

JavaScript

"Class 1"

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Invented by Brendan in 1995

2009 = ES1 to ES5

2015 = ES6 & others

① - Alert - Pop up hata hair

```
Print = Alert("Hello");  
Pop up a jaga -
```

Variables | Rules | Declaration 3

Assignment :-

Variables | Types of Variables

- 1 - Var
 - 2 - Let
 - 3 - Const
- Variables to declare category

Data Types :-

- 1 - Numbers
- 2 - String (any Name = " ")
- 3 - Boolean (true , false) (Yes , No)
- 4 - Null
- 5 - Undefined
- 6 - Array
- 7 - Objects
- 8 - functions

Variables Rules :- Class A

Case Sensitive

Key words & variable ka name
name talkatay.

Variables main hum number '4'
Capital Small letters, Dollar sign '\$'
and - underscore Laya saltay bain -
Variable any likhna hain & hum
number sari babhi Salt name laskhay
jeay
key word
No Space
allow -

Variables

Definition :- Class 3

Variables is just like a container.

Variable is used to store information.

The requires space in memory - It's
data can have but memory location
will always remain same.

Variables Scope :-

A. Block Scope Variable :-
It's variable declare in block { } (in curly braces)

It will alive only in block and
will be accessible after curly
braces.

2 - Global Scope Variable :-

These variables used globally in whole program -

Comments in Js :-

// = Single line // comment out.

/ * * / = Multiline Comments like in
class -

Print | Display in Js :-

On browser = Document. write("Hello");

On console = Console. log ("Hello");

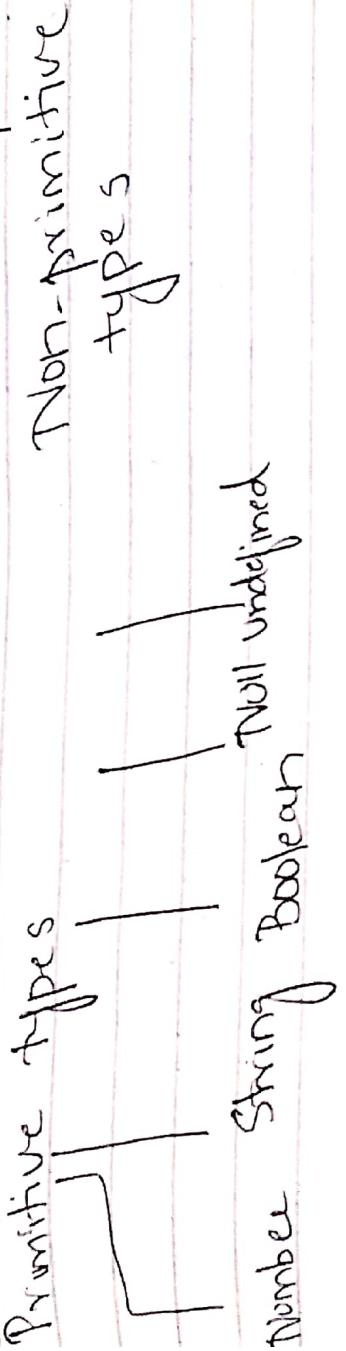
PopUp = Alert ("Hello");

Prompt :-

Let answer = Prompt ("Do you want to
document.write (Prompt);
answer");

Data types in JS :-

Data types In JS



Primitive Data types :-

. Number let RollNo = 56 ;

. String let name = "Zara" ;

. Boolean let isPass = true ;

. Null let Class = null ;

. undefined let Class ;

Non-Primitive Data type -

- Array :-
• Store multiple value in single variable.
• Values written in Square bracket
[, , ,] "Complexity"

```
console.log(info);
```

→ Print "

```
document.write(info);  
document.write(info[1]);
```

Q - Object :-

• Store multiple information in Single Variable.

