Javascript :

- its a programming for web applications
- its a easy programming
- JavaScript and Java are completely different languages, both in concept and design.
- JavaScript was invented by Brendan Eich in 1995, and became an ECMA standard in 1997.
- ECMA-262 is the official name of the standard. ECMAScript is the official name of the language.

variables ,operators , loops ,conditions,
functions ,properties ,datatypes ,validations, events ,DOM Manipulations , browser ,maps , currentlocation

Using Javascript in HTML Page :

1. internal
2. external

1. internal :

```
<script>
JS Code
</script>
```

Body : document will load first -> script file loads second
Head: script file loads first -> document loads second

2. external :

Create a Javascript file by fallowing

Sublimetext -> File -> new -> Script.js

```
<script src="pathOfTheFile">
</script>

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

Body : document will load first -> script file loads second
Head: script file loads first -> document loads second

JS debug :

Firefox : tools-> web developer->web console -> Javascript
Chrome : View -> developer -> Javascript Console
right click on browser -> inspect element

script2.js. function call
script3.js function call
script1.JS. (lib)

script1.JS. (lib)
script2.js. function call
script3.js function call

document.write : it is a function to print output on browser
console.log : it is a function to print output on browser web console

First Program:

```
document.write("Hello Javascript");
document.write("<br/>");
document.write("<h1>Message from javascript</h1>");
console.log("first javascript example");
console.log("I am In WebDevelopment");
```

Variables:

Variable is a container or a storage area which can contain some data .

```
var a = 10; //integer type (or) numeric

var b = 67.7876; //floating-point

var c = "Hyderabad"; //string

var d = 'Hyderabad'; //string

var e = true; //boolean

var f = false; //boolean

var g; //undefined
```

```
        var h = null; //null (empty)

        var devices=["iPhone","iPad","iPod"];  // array

        var empDetails={ "name":"srinivas", "qual":"MCA", "salary":
80000};  //Object

        document.write(a); //10
        document.write("<br/>");

        document.write(b); //67.7876
        document.write("<br/>");

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

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

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

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

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

        document.write(h); //null

        console.log(devices[0]);
        console.log(devices[1]);
        console.log(devices[2]);


        for (i=0;i<devices.length; i++)
        {

              document.write("<br/>")
              document.write(devices[i]);
        }
        // Coming From Object
        console.log(details.name);
```

```
console.log(details.qual);
console.log(details.salary);
```

What is an operator ?

Operator is a symbol which operates two are more operands

// Arithematic Operators

```
   var a=10; var b=20;
var sum=a+b;
   document.write("Addition value is ::" + sum);
   document.write("</br>");

var sub=b-a;
   document.write("Subtraction value is ::" + sub);
   document.write("</br>");

var mul=a*b;
   document.write("Multiplication value is ::" + mul);
   document.write("</br>");

 var div=b/a;
   document.write("Division value is ::" + div);
   document.write("</br>");

    var mdiv=b%a;
   document.write("ModuloDivision value is ::" + mdiv);
   document.write("</br>");
```

Assignment Operator::

```
    var a;
        a = 100; //assignment operator
        document.write(a); //100
        document.write("<br>");

        var b;
        b = a; //assignment operator
        document.write(b); //100
        document.write("<br>");

        a += 10; // a=a+10
```

```
document.write(a); //110
document.write("<br>");

a -= 10; // a=a-10
document.write(a); //100
document.write("<br>");

a *= 10; // a=a*10
document.write(a); //1000
document.write("<br>");

a /= 10; //a=a/10
document.write(a); //100
document.write("<br>");

a %= 30; // a=a%30
document.write(a); //10
```

Increment/Decrement Operator :

```
var a  = 10;
document.write(a); //10
document.write("<br>");

a++; //increment operator
document.write(a); //11
document.write("<br>");

a--; //decrement operator
document.write(a); //10
```

Relational Operator ::

