is a markup language and makes use of various tags to format the content.

We have many tags in HTML, some have closing tags while others don't have.

You would find these tags below in almost every web page:

<!doctype> - This tag defines the document type and HTML version.

<html> - This tag encloses the complete HTML document and mainly comprises of document header and body tags

<head> - This tag represents the document's **head** which keeps other HTML tags.

<body> - This tag represents the document's **body** which keeps other HTML tags.

Topic 1: Basic HTML Tags

Header tags: **\<h1\> \<h2\> \<h3\> \<h4\> \<h5\> \<h6\>**

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Heading Example</title>
    </head>

    <body>
        <h1>This is heading 1</h1>
        <h2>This is heading 2</h2>
        <h3>This is heading 3</h3>
        <h4>This is heading 4</h4>
        <h5>This is heading 5</h5>
        <h6>This is heading 6</h6>
    </body>

</html>
```

Topic 1: Basic HTML Tags

Paragraph tag: **<p>**

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Paragraph Example</title>
    </head>

    <body>
        <p>Here is a first paragraph of text</p>
        <p>Here is a second paragraph of text</p>
        <p>Here is a third paragraph of text</p>
    </body>

</html>
```

Topic 1: Basic HTML Tags

Line break tag: **
**

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Line Break  Example</title>
    </head>

    <body>
        <p>Hello<br />
            Welcome to CDS.<br />
            I hope you enjoy your time here<br />
            Jubril</p>
    </body>

</html>
```

Topic 1: Basic HTML Tags

Take home assignment 1: List 20 other HTML tags and their uses.

- Create a new html file with name format (tag_name.html) for each tag e.g:

  - p.html - For the paragraph tag <p>

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Paragraph Example</title>
    </head>

    <body>
        <p>Here is a first paragraph of text</p>
        </body>


</html>
```

- Put all the files in a folder and use your name for the folder name.

Topic 1: HTML Elements

- An HTML element is defined by a starting tag. If the element contains other content, it ends with a closing tag, where the element name is preceded by a forward slash as shown below with few tags. <p>...</ p> and <h>...</ h> are both HTML elements

- There are some elements which don't need to be closed e.g <br />, they are called **void** elements

- Elements can be nested e.g:

```
<head>
      <title>Nested Elements Example</title>
</head>
```

Topic 1: HTML Attributes

- An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts – a **name** and a **value**

- The **name** is the property you want to set while the **value** is what you want to the property to be. E.g:

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Align Attribute  Example</title>
    </head>

    <body>
        <p align = "left">This is left aligned</p>
        <p align = "center">This is center aligned</p>
        <p align = "right">This is right aligned</p>
    </body>

</html>
```

Topic 1: HTML Core Attributes

- **id** : attribute of an HTML tag can be used to uniquely identify any element within an HTML page

- **title** : the title attribute gives a suggested title for the element, it is often displayed as a tooltip when cursor comes over the element or while the element is loading.

- **class** : The class attribute is used to associate an element with a style sheet, and specifies the class of element. You will learn more about the use of the class attribute when you learn Cascading Style Sheet (CSS).

- **style** : The style attribute allows you to specify Cascading Style Sheet (CSS) rules within the element.

Topic 1: HTML Attributes

Take home assignment 2: Create a new html file and use 15 different attributes in elements.

Name this file **attributes.html** and put the file in your name folder.

Topic 1: HTML Formatting

- Special elements to help in formatting texts

- Bold element **\<b\> \</b\>**

- Italic element **\<i\> \</i\>**

- Underline element **\<u\> \</u\>**

- Strikethrough element **\<strike\> \</strike\>**

- Monospaced Font element **\<tt\> \</tt\>**

- Superscript element **\<sup\> \</sup\>**

- Subscript element **\<sub\> \</sub\>**

```
<p>The following word uses a <element>here</element> element</p>
```

Topic 1: HTML Formatting - Grouping content

The **\<div\>** and **\<span\>** elements allow you to group together several elements to create sections or subsections of a page.

- **\<div\>** element sample

```
<!DOCTYPE html>
<html>
    <head>
        <title>Div Tag Example</title>
    </head>
    <body>
        <div id = "menu" align = "middle" >
            <a href = "/index.htm" >HOME</a> |
            <a href = "/about/contact_us.html" >CONTACT</a> |
            <a href = "/about/index.htm" >ABOUT</a>
        </div>
        <div id = "content" align = "left" bgcolor = "white">
            <h5>Content Articles</h5>
            <p>Actual content goes here..... </p>
        </div>
    </body>
</html>
```

Topic 1: HTML Formatting - Grouping content

The **\<div\>** and **\<span\>** elements allow you to group together several elements to create sections or subsections of a page.

- **\<span\>** element sample

