HTML CSS JS

Hyper Text Mark up Language (HTML)

- Improvised version of Standard Generalized Mark Up Language (SGML)
- WWW & HTML was developed by Tim Berners Lee in 1990
- `.htm or .html` extension

Basic HTML Document

- html
- head
- title
- body

```
<body bgcolor="Yellow">
<body background="Star.jpg">
<body text="Red">
<body leftmargin="60">
```

- Anchor
    - marks the text as Hyper Link

```
<a href ="C:\Personal\spec.doc"> Click </a>
```

- Formatting Elements

```
<h1> to <h6>
<font> ...</font>
<b>...</b>
<u> ... </u>
<i>...</i>
<strike>...</strike>
<sub> ... </sub>
<sup>... </sup>
```

- Form Elements
    - Text field

    - Password Field
    - Combo Box
    - List Box
    - Radio Button
    - Check Box
    - Command Button
- Text Scrolling in the web page

```
<html>
        <body >
                <marquee direction = "right" onmouseover="stop();"
                onmouseout="start();">How is this ??? </marquee>
        </body>
</html>
```

- Adding Image as a Back Ground

```
<body background="Penguins.jpg">
```

- Adding Image To Body

```
<img src="Tulips.jpg" alt="Smiley face" height="100" width="200">
```

- Table Properties

```
<body>
        <table border="1">
                <tr>
                        <th> a00 </th>
                        <th> a01 </th>
                </tr>
                <tr>
                        <th> a10 </th>
                        <th> a11 </th>
                </tr>
        </table>
</body>

<!-- Merging cells in a table -->
<body>
        <table border="1">
                <tr>
                <th>Column 1</th>
                <th>Column 2</th>
                <th>Column 3</th>
```

```
                </tr>
                <tr>
                        <td rowspan="2">Row 1 Cell 1</td>
                        <td>Row 1 Cell 2</td>
                        <td>Row 1 Cell 3</td>
                </tr>
                <tr>
                        <td>Row 2 Cell 2</td>
                        <td>Row 2 Cell3</td>
                </tr>
                <tr>
                        <td colspan="3">Row 3 Cell 1</td>
                </tr>
</body>
```

HTML - 5

- To Load a Video on to the web-page

```
<video src="videos/bunny.ogv" width="250" height="150" controls></video>
```

- To add Audio to web-page

```
<audio controls><source src="Sleep Away.mp3" type='audio/mp3'></audio>
```

- HTML 5 - legend
- HTML 5 - IFrame

```
<iframe src="Tulips.jpg" width="200" height="120" scrolling="auto"
align="left"></iframe>
```

- HTML Quotation and Citation Elements

```
<abbr>abbreviation or acronym</abbr>
<address>contact information</address>
<bdo dir="rtl">Define text-direction</bdo>

<blockquote>section that is quoted from another source</blockquote>

<cite>title of a work</cite>
<q>short inline quotation</q>
```

- To Disable the right click on the web page

```
<body oncontextmenu = “return false;”>
```

- Semantic Elements in HTML 5
  - A semantic element clearly describes its meaning to both the browser and the developer

```
<header>
<nav>
<section>
<article>
<aside>
<figure>
<main>
<table>
<footer>
<summary>
```

- Improvements in input types

```
<div> DOB <input type = "date" /></div>
<div> email <input type = "email" /></div>
<div> Social N/W site <input type = "url" /></div>
<div> Profile <input type = "file" /></div>
<div> Google <input type = "search" /></div>
<input type = "Submit" /><input type = "reset" />
```

- Progress Bar

```
<progress value = "70" max = "100"></progress>
```

- Geo Location
  - HTML Geolocation API is used to get the geographical position of a user
  - `getCurrentPosition()` & `showPosition()`

Cascading StyleSheets (CSS)

- Created by World Wide Web Consortium (W3C)
- CSS consists of
  - **Selector** : HTML element/tag that needs to be defined
  - **Property** : The attribute that needs a change

    - **Value** : Each property will take a value
- **Inline Stylesheet**
- **Internal Stylesheet** : `<head><style type="text/css">...</style></head>`
- **External Stylesheet**

```
<link rel="stylesheet" type="text/css" href="my_style.css" />
```

