**Phase 4 :**

**Front end technologies**

**HTML and HTML5**

**CSS and CSS3**

**JS using ES5 and ES6 style**

**Adv JS**

**Function and types of functions**

**ES6 features let, const and var keywords**

**Pre defined object**

**String**

**Math**

**Arrays**

**Bootstrap**

**TypeScript**

**Angular Framework**

**HTML and CSS**

**HTML : Hyper text mark up language which is use to create the web page.**

**Web page is use to display the content on browser in different formats.**

**http://**[**www.google.com**](http://www.google.com)**--> URL**

**req (http/https)---------------------🡪**

**Client Server**

**🡨------res(http/https) HTML/HTML5**

**HTML provided lot of pre-defined tags or elements. Which help to create the web page.**

**HTML is not case sensitive.**

**Syntax**

**<tagName>**

**</tagName>**

**<html>**

**<head>**

**<title>Welcome to My Web Page</title>**

**</head>**

**<body>**

**<p>Welcome to My App</p>**

**</body>**

**</html>**

**IDE : VS Code :**

**6 heading tags start from h1 to h6**

**H1 largest**

**H6 smallest**

**Attribute : attribute is use to describe the properties of tags.**

**Attribute we can write in opening tag in the form of key-value pairs**

**<tag attributeName=”value”></tagName>**

**IN HTML4**

**<!doctype html public url=”sfasfasfasfasf.dtd”/>**

**Document type definition**

**In html5 they remove this rules and they provided few new tags which help to create dynamic web page with help of html.**

**<!doctype html>**

**CSS : Cascading style sheet :**

**CSS provide lot of pre-defined attribute which help to apply different formatting style for web page**

**With the help of css we can do separation of concern.**

**Types of CSS**

1. **Inline CSS**
2. **Internal CSS or Embedded CSS**
3. **External CSS**

**Inline CSS**

**Syntax**

**<tagName style=”property:value;property:value;”></tagName>**

**<p style=”color:red;”>Hello</p>**

**<p>**

**<font color=”red”>Hello</font>**

**</p>**

**Internal CSS or Embedded CSS**

**In between head tag we have to write style tag**

**<style>**

**Selector {property:value}**

**</style>**

**Types of selector**

1. **Universal selector : \* {property:value;}**
2. **Specific tag selector : tagName {property:value}**
3. **Multi specific selector tagName,tagName {property:value}**
4. **Local class selector tagName.className {property:value }**
5. **Global class selector .className{property:value}**
6. **Id selector : #idName{property:value}**
7. **Child selector : parenttagame childtagName {property:value}**

**Class selector Vs Id selector**

**Class is known as group of tags of same type or different types.**

**<p class=”abc” id=”a1”>First Para</p>**

**<p class=”xyz” id=”a2”>Second Para</p>**

**<p class=”abc” id=”a3”>Third Para</p>**

**<p class=”xyz” id=”a4”>Fourth Para</p>**

**External CSS**

**JavaScript : JavaScript was object based interpreter scripting language. Which provide programming features on web page.**

**We will learn JS using ES5 (ECMA ) European Computer Manufacture Association**

**ECMA is a concept and JS is a one of the implementation of ECMA or ES.**

**From ES6 JS also known as object oriented scripting language.**

**<script type=”text/JavaScript”> opening tag**

**</script> closing tag**

**In between head or body tag of html page.**

**Data types :**

**4 types**

1. **Number type**
2. **String type**
3. **Boolean type**
4. **Object reference type**

**In JS to declare the variable we use var keyword (till ES5 JS).**

**Operator**

1. **Arithmetic operator**
2. **Logical operator**
3. **Conditional operator**
4. **Increment and decrement**

**= == ===**

**Typeof**

**31-07-2022**

**If statement**

**If else**

**If else if**

**Switch**

**Loop**

**While loop**

**Do while loop**

**For loop**

**functions**

**function is use to write the set of instruction to perform a specific task.**

**In JS function are divided into two types**

1. **Pre-defined function or built in function**
2. **User-defined function**

**Pre-defined function**

1. **alert(“Msg”): This is a pre defined function which help to display pop up message.**
2. **Prompt() : using this function we can take the value through keyboards.**
3. **parseInt() : it is use to convert string to integer**
4. **parseFloat() : it is use to convert string to float**
5. **eval() : it is use to convert string to number (int or float)**