```
var x = 100;
var y = 200;

var temp1, temp2, temp3, temp4, temp5, temp6;

temp1 = (x == y);
document.write(temp1); //false
```

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

temp2 = (x != y);
document.write(temp2); //true
document.write("<br>");

temp3 = (x < y);
document.write(temp3); //true
document.write("<br>");

temp4 = (x <= y);
document.write(temp4); //true
document.write("<br>");

temp5 = (x > y);
document.write(temp5); //false
document.write("<br>");

temp6 = (x >= y);
document.write(temp6); //false
```

logical operators

```
var x = 100;
  var y = 200;
  var z = 50;

  var temp1 = ( (x<y) && (x>z) ); // logical and
  document.write(temp1); //true
  document.write("<br>");

  var temp2 = ( (x<y) || (x<z) ); //logical or
  document.write(temp2); //true
  document.write("<br>");

  var temp3 = ( !(x<y) );
  document.write(temp3); //false
```

Concatenation Operator :

```
var s4=10;
    var s5=20;
    var s6=s4+s5;
    document.write(s6); //30
```

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

        var s1 = "peers";
        var s2 = "tech";
        var s3;
        s3 = s1 + "-" + s2; //string + string + string

        document.write(s3); //peers_tech
    document.write("</br>");
        var p1 = "peers";
        var p2 = 123;
        var p3;
        p3 = p1 + p2; // peers123
        document.write(p3);
```

Conditional Statements

Very often when you write code, you want to perform different actions for different decisions.

You can use conditional statements in your code to do this.

In JavaScript we have the following conditional statements:

- Use **if** to specify a block of code to be executed, if a specified condition is true
- Use **if-else** to specify a block of code to be executed, if the same condition is false
- Use **else if** to specify a new condition to test, if the first condition is false
- Use **switch** to specify many alternative blocks of code to be executed

The if Statement

Use the **if** statement to specify a block of JavaScript code to be executed if a condition is true.

Syntax

```
if (condition) {
  block of code to be executed if the condition is true
}
```

```
//if
    var a=10;
    var b=10;
  if (a==b)
{
    document.write ("both are equal");
}
```

The else Statement

Use the **else** statement to specify a block of code to be executed if the condition is false.

```
if (condition) {
    block of code to be executed if the condition is true
} else {
    block of code to be executed if the condition is false
}
```

```
// if-else
        var n = 10;
        if (n % 2 == 0)
        {
            document.write("<h3>n is even number</h3>");
        }
        else
        {
            document.write("<h3>n is odd number</h3>");
        }
```

```
var a=10;
var b=20;
if (a==b)
{
    document.write ("both are equal");
}
else
{
 document.write ("both are not equal");
}
```

The else if Statement

Use the **else if** statement to specify a new condition if the first condition is false.

Syntax

```
if (condition1) {
    block of code to be executed if condition1 is true
} else if (condition2) {
    block of code to be executed if the condition1 is false and condition2 is
true
} else {
    block of code to be executed if the condition1 is false and condition2 is
false
}
```

```
  // else if
       var speed=100;
          if (speed<20)
                {
          document.write("slow");
    }
          else if (speed<50)
                {document.write("avarage");}
       else if (speed<70)
          {document.write("medium");
         }
       else{
          document.write("High");
       }
```

The JavaScript Switch Statement

switch statement is used to perform different actions based on different conditions.

Use the switch statement to select one of many blocks of code to be executed.

Syntax

```
switch(expression) {
    case n:
        code block
        break;
    case n:
        code block
```

```
    break;
  default:
    code block
}
```

```
     var n = 7;

    var monthname;
    switch (n)
    {
        case 1: monthname = "Jan"; break;
        case 2: monthname = "Feb"; break;
        case 3: monthname = "Mar"; break;
        case 4: monthname = "Apr"; break;
        case 5: monthname = "May"; break;
        case 6: monthname = "Jun"; break;
        case 7: monthname = "Jul"; break;
        case 8: monthname = "Aug"; break;
        case 9: monthname = "Sep"; break;
        case 10: monthname = "Oct"; break;
        case 11: monthname = "Nov"; break;
        case 12: monthname = "Dec"; break;
        default: monthname = "Unknown"; break;
    }

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

var speed=30;

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

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

     switch(speed)
    {
     case 10:
     {
        document.write("Speed :: slow");
     }break;

     case 20:
     {
```

```
            document.write("Speed :: avarage");
        }break;

        case 30:
        {
            document.write(" speed :: good");
        }break;

        default:
        {
            document.write("Speed :: Not Moving");
        }
        break;
}
```

JavaScript Loops

Loops are handy, if you want to run the same code over and over again, each time with a different value.

Different Kinds of Loops

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
- **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

The While Loop

The while loop loops through a block of code as long as a specified condition is true.

Syntax