• Values written in curly bracket { }

Syntax :-

```
let info = {  
    name : "Lara",  
    RollNo : 31,  
    isPass : true,  
};
```

```
document.write(stud.info);  
Console.log(typeof info);  
Practice No 1 :- [Class 3 :-]
```

```
let items = {
```

ItemName :- Pack of colton,
Rating : 4 ,
Price : 250 ,
Available : true ,
Discount : 20 ,
document.write(items);
Console.log(typeof items);

Ques: What is type of relation Management?

Example :- items.Price

₹ 250.

Operators in JS :-

Task perform following says usage use
holiday brain

- Arithmetic Operator
- Assignment operator
- Comparison “ ”
- Logical “ ”
- Conditional “ ”

1- Arithmetic Operators :-

- + Addition, - Subtraction, / Division,
- * Multiplication, Exponentiation (Increment, Decrement),
- % (modulus / remainder).

Unary operators :-

- Post increment ++
- Pre increment ++
- Post decrement --
- Pre decrement --

Ans Example :- All document will be (a=1, b=10),
let a = 9;
let b = 5;
let c = a + b;

Subtract

document. write ("a" + "b" = "a+b", <"br>) ;
multiple document. write ("a" * "b" = "a*b", <"br>) ;
division , " (" a" / " b" = " , a / b, <"br>) ;
Exponent Modulus (remainder) " (" a" % " b" = " , a%b, <"br>) ;
Exponent means power, both have $\text{jesay } 2^2 \text{ is } 4$;
" (" a" ** " b" = " , a**b, <"br>) ;

Increment means $+ +$, means 1 more than

Decrement means $- -$,
means $a++$, $a = a + 1$;
 $a--$, $a = a - 1$;
 $-a$, means the way how a pre increment
 $+ + a$,

2- Assignment Operator (assign value)

$=$, $a = 2$; left side = Right Side

$+ =$, $a + = 2$, $a = a + 2$;

$- =$, $a - = 2$, $a = a - 2$;

$* =$, $a *= 2$, $a = a * 2$;

$% =$

$a \% = 2$, $a = a \% 2$;

$*$ $a \% = 2$, $a = a \% 2$;

example:-

```
let a = 2,  
    a + = 4;
```

```
document.write(a);  
ans = a ans = 6 initial value
```

```
class S:-
```

3. Comparison Operator:-

- $= = =$ (equal-to + same data type) (true/false)
- $= = \neq$ (equal-to)
- \neq (not equal-to)
- $\neq =$ (not equal to) (data type)

 $> =$ $< =$

4- logical Operator:-

- logical AND & &
- logical OR ||
- logical NOT !

5. Conditional Operator

Terinary Operator
Condition ? True output :
False output
if:
 else
 else if

Value > 18? adult : not adult

Example :-

Let age = 20;

If (age < 20) { document.write("You are
two young") }

else if (age > 20) { document.write
("You are Young")
Else { document.write("You are perfect");
}

Conditional operator Example :- logical
operator
Example
if, else, else if
Let a = 5;
Let b = 6;
for (a > 2 && b > 5)

{ about ("both condition are true");
else { alert ("one condition not value");
} } or

Let a = 5;
Let b = 6;

for (a > 2 || b > 5)
{ alert ("either one is true"); } ?

1. Not

```
Let a = 5;  
Let b = 6;
```

```
if( a < b ) { alert ("true"); } // false  
Else { alert ("False"); } // True .
```

Ternary operation Example :-

Is main alk he line main if else likha jata hain

```
* Let age = 20;
```

```
// age > 20 ? "Adult"; " Not Adult";
```

```
Let result ;  
result = age > 18 ? "adult" ; " not adult" ;  
document.write (result);
```

Practice work "Class S"

Ques:- Get input from User a number and check and print it is even number or odd.

Ans :-

```
Let num = 40 ;  
Let result = num % 2 == 0? "Even" : "Odd";  
Prompt (result);
```

```
Let num = 15 ;  
Let result = num % 2 == 0? "Even" : "Odd";
```

Qno 2) Create input from user a number and check it is divisible by 3 or not? if it is divisible by 3 or not?

