HTML -> Static Pages
DHTML -> Dynamic Pages (Runtime)

      Cascading Style Sheet (CSS)
      Scripting   -> Javascript, VBScript, JScript

Scripting Language

  Java Script -> Netscape

      Java Script is a Scripting Language that is used to validate the HTML forms and to perform runtime activities. In General, HTML are static pages, we cannot perform any dynamic activities. To do this, DHTML concepts introduced. DHTML contains two main components CSS(Cascading Style Sheet) Positioning and Scripting Language.

      Two types of scripting languages are used. namely Java Script and VB Script.

      JavaScript is used as Client Side Scripting and VB Script is used as Server Side Scripting. By using JavaScript we cannot perform Server side programming such as Database connectivity, Response transferring for the Client request etc.

Before introduced J & V Scripts

      CGI (Common Gateway Interface) Script
      PERL (Practical Extraction Reporting Language)
          - due to time delay, CGI omitted.

      Client Side Scripting -> Without Connecting database, the validations are made.

      Validation
      ----
      * Username not exceed 25 characters.
      * Password not exceed 10 characters.
      * Password and retype password must be same
      * if the Date of birth is entered, the age is calculated automatically.
      * Some simple validations
To include a Scripting content into a HTML Page

      <script language="script name">

          Script content
      </script>

```
<html>
<head> <title> ........... </title>
<script language="script name">
        content
</script>
</head>
<body>
<scirpt language="script name">
        content
</script>
</body>
```

To display a value through script, there are two methods available

        1. Through a Message Box
        2. On the Document.

   Through a Message Box

        alert("control string" + value)

   To display on the Document.

document.write("control string" + value)   - function that is available in JS language

        Eg:

        First.js
        ----
                a = 10;
        alert("The value of a = " + a);

        First.html

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

        Eg:

        <html>
```

```
<script>
a = 20;
document.write("<h1 align=center> The value of a = " + a + "</h1>");
</script>
</html>
```

To get input from the User

Variable is nothing but a dataname to store the given value in the memory.

- must begin with an alphabet
- there are no special characters allowed
- each variable must be unique

variable = prompt("control string","default value")

var a
a=prompt("Enter a Number","3")

Eg:

```
<script>
var a,b
a = parseInt(prompt("Enter the value of a","10"));
b = parseInt(prompt("Enter the value of b","20"));
c = a +b;
alert(c);
</script>
```

parseInt()   -> Convert to Integer
parseFloat() -> Convert to Float

a = confirm("Control String")

Eg:

```
<script>
a = confirm("Do You want to save record");
if (a)
        alert("Record Saved");
else
        alert("Record not saved");
</script>
```

```
        Eg:
        -----
<html>
<script language="javascript">
var q = "Which is capital of india?";
var ans="Delhi";
var resp=prompt(q,"Sample");
while (resp!=ans)        {
        if(confirm("Wrong.Want a second chance"))
                resp=prompt(q,"0");
}
document.write("Answer Correct");
</script>
</html>


        Eg:
        ----
<html>
<body>
<br>
This is a Normal HTML document
<br>
<script language="JavaScript">
document.write("This is JavaScript");
</script>
<br>
Back in HTML again
</body>
</html>


        Variables Declaration
        --------------------------
                var var_name

        Eg:
        ----
<script language="javascript">
var num;
num=89;
var name="Krishna";
var bool=true;
document.write(num);
```

```
document.write("<br>");
document.write(name);
document.write("<br>");
document.write(bool);
document.write("<br>");
document.write("Hello World");
</script>
</body>
</html>
```

Eg:

```
<html>
<head>
<title> Example </title>
</head>
<body>
<script language="JavaScript">
var temp1,temp2,temp3;
temp1 =parseFloat(prompt("Enter the value of temp1"));
temp2 =parseFloat(prompt("Enter the value of temp2"));
temp3 = temp1+ temp2;
alert(temp3);
document.write("The value of temp1 is : " + temp1);
document.write("<br>");
document.write("The value of temp2 is : " + temp2);
document.write("<br>");
document.write("The value of temp3 is : " + temp3);
document.write("<br>");
</script>
</body>
</html>
```

Operators

Arithmetic operators
Relational
Logical
Increment and Decrement
Bitwise Operators
Assignment Operator
Conditional

Arithmetic Assignment

Arithmetic Operators

+
-
*
/
%

Relational

>
<
>=
<=
==
!=

Logical

&&(and)
||(or)
!(not)

Increment and decrement

++   Prefix and Postfix
--   Prefix and Postfix

Bitwise

&   AND
| OR
~   Complement
^   X-OR
<<   Left Shift
>>   Right Shift

Conditional

?:
        Condition?True:False

```
Assignment
----------------
=

Arithmetic Assignment
-----------------------------
+=
-=
*=
/=
%=

Control Statements
-------------------------
        To Change the flow of control.

Two types
----------------
1. Conditional

Conditional
-----------------
        If Statements
        switch case
        for loop
        while loop
        do while loop


break
continue;

If Statements
------------------
        if (condition)
        {
                statements;
        }
        else if(condition)
        {
                statements;
        }
        else
        {
```

```
                statements;
        }

switch case
----------------
        switch(expression)
        {
        case 1:
                statements;
                break;
        case n:
                statements;
                break;
        default:
                statements;
        }

while loop
-------------
        while (condition)
        {
                statements;
                break (or) continue;
        }

do while loop
-------------------
        do
        {
                statements;
        }while (condition);

for loop
-----------
        for (initialization; condition; increment (or) decrement)
        {
                statements;
        }




Arrays
----------
        Collection of Similar datatypes.
```

Eg:

```
<script language="javascript">
var a = new Array();
a[0] = 1
a[1] = 2
a[2] = 3
document.write(a[0]);
document.write("<br>");
document.write(a[1]);
document.write("<br>");
document.write(a[2]);
</script>
```

Eg:

```
<script language="javascript">
document.write("<h1> Array Arranged Alphabetically! </h1> <br>");
array1 = new Array("Vigneshwari","Krithika","Meena","Nandhini","Ravi","Srikumar","Sridevi");
array2 = new Array("");
array2 = array1.sort();
for(i=0;i<7;i++)
   document.write(array2[i] + "<br>");
document.write("<h1> Joins the array values </h1><br>");
array3 = new Array();
array3= array1.join();
document.write(array3 + "<br>");
document.write("<h1> Reverse the Array </h1> <br>");
array4 = new Array();
array4 = array2.reverse();
for(i=0;i<7;i++)
        document.write(array4[i] + "<br>");
</script>
```

Eg:

```
<script language="javascript">
document.write("<h1> Array Arranged Alphabetically!</h1><br>");
array1 = new Array("Vigneshwari","Kirthika","Meena","Nandhini","Ravi","Srikumar","Sridevi");
array2 = new Array("");
array2 = array1.sort();

for(var i=0;i<7;i++)
  document.write(array2[i] + "<br>");
```

```
</script>

Eg:
----
<script language="javascript">
var a = new Array(10);
var n,i,j,temp;
n=parseInt(prompt("Enter the value of n " ,"5"));
for(i=1;i<=n;i++) {
        a[i]=parseInt(prompt("Enter the number"));
}

for(i=1;i<=n;i++) {
        for(j=i+1;j<=n;j++) {
                if(a[i] > a[j]) {
                        temp=a[i];
                        a[i] = a[j];
                        a[j] = temp;
                }
        }
}

document.write("The Sorted Values are " + "<br>");
for(i=1;i<=n;i++) {
        document.write(a[i] + "<br>");
}
</script>
```

Multi Dimensional Array

        Java and Java Script Does not support Multidimensional Array. However an Array of array is used.