```
while (condition) {
   code block to be executed
}
   Ex :
    var i = 0; // init
         while (i <= 10)  // condition
```

```
        {
            document.write(i);
            document.write("</br>");
            i++; // inc/ dec
        }
```

The Do/While Loop

The do/while loop is a variant of the while loop. This loop will execute the code block once, before checking if the condition is true, then it will repeat the loop as long as the condition is true.

Syntax

```
do {
   code block to be executed
}
while (condition);
Ex :
var i = 0;
        do
        {
            document.write(i);
            document.write("<br>");
            i++;
        }while(i <= 10);
```

The For Loop

The for loop is often the tool you will use when you want to create a loop.

The for loop has the following syntax:

```
for (statement 1; statement 2; statement 3) {
   code block to be executed
}
Ex -1
   for (var i=0; i<=10; i++)
        {
            document.write(i);
            document.write("<br>");
        }
```

Ex-2

```
var i;
 document.write("<h3>loop starts</h3>");
 for (i=1; i <= 100; i++)
 {
      if (i % 2 == 0)
      {
           document.write("<span style='color:green;'>");
           document.write(i);
           document.write(" </span>");
           document.write(" </br>");

      }
      else
      {
           document.write("<span style='color:red;'>");
           document.write(i);
           document.write(" </span>");
           document.write(" </br>");

      }
 }

 document.write("<h3>loop finished</h3>");
```

for in ::

```
var devices=["iPhone","Android","nexus","samsung"];

    document.write(devices.length);
        document.write("<br>");

    for(var x in devices)
    {
        document.write ("deviceName :: " + devices[x]);
        document.write("<br>");
    }
    var employees=[
    {"name":"srinivas","salary":12000},
    {"name":"Sowmya","salary":12000},
    {"name":"Srikanth","salary":12000},
    {"name":"suresh","salary":13000}]

  for(var emp in employees)
    {
```

```
document.write ("name of the employee :: " + employees[emp].name);
        document.write("<br>");
document.write ("salary of the employee :: " + employees[emp].salary);
  document.write("<br>");
 }
```

Loop Break:

```
var i;

        for(i=1; i<=10; i++)
        {
              document.write(i + "<br>");
              if (i == 7)
              {
                    break; //stop loop
              }
        }
```

Loop Continue ::

```
var i;
        for(i=1; i<=10; i++)
        {
              if (i == 7)
              {
                    continue;
                    //skip the number and goto next number
              }
              document.write(i + "<br>");
        }
```

No Script :

```
 <noscript>
        <h1 id="myhead">Please enable javascript</h1>
   </noscript>

      <script type="text/javascript">
        document.write("<h1>Message from javascript</h1>");
        document.write('<style> h1 {color:red} </style>');
        var text=document.getElementById("myhead").innerHTML;
        document.write(text);
```

```
</script>
```

Alert : Display message on top of the browser

```
alert("This is message");

 var x="Srinivas";
 var y="Gorantla”;
alert(x+ " " +y);
```

Confirm : confirmation message asking user

```
var result = confirm("This is message");
    document.write(result);

    document.write("</br>")

    if (result == true) {
          document.write(" I am OK");
    }
    else
    {
   document.write(" I am Going Out");
    }
```

Array :

```
var n = [ 1, 2, 3, 4, 5 ];

    var devices = [ ":iPhone",":iPad",":iPod",":iPadmini",":iPodTouch" ];

    document.write(n[0]);
    document.write(devices[0]);
    document.write("<br>");

    document.write(n[1]);
    document.write(devices[1]);
    document.write("<br>");

    document.write(n[2]);
    document.write(devices[2]);
    document.write("<br>");
```

```
document.write(n[3]);
document.write(devices[3]);
document.write("<br>");

document.write(n[4]);
document.write(devices[4]);
document.write("<br>");
document.write("<br>");

for (var i = 0; i < devices.length; i++) {
document.write(n[i]);
document.write(devices[i]);
document.write("<br>");
}
```

Functions ::

Function is a set of statements which can have some specific functionality

// function define

