

Java Script Languages

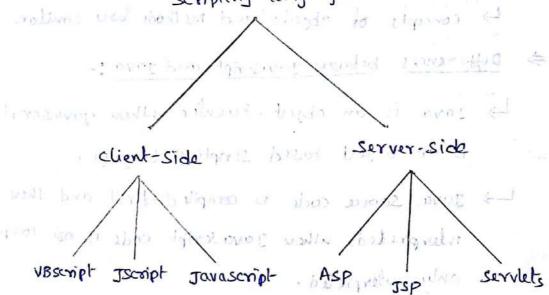
* scripting Languages:

These are specialized programming languages, which are used enhance temptionality and appearance of webposes

These are two types

- client-side scripting language used for simple validations at client-side.
- Server-side scripting language used for database validation.

 scripting languages



> <script> lag: porq or od bridge 111 1 = 1004

This is bused to includes the script into html

// Language = "Name of script'>

> The scripting languages are used to modify document's content dynamically.

VINDAL IS TOOK SEED

⇒ Javascript is a client-side scripting language.

* Introduction to Java script:-

Javascript is an object-based scripting language, which is designed to enhance tunctionality of webpages.

That are downloped with HTML-

Javascript is a client-side scripting language.

- => Similarities between Javascript and Java:-
 - Lo Both have some kind of operators.
 - Ly similar control structures.
 - L) concepts of objects and methods are similar.
- > Differences between Javascript and Java:
 - is an object-based scripting language.
- Dava source code is compiled trest and then interpreted, where Javascript code is not compiled only interpreted.

Note: - In the object - based programming language, we can use pre-defined objects only.

The object-sciented programming language supports to create new objects and to use the objects.

- -> Benifits of Javascript:-
 - Lo Widely supported in meb browsers
 - Ly web swifaces don't need a special plug-in to use your script.
 - can most of Them.

* Variables:

A voriable is a named location that is used to store any value to that particular program. Rules to naming The variable: -

- -> Names must begin with a letter or digit of underscrove.
- -> spaces are not allowed in between voliable name.
- -> Names are case-sensitive.
- -> Reserved word won't use as voriable name.
- => All vociables can be declared by using one keyword i.e "var".

EX:- Var a; Var sum= 10;

* Datatypes:-Javascript supports tollowing datatypes

L> Numeric

var a = true; 7 bookan Vay hum = 10; > numeric Ly strings

name = "Madhu". > sking L) Boolean

4 null age = hull; , null. Vecy

* operators in Java script:-

L> Arithmetic operators:- L> Relational operators:-

< -> less than + -> Addition

-> substraction > -> greater than

<= -> lessition or equal to * -> Multiplication

/ -> Division >= -> greater than a equal to

ETHN HALLS

1. - Modulus Ly Logical operators:

== -> Is equal to | | -> logical OR

1-> Regulatily operators:

!= -> is not equal to

* programming With Java scripts:-

Example: - The following enample program displays the normal text.

<html>
<html>
<head>
<title>Sample Java script </title>
<title>Sample Java script'>
<script language = "Java script">
<!-- This indicates the comment -->

document. writeln ("This is my-first program");

document. writeln ("about Javascript");
</script>
</script>
</script>
</script>
</script>
</script>
</script></script>
</script>
</script

010:-

This is my first program about java script

In The above enample,

- > < script > tag is used to including the script into
- => "<!-- -->", This is used to display or write the comment
- Noti: A good practice to deploy the script in the HEAD region of the HTML code.

Example: - The following script demonstrats the addition and substraction of two numbers.

```
Asantml
 <ntml>
 < head>
  <ti>the> script to addition and subtraction<title>
 < script language = "tavascript">
    var n,, Nz, add, Sub;
    M = 10;
    n2 = 15;
    add = N, + N2;
     Sub = N2 - N1;
    downers. writeln ("Addition is" +add);
    document. writeln ("subtraction is" + sub);
 <1script>
 < I head?
< body>
  <1body>
  < Inhm1>
```

010:-

@ script to addition & subtraction Addition is 25		QΧ	
subtraction is 5		-0	
		trafe.	187 -
polarica dichez di rappes		in pal	n pritta
of carries all a		Succession	lg2 ch
of a course the grade of a	Alexander	- (₁₎	
			ag cheell

In the enample, we can assign the values directly to voviables, instead of this we can also provide these values dynamically during run time.

