Client-Side JavaScript :

Client-side JavaScript is the most common form of the language. The script should be included in or referenced by an HTML document for the code to be interpreted by the browser.

It means that a web page need not be a static HTML, but can include programs that interact with the user, control the browser, and dynamically create HTML content.

The JavaScript client-side mechanism provides many advantages over traditional CGI server-side scripts. For example, you might use JavaScript to check if the user has entered a valid e-mail address in a form field.

The JavaScript code is executed when the user submits the form, and only if all the entries are valid, they would be submitted to the Web Server.

JavaScript can be used to trap user-initiated events such as button clicks, link navigation, and other actions that the user initiates explicitly or implicitly.

JavaScript can be implemented using JavaScript statements that are placed within the **<script>... </script>** HTML tags in a web page.

You can place the **<script>** tags, containing your JavaScript, anywhere within you web page, but it is normally recommended that you should keep it within the **<head>** tags.

The <script> tag alerts the browser program to start interpreting all the text between these tags as a script. A simple syntax of your JavaScript will appear as follows.

```
<script ...>

   JavaScript code

</script>
```

The script tag takes two important attributes —

- **Language** — This attribute specifies what scripting language you are using. Typically, its value will be javascript. Although recent versions of HTML (and XHTML, its successor) have phased out the use of this attribute.

- **Type** — This attribute is what is now recommended to indicate the scripting language in use and its value should be set to "text/javascript".

So your JavaScript segment will look like —

```
<script language="javascript" type="text/javascript">

   JavaScript code

</script>
```

Your First JavaScript Script

Let us take a sample example to print out "Hello World". We added an optional HTML comment that surrounds our JavaScript code. This is to save our code from a browser that does not support JavaScript. The comment ends with a "//-->". Here "//" signifies a comment in JavaScript, so we add that to prevent a browser from reading the end of the HTML comment as a piece of JavaScript code. Next, we call a function **document.write** which writes a string into our HTML document.

This function can be used to write text, HTML, or both. Take a look at the following code.

```html
<html>

   <body>

      <script language="javascript" type="text/javascript">

         <!--

            document.write("Hello World!")

         //-->

      </script>

   </body>

</html>
```

This code will produce the following result −

```
Hello World!
```

(1)Variable example in javascript:

```html
<html>

        <head>


        <script>

        var x = 10;

        var y = 20;
```

```html
        var z=x+y;

        document.write(z);

        </script>

</head>

<body>

</body>

</html>
```

(2)Global variable example:

```html
<html>

        <head>

        <script>

        var data=200;//gloabal variable

        function a(){

        document.writeln(data);

        }

        function b(){

        document.writeln(data);

        }

        a();//calling JavaScript function

        b();

        </script>

        </head>
```

```
<body>

</body>

</html>
```

(3)simple array example:

```
<script>

        var emp=["Sonoo","Vimal","Ratan"];

document.write(emp[0]+"<br>");

document.write(emp[1]+"<br>");

document.write(emp[2]);

</script>
```

(4)New keyword using array example:

```
<script>
        var  i;
        var emp = new Array();
        emp[0] = "Arun";
        emp[1] = "Varun";
        emp[2] = "John";
```

```
document.write(emp[0]+"<br>");

document.write(emp[1]+"<br>");

document.write(emp[2]+"<br>");
```

</script>

(5)array constructor :

<script>
```
var  emp=new Array("Jai","Vijay","Smith");


document.write(emp[0] + "<br>");

document.write(emp[1] + "<br>");

document.write(emp[2] + "<br>");


</script>
```

(6)function example:

<script>
```
function msg(){

alert("hello! this is message");

}

</script>
```

```
<input type="button" onclick="msg()" value="call function"/>
```

(7)argument function:

```
<script>
        function getcube(number){
        alert(number*number*number);
        }
        </script>
        <form>
        <input type="button" value="click" onclick="getcube(4)"/>
        </form>
```

(8)return function:

```
<script>
        function getInfo(){
        return "hello javatpoint! How r u?";
        }
        </script>
        <script>
        document.write(getInfo());
        </script>
```

(9)alert example:

<!DOCTYPE html>

<html>

<body>

<p>Click the button to display an alert box:</p>

<button onclick="myFunction()">Try it</button>

<script>
function myFunction() {
    alert("I am an alert box!");
}
</script>

</body>

</html>

(10)confirm example:

<!DOCTYPE html>

<html>

<body>

```html
<p>Click the button to display a confirm box.</p>

<button onclick="myFunction()">Try it</button>

<p id="demo"></p>

<script>
function myFunction() {
    var x;
    if (confirm("Press a button!") == true) {
        x = "You pressed OK!";
    } else {
        x = "You pressed Cancel!";
    }
    document.getElementById("demo").innerHTML = x;
}
</script>

</body>
</html>
```

(11)Prompt example:

```
<!DOCTYPE html>

<html>

<body>


<p>Click the button to demonstrate the prompt box.</p>


<button onclick="myFunction()">Try it</button>


<p id="demo"></p>


<script>
function myFunction() {

   var person = prompt("Please enter your name", "Harry Potter");


   if (person != null) {

      document.getElementById("demo").innerHTML =

      "Hello " + person + "! How are you today?";

   }
}
</script>


</body>

</html>
```

(12)if example:

```html
<html>
  <body>

    <script type="text/javascript">

        var age = 20;

        if( age > 18 ){
          document.write("<b>Qualifies for driving</b>");
        }

    </script>

  </body>
</html>
```

(13)if else example:

```html
<html>
  <body>
```

```html
<script type="text/javascript">

    var age = 20;

    if( age > 18 ){

        document.write("<b>Qualifies for driving</b>");

    }

    else{

        document.write("<b>Does not qualify for driving</b>");

    }

</script>
</body>
</html>
```

(14)else if example :

```html
<html>
  <body>
  <script type="text/javascript">

    var book ="history";
    if( book == "history" ){
```

```
        document.write("<b>History Book</b>");

      }


      else if( book == "maths" ){

        document.write("<b>Maths Book</b>");

      }


      else if( book == "economics" ){

        document.write("<b>Economics Book</b>");

      }


      Else

      {

        document.write("<b>Unknown Book</b>");

      }


   </script>

 </body>

<html>
```

(15)switch example :

```html
<html>
  <body>

    <script type="text/javascript">

        var grade='B';
        document.write("Entering switch block<br />");
        switch (grade)
        {
          case 'A': document.write("Good job<br />");
          break;


          case 'B': document.write("Pretty good<br />");
          break;


          case 'C': document.write("Passed<br />");
          break;


          case 'D': document.write("Not so good<br />");
          break;


          case 'F': document.write("Failed<br />");
          break;
```

```
          default:  document.write("Unknown grade<br />");

                         break;

     }


</script>

 </body>

</html>
```

(16)for loop example:

```
<html>

  <body>


    <script type="text/javascript">


      var count;

      document.write("Starting Loop" + "<br />");


      for(count = 0; count < 10; count++){

        document.write("Current Count : " + count );

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

      }
```

```
        document.write("Loop stopped!");


    </script>


    <p>Set the variable to different value and then try...</p>
  </body>
</html>
```

(17)while loop example:

```
<html>
  <body>
    <script type="text/javascript">


        var count = 0;

        document.write("Starting Loop ");


        while (count < 10){

            document.write("Current Count : " + count + "<br />");

            count++;

         }
        document.write("Loop stopped!");

        </script>

      </body>
```

```
</html>
```

(18)do while :

```
<html>
  <body>
  <script type="text/javascript">


        var count = 0;


        document.write("Starting Loop" + "<br />");
        do{
          document.write("Current Count : " + count + "<br />");
          count++;
        }


        while (count < 5);
        document.write ("Loop stopped!");
    </script>
  </body>
</html>
```

(19)Simple Object   Example   :

```
<script>
        emp={id:102,name:"Shyam Kumar",salary:40000}
        document.write(emp.id+" "+emp.name+" "+emp.salary);
        </script>
```

(20)object using new keyword:

```
<script>
var emp=new Object();
emp.id=101;
emp.name="Ravi Malik";
emp.salary=50000;
document.write(emp.id+" "+emp.name+" "+emp.salary);
</script>
```

(21)Object Constructor example:

```
        <script>
        function emp(id,name,salary){
        this.id=id;
        this.name=name;
```

```
        this.salary=salary;

        }

        e=new emp(103,"Vimal Jaiswal",30000);

        document.write(e.id+" "+e.name+" "+e.salary);

        </script>
```