CSS Classes

- `.class-name { property:value; }`

CSS-Pseudo classes

- Used to include special style effects for selectors
- `:focus` Adds a style to an element that has keyboard input focus
- `:hover` Adds a style to an element when mouse moves over it
- `:link` Adds a style to an unvisited link
- `:visited` Adds a style to a visited link
- Syntax : `selector:pseudo-class {property:value}

```
a.red:visited {color:#FF0000}

<a class="red" href="c:\css_syntax.html">CSS Syntax</a>
```

Image Set up

```
img {
        -webkit-filter: grayscale(100%); /* Chrome, Safari, Opera */
        filter: grayscale(100%);
        border-radius: 50%;
}
```

JS

- JavaScript was developed by Brendan Eich, a developer at Netscape Communications Corporation, in 1995

- JS is a scripting language used for client-side validations in web pages
- Interpreted Language

JavaScript in HTML

- Can be embedded in HTML files, executed when a web page loads or an event triggers
- Scripts can be placed in the head or body sections of HTML

```
<script type="text/javascript">
        document.write("Welcome to Javascript")
</script>
```

Variables

- Information is stored in variables, which can change during script execution
- Declared implicitly (directly using the name) or explicitly (using the `var` keyword)

Popup Boxes

- **Alert :** Displays a message

```
<script type="text/javascript">
        alert("Beware of pickpocketers");
</script>
```

- **Confirm :** Asks the user to confirm something

```
<script type="text/javascript">
        if (confirm(" Are you awake ?")==1)
                document.write("Good for you");
        else
                document.write("Bad for you");
</script>
```

- **Prompt :** Asks the user for input

```
<script type="text/javascript">
        var name = prompt(" Enter your name“ );
        document.write(name + ", Welcome to JavaScript !");
</script>
```

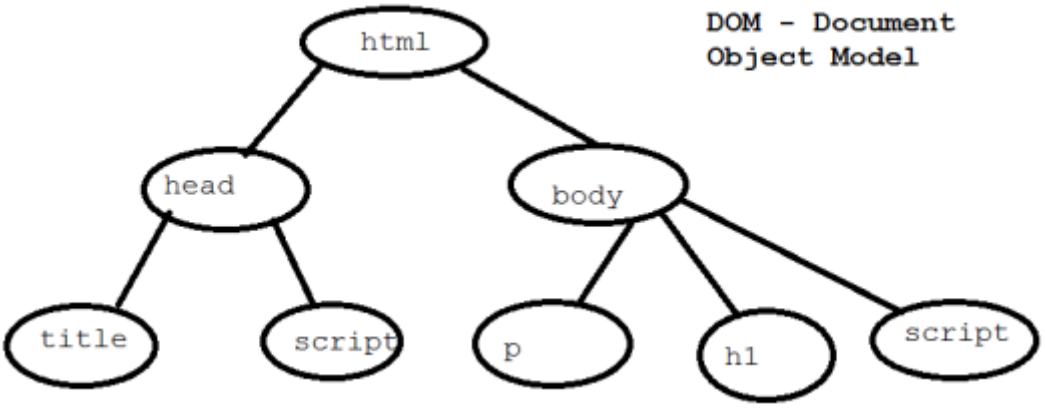
Function

- Defined using the `function` keyword
- Function Overloading is not supported
- `prototype` keyword is used to over-ride the functions already existing in JavaScript
- Can be placed both in the body and in the head section

```
<script type="text/javascript">
        function disp(){
                alert("This is a function in JavaScript");
        }
</script>
```

DOM (Document Object Model)

- Represents the structure of a web page
- The document object is a container for all the tags in a HTML page
- Allows scripts to dynamically access and update the content, structure, and style of a document
- It organizes the entire html document in a tree structure



- Some document object methods
  - write() : used to print contents onto a web page
  - getElementById : used to retrieve element with a specific id
  - getElementsByTagName : used to retrieve an array of all elements having a specific tagname