To do that, just replace The code from line number 6 to 7 by following code.

n, = parse Int (window, prompt ("Enter n; value"));

n2 = parse Int (window, prompt ("Enter n2 value"));

now, The output will be generated in following manner

orp:-

Entry the value of the

Explorary user prompt K

Enter the volce-18 Ms

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		The Control of the Control
D script to addition	and subtraction	× U -
Addition is 30		
subtraction is 20		
		at Louded

In the above enample,

- ⇒ Window. prompt It causes a small window to be displayed on console.
- => parseInt It is used to convert the given string into Inleger.

Similarly will make your regular made the strong

=> parsefloat - It is used to convert a given string into
Heating value.

```
* conditional statements:-
4 it statement:-
                                → else-if ladder:-
                                   syntax: - it (condition)
    Syntax: - it (condition)
                                             statement:
               Statements.
                                            else it (condition)
La if-else statement:
                                             statements;
     symax: - it (condition)
                                            else
                Statements;
                                            Statements;
                else
                 Statements:
```

Example: - The following enample finds manimum of three num - bers.

```
<html>
<head>
<head>
<title> manimum of 3 numbers <title>
<title> manimum of 3 numbers <title>
<script language="savascript">
var n1, n2, n3;

n1 = parseInt (window. prompt ("Enter n1 value"));

n2 = parseInt (window. prompt ("Enter n2 value"));

n3 = parseInt (window. prompt ("Enter n3 value"));

ut (n1 > n2 + 2 n1 > n3)

downeut. writeln ("maximum is" + n1);

else if (n2> n1 + 2 n2> n3)

downeut. writeln ("maximum is" + n2);

else

downeut. writeln ("maximum is" + n2);
```

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clnead>
clbody>
clbody>
clbody>
clbody>

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		n, value	

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Entry 13 value

Example:-

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Street of region 1975.	and the last property of	= , 14
arrive - a - 1 - 1 - 1	morg-bulb view) lattering	= 218
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	M. T. E. T. S. P. S. W. S. W.	i .

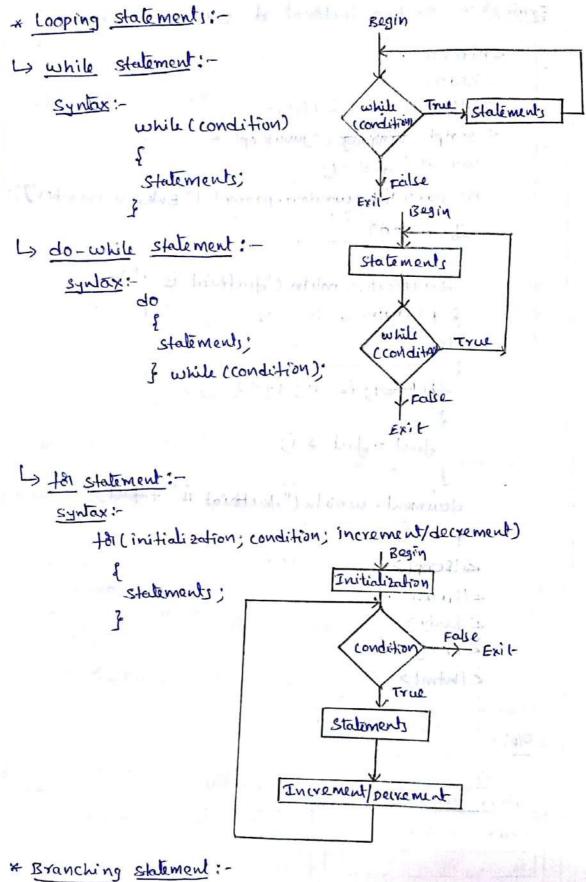
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Ly switch case: - syntax: switch (enpression)

case 1: statements; break;

case 2: statements; break;

defeult: Statements;