```
syn :  function functionName()
{
   function Body
}
```

Ex:

```
function myCountry()
{
      document.write("<h3>India</h3>")
}
```

// function calling

```
myCountry();


  function mystate()
     {
          document.write("<h3>AndhraPradesh</h3>")
     }
myState();

    function mytechnology()
```

```
        {
            document.write("<h3>Mobile Technology</h3>")
        }
    mytechnology();



// Function calling in Another function ::

        function country()
        {
            document.write("<h2>India</h2>");
        }

        function city()
        {
            document.write("<h2>Hyderabad</h2>");
            country();
        }

        city();
```

Functions Arguments -return

```
        function add(a,b)
        {
            var c; //local variable
            c = a+b;
            return (c);
        }

        var result;

        result = add(20,40);

        document.write("addition value is ..." + result); //30
        document.write("<br>");

        var x = 100;
        var y = 250;

        var result2 = add(x, y);

        document.write(result2); //350
```

```
function sub(a,b)
{
	var subVar=a-b;
	return (subVar);
}

var resultSub= sub(20,10);

document.write("</br>");
document.write("subtraction value is" + "  " + resultSub);//10
```

Element Selector ::

Select HTML elements by Element Name

```
 document.write("Loading From Javascript")
	 document.write("</br>")

	for (var i=0; i < 6; i++)
	{
	var getVal = document.getElementsByTagName("p")[i].innerHTML;
	document.write(getVal+ "Hello");
	document.write("</br>")

	}
```

ID selector:

```
document.getElementById("div1").innerHTML = "Web Development is
Universal";
   document.getElementById("div1").style.color = "blue";
   document.getElementById("div1").style.backgroundColor = "yellow";
   document.getElementById("myheading").innerHTML="Gud Morning";
   document.getElementById("myheading").style.color="rgb(255,0,0)";
```

Class Selector ::

```
   alert(document.getElementsByClassName("c1").length);
   for (var i=0; i < document.getElementsByClassName("c1").length; i++)
	{
   document.getElementsByClassName("c1")[i].innerHTML = "Web
Development is Universal";
```

```
        }
```

Events : Which can execute for specific functionality

1. Click :

```
// click starts then it will call
document.getElementById("div1").addEventListener("click", fun1);
        function fun1()
        {

document.getElementById("div1").innerHTML = "thanx you are in web
development";
document.getElementById("div1").style= "color:white;background-
color:red;width:250px;";
        }
```

2. Double Click ::

```
        document.getElementById("div1").addEventListener("dblclick",
fun1);

        function fun1()
        {
              document.getElementById("div1").innerHTML = "thanx you are
in web development";
              //this = div1
            document.getElementById("div1").style= "color:white";

        }
```

3. MouseOver MouseOut :

```
    <h1>JavaScript Events - mouseover, mouseout</h1>

    <div id="div1">
        mouseover me
    </div>

    <div id="div2" onmouseover="fun3()" onmouseout="fun4()">
        mouseover me
    </div>
```

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

        document.getElementById("div1").addEventListener("mouseover",
fun1);

        document.getElementById("div1").addEventListener("mouseout",
fun2);

        function fun1()
        {
            document.getElementById("div1").innerHTML = "thanx you are
in web development";
            document.getElementById("div1").style="color:white";
        }

        function fun2()
        {
            document.getElementById("div1").innerHTML = "mouseover
me";
            document.getElementById("div1").style="color:black";
        }

   function fun3()
   {
                document.getElementById("div2").innerHTML =
"mouseover me";
                document.getElementById("div2").style="color:red";


    }
   function fun4()
    {
                document.getElementById("div2").innerHTML =
"mouseout me";
              document.getElementById("div2").style="color:red";

    }
```

ImageHover :

```
<h1>Image with hover</h1>

    <img src="tick1.jpg" id="myimage">
```

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


document.getElementById("myimage").addEventListener("mouseover",
fun1);


document.getElementById("myimage").addEventListener("mouseout",
fun2);

          function fun1()
          {
            document.getElementById("myimage").setAttribute("src",
"tick2.jpg");
          }

          function fun2()
          {
                document.getElementById("myimage").setAttribute("src",
"tick1.jpg");
          }

    </script>
```

MouseMove ::

