**Java script Introduction**

* In 1995 first introduced by Brendan eich.
* Javascript is a client side scripting Languge
* Starting name: livescript
* Developed ECMA script – 262
* Only Netscape navigator 2.0 first worked
* All browsers worked from 1996
* Javascript is a case sensitive language
* Javascript extention: .js
* Main use: directly interact with html codes
* Java and javascript are different
* Joining operator + or concentration operator
* Javascript is a interpreter (line by line error check)
* Javascript is a loosly type checked language

Var a=10;

Var b=10.20

Var c=”text@123”;

General format:

<html>

<head>

<script type=”type/javascript”>

</script>

<title></title>

<script type="text/javascript">

alert("welcome to javascript");

document.write("<h1>welcome to javascript</h1>");

document.write("<center><h1>welcome to javascript</h1><center>");

var rno=1;

var name="vikash"

var mark=100;

document.write("<h1>roll number:"+rno+"</h1>")

</script>

<script type="text/javascript">

function print()

{

var a=application.txt.value;

var b=application.txt2.value;

document.write("<h1>Username :"+a+"</h1>");

document.write("<h1>password :"+b+"</h1>");

if (a=="admin" && b=="password")

{

alert("valid user");

}

else

{

alert("invalid user");

}

}

</script>

</head>

<body>

<form name="application">

<input type="text" name="txt" placeholder="Enter your name:"><br>

<input type="password" name="txt2" placeholder="Enter password:"><br>

<button onclick="print()">enter</button>

</form>

**statement**

* JavaScript statements are composed of:
* Values, operators, expression, keywords and comments
* This statement tells the browser to write “HELLO DOLLY”. Inside an HTML . element with id=”demo”:
* Example: document.getElementById(“demo”).innerHTML=”HELLO DOLLY”;

**Semicolon ;**

* Semicolons separate JavaScript statements.
* Add a semicolon at the end of each executable statement.
* Example:
* Var a, b, c;
* a=5;
* b=6;

**SYNTAX**

* JavaScript syntax is the set of rules, how Javascript programs are constructed.

**Variables**

* In a programming language, variables are used to store data values.
* JavaScript uses the var keyword to declare variables.
* An equal sign is used to assign values

<script type="text/javascript">

function add()

{

var a=10;

var b=30;

var c=43;

var d=a+b+c;

document.write("<br> total :"+d);

}

</script>

</head>

<body>

<input type="button" onclick="add()" value="result">

</body>

<script type="text/javascript">

function add()

{

var a, b, c;

a=parseFloat(document.getElementById("t1").value);

b=parseFloat(document.getElementById("t2").value);;

c=parseFloat(document.getElementById("t3").value);;

const d=a+b+c;

document.write("<br> total :"+d);

}

</script>

</head>

<body>

<input type="text" id="t1" placeholder="enter no 1" name=""><br>

<input type="text" id="t2" placeholder="enter no 2" name=""><br>

<input type="text" id="t3" placeholder="enter no 3" name=""><br>

<input type="button" onclick="add()" value="result">

</body>

* parseInt – to get integer
* parseFloat – to get float values

function add()

{

var a, b, c;

a=parseFloat(document.getElementById("t1").value);

b=parseFloat(document.getElementById("t2").value);;

c=parseFloat(document.getElementById("t3").value);;

const d=a+b+c;

document.getElementById("result").innerHTML=d;

}

</script>

</head>

<body>

<input type="text" id="t1" placeholder="enter no 1" name=""><br>

<input type="text" id="t2" placeholder="enter no 2" name=""><br>

<input type="text" id="t3" placeholder="enter no 3" name=""><br>

<input type="button" onclick="add()" value="result">

<br>

<div id="result"></div>

</body>

**PASS OR FAIL**

<script type="text/javascript">

function pass()

{

var q;

a=parseInt(document.getElementById("t1").value);

if(a>=35)

document.getElementById("result").innerHTML="<font color='green'>PASS</font>";

else

document.getElementById("result").innerHTML="<font color='red'>fail</font>";

}

</script>

</head>

<body>

<input type="text" id="t1" placeholder="enter your mark:" name=""><br>

<input type="button" onclick="pass()" value="result">

<br>

<div id="result"></div>

</body>

**JavaScript operator**

Operator:

def operator is an symbol

**Arithmetic operator**

* + addition
* - subtraction
* \* multiplication
* / division – quotient value
* % modules remainder value