Ans :- Let num = 35;
Let result = num % 35 == 0 ? "divisible by 3" : "not divisible by 3";

Print result(result);

Class C

Assignment First "Mouksheet" :-

Let name = "Zara";
Let rollNo = 061*;
Let clas = "JavaScript";
Let teacherName = "Miss binary";

Let Englishmarks = 67;
Let Urdumarks = 85*;
Let Physicsmarks = 77;
Let Mathmarks = 66*;
Let Chemistrymarks = 55;

Sum of all marks // n subjects

Let total = Englishmarks + Physicsmarks +
Mathmarks + Chemistrymarks;

Let per = total / 400 * 100;

~~Condition apply~~

($\rho_{\text{eff}} < 100$ & $\rho_{\text{eff}} > 90$)

grade = "D+";
}

Else if ($p_{\text{new}} < 89$ & $\delta_{\text{new}} \geq 80$)

{ grade = "A"; }

Else if ($perc < 79$ & $perc \geq 70$)

grade "B" - 3

```
Else if (per < c9 88 per >= Go)
```

grade 2 C 19

Since f_{2013} is even, $f_{2013} > 100$ (since $f_{2013} \neq 100$)

in
A
grade
is

Else } made it. }

Table Creation

Subject Children out of
makes

document. Write ("<tr><th> Subjects </th><th> obtained marks </th><th> out of </th>");

document. Write (" $\leftarrow t_1 \rightarrow \leftarrow t_2 \right>$ english $\left< \leftarrow t_2 \right> \left< \leftarrow t_3 \right>$ "
~~to effect~~), engmarks, = " $\left< t_3 \right>$ " $\left< \leftarrow t_1 \right> \left< \leftarrow t_2 \right>$ 100($\left< t_3 \right>$)

1	"	"	"	"	"	"
2	"	"	"	"	"	"
3	"	"	"	"	"	"

document. Write (`<td> <td> total </td> </td>`);

" " ("ctr > std) Percentage </td> <td>
Percentage , * </td> </td> </td>);

Capade & Co

pass or fail

"Class 7"

- Switch Statement := Switch Case break
 - Let reply = Prompt ("Do you want to continue")
 - Switch (reply)

```
document . write ("Continue");
break;
Case # Yes #;
```

```
document . write ("Continue");
break;
Case # N #;
```

```
document . write ("End");
break;
Case # NO #;
```

```
document . write ("End");
break;
```

```
Case = default:
{ document . write ("Wrong input"); }
```

If say be human keyboard having message:

Let reply = Prompt ("Do you want to continue")
If (reply == 1)
{ document . write ("Continue"); }

else if
else

"String"

String is a sequence of characters used to represent a text.

- It is a primitive data type -
- We can create string by using template literals and in single and double quotations -

Template Literal :-

Template literal are a feature in javascript that were introduced with es6. They give you a more flexible and maintainable way of working with strings in java script.

How to use template literals.

- for next line → in the console you will get
"\n" → for tab (space) → "\t" → double slash say at any place → for variable in string → \${variable name} → for double quotation → "hello"

Some String Properties & Methods :-

Let str1 = "I am a student";
let str2 = "I am a girl";
let str3 = "I am 26 years Old";
Position index start with 0 in string
so bind length

to join strings

document.write("Str1" + " + Str2);
(Str1, OR
Str1 = " ", Str2);
by concat
let Str4 = Str.concat(Str1, Str2) | Str.concat({Str1, Str2})
document.write(Str4);

String manipulations :- Methods

. Str. Trim() = to remove Space from
Start and End -

- . Str. trimStart() = Start space remove
- . Str. trimEnd() = End space remove
- . Str. Include() = Includes Keywords KO.
- . Str. toupperCase() = Uppercase change
- . Str. tolowerCase() = Lowercase change
- . Str. replace(= str1, str2) = replace
- . Str. replaceAll (= str1, str2) = replace all
- . Str. slice(= Str1. Slice(2, 5)) ;

Class 8

"