```
<!DOCTYPE html>
<html>

    <head>
        <title>Span Tag Example</title>
    </head>

    <body>
        <p>This is the example of <span style = "color:green">span tag</span>
            and the <span style = "color:red">div tag</span> alongwith CSS</p>
    </body>

</html>
```

Topic 1: HTML Comments

Comment is a piece of code which is ignored by any web browser. It is a good practice to add comments into your HTML code, especially in complex documents, to indicate sections of a document, and any other notes to anyone looking at the code. Comments help you and others understand your code and increases code readability.

- **Comment** example

```html
<!DOCTYPE html>
<html>

    <head>  <!-- Document Header Starts -->
        <title>This is document title</title>
    </head> <!-- Document Header Ends -->

    <body>
        <p>Document content goes here....</p>
    </body>

</html>
```

Topic 1 - The End

Take home assignment 3: Create a website using all what we have learnt in Topic 1. The html file should begin with a comment after the **doctype** tag explaining what your website does.

See you Next Week

Quick Review of last week class

Adding images.

```
<img src = "Image URL(path to the image)"/>
```

Adding attributes to the image

```
<img src = "/html/images/test.png" alt = "Test Image" width = "150" height = "100"
border = "3" align = "right"/>
```

Sample

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Using Image in Webpage</title>
    </head>

    <body>
        <p>Simple Image Insert</p>
        <img src = "/html/images/test.png" alt = "Test Image" />
    </body>

</html>
```
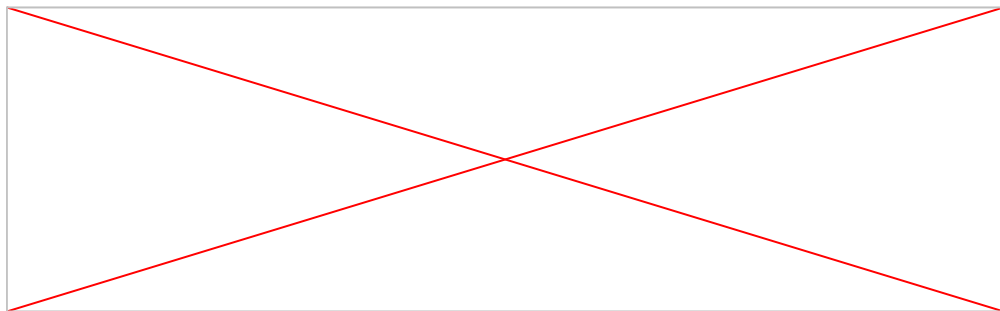
Tables

The HTML tables allow you to arrange data like text, images, links, other tables, etc. into rows and columns of cells.

<table> = to create table , <tr> = to create a row, <td> = cell, <th> - table heading

Blue = table

Red = row

Green = cell

Attributes for table includes: width, height, bordercolor, bgcolor

Tables

```html
<!DOCTYPE html>
<html>

    <head>
        <title>HTML Table Header</title>
    </head>

    <body>
        <table border = "1"bordercolor = "green">
            <tr>
                <th>Name</th>
                <th>Salary</th>
            </tr>
            <tr>
                <td>Ade Wale</td>
                <td>5000</td>
            </tr>

            <tr>
                <td>Ola Wale</td>
                <td>7000</td>
            </tr>
        </table>
    </body>

</html>
```

Lists

We can have ordered lists and unordered lists.

 = unordered list, <ol> = ordered list

```
<!DOCTYPE html>
<html>

    <head>
        <title>HTML Unordered List</title>
    </head>

    <body>
        <ul>
            <li>Beetroot</li>
            <li>Ginger</li>
            <li>Potato</li>
            <li>Radish</li>
        </ul>
    </body>

</html>
```

For ordered list replace <ul> with <ol> in the above example.

Lists(Attributes)

<ul type="disc"> can also have a value of square or circle

<ol type = "1">

```
<ol type = "I"> - Upper-Case Numerals.
<ol type = "i"> - Lower-Case Numerals.
<ol type = "A"> - Upper-Case Letters.
<ol type = "a"> - Lower-Case Letters.
```

Text Link

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.**

```
<a href = "URL/Link I want to use">Text I want the user to see</a>
```

```html
<!DOCTYPE html>
<html>

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

    <body>
        <p>Click following link</p>
        <a href = "https://www.facebook.com">Tutorials Point</a>
    </body>

</html>
```

Image Link

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Image Hyperlink Example</title>
    </head>

    <body>
        <p>Click following link</p>
        <a href = "https://www.facebook.com" >
            <img src = "path to image" alt = "Image" border = "0"/>
        </a>
    </body>

</html>
```

iFrames

The <iframe> tag defines a rectangular region within the document in which the browser can display a separate document, including scrollbars and borders. An inline frame is used to embed another document within the current HTML document.