**Relational operator or comparison**

* < less than
* <= less than or equal to
* > greater than
* >= greater than or equal to
* == equal to
* !=not equal to

**Logical operator**

* && logical and [any one condition is false ]
* || logical or
* ! logical notv

**Assignment operator**

* = var a=10,var b=a;
* += a+=b; or a=a+b;
* -= a-=b; or a=a-b;
* \*= a\*=b or a=a\*b
* /= a/=b or a=a/b
* %= a%=b or a=a%b

**Increment and decrement**

* ++ Increment operator
* -- Decrement operator
* Pre increment: ++var
* Pre decrement: --var
* Post increment: var++
* Post decrement: var—

**Conditional or ternary operator :**

* exp1? exp2 : exp3
* condition? True: false

**bitwise operator**

* & bitwise and
* | bitwise or
* ^ bitwise xor
* << left shift
* >> right shift

* 8421
* 0000-0
* 0001-1
* 0010-2
* 0011-3
* 0100-4
* 0101-5
* 0110-6
* 0111-7
* 1000-8
* 1001-9
* 1010-10
* 1011-11
* 1100-12
* 1101-13

**Arithmetic operator**

<script type="text/javascript">

var a=45;

var b=5;

var c=9;

var ans=a+b\*c

document.write("<br> a value:"+a)

document.write("<br> b value:"+b)

document.write("<br> c value:"+c)

document.write("<br> result:"+ans)

var ans=a%b;

document.write("<br> a result:"+ans)

var ans=0/0;

document.write("<br> a result:"+ans)

var ans=0/10;

document.write("<br> a result:"+ans)

var ans=10/0;

document.write("<br> a result:"+ans)

var ans=parseInt(4/6);

document.write("<br> a result:"+ans)

var ans=4%6;

document.write("<br> a result:"+ans)

</script>

**Relational operator**

<script type="text/javascript">

var a=15;

var b=5;

var ans=a>b;

document.write("<br> a result:"+ans)

var ans=a>=b;

document.write("<br> a result:"+ans)

var ans=a<b;

document.write("<br> a result:"+ans)

var ans=a<=b;

document.write("<br> a result:"+ans)

var ans=a!=b;

document.write("<br> a result:"+ans)

var ans=a==b;

document.write("<br> a result:"+ans)

</script>

**Logical operator**

<script type="text/javascript">

var m1=100;

var m2=100;

var m3=100;

var m4=100;

var m5=100;

var res=m1>34 && m2>34 && m3>34 && m4>34 && m5>34;

document.write("<br> a result:"+res)

var res=m1>34 || m2>34 || m3>34 || m4>34 || m5>34;

document.write("<br> a result:"+res)

var res=!(m1>34 || m2>34 || m3>34 || m4>34 || m5>34);

document.write("<br> a result:"+res)

</script>

**Incerement and decrement**

<script type="text/javascript">

var a=100;

document.write("<br> predecrement result:"+ ++a);

document.write("<br> predecrement result:"+ a--);

document.write("<br> predecrement result:"+ --a);

document.write("<br> predecrement result:"+ a++);

</script>

**Conditional operator**

<script type="text/javascript">

var a=3000;

var b=2000;

var c=1000;

var d=(a>b && a>c) ? (a) : (b>c?b:C);

document.write("<br> biggest number:"+d);

</script>

**Bitwise operator**

<script type="text/javascript">

var a=5;

var b=20;

var c=a&b;

var d=a|b;

var e=a^b;

document.write("<br> bitwise and result:"+c);

document.write("<br> bitwise or result:"+d);

document.write("<br> bitwise xor result:"+e);

</script>

<script type="text/javascript">

var a=5;

var c=a<<1;

var d=a>>1

document.write("<br> bitwise and result:"+c);

document.write("<br> bitwise or result:"+d);

</script>

**JavaScript functions**

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)

<script type="text/javascript">

function add()

{

a=parseInt(prompt("enter no1:"))

b=parseInt(prompt("enter no2:"))

c=a+b;

alert("total:"+c);

}

</script>

</head>

<body>

<input type="button" onclick="add()" name="add" value="click here">

</body>

**Function with argument**

<script type="text/javascript">

function add()

{

a=parseInt(prompt("enter no1:"))

b=parseInt(prompt("enter no2:"))

caller(a,b)

}

function caller(x,y)

{

if(x,y)

{

alert(x+"is greater ");

}

else

{

alert(y+"is greater")