Built-in Objects

01 String

```
let str = "Hello, World!";
console.log(str.length);                    // 13
str.charAt(0)                               // H
str.concat(" Welcome!")                     // Hello, World! Welcome!
str.includes("World")                       // true
str.indexOf("World")                        // 7
str.toUpperCase()                           // HELLO, WORLD!
str.toLowerCase()                           // hello, world!
str.slice(0, 5)                             // Hello
str.replace("World","Universe")             // Hello, Universe! Welcome!
str.split(" ")
//['Hello,','Universe!','Welcome!']
str.endsWith("i")                           // false
str.bold()
str.big()
str.fontcolor("color-name")
```

02 Math

```
Math.abs(-5)                                // 5
Math.ceil(4.2)                              // 5
Math.floor(4.8)                             // 4
Math.max(1, 2, 3)                           // 3
Math.min(1, 2, 3)                           // 1
Math.random()                               // Random number between 0
and 1
Math.round(4.5)                             // 5
Math.sqrt(16)                               // 4
Math.pow(2, 3)                              // 8
```

03 Date

```
// var myDate = new Date()
let date = new Date();
Date.now());                                // Current timestamp
date.getFullYear()                          // Current year
date.getMonth()                             // Current month
date.getDate()                              // Current day
date.getDay()                               // Current weekday
date.getHours()                             // Current hour
date.getMinutes()                           // Current minute
date.getSeconds()                           // Current second

date.setFullYear(2025)
date.getFullYear()                          // 2025
```

```
date.setMonth(11)                                   // December
date.getMonth()                                     // 11
date.setDate(25)
date.getDate()                                      // 25
```

04 Array

```
// var myArray = new Array()
let arr = [1, 2, 3, 4, 5];
arr.length                                          // 5
arr.push(6)                                         // [1, 2, 3, 4, 5, 6]
arr.pop()                                           // [1, 2, 3, 4, 5]
arr.shift();                                        // [2, 3, 4, 5]
arr.unshift(1);                                     // [1, 2, 3, 4, 5]
arr.slice(1, 3)                                     // [2, 3]
arr.indexOf(3)                                      // 2
let newArr = arr.concat([6, 7, 8])                  // [1, 2, 3, 4, 5, 6, 7, 8]
arr.forEach((num) => console.log(num * 2));         // 2, 4, 6, 8, 10
let squaredArr = arr.map((num) => num * num); // [1, 4, 9, 16, 25]
```

- Interaction between the user and the web page is through a set of events
- Events are pieces of code that are run when an action is taken by the user

01 OnClick

- It is added to `<input type="button"> tags and <a> links`
- This event is triggered when the button or the hyperlink is clicked

```
<input type="Button" value="Save"
onclick="alert('This is the event of Button')">
```

02 OnBlur

- This event occurs when an element loses focus , that is when the user selects another element

```
<html>
        <form>
                <input type="Button" value="Save" onblur="confirm('This is
the Blur event on SAVE button')">
                <input type="Button" value="Cancel">
```

```
        </form>
</html>
```

03 OnFocus

- This event occurs when the cursor focus is on the element and can be applied to all elements
- It can be added to select ,text boxes and textareas
- It is activated only after the element gets focus

```
<html>
        <head>
                <script type="text/javascript">
                        function disp(){
                                alert("The focus is on the textbox");
                        }
                </script>
        </head>
        <form>
                <input type="text" onfocus="disp()"><br>
                <input type="Button" value="Save">
        </form>
</html>
```

Form validations

Disable the right click on the web page

- `<body oncontextmenu = “return false;”>`

```
//Disable the context menu
document.addEventListener('contextmenu', event => {
        event.preventDefault()
})

//Disable essential hotkeys
document.body.addEventListener('keydown', event => {
if (event.ctrlKey && 'cvxspwuaz'.indexOf(event.key) !== -1) {
        event.preventDefault()
}
})
```

Built-in Window Methods

```
window.document.getElementById("demo")
window.print()        // webpage is been sent to the printer
window.find(“String”) // returns T/F based on found / not-Found
window.open("http://www.google.com") // open site in new window
window.(alert/confirm/prompt)
```

Timing Events

- setTimeout(function, milliseconds)
- setInterval(function, milliseconds)
- clearTimeout(timeoutVariable)

```
<button onclick="myVar = setTimeout(myFunction,3000)"> Try</button>
<button onclick="clearTimeout(myVar)">Stop</button>
```