Loops :-

- To execute a piece of code -
- Finite loop and infinite loop
 - Finite loop (Ending point)
 - Infinite loop (not end) memory full

Computer hang -

1- For Loop :-

- 1) - i is block scope variable. Use for iteration / counting.
first step initialization
- 2) - 2nd Condition check jab tak condition true block of code execute.
- 3) - 3rd Step updating

```
let i = "Lara";
for ( let i = 1; i < 5; i++ )
```

```
{ document.write(i); }
```

Practice Questions - Class 8

Q No 1: Print Counting 10 to 1 :-

```
Ans:- Let i;
for ( let i = 1; i <= 10; i++)
document.write(i); }
```

Q No 2 :- Print your name 20 times on screen?

```
Ans:- Let im = "Zarakhan";
for ( let i = 1; i <= 20; i++)
document.write(im); }
```

Q No 3 :- Print a table of any number by taking user's input?

```
Let tableno = prompt("Enter any number
of your choice");
for ( let i = 1; i <= 50; i++)
document.write(`~ ${tableno} x ${i} = ${i * tableno}); }
```

Q No 4: Backward Counting
for (let i = 10; i --;)

["Class 9"]

Array :-

- Store multiple Value in Single Variable.
- Values written in Square brackets [].
- Values Separated by Comma.
- Each position is called index.
- Each Value Call through index number Start with 0

e.g arr [0] , arr [1]

Syntax :

1.

```
let int = [ 5 ; 10 ; "Computer" ];
```
2.

```
let array = [ 61 , "Zaiakhan" , "Computer" ],  
document.write( array.length );
```
3.

```
ans = 3
```
4.

```
document.write( arr[ 1 ] <br> );
```
5.

```
ans = Zaiakhan
```
6.

```
for loop say how many times :-
```
7.

```
Let L = array.length ;  
document.write( array[ 0 ] )  
for ( let i = 0 ; i < L ; i++ )  
{ document.write( arr[ i ] ) ; }
```

2. Form of Queue

Let queue = [24, "7 and 7 year old",
for (let i = 0; i < queue.length; i++) {
 console.log(queue[i]);
}

Methods :-

- 1- Push() : means add word in the end
away. push()
- 2- array.pop() : means remove words in the
end and return updated array
- 3- array.unshift() : add in start
- 4- array.shift() : delete from start
- 5- array.pushing : convert array in string
- 6- array.concat : join 2 or 3 arrays in
newly created array don't change original
array.
- 7- array.length : length of array.
- 8- array.splice = (start index, delete, Add)
- 9- array.slice = (start index, end index) returns piece of array

10 - array : Index of = position of array

Practice Questions:- Class 9 :-

Ques 1. Create an array to store different items (minimum 6) vegetables, fruits / companies

Ans:- 1} let array = ["Apple", "Banana", "Orange", "Mango", "Strawberry", "Grapes"]

document.write(array.length);

2) Print all items of array by Using for loop?

for (let i of array) { document.write((i, "
"); } OR

for loop
let array1 = array.length;
for (i = 0; i <= array1; i++) {

array1
document.write((i, " ")); }

3) Remove first item from array ?

Ans:- array.shift();
document.write(array);

Q) Remove 3rd item and add 2 items in this place?

Ans:- array.splice(0,3,"xyz","abc");

document.write("array");

else
5) remove item from end -

array.pop();
document.write("array");

6) add any item in the last of array

array.push("blueberry");

document.write("array");

Class AD :-

Object (definition) -

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

Syntax

Let stu = { name : "Zara",
 class : "6A",
 rollno : 55 };

document.write(stu.rollNo);

for in loop :-

Kejs po bhe print kaiha hain or
bilkul for of ke toha kaam kaiha hain.

Example :-

```
let info = { name: "Zara",  
            class: "Javascript",  
            rollNo: 061 }
```

for (let key in info)



yaha tch bhee hu.
Kejs ko print kaijga

```
{ document.write(key); }
```

Print = name

Class

rollno => Only keys

print hue.