4

```
Example: To find factorial of given number.
    < n+ml>
    < head>
    etitle> factorial </title>
     < script language = "Jouascript" >
      vor n,i, fad=1;
      n= parseInt (window. prompt (" Enter a number"));
       it ( n ==0)
        downerd. writin ("factorial is 1");
        3
     e229
         faci=1; iz=n; (++)
          fact = fact xi;
       downent, writin ("factorial is" + fact);
      < Iscript>
      21 head>
      < body>
     <1body>
      c/ntm1>
```

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5			1

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deserved by a mile trade of

* Functions :-

A function is a self-contained block of statement that peritorm a particular task.

Basically, tunctions are two types, They are

- -> predefined functions
- -> user defined functions

L) pre defined functions:-

These are also called as global functions, because they can be called and used in any part of a program.

-> IsFinite):-

value as an argument and returns true only it The given argument results a finite numeric else it returns false.

Example: is finite (5/0); -> It returns false

> isNaN():-

It returns true status only it the organient is not a number, else it returns a false status.

Example: is NaN (a); -> It returns true

-> posseInt():-

It accepts string as argument and converts into its equivalent number.

-> parsetlate: parseInt (102); -) It converts to 1002

It accepts string as argument and converts into it equivalent Hooding value.

Example: parsa float (12); -> 12.00

The lakes a string as an argument, it is used to spe evaluting the string.

```
Example! - Eval (2×8) -> Et return 6.
 Ly user defined functions:
        These functions are defined by user by wi
 predatived tryword "function".
     Each of these functions can have following
    - Junction name
   -> List of parameters
   -> List of statements
 > Return type
   Syntax:
          function function-name (porameters)
    Statements;
 Example: - I do place sailed and
     <hfm(>
     < head >
     <tile> Example to functions </tile>
     Lscript language='Javascript"> Halland =
        var a:
       a = parseInt (window. prompt L" ENEr a num'));
      downed - write In (" Square of given no is"
                                   + Square (al);
downer. write In ("cabe of given no is"
                                  + cube (a);
        Junction Square (K)
```

The state of the s

· 2 160

S = K * K;

function cube (K) and the first of a contract of this section is var c; C= K* K* K) The State of the second noturn c; 7 Ziscript > 1 min will blan of laster in the < I head> ZINTML>

* Objects in Java script :- 12 of bill if it

In todays would almost all programming languages uses object-oriented-concepts.

In the real wald object is nothing but an entity. which ean different from other entities.

In, Javascript object, newsons to construct holding data and functions.

Once The Java script gets encuted, a separate memby

space is reserved to each object, where its data and tunctions are stored.

The Javascript supports tollowing objects AUT WINGEL -: AT

1) Domment object:

The word downer refers to the page which will displays The browser windows.

It has Jollowing methods

⇒ Write/WriteIn ():-

It is used to display the text on the document. Example: downert write ("Hai")

<u>°(e)</u>- Haî

> folms():-

It is used to process the elements in tom.

Example: - downent towns (town-name):

(A) Select - work you.

> Links L): -

It is used to hold the number of links in whelpage.

Example: downerl. links();

⇒ close ():-

It is used to stop current process on the document.

Example: document. close();

→ window object:

One on more command buttons.

It supports tollowing methods

⇒ opency: - It is used to open a new window. It has
two organish, mose one -> URL

> Name of window.

Ex:- Window . open ("URL', "name");

⇒ Scroll ():- It is used to scroll the window easily.

It has two arguments, those are -> x - cooldinate.

y - cooldinate.

Ex:- windows scroll (100, 105)

⇒ prompt():- It is used to get the input from the user by displaying small window.

Ex: window. prompt ("Enter a value");

=> close U:- It is used to close the current window.

Ex: window. close U:

Math Object:

The math object have the different types of methods. Those are used to pertoim several mathematical calculations.

It has tellowing syntax, Math. method (numeric values);

The following are frequently used mathematical methods.

- => min():
 It displays the minimum of two numeric values.

