Javascript class #1

- Javascript was invented by Brenden Eich in 1995.
- It was developed for Netscape 2 and became the ECMA-262 Standard in 1997.
- European Computer manufacturer association Ecma international formally European Computer manufacture Association Organization that develops stands in Computer and technology.

- Es1 to Es5 (1997 to 2009)
After that in 2015 major changes to follow the rules and regulation that is called ECMA script / Es 2015 / ES6.

- ES6 is standard for Javascript after that every year new changes come.
ES7, ES8, Es10.

- Js is light weight oriented object oriented programming language.
- use in form submit.
- in clinet side validation.
- popup / events on click uses.
- Clinet side execule / browser / Js query, Read js, angular Js,
- website Server side (Node js, Express js)
- Mobile development / Hybrid App (frame work for mobile app react native, phone gap etc)
- Software Development / Eectron js, Ex - vscode, frame wook etc.

- we use <script> for Js
<script src " index.js "></script> (for file link)

- we use aleet for popup.
aleet (" Hello ")

Class 2 (variable and datatypes).

Variable: Variable is just like a container.

- variable is used to store information.
- It ~~reves~~ reserves space in memory. ilś data can vary but memory location will alway remain same.

Variable Rules:-

variable name. can't be any keyword. e.g (Alert, prompt) etc.

- variable is ~~Casesensitive~~ly. Casesentitive. Same name in capital and small letters are different. eg Name or Name (both are 2 diff variables).
- Variable can be consist of alphabet numbers, dollar sign and underscore.
- Variable name can't be start with digit (no) ilś first letter.
- no space allowed.

As A Good programmar:-

- your variable name should match with ilś contents.

- When you want 2 words js in variable name, so first was start with small letter and 2nd letter start with Capital.
  e.g fullName, rollNumber etc.
  ↖ It is Camel case.

Types of variables.

- Var (used before Ecmascaype this type of variable can be define again in again in JS).

After ES6 in modern or advance Javascript these 2 keywords use for decleration variables.

- let.- (its value can be change any time in programming language and can declare and assign in 2 steps) e.g let name = (declar

- Const :- (it use for constant value e.g P.- Valu
  its can't be changed. it value must

assigned at the time of declaration.
e.g Const name = "Alma"; (declare and assign in same sentence).

- Variable Scope

1) Block Scope Variable :- If variable declare in block of code in curly bracket { }.
it will alive only in block and will not be accessable after curly bracket.

2) Global Scope variable :-
There variable used Globally in whole program.

- Comments in JS:
Single line : // let name = "Alma";
multi line : /* */

3) Print / Display in JS
On Browser :
window.document.write("Alma");
- In Console:
Console.log("Alma");

Class # 3 Data types Primitive and Non-primitive

primitive Data type.

1) Number 2) String 3) Boolean 4) Undefined
5) Object (Null)

1) Number :- aisa data jo no mein write kia jaye use no data type kehte He.

e.g let rollNo = 23;

2) Strings: Whose data written in text called String.

e.g let name = "Asma"

3) Boolean:- koi aisa data jise hm true ya false me write kry ya jis ki value true ya false me ho boolean data type kehty He.

e.g let is pass = true;
document.write (is pass);

4) Undefined :- jis mein koi value defined no ho is Undefined data type kehty He.

let class;
let percentage;

Null object:-

e.g let abc = null

document.write(null);

Non-primitive / composite / Data types

i) Array.

- Store multiple value is string variable.
- value written in square bracket [ ]

e.g

let info = ['s', "hina", "Asma"];

console.log(info);

Objects:-

- Store multiple value in single value
- Values written in curly brackets { } in pairs with keys.

e.g

let ~~sud~~ student = { name: "Asma";

roll no: 03;

sub: "Compuler" }

Class 4 "Operator"

operators:- perform some task called operator

e.g a+b, 4+5

↓ Expression ↓ +operator

i) Airthematic Operation (Addition)

```
let a = 9
b = 5
document.write (a+b)        (direct print)
```

2) Subtraction

```
let a=10
b= 4
document.write (a-b)
```

3) Multiply :-

```
document.write (a*b)
```

4) Division:-

```
document.write (a/b)
```

(Modulus) (Remainder)

→ document.write (a % b)

(Exponentation)

let a = 4

b = 5

document.write (a ** b);

Unary Operator

Post increment a++ یا مطلب a میں 1 بڑھ

Post decrement a-- یا مطلب a میں 1 کم

pre increment ++a

pre decrement --a

b--
document.write(b)
(pre decrement) - first
document.write(--a);
document.write(a);
(pre increment) + first
document.write(++a);
document.write(a);

