

let a = 9;

let b = 5;

addition

document.write(a+b); // 14

" " "(a-b); 4

" " "(a\*b); 45

(a/b); 1.8

(a%b); 4

(a\*\*b);

**Increment** ++

**Decrement** --

++ = 1 plus

-- = 1 minus)

a++; 6

~~a++; 6~~

b--; 2

**Assignment Operator (assign value)**

= a=2; left side = right

+= a+=4 / a=a+4;

-= a-=4 / a=a-4;

\*= a\*=4 / a=a\*4;

%= a%-=4 / a=a%4;

\*\*= a\*\*-=4 / a=a\*\*4;

## Reserved keyword

اے کوئی نام نہیں use کر سکتے Reserved  
 ↗ character ایسے space کو keyword کی پڑھی  
 - ایسے لفظ except browser میں ہے

var age = 45;

var - Fox = 56;

var var1 = 45;

var while = 56;

## Case Sensitive :-

open کو small letter میں variable کے پر  
 کوئی نہیں show گزے big letter capital میں  
 - ایسے لفظ case sensitive ہے  
 var Rose = "hellow";  
 alert (Rose); error

## Camel Case

اے کوئی space کو var کے بعد  
 نہ کر سکتے ایسے

var user Response = "Yes";

console.log (user Response);

```
var name = "mark";
name = "john";
```

## Variable For number :-

To store whole or decimal val we use number data type.

## Variable For Boolean

To store True / False boolean data type.

## Type of Data :-

```
var age = 34;
```

```
var name = "hellow";
```

```
console.log (type of age);
```

```
console.log (type of name);
```

## Statement :-

Statement is one line is called statement.

## end of statement :-

statement ka end hum ; Aise karte hain Zaroori Nhi Lagana

## Expression :-

$4/2$  ;  $a+4$  ;  $a+b$ ; `vara=`  
`"John" + " " + "Doe"`

Ye Expression hai.

Var a = 6;

Var b = "5";

Var c = Parse Int (b);

Var d = a + c;

Console.log (d);

## Comparison Operators ::

Var a = 3;

Console.log (a == 3); true

Console.log (a == "3"); false

Console.log (a == b); false

Var a = 5;

Console.log (a == b);

Console.log (a != b);

Console.log (a > b);

Console.log (a < b);

Console.log (a >= b);

Console.log (a <= b);

## Logical Operators ::

Logic Expressions :- Variable 1 logical variable  
Variable 2 logical variable  
Value: false, True, right or wrong Describe it

Var a = 6;

Var b = 8;

Console.log (a == b);

# Eliminating ambiguity .. BODMAS

expressions like  $x = 5 + 2^3 - 2/2$  etc  
 $\Rightarrow$  var a =  $5 + 2 + 3 - 2/2$  etc  
 Now we have to decide which

## BODMAS :-

- ① B Bracket
- ② O orders i.e powers and square roots, etc.
- ③ DM Division and multiplication
- ④ AS Addition and subtraction

## Prompt :- (پریسٹ، کوئی کوئی)

کوئی sum کا value کو prompt پر لے  
 کر coordinate کو sum کا

Var age = prompt ("What is your age?")

Console.log (age);

var newAge = age + 5;

console.log (newAge);

## String Numbers or decimals

parseInt() & sum (کو یہ string number use کریں)

کیفیت Use parseFloat() & sum (کو یہ string decimal number use کریں)

(کو No 0.09 کو 0.9 کو Number کریں)

## Not & Double Not

boolean value used to ignore the writing  
of code or cancellation

```
var a = 5;  
console.log("A = " + a);  
var b = !a;  
console.log("b = " + b);  
var c = !!a;  
console.log("c = " + c);
```

## Why they are called short - circuit

when logic is false it's not evaluated  
true || will evaluate the next part

```
var score = 40;  
var a = score > 50 || score < 70 ?  
    score + 6 :  
    score - 6;  
Console.log(a);
```

## Conclusion :-

else if & break prevent complex logical flow  
> loop ope ope  
 . they use break

Console.log ( $a != B$ );

Console.log ( $a > B$ );

1 -  $// (as)$

2 -  $&&$  (And)

3 -  $!$  (Not)

### && And :-

false Ans میں کوئی کامیابی نہیں۔

$var a = 5$   $var b = 6$ ;  $var c = a < b \&& b < 10$ ;

### || (OR) :-

one true Ans میں کوئی کامیابی ممکن۔

$var c = 5$ ;

$var c = a < 10 || a > 20$ ;

### NOT ! OPERATORS :-

false  $\Rightarrow$  not false  $\Rightarrow$  true میں کوئی کامیابی نہیں۔

$var a = 60$ ;

$var b = a > 100$ ;

$var c = !b$ ;

$var d = !(a > 100)$ ;

# Variable legal and illegal.

## 1- Legal name :-

var hollow = 56;

var xyz = 44;

var \$work = 90;

var user2 = 56;

var i info = 99;

var my \$work = 77;

## 2- Illegal names :-

Var 2 user = 12; // Can't start with

Var my User = 23; // can't contains sp

Var hollow #world = 34;

Var my - info = 44;

Var my ? info = 45;

Var my \* info = 45;

## Comments :-

Comments hum kisi bhi tag  
in information dene ke lie use  
karne hain or aise hum // and  
/\* and \*/ arise likh sakte  
tag ke darmian.