 Ex:- downent. write (Math.min(10,5)); 110/p:-5
- It displays the maximum of two numbers

 Ex: downers. write (Math. max (10,5)); 11010: 10
 - => abs(x):
 It returns the absolute value of x

 Ex: document. write (Math. abs (-43)); 110/16:- 43
 - =) <u>(eil(n):-</u>

 The relains the nearest-integer not less than x.

 Ex: document. write (Math. ceil(s.8)); 110/1:6

 document. write (Math. (eil(s.0)); 110/1:6
 - => round(n):
 It returns the nearest inliger.

document. write (math. round (5.8)); 11010:6

=> floor():-

It returns the newsest integer not greater than n.

Ex: downert. write (Math floor (S.8)); 11019.5

=> Paw ():- It returns power of one value.

Ex; downent. will (Math. pow(2,3)); 11010: 8

> sqrt(): It returns The square root of given number.

Ex: downent. write (Math. sqrt(9)); 11010:-3

=> sin():- It returns trigonometric sine value.

Ex: downeut. write (Math. sin(90)); 11 0/0:-1

=> cos():- It relieves trigonometric cos value.

Ex: document, write (Math. cos (0)); 110/p: 1

> lan U:- It returns trigonometric tan value.

Ex: downed write (Math. lay (45)); 1/0/p:- 1

=> Logis: It returns log writimic equavikut value

Ext downent . write (Matt. log(2.71)); // 0/8: 1.0

In general terms string ruler to series of characters enclosed under double quots.

The Howing are frequently used string methods

This used to convert the given string into lower - case letters.

Ex:- var name = "MADHU";

document. writely (name. to Lower (ase ());

11 01p:- madhe

⇒ to Upper Case ():
It is used to convert the given string into upper - case letters.

Ex:- var name="madhu";

document. writely [name. to Upper (ase());

11 011:- MADHU

⇒ concate):-It simply combines or concatenates two strings.

Ex: var name = "Mr"

downent. write (name. concat ("Madher")); //og: Mr Madh

> char At():-It returns a character based on given index value. Ex:- var name = "Madhu"; name. charAt (3); 11 ole:- h > substr:-It is used to entract substring from given string.

It use two arguments, "index" and "length". var name = " Madhe";

name. substr(2,2); 11 %:- dh

=> Substring():- 10: 10) In all may get a series It is used to entract substring from given string. It use two orguments, "index" and "end". Ex: var name = "madhu"; name. substring (2,4); 1100: dhu

=> index Of():-It returns an index based on given character. (5' 8) -00 for 61 Ext var name = " madhu"; name. index of ('d'): 1101p: 2

=> last in dep of (12 It takes a character as an orgument and returns the numeric value, which is appearence at last time in string. Ex: var name = " Mr Madhu";

name: lastIndex of ('m'); 110/p:- 3.

=> length: - is it is not to not they is It returns a length to given string. EX:- var name: "Madhu"; name. length; 1190:5

Call provide was a winding one of the

1) Date Object:-

This object simply captures The date of the local system at that instant and returns the value.

usage: var current date = new Date ();

II has following methods

- ⇒ tostring ():- It- returns to string respective of date.
- => get Date(): It returns 1 to 31, day of month
- => get Day 1): It returns 0 to 6, sunday to saturday.
- => getMonth W: It returns 0 to 11, Jan to Dec.
- => get-Full Vearl):- It returns 4 digit- year no.
- => get-Harrs():- It- neturns 0 to 23.
- => get Minutes (): It relieves 0 to 59.
- => get seconds (): Il- returns 0 to 59.
- => set-Date (1--31)
- => Sel-Day (0.6)
- => Sol-Month (0. 11)
- => set Full year (Y, m,d)

Sels dali, day, month and

- => Sch-Hours (0.-23)
- =) Set Minutes (0.59)
 - => sel- Seconds (0..59)
 - => Sof Time (HH: MM: L)

Sets date, hours, minutes, seconds

- Array Object: - 18 11 10 415 ATTENT I AMON

Array is a collection of items or elements. In Javascript, Arrays are created using a special Keyword "new

Syntax: var Array name = new Array ();

Ex: Var numbers = new Array (10);

The Array object supports following methods

- => push():- It is used to insert data into an array.