```
a = new Array(2)
a[0] = new Array(2)
a[1] = new Array(2)
```
Eg:

```
<script language="javascript">
var a=new Array(2);
a[0] = new Array(2);
a[1] = new Array(2);
var i,j;
alert("Enter the matrix values");
```

```javascript
for(i=0;i<2;i++) {
        for(j=0;j<2;j++) {
                a[i][j] = parseInt(prompt("Enter the value"));
        }
}

document.write("The given matrix is" + "<br>");
document.write("<pre>");
for(i=0;i<2;i++) {
        for(j=0;j<2;j++) {
                document.write(a[i][j] + "\t");
        }
        document.write("<br>");
}
document.write("</pre>");
</script>
```

functions
----
        subprograms.
syntax:
----
function func_name(arguments)
{
        statements;
}

Eg:

```javascript
<script language="javascript">
function name (n)
{
        document.writeln(n)
        document.writeln(n.length)


}

var nn = "CSC";
name(nn)
</script>
```

Eg:

```javascript
<script language="javascript">
function cube(n)
{
        return n*n*n;
}

var x = prompt("Enter the value of x to find the cube value","3")
var y;
y = cube(x);
document.write(y);
</script>
```

Eg:

```javascript
<script language="javascript">
function cube(n) {
        return n*n*n;
}

var x=3;
var y
y=cube(x);
document.write(y);
</script>
```


Eg: this-> Refers current Object

```javascript
<script language="javascript">
function disp()
{
        document.write("The Name is : " + this.name + "<br>");
        document.write("The age is : " + this.age + "<br>");
}

function get(name,age) {
        this.name = prompt("Enter the Student Name ");
        this.age= prompt("Enter the Student Age");
        this.disp=disp;

}

s1 = new get();
s1.disp();
```

```
</script>

Eg:
----
<script language="javascript">
function grade(math,eng,sci) {
        this.math=math;
        this.eng=eng;
        this.sci=sci;
}

function dispmarks() {
        document.write("Name is : " + this.name + "<br>");
        document.write("Age is : " + this.age + "<br>");
        document.write("Maths grade is : " + this.grade.math + "<br>");
        document.write("English grade is : " + this.grade.eng + "<br>");
        document.write("Science grade is : " +this.grade.sci + "<br>");
}

function stud(name,age,grade) {
        this.name=name;
        this.age=age;
        this.grade=grade;
        this.dispmarks=dispmarks;
}

grade1 = new grade(70,80,90);
stud1 = new stud("Hema",24,grade1);
stud1.dispmarks();
</script>

Eg:
----
<script language="javascript">
document.write("<pre>");
document.write("Eval(\"6 + 2 \") Returns : " + eval("6+2") + "\n");
document.write("isFinite(80/0) returns : " + isFinite(80/0) + "\n");
document.write("isNaN(9) returns : " + isNaN(9) + "\n");
D = new Date(4300234234100);
x = String(D);
document.write(x + "\n");
var a = 's'
document.write("escape(a) returns : " + escape(a) + "\n");
document.write("unescape(a) returns : " + unescape(a) + "\n");
```

```
document.write("</pre>");
</script>

Eg:
----
<Script lanaguage="JavaScript">
document.write("<h1>   Experiment with Date  </h1> <br>");
curdate = new Date() ;
c1 = new Date() ;
with (curdate)
{
        document.write("getMonth()  = " + getMonth() + "<br>");
        document.write("getDate() = " + getDate() +"<br>" );
        document.write("getYear() = " + getYear() + "<br>");

}
</script>
```

Event Handling

        Mouse Events
        Keyboard Events
        General Events

Mouse Events

        Click   -   onClick()
        Double click- onDblClick()
        Down   -   onMouseDown()
        Up   -   onMouseUp()
        Move   -   onMouseMove()
        Over   -   onMouseOver()
        Out   -   onMouseOut()

KeyEvents

        Press -   onKeyPress()
        Down -   onKeyDown()
        Up   -   onKeyUp()

General Events

        Focus -   onFocus()   (Got Focus)
        Blur   -   onBlur()   (lost Focus)

Change   -   onChange()

Eg:
----
        password   -> password not exceed 8 characters
        retype password -> Password and retype password must be similar.