```
    document.getElementById("div1").addEventListener("mousemove",
fun1);

          function fun1(event)
          {
                //event = browser given information
                var x = event.pageX;
                var y = event.pageY;
                document.getElementById("div1").style="color:red";
                document.getElementById("div1").innerHTML = x + ", " + y;
          }
```

KeyUp:

```
     <h1>Keyup</h1>

    Source Text:
```

```
    <input type="text" id="txt1">
    <br>
    Destination Text:
    <input type="text" id="txt2">


    <script type="text/javascript">

        document.getElementById("txt1").addEventListener("keyup", fun1);

        function fun1()
        {
          document.getElementById("txt2").value =
document.getElementById("txt1").value;
        }

    </script>
```

KeyPress::

```
    <h1>Keypress</h1>

    Source Text:
    <input type="text" id="txt1">
    <br>

    Destination Text:
    <input type="text" id="txt2">

    <script type="text/javascript">

        document.getElementById("txt1").addEventListener("keypress",
fun1);

        function fun1()
        {
            document.getElementById("txt2").value =
document.getElementById("txt1").value;
        }

    </script>
```

Alphabates Only ::

```
<h1>Alphabets only</h1>

    <input type="text" id="txt1"><br/>
    <span id="myspan"></span>

    <script type="text/javascript">

        document.getElementById("txt1").addEventListener("keypress",
fun1);

        function fun1(event)
        {
            //event means "browser given details"
            //ascii value of currently pressed character
            var ch = event.which;
            //alert(ch);

            if ( !((ch >=65 && ch <=90) || (ch >=97 && ch <=122) || (ch
== 32) || (ch == 8) || (ch == 0)))
            {
                event.preventDefault();
                document.getElementById("myspan").innerHTML="Only
Alphabets Allowed";
                //cancel the currently pressed character
            }
            else
            {
            document.getElementById("myspan").innerHTML="";

            }
        }

    </script>
```

NumbersOnly :

```
    <h1>Numbers only</h1>

    <input type="text" id="txt1">
    <span id="myspan"></span>

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

```
        document.getElementById("txt1").addEventListener("keypress",
fun1);

        function fun1(event)
        {
            //event means "browser given details"

            //ascii value of currently pressed character
            var ch = event.which;
            //alert(ch);
            if ( !((ch >=48 && ch <=57) || (ch == 8) || (ch == 0)))
            {
                event.preventDefault();
                document.getElementById("myspan").innerHTML="Only
Numbers Allowed";
                //cancel the currently pressed character
            }
            else
            {

document.getElementById("myspan").innerHTML="";

            }
        }

    </script>
```

CheckBox :

```
<input type="text">
    <h1>JavaScript - CheckBox</h1>
    <input type="checkbox" id="chk1">
    <label for="chk1">I accept license agreement</label>
    <br>

    <input type="submit" id="btn1" disabled="disabled">

    <script type="text/javascript">

        document.getElementById("chk1").addEventListener("change",
fun1);

        function fun1()
        {
```

```
            var b = document.getElementById("chk1").checked;

            if (b == true)
            {
                document.getElementById("btn1").disabled = "";
                document.getElementById("btn1").style="background-
color:red";

            }
            else
            {
                document.getElementById("btn1").disabled = "disabled";
                document.getElementById("btn1").style="background-
color:yellow";
            }
        }

    </script>
```

RadioButton ::

```
<h1>JavaScript -RadioButton</h1>

    <form>

        <input type="radio" id="rb1" name="group1" checked="checked">
        <label for="rb1">Small</label>

        <input type="radio" id="rb2" name="group1">
        <label for="rb2">Medium</label>

        <input type="radio" id="rb3" name="group1">
        <label for="rb3">Large</label>

        <br>

        <div id="div1" style="font-size:20px;">
            Hello, World
        </div>

    </form>

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

```
        document.getElementById("rb1").addEventListener("change", fun1);
        document.getElementById("rb2").addEventListener("change", fun1);
        document.getElementById("rb3").addEventListener("change", fun1);

        function fun1()
        {
            if (document.getElementById("rb1").checked == true)
                document.getElementById("div1").style.fontSize =
"20px"; //small

            else if (document.getElementById("rb2").checked == true)
                document.getElementById("div1").style.fontSize =
"35px"; //medium

            else if (document.getElementById("rb3").checked == true)
                document.getElementById("div1").style.fontSize =
"50px"; //large
        }