 Once the data is pushed, array size gets increased.

 Ex: numbers.push(9);
- => Pop():- It is used to remove the elements from an eurray. Ex:- numbers. Pop(8);
- ⇒ <u>Sort()</u>:- It is used to arrange the elements in ascending order <u>Ex</u>: numbers.sort();
- => reverse():- Il reverses the elements in an array.

 Ex: numbers. reverse();
 - Example var Students = New Array ("Ravi", "Mohan", kiran);
 Students. push ("seetha"); Olp 'Ravi', "Mohan", "kuran", seethe.

 Students. pop ("Mohan"); Ole Ravi', kiran, seetha.

* Dynamic HTML WITH Javascript :-

- → DHTML is a combination of HTML, Javascript, CSS and DOM (Document object Model). It creates some interactive and animated mab sites.
- The viewing process.
- → DHTML code is difficult to be developed and debugged because it is a collection of various Technologies.

The dynamic HTML provides validation process.

→ Data validation:

validation is process of ensuring that some data might be correct data to a particular application.

is allowed to enter the data required by The Eganization

```
Example:-
```

```
< html>
   < head >
   <title> validations </title>
   ascript language = "Javascript" >
   function validate ()
   var uname, pud, coud, email;
    uname = document. Johns ("tomi"). uname value;
    bong = goomweng. Howr (, timi, ) is mg. rapie,
   chrod = gomment. fgwr (, fwn, ). chry. raper.
    email = document . Homs ("tomi"). email. value;
  it ( uname == " !! pwd == " !! cpwd == " !! email == " !
      alert (" plz enter all details")
  else it ( mame. length 28)
    alert ("user name must be atleast 8 characters");
                Viadeur believer bone stituering
  else it pood. length < 6)
   alert (" passwed must be alteast 6 character");
                   hariffile is ober 1817 1 6-
   else ut ( pod! = cpud)
    dert ( passwolds didn't match );
                               - Hotelshin due to
  else
                    Lower 21 mituhalist
< 12 cmpt>
```

```
< body>
         name="trm1">
   < your

   2+47
   dd > username: <1td>
   <input type="lext" name="oname"></input>
   21ty>
    2+8>
    <49> bornag: </4>
    < linput lype = 'passwad' name = 'pwd" > < linput>
     2/tr>
     4+4>
     < fd> contim passubd: < lfd>

    <a href="https://passwold" name = "Lpwd" > </a> </a> </a>

      <141> <141>
      < H>
       2td> E-mail: 21td> 1 million lange 7
 < <input !gpe="text" name="email"></input>
  ile. Litd> Lity> Livery ale about dell'impriment
        <4Y>
        ctd colspan=2 align="center"> > 0
         Zinput type = "button" onclick = 'validate()"
    marie = 10 most iname = "btn" value = "Submit" 1> < [td]
          // Les lames of
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September 1	: [hw73]	son how	was applifu	1N3 KBES
	L			0.5

* Event Handling in Java script: -

once The event is generated, there is often requirement of code to process these events, such code is known as event handler.

The Adaming are commonly used Event handlers

- > onLoad(1:- It invokes as soon as a given web document was loaded.
- -> on click (): It invokes as soon as Whenever any of The page elements are clicked.
- -> on change U: It invokes when ever data in any of The HTML control (textbox, textravea, etc) gets changed.
- > on Dbl click (): It moves whenever any of The page elements are clicked twice.
- -> on Mousemone U: It invokes as soon as a user passel The mouse pointer over any of the page elements.

- > on Submit 0:- It invokes as soon as the user press the submit button on the web page.
- -> on Unload (): It invokes as soon as a given web document is closed.
- -> on keyup U:- It invokes as soon as the user releases the key, I'm "miled" and legge
- -> on key Down ():- It- invoked as soon as the user pross The Key.
- -> on Blur 1):- It involves as soon as any text or data turns Hur. 2 ling is to a (" por part") by you in you wanter