**user defined function**

**In JS we can declare the function lot of ways.**

1. **Simple syntax In ES5 style**

**syntax**

**function functionName(parameterList) {**

**function body;**

**}**

1. **Function no passing parameter and no return type**
2. **Function passing parameter and no return type**
3. **Function no passing parameter but return type**
4. **Function passing parameter and return type**

**Event : event provide bridge between html and JS.**

**In JS all event start with pre-fix on followed by event name.**

**Like**

**onClick**

**onDblClick**

**onMouseOver**

**onKeyUp**

**onKeyDown**

**onSubmit**

**onFocus**

**onBlur**

**onLoad**

**onUnload**

**onChange**

**etc**

**source of the event all html tags (ie p, div, h1 tag) or forms components like button, radio button check box, window , keyboards etc.**

**listener : they are normal function which help capture the events.**

**DOM : Document Object Model : DOM API : Document Object Model Application Programing interface.**

**Lot of programming like Java, Python, JS etc provided DOM API which help to read, write and update HTML contents dynamically.**

**DOM Hierarchy**

**index.html**

**html**

**head body**

**title p Hello**

**meta h1 Title**

**script div Desc**

**BOM : Browser Object Model**

**Top most hierarchy is BOM**

**Object properties or state**

**Behavior**

**Object properties**

**Behavior**

**Object property**

**Behavior**

**Object**

**window.document.write();**

**or**

**document.write();**

**window.alert(); or alert()**

**ES5 and ES6 JS Features**

**var, let and const keyword we use to declare the variable in JS.**

**Using var we can re-declare same variable once again with same value or different value.**

**var a=10;**

**a=30;**

**var a=20;**

**int a=10;**

**a=20;**

**int a=30; // error in Java**

**using let keyword we can’t do re-declaration.**

**let c=10;**

**c=20;**

**let c=30; // Error in JS**

**using var we can declare global scope**

**using let we can declare local scope like if block or for block etc.**

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**Arrow function : arrow function also known as anonymous function.**

**It is equal to lambda expression.**

**In arrow function if we want to write only one statement curly braces not required.**

**By default arrow function return the value without return keyword.**

**Callback function : passing the function name or body or function itself to another function as a parameter is known as callback function.**

**IIFE : Immediate invoke function expression**

**(functionbody)(functioncall);**

**Array : In JavaScript array is known as pre-defined object. which provide set of methods which help do some operation like add, remove, iterate etc. In JavaScript array can store same value as well as different types of values.**

**Syntax to create the array in JavaScript**

1. **Using literal style**
2. **Using new keyword**

**Creating user-defined object.**

**object : any real world entity**

**class : blue print of object or template of object.**

**In JS we can create user-defined object 3 ways**

1. **Literal style : ES5 JS**
2. **Function style : ES5 JS**
3. **Class style : ES6 JS**

**TypeScript : typescript is known as super set of JavaScript which support all ES6 features.**

**Browser doesn’t support typescript directly. So we have to convert typescript to javacript and then we have to include that js file in html page.**

**Typescript support data types.**

**To convert TS to JS we required node js.**

**Node JS : Node JS is run time environment for JS.**

**Before Node JS JavaScript is known as Client side scripting language. But after node JS JavaScript also known as Client side as well as Server side scripting language.**

**Node JS provided lot of predefined module which help to create server side programming language using JS. Like file handling programing, connecting database, creating restful web service using JS.**

**MEAN Stack Mongo DB Express JS Angular Node JS**

**MERN Stack Mongo DB Express JS React JS Node JS**

**Transpiler : converting one format to another format**

**Typescript : it will covert ts to js**

**Babel : es6 to es5**

**Npm : node package manager : this command help us to download external node js modules.**