    </script>
```

DropDown List:

```
<h1>JavaScript - DropDownList</h1>

    <select id="drp1">
        <option>Choose Country</option>
        <option>India</option>
        <option>UK</option>
        <option>US</option>
        <option>PAK</option>
        <option>PHILIPINES</option>
    </select>

    <br><br>

    You selected: <span id="span1"></span>

    <script type="text/javascript">

    document.getElementById("drp1") .addEventListener("change", fun1);

      function fun1()
```

```
    {
    document.getElementById("span1").innerHTML =
document.getElementById("drp1").value;

     if (document.getElementById("drp1").value == "Choose Country")
     {
         document.getElementById("span1").innerHTML = "";
     }
         }
    </script>


<h1>Choose background color</h1>

    <select id="drp1">
         <option value="select">Select</option>
         <option value="red">Red</option>
         <option value="green">Green</option>
         <option value="blue">Blue</option>
    </select>

    <br>

    <div id="div1">
         div1
    </div>

    <script type="text/javascript">

         document.getElementById("drp1").addEventListener("change",
fun1);

         function fun1()
         {
              var selectedcolor = document.getElementById("drp1").value;

              if (selectedcolor == "red")
                   document.getElementById("div1").style.backgroundColor
= "red";

              else if (selectedcolor == "green")
                   document.getElementById("div1").style.backgroundColor
= "green";
```

```
            else if (selectedcolor == "blue")
                document.getElementById("div1").style.backgroundColor
= "blue";

            else
                document.getElementById("div1").style.backgroundColor
= "white";
        }

    </script>
```

Focus Blur ::

```
    Email:
    <input type="text" id="txt1">
    <span id="span1" style="color:gray; display:none">Use gmail only</
span>

    <script type="text/javascript">

        document.getElementById("txt1").addEventListener("focus", fun1);
        document.getElementById("txt1").addEventListener("blur", fun2);

        function fun1()
        {
            document.getElementById("span1").style.display = "inline";
            document.getElementById("txt1").style.background="gray";
        }

        function fun2()
        {
            document.getElementById("span1").style.display = "none";
            document.getElementById("txt1").style.background="white";

        }
    </script>
```

this :: this is a keyword refererd current element in Javascript

```
  <input type="button" id="button1" value="click me">
    <input type="button" id="button2" value="click me">
    <input type="button" id="button3" value="click me">
    <input type="button" id="button4" value="click me">
    <input type="button" id="button5" value="click me">
```

```
    <input type="button" id="button6" value="click me">
    <input type="button" id="button7" value="click me">
    <input type="button" id="button8" value="click me">
    <input type="button" id="button9" value="click me">
    <input type="button" id="button10" value="click me">

    <script type="text/javascript">

        document.getElementById("button1").addEventListener("click",
fun1);
        document.getElementById("button2").addEventListener("click",
fun1);
        document.getElementById("button3").addEventListener("click",
fun1);
        document.getElementById("button4").addEventListener("click",
fun1);
        document.getElementById("button5").addEventListener("click",
fun1);
        document.getElementById("button6").addEventListener("click",
fun1);
        document.getElementById("button7").addEventListener("click",
fun1);
        document.getElementById("button8").addEventListener("click",
fun1);
        document.getElementById("button9").addEventListener("click",
fun1);
        document.getElementById("button10").addEventListener("click",
fun1);

        function fun1()
        {
            this.setAttribute("value", "thanx");
            this.style.backgroundColor = "skyblue";
        }
```

Set Attribute :

```
<img src="img1.jpg" id="myimage" width="300px" title="image1"><br>

    <input type="button" id="btn1" value="Set attribute">

    <script type="text/javascript">

        document.getElementById("btn1").addEventListener("click", fun1);
```

```
        function fun1()
        {
            document.getElementById("myimage").setAttribute("src",
"img2.jpg");
            document.getElementById("myimage").setAttribute("title",
"image2");
            document.getElementById("myimage").setAttribute("width",
"400px");
            document.getElementById("myimage").setAttribute("height",
"400px");
        }
    </script>
```

Remove Attribute:

```
<img src="img1.jpg" id="myimage" width="300px" title="my Image">
    <br>
    <input type="button" id="btn1" value="Remove attribute">
    <input type="button" id="btn2" value="Set attribute">
    <script type="text/javascript">
        document.getElementById("btn1").addEventListener("click", fun1);
        document.getElementById("btn2").addEventListener("click", fun2);
        function fun1()
        {

document.getElementById("myimage").removeAttribute("title");
            alert("title removed");
        }
        function fun2()
        {
            document.getElementById("myimage").setAttribute("title","my
Image");
          alert("title added");
        }

    </script>
```

Get Attribute :

```
    <img src="img1.jpg" id="myimage" width="300px" title="myImage">
    <br>

    <input type="button" id="btn1" value="Get attribute">
```

```
    <script type="text/javascript">
        document.getElementById("btn1").addEventListener("click", fun1);
        function fun1()
        {
            var a =
document.getElementById("myimage").getAttribute("width");
            alert(a);
        }
    </script>
```

Change CSS :

```
<div id="div1">div 1</div>

    <input type="button" id="btn1" value="Change css">

    <script type="text/javascript">
        document.getElementById("btn1").addEventListener("click", fun1);

        function fun1()
        {
            document.getElementById("div1").style.fontFamily = "Comic
Sans MS";
            document.getElementById("div1").style.fontSize = "50px";
            document.getElementById("div1").style.fontWeight = "bold";
            document.getElementById("div1").style.fontStyle = "italic";
            document.getElementById("div1").style.width = "500px";
            document.getElementById("div1").style.height = "200px";
            document.getElementById("div1").style.backgroundColor =
"#006633";
            document.getElementById("div1").style.color = "#ccffff";
            document.getElementById("div1").style.border = "5px double
red";
            document.getElementById("div1").style.paddding = "20px";
        //  document.getElementById("div1").style= {"width":"200px"; }
        }
    </script>
```

Adding elements :

```
<div id="div1">
```

```
        <p>para 1</p>
        <p>para 2</p>
        <p>para 3</p>

    </div>
    <input type="button" id="btn1" value="add para to div">

    <script type="text/javascript">

        document.getElementById("btn1").addEventListener("click", fun1);

        var n = 4;

        function fun1()
        {
              //create an element
            var mypara = document.createElement("p");
            // inner html for para
            mypara.innerHTML = "para " + n;
            // add para for DIV
           document.getElementById("div1").appendChild(mypara);
            n++;
        }
     </script>
```

Removing Elements :

```
<body>
    <div>
        <p>para 1</p>
        <p id="p2">para 2</p>
        <p>para 3</p>
    </div>

    <input type="button" id="btn1" value="remove para 2">

    <script type="text/javascript">
        document.getElementById("btn1").addEventListener("click", fun1);

        function fun1()
        {
        document.getElementById("p2").remove();
        }
    </script>
```

```
</body>
```

Image Gallery::

```
<body>

    <h1>Image gallery</h1>

    <img src="img1.jpg" width="500px" id="myimage">

    <br><br>

    <img src="img1.jpg" width="75px" class="class1">
    <img src="img2.jpg" width="75px" class="class1">
    <img src="img3.jpg" width="75px" class="class1">
    <img src="img4.jpg" width="75px" class="class1">
    <img src="img5.jpg" width="75px" class="class1">
    <img src="img6.jpg" width="75px" class="class1">
    <img src="img7.jpg" width="75px" class="class1">
    <img src="img8.jpg" width="75px" class="class1">
    <img src="img9.jpg" width="75px" class="class1">
    <img src="img10.jpg" width="75px" class="class1">

    <script type="text/javascript">

        var allimages = document.getElementsByClassName("class1");
         // adding click event for all img with class name "class1"
        for (i=0; i<allimages.length; i++)
        {
              allimages[i].addEventListener("click", fun1);
        }
        function fun1()
        {
      var currentsrc = this.getAttribute("src");
      document.getElementById("myimage").setAttribute("src", currentsrc);
        }
    </script>
    </body>
```

Photo Navigation :

```
    <h1>Photo navigation</h1>
```

```
    <img src="img1.jpg" width="350px" id="myimage">
    <br>

    <input type="button" value="Previous" id="button1">
    <input type="button" value="Next" id="button2">