}

}

</script>

</head>

<body>

<input type="button" onclick="add()" name="add" value="click here">

</body>

Or new method using conditional operator

var ans=x>y ? x : y ;

alert("greater number:"+ans);

**Function with return type**

<script type="text/javascript">

function add()

{

a=parseInt(prompt("enter no1:"))

b=parseInt(prompt("enter no2:"))

var big=caller(a,b)

document.getElementById("res").innerHTML=big;

}

function caller(x,y)

{

var ans=x>y ? x : y;

return ans;

}

</script>

</head>

<body>

<input type="button" onclick="add()" name="add" value="click here">

<br>

biggest number<div id="res"></div>

</body>

* We can reuse code: define the code once, and use it many times.
* You can use the same code many times with different arguments, to produce different results .

**No argument with return type**

<script type="text/javascript">

function caller()

{

a=parseInt(prompt("enter no1:"))

b=parseInt(prompt("enter no2:"))

var ans=a>b ? a : b;

return ans;

}

function add()

{

var big=caller()

document.getElementById("res").innerHTML=big;

}

</script>

</head>

<body>

<input type="button" onclick="add()" name="add" value="click here">

<br>

biggest number<div id="res"></div>

</body>

* Real life objects, properties, and methods .
* In real life , a car is an object.
* A car has properties like weight , color and methods like start and stop :

<script type="text/javascript">

var stud={

sid:1001,

sname:'vikash',

mark:98

}

document.write("<br> student id:"+stud.sid);

document.write("<br> student name:"+stud.sname);

document.write("<br> student id:"+stud.mark);

</script>

**Nested function**

<!DOCTYPE html>

<html>

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<title></title>

<script type="text/javascript">

function myfunc(){

var stud={

sid:document.getElementById("sid").value,

sname:document.getElementById("sname").value,

mark:{

tamil:parseInt(document.getElementById("m1").value),

english:parseInt(document.getElementById("m2").value),

maths:parseInt(document.getElementById("m3").value),

tot:null,

avg:null,

res:null

}

}

var mobj=stud.mark;

var sum=0;

var per=0;

var res="fail"

for(i in mobj)

{

sum=sum+stud.mark[i];

}

stud.mark.tot=sum;

stud.mark.avg=sum/3.0;

if(mobj.tamil>34 && mobj.english>34 && mobj.math>34)

{

res="pass";

}

stud.mark.res=res;

for(i in mobj)

{

document.write("<br> key: "+i);

document.write("value:"+stud.mark[i]);

}

}

</script>

</head>

<body>

<form onsubmit="myfunc()">

<input type="text" id="sid" placeholder="student id"><br>

<input type="text" id="sname" placeholder="student name"><br>

<input type="text" id="m1" placeholder="tamil"><br>

<input type="text" id="m2" placeholder="english"><br>

<input type="text" id="m3" placeholder="math"><br>

<input type="submit" value="finf total avg res using json">

</form>

</body>

</html>

**Array**

<script type="text/javascript">

var k={

sno:1,

sname:1001,

mark:[77,55,88,22]

}

document.write("<br> student number:"+k.sno);

document.write("<br> student name:"+k.sname);

document.write("<br> student mark 1:"+k.mark[0]);

document.write("<br> student mark 2:"+k.mark[1]);

document.write("<br> student mark 3:"+k.mark[2]);

document.write("<br> student mark 4:"+k.mark[3]);

</script>

**Inside array**

<script type="text/javascript">

var k={

sno:1,

sname:1001,

mark:[{alied:88},{science:22}]

}

document.write("<br> student number:"+k.sno);

document.write("<br> student name:"+k.sname);

document.write("<br> student mark 1:"+k.mark[0].alied);

document.write("<br> student mark 2:"+k.mark[1].science);

</script>

* An HTML web page has finished loading
* An HTML input field was changed
* An HTML button was clicked often, when events happen , you may want to do something.
* JavaScript lets you execute code when events are detected.
* HTML allows event handler attributes , with JavaScript code , to be added to HTML elements.

**On loading**

<script type="text/javascript">

function show()

{

document.getElementById("res").innerHTML="456"

}

</script>

</head>

<body onload="show()">

<div id="res">132</div>

</body>

**Onfocus**

<script type="text/javascript">

function show()

{

var k=document.getElementById("t1").value;

document.getElementById("res").innerHTML=k;

}

function dis1()

{

document.getElementById("res").innerHTML="cursor inside";

}

function dis2()

{

document.getElementById("res").innerHTML="cursor outside";

}

</script>

</head>

<body>

<input type="text" id="t1" onfocus="dis1()" onblur="dis2()">

<input type="button" id="b1" onclick="show()" value="click me">

<div id="res"></div>

</body>

**String**

A java Script string is zero or more characters written inside quotes.