```
<html>
<head>
<script>
function checkpwd()
{
        var pw,le
        pw = document.f1.pword.value;
        le = pw.length;
        if (le>8)
        {
                alert("Password not exceed 8 characters");
                document.f1.pword.value="";
        }
}

function checkrpw()
{
        var pw,rpw
        pw = document.f1.pword.value;
        rpw = document.f1.rpword.value;
        if (pw != rpw)
        {
                alert("Retype password unequal");
                document.f1.rpword.value="";
//        document.f1.rpword.focus;
        }
}

</script>

</head>
<body bgcolor="lightyellow">
<table align=center>
<form name="f1">
<tr>
<td> Username <td> <input type=text name="uname">
```

```
<tr>
<td> Password <td> <input type=password name="pword" onBlur="checkpwd()">
<tr>
<td> Retype Password <td> <input type=password name="rpword" onBlur="checkrpw()">
<tr>
<td> <td> <input type=submit value="Submit"> <input type=reset value="Reset">
</form>
</table>
</body>
</html>
```

Eg:

Email ID: senthil_2k2@rediff.com   str.substring(start,no of char);

Window Object

        Dynamic Window Creation.

window.open()
window.history
window.setTimeOut
window.setInterval

window.open("url","title","statusbar=0|1;toolbar=0|1");

Eg:

```
<html>
<head>
<title>Window Creation </title>
<script>
function openWin()
{

        win = window.open()
}
function closeWin()
{
        win.close();
}
</script>
```

```
</head>
<body bgcolor=#abcdef>
<center>
<form name="f1">
<input type=button value="Open" onClick="openWin()">
<input type=button value="Close" onClick="closeWin()">
</form>
</center>
</body>
</html>

        Eg:
        ----
        <html>
<head>
<title> Window Creation </title>
<script>
function openWin()
{
        win = window.open("window1.html","Hello","statusbar=0;toolbar=0,scrollbar=1")
}
function closeWin()
{
        win.close();
}
</script>
</head>
<body bgcolor=#abcdef>
<center>
<form name="f1">
<input type=button value="Open" onClick="openWin()">
<input type=button value="Close" onClick="closeWin()">
</form>
</center>
</body>
</html>

        Eg:
        -----
<html>
<head>
<title> Dynamic Window Creation </title>
<script>
function openHelp()
```

```
{
        win = window.open();
        win.document.write("<html>");
        win.document.write("<body bgcolor=lightyellow>");
        win.document.write("<h1 align=center> Sample Help Page </h1>");
        win.document.write("</body></html>");
}
function closeWin()
{
        win.close();
}
</script>
</head>
<body bgcolor=#abcdef>
<center>
<form name="f1">
<input type=button value="Help" onClick="openHelp()">
<input type=button value="Close" onClick="closeWin()">
</form>
</center>
</body>
</html>


        window.history
        ---------------------
        window.history.go(-1)          (Previous Page)
        window.history.go(1)           (Next Page)

        Eg:
        ----
        <html>
<head>
<title> History Object </title>
</head>
<body bgcolor="lightyellow">
<h1 aign=center> History Object </h1>
<a href="Next.html"> Next </a>
</body>
</html>


        Eg:
        ----
        <html>
<head>
```

```
<title> History Object </title>
<script>
function back()
{
        alert("Back called");
        window.history.go(-1);
}
</script>
</head>
<body bgcolor=#abcdef>
<h2 align=center> Next Page </h2>
<a href="javascript:back()"> Back </a>
</body>
</html>


        window.setInterval(functionname(),milliseconds,"javascript");
        window.setTimeOut(functionname(),milliseconds,"javascript");

        Eg:
        -----
<html>
<head>
<script>
var flag
i=0
function start1()
{
        flag = 1;
        window.setTimeout(changecol,1000,"javascript");
}

function changecol()
{
        col = new Array("red","green","blue","yellow","cyan","black");
        if (flag == 1)
        {
                document.bgColor = col[i];
                i=i+1
                if (i>6)
                        i=0
        }
}

function stop1()
```

```
{
        flag = 0;
}
</script>

</head>
<body>
<center>
<form name="f1">
<input type=button value="Start" onClick="start1()">
<input type=button value="Stop" onClick="stop1()">
</form>
</center>
</body>
</html>
```