

INTRODUCTION TO JS:

Notes: Moving from **static** pages to **dynamic** pages,

Dynamism: Changing contents/formatting of a page when events occur, creating new pages on the fly

Asynchronous vs Synchronous (Non-blocking vs Blocking):

Execution can happen in parallel vs. Execution happens in a sequence

Single Page Applications: dynamically rewriting the current web page with new data from the web server

JS Frameworks and Libraries / Web Application Frameworks:

Front-end: Vue.js, React.js, Angular (16.0),

Back-end: Node.js (Javascript based Server Environment),

Express (Back-end Web Application Framework for RESTful APIs based on Node.js),

Popular Stacks: MEAN (Mongo DB, Express, Angular, Node.js), **MERN** (Mongo DB, Express, React, Node.js)

USING JS:

- For client-side Validation
- JS Events
- DOM to Change HTML content
- DOM to Change stylesheets
- Inserting scripts in the HEAD and BODY sections
- Writing output, Using Alerts and Prompts
- JS logical operators
- JS arrays and Objects
- JS functions

Next Class: more about objects, strings, string methods, type conversion, FORM VALIDATION, best practices

JS Events

OnClick, Onmouseover, onmouseout, onload

DOM

```
<button Onclick='document.getElementById("id1").innerHTML="the content  
can be changed"'>
```

(Notes: observe the single quote and double quote usage,
capitalization)

Other document attributes, `document.getElementsByName(" ")`,
`document.getElementsByTagName(" ")`

```
<button  
onclick='document.getElementById("id1").style.color="green"'>  
<button  
onclick='document.getElementById("id1").src="planes.jpg"'>
```

Writing output:

Window, document methods: ***window.alert()***, ***window.prompt()***,
document.write(), ***window.open()***

`document.write("<h1>anything</h1>")` //writing output by erasing
all the current content

`alert("anything")` //shows an alert box

(Notes: Scripts can be Embedded both in the Head and the Body
section with `<script> </script>` tags.)

External Javascript can be included in the html file by

```
<script src="extscript.js"></script>
```

All JS statements should end with a semicolon

Variables can be declared with VAR / LET/ CONST keywords

JS Datatypes and operators

String, Number, Boolean, Array, Object

`==, ===, >=, <=, !=, ++, --` (unary, binary, ternary operators)

`&&, ||, !` (AND, OR, NOT logical operators)

JS arrays and Objects

```
Const branch = ["CSE", "IT", "ECE", "EEE"];  
array properties and methods: branch.length, branch.sort(),  
branch[0]  
const mobile = {brand:"Samsung", model:2023}  
mobile.brand / mobile["brand"]
```

JS control statements

If/else, for, while

```
if( x<5){}  
else{}  
*****  
for (let i = 0; i < arr.length; i++) {  
  temp+= arr[i] + "<br>";  
}  
*****  
for (x in mobile){ } // to loop through keys of objects  
for(x of mobile) { } // loops through any iterable object  
*****  
while (condition){ }
```

JS Functions

Syntax:

```
function myfun(a,b){  
  }  
}
```

Invoking: myfun(1,2)

Ex: onclick=myfun(1,2)