## Function:

Function welcome()

{

document.write("Welcome");

}

function sum(a,b)

{

Let c = a+b;

return c

}

welcome();

let answer = sum(4,5);

document.write(answer);

~~datatype~~ document.write(typeof sum);

## Arithematic Operators

a+b, 4+5 (operand)

- use + for sum &

+

-

\*

/

% (modulus/remainder) Expon.

Exponentiation

- Increment
- Decrement

# Java Script

Date \_\_\_\_\_

JavaScript Ko hum 3 Tareekh me likh sakte hain.

• • • • •

## - Alerts

Agar hum alert me likhen ga wo hume output me nazar ayega

Alert ("Hello world");

## - Console Log :-

Agar hum console log me likhen ga to wo Alag window me nazar ayeg

Console.log ("Hello world");

## - Document.write :-

Agar hum document.write me likhen ga to ye window me nazar ayega

Document.write ("Hello world");

## - Variable :-

Variable me hum information store karne hain.

Var nationality = "Pakistani";

Console.log (nationality);

Date

## Array :-

Let info : [ ] ; " name" ; // can put it in document , write ( info ) ;  
document . write ( info [ 1 ] ) ;  
document . write ( info [ 2 ] ) ;

## Object :-

Ye multiple value ka simple object  
me store karta hai 'ie Name  
card , bracket { } me nikala jata

```
let student = {  
    rollNo : 5 ,  
    name : "dania" ,  
    sub : "Maths"  
}
```

document . write ( student ) ;  
createTag ( type of student ) ;

## Operators :-

- Every object will perform tasks

# Increment and decrement Operators :-

With decrease or increase of single step

var age = 12 ;

var newage = ++age ;

alert (age) ;

alert (newage) ;

var a = 4 ;

var b = 2 ;

var c = ++a + b ;

alert (a) ;

15

alert (b) ;

// 2

alert (c) ;

// 7

var a = 4 ;

var b = 3 ;

var c = a++ + --b - --a

alert (a) ;

4

alert (b) ;

2

alert (c) ;

2

## Arithmetics Operators :-

Mathe ke kaam karne ke liye hum A-O use karte hain.

var a = 5;

console.log(c);

var b = 4;

console.log(d);

console.log(e);

var c = a + b;

var d = a - b;

var e = a \* b;

var f = a % b;

## Assignments Operators :-

Is me hum use karte hain ke hum a ki value den ga aur us a ki value me add sub multi Karen ga.

var a = 5;

a = a + 2;

console.log(a);

# Strings Concatenation

Q. What is concatenation of strings ?

Ans :-

```
Var a = "3" + "4";
Var b = 3 + "6";
```

## Data Types :-

types of data

- ① Number → integer → float etc
- ② string and array of characters
- ③ Boolean true and false
- ④ Null (No value)
- ⑤ undefined - declared variable but hasn't been given a value
- ⑥ Symbol - a unique value that's not give a any other.

## Complex type :-

object and function

## Variable For String :-

To store text in variable we use string.

String p. We code single & code double  
 ۱. To code text in single quotes.  
 ۲. To code text in double quotes.

## Break:-

to break loop break is used here  
use -

```
for (var i=0; i<5; i++) {  
    if (i == 5) {  
        break;
```

```
    console.log("I = " + i);
```

```
},  
    console.log("After");
```

## Continue

use tag = p which continued by  
if continue it skip next line -

- \* Mobile Development (Hybrid App) (Same work for mobile app react native, ph, gap etc)
- \* software Development (Electron js, vs code, framework etc)

use tag script for JavaSc  
to put in head or in body for JS

<script> </script>

<script>  
alert("Hello 2");