2) Assigment operator / assign value

let a=8

a++ a+=4
document.write(a); 12

a-=3
document.write(a); 5

a*=3
document.write(a); 24

=
+= = a
-= =
*=
%=
**

a/=3
document.write(a) = 2.66

a**=3 (power)
document.write(a) 8*8*8

Compare two values
Result in boolean

Class 5 Comparison operator (Conditional operator)
ہمیشہ false یا True واپس کرتا ہے

e.g ~~let a=5~~
~~b=~~

== (equal to) === (equal to + same data type)
!= (not equal to) !== (not equal to & data type)
> < >= <=

let a=2; (number)
let b="2"; (String)
a==b (True) a!=b (false)
a===b (false a!==b (True)

Logical Operator (comparison b/w two values)
Logical AND &&
Logical OR ||
Logical NOT !

Conditional operator
if statement
if-else statement
if-else if statement

Class 6 String

- String is a sequence of characters used to represent a text.
- It is primitive data type.
- we can create string by using template literal and in single and double quotations

String creation and manipulation :-

let string = "I am learning JS"; double

= = = 'i am learning JS'; single

let str = `i am learning JS`; // template literal (adjacent to 1 key in key)

template literal = ` ` back tick

Template literal :-

Template literal are a feature in Java that were introduced in ES6. They give you a more flexible and maintable way of working with string in Java

- How to Use template literal in Javascript

- for tab (spare) it
- for print ' in string
- for write variable in string (variable name).

for double quatation hello /"hello"

```
let str = " Hello /n How are you?"
    let num = 9
document.write = (" Hello $(num)');
```

Some String properties and method.

- let str = " i am learning JS";
  - = = "Css"
  - = "Html"
- position start in 0 in string
- To find length (str.length)
- To join string

```
document.write (str.1"   "+ str2)
```

- by Concat{}

```
let str4 = str.Concat(str2)/ str2.Concat/str3)
        document.write (str4)
```

length کا استعمال کرنا

let str = "hello"; how are you.
let l = str.length length کا استعمال کرنا یہ ہے
document.write(l); length

Concat کا استعمال کرنا

let str2 = "I am learning JS";
document.write(str1 + str2)

trim

str.trim() // to remove spare start and end.

str.trimStart()
str.trimEnd()
str.toUpperCase() Change in upper case
str.toLowerCase() Change in lower case
str.replace("Java", "Css"

String manipulation
\t (for space) \n for next line
\' (for qutation
\\ (for Single qutation)

String manipulation loops.

- In
  - to excule a piece of code. (agar n days)
  - finite loop and infinite loop.
  - finite loop (ending point)

infinite (not end) memory full / compuler hang

for loop

```
for(let i=1, i<=5, i++)
{
  document.write("hello");
}
```

- i is block scoop variable. Use for iteration / counting.
- first step initialization
- 2nd condition check jab tak condition true block of code execute.
- 3rd step updation.

```
for (let i=1 , i<=5, i++)
{
  document.write(i, "<br>")
```

~~let tabno = (from~~ let tabno = ParseInt(prompt("Enter your choice")

~~for (i=~~ for i=1, i<=12, i++

document.write(`${tabno} x ${i} + ${tabno*i}`);

document.write("
");

Class 9 (Array methods and for of loop)

Array :— (Store multiple value in single variable

- Value written in square bracket[].

values seprated by coma , .

each position is called index.

index no start with 0.

```
let arry = ["Hina", "Karachi", "Islambad"]
```

document.write(arr.length) find length of arry

```
let l = arr.length-1;
for (let i=0, i<=l, i++)
  {
    document.write(arr[i], "<br>").
  }
```

For of loop

```
for (let value of arr)
  {
    document.write(value);
  }
```

arr.Push(html) ([Insert item in end])

document.write(arry)

arr.unshift (add item in start)

arr.shift (remove item in start).

arr.pop (remove item in end).

Class 10 (For In loop / while loop do while loop)

Object:—

- Store multiple value in Single variable
- Value written in curly brackets { } in pairs with key

let student : { (For In loop)

name: "Asma"

roll no: 25

class: Chemistry

}

```
for(let key in student)
{
  document.write(~~key~~ (key,:"student{key}, "<br>"
}
```

for of loop

```
let arr [1, 2, 3, 4, 5, 6, 7, 8]
for (let i of arr)
{
  document.write (i, "<br>")
}
```

while loop

```
let i=1
while (i<=10)
{
  document.write(i, "Alma")
  i++
}
```

do while loop

```
let i=20
do
{ document.write(i "Alma"<br>)
  i++,
} while (i<=10); false
```