<title></title>

<script type="text/javascript">

function show()

{

event.preventDefault(); //don't referesh

var n=document.getElementById("t").value;

document.getElementById("res1").innerHTML=n.length;

document.getElementById("res2").innerHTML=n.toUpperCase();

document.getElementById("res3").innerHTML=n.toLowerCase();

document.getElementById("res4").innerHTML=n.substring(4,6);

document.getElementById("res5").innerHTML=n.replace("a","o");

document.getElementById("res6").innerHTML=n.replaceAll("v","c");

}

</script>

</head>

<body>

<form onsubmit="show()">

<label>Enter Text:<input type="text" id="t"></label>

<br>

<input type="submit" name="strfun">

</form>

<div id="res1"></div>

<div id="res2"></div>

<div id="res3"></div>

<div id="res4"></div>

<div id="res5"></div>

<div id="res6"></div>

</body>

<!DOCTYPE html>

<html>

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<title></title>

<script type="text/javascript">

function show()

{

event.preventDefault(); //don't referesh

var n=document.getElementById("t").value;

document.getElementById("res1").innerHTML="with trim"+n.trim();

document.getElementById("res2").innerHTML="without trim"+n;

document.getElementById("res3").innerHTML="char 4th position:"+n.charAt(4);

document.getElementById("res4").innerHTML="index of "+n.indexOf('k');

}

</script>

</head>

<body>

<form onsubmit="show()">

<label>Enter Text:<input type="text" id="t"></label>

<br>

<input type="submit" name="strfun">

</form>

<div id="res1"></div>

<div id="res2"></div>

<div id="res3"></div>

<div id="res4"></div>

</body>

</html>

**Date and time**

<script type="text/javascript">

function showdata()

{

var d=new Date();

document.getElementById("res").innerHTML="Date and time"+d;

var d1=d.getDate();

var m1=d.getMonth()+1;

var y1=d.getFullYear();

document.getElementById("res2").innerHTML=d1+" / "+m1+" / "+y1;

var h=d.getHours();

var min=d.getMinutes();

var sec=d.getSeconds();

document.getElementById("res3").innerHTML=h+" / "+min+" / "+sec;

setTimeout(showdata,1000,"javascript");

}

</script>

<body onload="showdata()">

<div id="res"></div>

<div id="res2"></div>



<div id="res3"></div>

</body>

* javaScript supports different kinds of loops:
* for – loops through a block of code a number of times
* for / in -loops through the properties of an object .
* for / of – loops through the variables of an iterable object.
* While – loops through a block of code while a specified condition is true.
* Do/ while – also loops through a block of code while a specified condition is true.



Example:

1 2 4

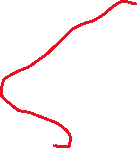
for( var i=1, i<=10: i++)



{



3



Document.write(“ ”+i);

}



**For loop**

<script type="text/javascript">

for(var i=1;i<25;i++)

{

document.write(" "+i);

}

document.write("<br>===========================<br>");

for(var i=20; i>=1;i--)

{

document.write(" "+i);

}

</script>

**While loop**

<script>

var i=10;

while(i<20)

{

i++;

document.write(" "+i);

}

</script>

</head>

<body>

<input type="text" id="" name="">

</body>

**Dynamic in while loop**

<script type="text/javascript">

function show()

{

var s=parseInt(document.getElementById("t1").value);

var e=parseInt(document.getElementById("t2").value);

var tot=0;

var i=s;

while(i<e)

{

document.write(i+"+");

tot=tot+i;

i++;

}

document.write(i+"="+(tot+i));

}

</script>

</head>

<body>

<input type="text" id="t1" placeholder="enter starting no:" name=""><br>

<input type="text" id="t2" placeholder="enter second no:" name=""><br>

<input type="button" value="click me" onclick="show()" >

</body>

<script type="text/javascript">

var arr= new Array(11,22,33,44,55);

var tot= 0

for (i in arr)

{

tot=tot+arr[i];

document.write("<br>"+i+"index:"+arr[i]+"----------------------------"+tot);

}

for (i of arr)

{

document.write("<br>"+i);

}

</script>