(22)addition of two number using form using JavaScript :

```
n1<input type = "number" id = "n1" value=15 />

n2<input type = "number" id = "n2" value=20 />


<p>Sum?</p>


<button onclick="sum()">Try it</button>

<p id="demo2">Result?? </p>


<script type="text/javascript">

 function sum()

{

   var fn, ln;

   fn = parseInt(document.getElementById("n1").value);

   ln = parseInt(document.getElementById("n2").value);
```

```
    result =  (fn+ln);

    document.getElementById("demo2").innerHTML = result;

}

</script>
```

Another example for addition using name of field using parseInt() function :

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"

"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />

<title>Untitled Document</title>

<script language="Javascript">

function showResult()

{

a = document.Order.Mortgage.value;

b = document.Order.Debt.value;

c = document.Order.Income.value;

d = document.Order.Years.value;

Total = document.Order.Total.value = parseInt(a) + parseInt(b) +

parseInt(c)+parseInt(d);
```

```html
}
</script>
</head>
<body>
<pre>
<form name="Order" action="" method="POST" enctype="text/plain"><br>
<font color=000099 size="4">Mortgage</font>   <input type=text
name="Mortgage"   size="20"><br>
<font color=000099 size="4">Debt</font>   <input type=text
name="Debt"   size="20"><br>
<font color=000099 size="4">Income</font>    <input type=text name="Income"
size="20"><br>
<font color=000099 size="4">Years</font>     <input type=text
name="Years"   size="20"><br>
<font color=000099 size="4">Total</font>      <big>$</big><INPUT maxLength="8"
size="7" name="Total"><br>
<INPUT name="Submit"  type="button" class="style2" onclick="javascript:showResult();"
value="Submit">
</form>
</pre>
</body>
</html>
```

Same example for addition using name of field using parseFloat() function :

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"

"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />

<title>Untitled Document</title>

<script language="Javascript">

function showResult()

{

a = document.Order.Mortgage.value;

b = document.Order.Debt.value;

c = document.Order.Income.value;

d = document.Order.Years.value;

Total = document.Order.Total.value = parseFloat(a) + parseFloat(b) +

parseFloat(c)+parseFloat(d);

}

</script>

</head>

<body>

<pre>
```

```
<form name="Order" action="" method="POST" enctype="text/plain"><br>

<font color=000099 size="4">Mortgage</font> <input type=text

name="Mortgage"   size="20"><br>

<font color=000099 size="4">Debt</font><input type=text

name="Debt"   size="20"><br>

<font color=000099 size="4">Income</font> <input type=text name="Income"

size="20"><br>

<font color=000099 size="4">Years</font><input type=text

name="Years"   size="20"><br>

<font color=000099 size="4">Total</font><big>$</big><INPUT maxLength="8" size="7"

name="Total"><br>

<INPUT name="Submit"  type="button" class="style2" onclick="javascript:showResult();"

value="Submit">

</form>

</pre>

</body>

</html>
```

-----

another exmaple for simple calculator using else-if:

<form name=myform>

n1<input type = "number" name= "n1" value=15 />

n2<input type = "number" name= "n2" value=20 />

```html
<select  name=cal>

<option value=1>Add</option>

<option value=2>sub</option>

<option value=3>Division</option>

<option value=4>Multiplication</option>

</select>
```

```html
<button onclick="sum()">Try it</button>

</form>
```

```html
<script type="text/javascript">
```

```javascript
function sum()

{


var  n1=parseInt(document.myform.n1.value);

var  n2=parseInt(document.myform.n2.value);
```

```
if(document.myform.cal.value=="1")

{


alert(parseInt(n1+n2));


}



else if(document.myform.cal.value=="2")


{


 alert(parseInt(n1-n2));



}


else if(document.myform.cal.value=="3")


{


 alert(parseInt(n1/n2));
```

```
}

else if(document.myform.cal.value=="4")

{

 alert(parseInt(n1*n2));

}

else

{

alert('no cal');

}

 }

</script>
```

-----

another exmaple for simple calculator using switch :