```
Example: -
         <html> = ma 12 arg - where " lead" - and bugget =
         < head>
         <ti>Les Event handlings </tile>
        <body onLoad = 'alert ("Example +& Javascript events')'>
        </head>
         < h1 align = " center" > Javascript Events </h1>
          <br/>

            <dom name="frm1" onsubmit='alert ("submit")'>
             OnBlur Event:
             zinput type = "text" value = "click here"
on Blur = 'alert ("Not clear") > < linpuls
          Onclick Event: value = click here
                                                                             onclick = 'alert (" Elicked") ></input>
                                  ( .. UNDIN . LETINICO JE JE NIGO . CURLANIAN ... IN
         Onchange Event:
         <input type="lext-" value="click here"
                                                              onchange = 'alert ("changed')'></input>
                                                                                                     Law of the thought the sale is
```


>

```
on DH click Event:
Zinput type = "button" value = "click here"
           on Ablactick = 'alert ("Double clicked") > </inpl
 on mouse move Event:
Zinput type = "button" value = 'place here"
            on mouse move = 'alert ("nouse placed")'>
onkey up Event:
<input type= "text" value=" press any key'</pre>
             onkey up = 'alert (" Key up ") > < linput>
onkey Down Event:
<input- type="lext-" value = "press any key"</pre>
           onkey Down = 'abort (" Key Down") > < linput>
onsubmit Event:
<input type ='submit' value = "submit'></input>
< Horm>
```

< 1body>

< Intml>

To open a new window, we usually resort to cotain predefined Javascopt Junctions.

window. open ('URL', 'window, namu' -).

→ URL: Here we supply the address of the page.

→ Window-name: It specifies the window name.

And it supports different types of adjibutes, like

```
width = pinel
       height = pinel
      sorollbars = yes or No
To closing a wlindow synthe is
    Syntax: Window. closecs:
Examplis
   <html>
   e head>
   etitle> window operations < Hitle>
  <body>
   <imput lype="button" value = "New Window"
   <form>
          onclick = " window open ( login. Wmi, login)
                     Width=250, height=200)"> </mput>
          type = "button" value = "clase"
   ~input
```

onchick = "Window. closel) > < 1 inputs.

I Take I draw , by with

< Horms

< 1 body >

21 hdml>

```
Example programs,
* Write a gavascript to find given number is amosh,
  or not.
       <html>
       < nead>
       <title> Amstrong </title>
      <script language = "jova script" >
        vour n, lemp, sum=0, v;
        n = pakseInt (window: prompt("Enter n value"));
        temp=n;
         while (n>0)
         7 = parse Int (n./10);
         Sum = Sum + rxxx.
           n= parseInt (n/10).
                       " notice out log
        ut ( temp = = sum)
         downed write "Amstrong");
        else
          downent, write ("NOT");
      <1script>
     < Ihead>
     </html>
```

```
Write a Javascript 18 find given number is pallendram &
Not.
     <html>
     <hend>
     <title> pallendram </title>
     <script language = "Javascript">
      var n, temp, sum = 0, ";
     n = parce Int ( window. prompt (" Enter n value"));
     temp = n; law may little become
      while n>0)
      Y = parte Int (N'1. 10);
      Sum = Sum * loty
       n= parseInt (n/10);
      if ( Temp = = sum)
       downent. writin ("pallendram");
       else
         downers. writin(" NOT');
      elscript>
     < Ihead>
     < body>
      <1body>
      < Intml>
```

```
write a Javascript to find the prime numbers upto give
   numbers.
         chtml>
         < head >
         <title> prime numbers </title>
         «script language = "Java script" >
           var n, count, i, i;
           n= parseInt (window. prompt ("Enler a value")).
           document. Write (" prime numbers are");
           da(i=1; i<=n; i++)
             {
               count =0; ((all m) to fairing = 1
             AN(J=1; j <= (; j++) x mul = muz
                             full of billing on
                it (i/) == 0)
             count ++;
                        "I NINTEW . LNAWWOOD
              H ( court == 2)
               1
                document writin (i):
           <1script>
          < Ihead >
           <16+ml>
```