**HTML**

* **HTML-Hyper Text Markup Language**
* **HTML is standard markup language for web pages.**
* **HTML describes the structure of a web page.**
* **HTML consists of series of elements.**
* **HTML tell the browser how to display the content**

**HTML elements**

**HTML element is defined by start tag, some content and end tag.**

**Eg :< h1>Heading<h1>**

**Web browsers**

**The purpose of web browsers is to read HTML documents and display them correctly. They does not display HTML tags, but uses them to determine how to display the document.**

**Tags in HTML**

1. **<! DOCTYPE> - Defines the document type.**
2. **< html> - Defines an HTML document.**
3. **< head> - Contains metadata/information for the document.**
4. **< title> - Defines a title for the document.**
5. **< body> - Defines document’s body.**
6. **< h1> to< h6>- Defines HTML heading.**
7. **<p> - Defines a paragraph.**
8. **< br> - Inserts a single line break.**
9. **< hr> - Defines a thematic change in the content.**
10. **<!--…--> - Defines a comment**
11. **< abbr> - Defines an abbreviation.**
12. **< address> - Defines contact information for the author**
13. **<b> - Defines bold text.**
14. **<link> - Most used to link to style sheets.**
15. **<mark> - Define marked/highlighted text.**
16. **<pre> - Defines preformatted text.**
17. **<q> - Defines short quotation.**
18. **<s> - Defines text no longer correct**
19. **< a> - Defines a hyperlink.**
20. **<nav> - Defines navigation links.**
21. **<table> - Defines a table.**
22. **<th> - Defines header cell in a table.**
23. **<tr> - Defines a row in a table.**
24. **<td> - Defines a cell in a table.**
25. **<main> - Specifies main content of a document.**

**CSS**

* **CSS is the language we use to style an HTML document.**
* **CSS describes how HTML elements should be displayed.**
* **CSS-Cascading Style Sheets**

**Css syntax**

Eg:**h1 (selector) {**

**Color(property): blue(value);**

**font-size: 12px;**

**}**

**Css Selectors**

**They selects the HTML elements we want to style.**

**CSS element selector**

**The element selector selects HTML elements based on the element name.**

**Eg: p{**

**text-align: center;**

**color: red;**

**}**

**CSS id selector**

**The id selector uses id attribute of an HTML element to select specific element. # is used to select id.**

**Eg: #paral{**

**text-align: center;**

**color: red;**

**}**

**CSS class selector**

**The class selector selects HTML element to select specific element. (.) is used to select class.**

**Eg: .paral{**

**text-align: center;**

**color: red;**

**}**

**CSS Universal selector**

**The universal selector (\*) selects all HTML elements on the page.**

**Eg: \*{**

**text-align: center;**

**color: red;**

**}**

**Three Ways to Insert CSS**

**There are three ways of inserting a style sheet:**

* **External CSS**
* **Internal CSS**
* **Inline CSS**

## External CSS

**With an external style sheet, you can change the look of an entire website by changing just one file!**

**Each HTML page must include a reference to the external style sheet file inside the <link> element, inside the head section.**

## Internal CSS

**An internal style sheet may be used if one single HTML page has a unique style.**

**The internal style is defined inside the <style> element, inside the head section**

## Inline CSS

**An inline style may be used to apply a unique style for a single element.**

**To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.**

**CSS Properties:**

**Text Styling**

* **color: Sets the color of text.**
* **font-family: Defines the font for text.**
* **font-size: Sets the size of the font**
* **font-weight: Specifies the weight (boldness) of the font.**
* **text-align: Aligns the text horizontally within its container.**

**Css backgrounds**

* **background-color: Sets the background color of an element.**
* **background-image: Sets an image as the background.**
* **background-size: Sets the size of the background image.**
* **background-position: Sets the position of the background image.**
* **background-repeat: Defines how the background image repeats**.

**Css borders**

* **border: Sets the width, style, and color of borders.**
* **border-radius: Sets the radius of rounded corners.**
* **border-color: Sets the color of the border.**
* **border-width: Sets the width of the border.**
* **border-style: Sets the style of the border (solid, dashed, dotted, etc.).**

# **CSS Margins**

# **Margins are used to create space around elements, outside of any defined borders.**

# **CSS Padding**

# **Padding is used to create space around an element's content, inside of any defined borders**.

**JAVASCRIPT**

**JavaScript (JS) is the most popular programming language for web development. It can be used for both Client-side and Server-side. It is also known as a scripting language for web pages. It is commonly used to create dynamic and interactive content on websites. JS is an essential component of modern web browsers, enabling client-side scripting to enhance user experience by manipulating the content of web pages in real time**.

## How to Link JavaScript File in HTML?

**JavaScript can be added to HTML file in two ways:**

* **Internal JS: We can add JavaScript directly to our HTML file by writing the code inside the <script> tag. The <script> tag can either be placed inside the <head> or the <body> tag according to the requirement.**
* [**External JS**](https://www.geeksforgeeks.org/what-is-external-javascript/)**: We can write JavaScript code in another files having an extension.js and then link this file inside the <head> tag of the HTML file in which we want to add this code**.