</script>

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

<link rel="stylesheet" href="file name">

</link>

better: In body tag of link  
comment! --<script src="script.js"> -->

last: <link> + <!--> </body>

defer attribute so js file won't read by browser

# JavaScript

Date class 01

## Introduction to JavaScript

- \* javascript was invented by brendan eich in 1995.
- \* It was developed for Netscape 2, and became the ECMA-262 standard in 1991.
- \* European Computer Manufacturers Association Eema International (formally European Computer Manufacturers Association) is an organization that develops standard in computer and technology.
- \* ES1 to ES5 (1991 to 2009)
- \* After that in 2015 (major changes to follow the rules and regulation) this is called EmaScript /Es2015 / Es6.
- \* Es6 is standard for javascript after that every year new changes came ES7, ES8, ES10 Etc.
- \* Js is a light weight object oriented programming language.
- \* use in form submit \* in client side validation \* popUp/ events on click

### Uses

- \* client side execute/browsers .(Js query, Reactjs > angular js)
- \* website SERVER side( node js , Express )

Let or const variable use  
note hain modern javascript me

```

var a = 6;
var a = 5;
let a = 5;
let a = 10;
const pi = 3.1425

```

Let

Is me change  
ho sakte hain

Const

const me okie  
error show  
hoga  
is me value  
change nhi ho  
sakte.

## Document.write :-

is display window पर Document.write  
 window • ~~windows~~ document.write  
 window.write ("world");  
 console.log ("world");  
 Alert ("World")

Console me hum javascript code likha hain error find karne keliye console window me jana hogा. Console me hum execute bhi kar sakte aur coding bhi.

## Variables :- store value

### Data types :- number, string, boolean, null, undefined, Array, objects, functions

- number • string • boolean • null
- undefined • Array • objects • functions

variable me hum abcde ho sakte hain as A, B, number, -, dollar ka sign.

Let ghi;  
let \$ jhhj  
let -gh34

variable will be capital

will be small

not be keyword. It's variable

Let age = 45 ;

console.log("age");

console.log(age);

let

## Boolean :-

*values false or true i.e.,*

```
let ispass = true;
document.write(`ispass`);
console.log(typeof ispass);
```

## undefined :-

```
let clas;
document.write(clas);
console.log(typeof clas);
```

- numbers

```
let roll no = 56;
```

- string

```
let name = "Aisha";
```

- boolean

```
let ispass = true;
```

- undefined

```
let percentage;
```

- null

```
let class = null;
```

## null :-

```
let abc = null;
```

```
document.write(abc);
```

```
console.log(typeof abc);
```

## Print display in js ::

- On browser      window.document.write
- in console      console.log("hizza");
- Popup            window.alert("hizza");

## Taking input from Users in JS ::

```
num = prompt("choose any number : 1-10");
document.write(num);
```

## Variables and Datatypes in Javascript

### Numbers ::

useful in calculation:  $\pi =$

```
let age = 35;
document.write(age);
console.log(typeof age);
```

### String ::

useful & can't single quote

```
let name = "Alishba";
document.write(name);
console.log(name);
```

## Nested if :-

Chained if or if as nested if

var Score = 92;

if (Score > 80) {

    console.log ("Grade A");

    if (Score > 90) {

        console.log ("Reward \$100");

}

## Conditions with logical Operators :-

Logical condition if operator logical part

if (Score > 80 && Score < 100) {

    console.log ("Grade A");

}

## Value Conversion to Boolean :-

convert the true & false values into

c- false

a- null

b- NaN

c- 0

e- undefined

f- ''

c- True or else

a- {}

b- Any text

c- 1

## Conditions if - else :-

```

var age = 50;
if (age > 60) {
    console.log("In if Age = " + Age)
    console.log("Hello")
}
else {
    console.log("In else age " + age)
}

```

## Conditions else - if :-

condition multiple use

```

var score = 71;
if (score > 80) {
    console.log("Grade A")
}
else if (score > 70) {
    console.log("Grade B")
}
else if (score >= 60) {
    console.log("Grade C")
}
else {
    console.log("Failed");
}

```

## for loop

for문은 반복문이다  
for (int i = 0; i < 3; i++)  
 console.log(i);  
}

out put

0  
1  
2

## Infinite loop

반복문은 무한루프를 막기 위해서는  
반복문의 조건을 정해놓고  
정해놓은 조건을 만족하는지  
체크하는 코드를 넣어야 한다.

## For Loop Application

for 문은 반복문을 테이블처럼  
생성하는 경우에 사용된다.  
for (int i = 0; i < 5; i++)  
 console.log(`row \${i+1} column \${i+1}`);  
}

```

var age = 45;
if (age) {
    console.log("In if Age=" + age);
}
else {
    console.log("In if Age=" + age);
}
  
```

## Value Conversion to boolean

non-zero values operator || or &&  
also use (0, values) here

var a1 = 'cat'    'Dog'	"Dog"
var a2 = 'False'    'cat'	False
var a4 = ''    false	
var a5 = 0    1;	0

var a1 = 'cat'    'Dog'	"cat"
var a2 = false    'cat';	"Cat"
var a7 = 1    False;	1