Kejs kay sth info (value) bhee change hu

```
for ( let key in info ) { document.write(
```

```
(key, " : ", info[key]), "br" ); }
```

Odd number print

```
let num = 30;  
let result = num % 2 == 0 ? "<br>" :  
    even : odd ;  
document.write(result);
```

- Create an object & print keys and value with it by using for in loop.

```
let student = {  
    Name : "Zara",  
    Class : 61,  
    Subject : "Javascript"  
}  
  
for ( let key in student ) {  
    document.write(key, " : ", student[key],  
        "  
    );  
}
```

While OR Do While loop :-

while loop:- while loop kota ha hota ham lekin is main chlega alog likhay.
gay jesaay tay example :-

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

Do while loop :-

(one time execute hata hain (gaur))
Phelav Condition check ho liye while or
for loop main lekin is main phelav
do augga phir while hoga -

Example :-

True/false augga is main
gesay 1 time execute hata hoga do while
loop -

let i = 21;

```
Do
{ document.write(i, "binakhan <br>");  
 i++; }  
while (i<10); // false // true
```

Practise Qno 1 [class go].

Print 1 to 10 sum (Do while loop say)

```
let sum = 0;  
let i = 1;
```

```
Do
{ document.write(i, <br>);  
 sum = sum + i;  
 i++; }  
while (document.write(i<10);
```

```
document.write("sum of 1 to 10 is  
" + sum);
```

Class 11 :-

function :-

A javascript function is a block of code designed to perform a particular task.

A javascript function is executed, when something invokes it (calls it) :-

function hum isleye banatey hain agar
ham so linee print karwan hain tu jo
ba b au nahe kDNA paro jga:

Example :- ①

document.write("Zara",toUpperCase());
Call Zawara Zaron hain function main -

e.g :- ②

function abc() {

document.write("Zatasha ");

" " " " " ;
" " " " " ;
" " " " " ;
" " " " " ;
}

abc(); —————— print hiye y

html main the call Zawata hain "bottom"
bottom onclick = "abc();"> click me </button>

function invoke

(call)

function definition
(define)

function frame()

frame();

{
block of codes}

frame(2,3)
or

function frame(p1,p2)

{
document.write(p1+p2)}

let ans = sum
(2,3);

- function sum(p1+p2)

console.log(ans);

{
ans = p1 + p2;
return ans;

Parameter - wo hola y hair jo hum
value received kota y hair.

Arguments :- jo value hum invoked
ta koi waiso bhikha y hair wo arguments.

Example 1 :-
Direct main yesay abc(5,7)

function abc(p1,p2){
document.write(p1+p2)}

Example 2 :-
(value pass kdy)

Let a = 6;
let b = 3;
abc(a);

function abc(p1,p2){
document.write(p1+p2)}

Example:- (Return rawana)

let $x = 4;$
let $y = 5;$

Sum rawana having
← function key

function define,-

let result = sum(x, y);

function sum(p_1, p_2) {

 let ans = $p_1 + p_2$;
 return ans;

document.write(result);

= "latest (esc) Main Draw Function:-

const functionName = () => {

 block of code }

functionName()

Arrow function easy way of call (invoked)
and function define (short form) -

Const mult(p_1, p_2) => {

 let ans = $p_1 * p_2$;
 let ans = mult(a, b);
 return ans;

(Class 12) :-

Vowels :-

function Count -> thought
function Count -> Statement
Use for loop main or function
main vowels to print Count
length.

Example :-

Let str = "aieooghtuo";

vowel (String);

function vowel (str) { i = 0;

for (let value of str) {

if (value == "a" || value == "e" ||

value == "i" || value == "o" || value ==

"u") {

document.write (value);

i + 1;

}

document.write ("
");

char = == "U" ||
cont ++; } }

return cont; } .

: for each loop in Arrays {

ans . for each (Callback function)

callback function . Here , it is a function
written for each element in the for

* A Callback is a function passed
argument to another function .

ans . for each ((val) -> { }

Console . log (val); }