===

======

<form name=myform>

n1<input type = "number" name= "n1" value=15 />

n2<input type = "number" name= "n2" value=20 />

<select name=cal>

<option value=1>Add</option>

<option value=2>sub</option>

<option value=3>Division</option>

<option value=4>Multiplication</option>

</select>

<button onclick="sum()">Try it</button>

</form>

```html
<script type="text/javascript">


function sum()

{


var  n1=parseInt(document.myform.n1.value);

var  n2=parseInt(document.myform.n2.value);

   var cal=parseInt(document.myform.cal.value);

   switch(cal)

   {


   case  1:


alert(parseInt(n1+n2));

break;

case 2:


alert(parseInt(n1-n2));


break;




case 3:
```

```
    alert(parseInt(n1/n2));

break;



case 4:


    alert(parseInt(n1*n2));


break;


default:




alert('no cal');


break;


    }


    }
```

</script>

==

======

From validation code in javascript :

<html>

<head>

<title>

Simple Client Side Validation

</title>

<script type="text/javascript">

function valid()

{

```
if(myform.name.value=="")

{

alert("enter your name");

return false;

document.myform.name.focus();

}


if(myform.contact.value=="")

{

alert("enter your contact");

return false;

document.myform.contact.focus();

}

if(isNaN(myform.contact.value))

{

alert("enter numeric value in contact");

return false;

document.myform.contact.focus();
```

```javascript
}

if(myform.city.value=="")
{

alert("enter your city");

return false;

document.myform.city.focus();

}

if(myform.email.value=="")
{

alert("enter your email");

document.myform.email.focus();

return false;

}
```

```javascript
if(myform.address.value=="")

{

alert("enter your address");

document.myform.address.focus();

return false;

}

var mailformat = /^\w+([\.-]?\w+)*@\w+([\.-]?\w+)*(\.\w{2,3})+$/;

if(!myform.email.value.match(mailformat))

{
alert("You have entered an invalid email address!");

document.myform.email.focus();

return false;

}
```

```
return true;

}


</script>


</head>

<body>

<form name="myform"  action="submit.php" method="post"  onsubmit="return(valid());"

>

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

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

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

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

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

<input   type=submit    name=submit>

</form>

</body>

</html>
```

===

===

======

JAVASCRIPT EVENT HANDLING

==

==

======

Event	Description
onchange	An HTML element has been changed
onclick	The user clicks an HTML element
onmouseover	The user moves the mouse over an HTML element
onmouseout	The user moves the mouse away from an HTML element
onkeydown	The user pushes a keyboard key
onload	The browser has finished loading the page

JavaScript   Event:

(1)Example 1 onclick event save onclick.html:

<!DOCTYPE html>

<html>

<body>

<p>Click the button to display the date.</p>

<button onclick="displayDate()">The time is?</button>

<script>

```
function displayDate() {

    document.getElementById("demo").innerHTML = Date();

}
```

```
</script>
```

```
<p id="demo"></p>
```

```
</body>
```

```
</html>
```

(2)Example 2 on onload Event save file onload.html:

```
<!DOCTYPE html>
```

```
<html>
```

```
<body  onload="displayDate()">
```

```
<p>Click the button to display the date.</p>
```

```
<script>
```

```
function displayDate() {
```

```
    document.getElementById("demo").innerHTML = Date();

}
```

</script>

<p id="demo"></p>

</body>

</html>

(3)Example 3 onmouseover save file as onmouseover.html:

<!DOCTYPE html>

<html>

<body>

<p>Click the button to display the date.</p>

<button onmouseover="displayDate()">The time is?</button>

```
<script>

function displayDate() {

    document.getElementById("demo").innerHTML = Date();

}

</script>


<p id="demo"></p>


</body>

</html>
```

(4)Example 4 on onchange event SAVE file onchange.html:

```
<!DOCTYPE html>

<html>

<body>


<p>Click the button to display the date.</p>

<select name=city  onchange="displayDate()">

<option value=mumbai> Mumbai</option>
```

```
<option value=delhi>Delhi</option>

</select>



<script>

function displayDate() {

    document.getElementById("demo").innerHTML = Date();

}

</script>



<p id="demo"></p>



</body>

</html>
```

(5)Example 5   onkeydown   event save file as onkeydown.html:

```
<!DOCTYPE html>

<html>
```

```
<body>

<p>Click the button to display the date.</p>

<input type=text name=name  onkeydown="displayDate()">




<script>

function displayDate() {

    document.getElementById("demo").innerHTML = Date();

}

</script>


<p id="demo"></p>


</body>

</html>
```