**Syntax:**

<script>  
 // JavaScript Code  
</script>

## ****Applications of JavaScript****

* **Web Development**
* **Web Applications**
* **Server Applications**
* **Games**
* **Machine Learning**
* **Mobile Applications**

## [JavaScript Variables](https://www.geeksforgeeks.org/javascript-variables/)

**A JavaScript variable is the simple name of the storage location where data is stored. There are two types of variables in JavaScript which are listed below:**

* [**Local variables:**](https://www.geeksforgeeks.org/global-and-local-variables-in-javascript/) Declare a variable inside of a block or function.
* [**Global variables:**](https://www.geeksforgeeks.org/global-and-local-variables-in-javascript/)**Declare a variable outside function or with a window object**

## [Variables](https://www.geeksforgeeks.org/javascript-variables/)

**In JavaScript, variables are used to store and manage data. They are created using the var, let, or const keyword.**

### **var:**

**Declares a variable. It has a function-scoped or globally-scoped behavior.**

**var x = 10;**

## [Data Types](https://www.geeksforgeeks.org/javascript-data-types/)

### **Primitive Data Types**

**The predefined data types provided by JavaScript language are known as primitive data types. Primitive data types are also known as in-built data types.**

* [**Number:**](https://www.geeksforgeeks.org/javascript-numbers/)**JavaScript numbers are always stored in double-precision 64-bit binary format IEEE 754. Unlike other programming languages, you don’t need int, float, etc. to declare different numeric values.**
* [**String:**](https://www.geeksforgeeks.org/javascript-strings/)**JavaScript Strings are similar to sentences. They are made up of a list of characters, which is essentially just an “array of characters, like “Hello world” etc.**
* [**Boolean:**](https://www.geeksforgeeks.org/javascript-boolean/)**Represent a logical entity and can have two values: true or false.**
* [**Null:**](https://www.geeksforgeeks.org/null-in-javascript/)**This type has only one value that is null.**
* [**Undefined:**](https://www.geeksforgeeks.org/undefined-in-javascript/)**A variable that has not been assigned a value is undefined.**
* [**Symbol:**](https://www.geeksforgeeks.org/javascript-symbol-method/)**Symbols return unique identifiers that can be used to add unique property keys to an object that won’t collide with keys of any other code that might add to the object.**
* [**BigInt:**](https://www.geeksforgeeks.org/bigint-in-javascript/)**BigInt is a built-in object in JavaScript that provides a way to represent whole numbers larger than 253-1.**

# **JavaScript Let**

**JavaScript let is a keyword used to declare variables that are block-scoped. Variables defined with the let keyword cannot be redeclared and must be declared before use.**

### **Syntax:**

let variable\_name = value;

# **JavaScript var**

**JavaScript var statement is used to declare variables in JavaScript that are function-scoped. The var statement is also used to declare global-scope variables.**

### **Syntax:**

var variableName = valueOfVar;

## Operators

* [JavaScript Arithmetic Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-arithmetic-operators)
* [JavaScript Assignment Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-assignment-operators)
* [JavaScript Comparison Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-comparison-operators)
* [JavaScript Logical Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-logical-operators)
* [JavaScript Bitwise Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-bitwise-operators)
* [JavaScript Ternary Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-ternary-operators)
* [JavaScript Comma Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-comma-operators)
* [JavaScript Unary Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-unary-operators)
* [JavaScript Relational Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-relational-operators)
* [JavaScript BigInt Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-bigint-operators)
* [JavaScript String Operators](https://www.geeksforgeeks.org/javascript-operators/?ref=lbp#javascript-string-operators)

**LOOPS**

## For loop

## **Syntax:**

for (statement 1 ; statement 2 ; statement 3){  
 code here...  
}

* [**Statement 1:**](https://www.geeksforgeeks.org/javascript-for-loop/?ref=lbp#statement1)**It is the initialization of the counter. It is executed once before the execution of the code block.**
* [**Statement 2:**](https://www.geeksforgeeks.org/javascript-for-loop/?ref=lbp#statement2)**It defines the testing condition for executing the code block**
* [**Statement 3:**](https://www.geeksforgeeks.org/javascript-for-loop/?ref=lbp#statement3)**It is the increment or decrement of the counter & executed (every time) after the code block has been executed.**

# **While Loop**

### **Syntax:**

while (condition) {  
 // Statements  
}

# **For in Loop**

**Syntax:**

for (let i in obj1) {  
 // Prints all the keys in  
 // obj1 on the console  
 console.log(i);  
}

# **do…while Loop**

Syntax:

do {  
 // Statements  
}  
while(conditions)

# **JavaScript Output**

## ****Using [innerHTML](https://www.geeksforgeeks.org/html-dom-innerhtml-property/)****

It is used to access an element. It defines the HTML content.

### **Syntax:**

document.getElementById("id").innerHTML;

## ****Using [document.write()](https://www.geeksforgeeks.org/html-dom-write-method/)****

It is used for testing purpose

### **Syntax:**

document.write();

## ****Using [window.alert()](https://www.geeksforgeeks.org/html-window-alert-method/):****

It displays the content using an alert box.

### **Syntax:**

window.alert();

## ****Using****[****console.log()****](https://www.geeksforgeeks.org/javascript-console-log-method/)

It is used for debugging purposes.

**Syntax:**

console.log();

## ****Using**** [window.prompt()](https://www.geeksforgeeks.org/javascript-window-prompt-method/)

It Allows to take input from user.

### **Syntax:**

window.prompt();

## Using ****[appendChild()](https://www.geeksforgeeks.org/html-dom-appendchild-method/)****

This method allows you to append content to an HTML element.

### Syntax:

element.appendChild(node);