```html
<!DOCTYPE html>
<html>

    <head>
        <title>HTML Iframes</title>
    </head>

    <body>
        <p>Content of this page</p>

        <iframe src = "link to what you want to load in the frame" width = "555" height = "200">
            Sorry your browser does not support inline frames.
        </iframe>

        <p>More content of this page</p>
    </body>

</html>
```

Topic 2 - The End

See you Next Week

Topic 3 - Block & Inline Elements

All Elements can be classified into two:

- Block element

- Inline element

Block Element appear on the screen as if they have a break before them and after them.

<p>, <h1>, <h2>, <h3>, <h4>, <h5>, <h6>, <ul>, <ol>, <dl>, <pre>, <hr />

Inline Element on the other hand can be used in between sentences.

**<b>, <i>, <u>, <em>, <strong>, <sup>, <sub>, <big>, <small>, **

Topic 3 - Backgrounds

You can change the background in two ways:

- Change background color

- Use a background image

Background Color

```
<body>
     <!-- Format 1 - Use color name -->
     <table bgcolor="yellow" width = "100%">
        <tr>
           <td>
               This background is yellow
           </td>
        </tr>
     </table>
</body>
```

Topic 3 - Backgrounds

You can change the background in two ways:

- Change background color

- Use a background image

Background Image

```
<body>
      <!-- Format 1 - Use color name -->
      <table background="path/to/file" width = "100%">
          <tr>
              <td>
                  This background is yellow
              </td>
          </tr>
      </table>
</body>
```

Topic 3 - Colours

You can make your website more beautiful by adding colors.

The **body** element has following attributes which can be used to set different colors

- **bgcolor** − sets a color for the background of the page.

- **text** − sets a color for the body text.

- **alink** − sets a color for active links or selected links.

- **link** − sets a color for linked text.

- **vlink** − sets a color for *visited links* − that is, for linked text that you have already clicked on.

Topic 3 - Colours

There are following three different methods to set colors in your web page:

- **Color names** – You can specify color names directly like green, blue or red.

  - There are 16 basic standard color names listed by the world wide web consortium (W3C) but there are over 200 supported by browsers

- **Hex codes** – A six-digit code representing the amount of red, green, and blue that makes up the color.

  - #000000 - Black

  - #FFFFFF - White

  - #C0C0C0 - Grey

- **Color decimal or percentage values** – This value is specified using the rgb( ) property.

  - rgb(0,0,0) - Black

  - rgb(255,0,0) - Red

  - rgb(255,255,255) - White

Topic 3 - Colours

```html
<!DOCTYPE html>
<html>

    <head>
        <title>HTML Colors by Hex</title>
    </head>

    <body text = "#0000FF" bgcolor = "#00FF00">
        <p>Use different color hexa for for body and table and see the result</p>

        <table bgcolor = "#000000">
            <tr>
                <td>
                    <font color = "#FFFFFF">This text will appear white on black background</font>
                </td>
            </tr>
        </table>
    </body>

</html>
```

- Change hex values to **colour names** and **rgb values**

Topic 3 - Fonts

The font element has three attributes:

● size

● color

● Face

```
<!DOCTYPE html>
<html>

    <head>
        <title>Relative Font Size</title>
    </head>

    <body>
        <font size = "-1">Font size = "-1"</font><br />
        <font size = "+1">Font size = "+1"</font><br />
        <font size = "+2">Font size = "+2"</font><br />
        <font size = "+3">Font size = "+3"</font><br />
        <font size = "+4">Font size = "+4"</font>
    </body>

</html>
```

Topic 3 - Fonts

The font element has three attributes:

- Face

```
<!DOCTYPE html>
<html>

    <head>
        <title>Font Face</title>
    </head>

    <body>
        <font face = "Times New Roman" size = "5">Times New Roman</font><br />
        <font face = "Verdana" size = "5">Verdana</font><br />
        <font face = "Comic sans MS" size =" 5">Comic Sans MS</font><br />
        <font face = "WildWest" size = "5">WildWest</font><br />
        <font face = "Bedrock" size = "5">Bedrock</font><br />
    </body>

</html>
```

It is also possible to specify two or more font faces alternatives - `Times New Roman, Verdana`

Topic 3 - Fonts

The font element has three attributes:

- size

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Font Face</title>
    </head>

    <body>
        <font face = "Times New Roman" size = "5">Times New Roman</font><br />
        <font face = "Verdana" size = "5">Verdana</font><br />
        <font face = "Comic sans MS" size =" 5">Comic Sans MS</font><br />
        <font face = "WildWest" size = "5">WildWest</font><br />
        <font face = "Bedrock" size = "5">Bedrock</font><br />
    </body>

</html>
```

Topic 3 - Fonts

The font element has three attributes:

- color

```html
<!DOCTYPE html>
<html>

    <head>
        <title>Setting Font Color</title>
    </head>

    <body>
        <font color = "#FF00FF">This text is in pink</font><br />
        <font color = "red">This text is red</font>
    </body>

</html>
```

Topic 3 - The End

See you Next Week