    <script type="text/javascript">

document.getElementById("button1") .addEventListener("click", fun1);
document.getElementById("button2") .addEventListener("click", fun2);

    var allimages = [ "img1.jpg", "img2.jpg", "img3.jpg", "img4.jpg",
"img5.jpg", "img6.jpg", "img7.jpg", "img8.jpg", "img9.jpg", "img10.jpg" ];

        var c = 0;

        function fun1()
        {
            c--;
            if (c == -1)
            {
                c = 0;//reset c
            }
            var i = document.getElementById("myimage");
            i.setAttribute("src", allimages[c]);
        }

        function fun2()
        {
            c++;
            if (c == allimages.length)
            {
                c = allimages.length - 1; //reset c
            }
            var i = document.getElementById("myimage");

            i.setAttribute("src", allimages[c]);
        }

    </script>
```

Math Random :

```
<h1>random</h1>
```

```
<script type="text/javascript">
  // by defalut 0.0--1.0
  var n = Math.random();
     document.write(n);

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

  //  0.0--100.0
     var n = Math.random()*100;
     document.write(n);

    document.write("<br/>");
     var n1=Math.floor((Math.random()*100) + 50);
     document.write(n1);

</script>
```

Random Image :

```
<h1>Random image</h1>

<img src="" alt="Image here" width="200px" id="randomimage">

<script type="text/javascript">

var n = Math.floor(Math.random() * 10);

     var myimages = [ "img1.jpg", "img2.jpg", "img3.jpg", "img4.jpg",
"img5.jpg", "img6.jpg", "img7.jpg", "img8.jpg", "img9.jpg", "img10.jpg" ];

document.getElementById("randomimage").setAttribute("src",
myimages[n]);

</script>
```

sample Calc Program :

```
<head>
<title>JavaScript - Add Subtract Multiply Divide</title>
<style type="text/css">
     body,input
     {
```

```
            font-family: 'Tahoma';
            font-size: 30px;
        }
        #txt3
        {
            background-color: lightgray;
        }
        #button1,#button2,#button3,#button4
        {
            background-color: #ffcc99;
            border: 1px ridge red;
        }
    </style>
    </head>
    <body>

    <h1>Math</h1>

    <form>

        Enter value for a:
        <input type="text" id="txt1"><br>

        Enter value for b:
        <input type="text" id="txt2"><br>

        <input type="button" id="button1" value="Add">
        <input type="button" id="button2" value="Subtract">
        <input type="button" id="button3" value="Multiply">
        <input type="button" id="button4" value="Divide">
        <br>

        Result:
        <input type="text" id="txt3" readonly="readonly">

    </form>

    <script type="text/javascript">

        document.getElementById("button1").addEventListener("click",
fun1);
        document.getElementById("button2").addEventListener("click",
fun2);
        document.getElementById("button3").addEventListener("click",
```

```
fun3);
        document.getElementById("button4").addEventListener("click",
fun4);

        // addition function
        function fun1()
        {
              var a = parseInt( document.getElementById("txt1").value );
              var b = parseInt( document.getElementById("txt2").value );

              var c = a + b;
              document.getElementById("txt3").value = c;
        }
          // subtraction function
        function fun2()
        {
              var a = parseInt( document.getElementById("txt1").value);
              var b = parseInt( document.getElementById("txt2").value);

              var c = a - b;
              document.getElementById("txt3").value = c;
        }
         // multiplication function
        function fun3()
        {
              var a = parseInt( document.getElementById("txt1").value);
              var b = parseInt( document.getElementById("txt2").value);

              var c = a * b;
              document.getElementById("txt3").value = c;
        }
         // division function
        function fun4()
        {
              var a = parseInt( document.getElementById("txt1").value);
              var b = parseInt( document.getElementById("txt2").value);

              var c = a / b;
              document.getElementById("txt3").value = c;
        }

   </script>
```

To Uppercase :

```
var s1 = "Hyderabad";
      document.write(s1);
     document.write("</br>");
        document.write("after uppercase conversion");
         document.write("</br>");

      var s2 = s1.toUpperCase();

      document.write(s2);
```

To Lowercase :

```
       var s1 = "Hyderabad";
      var s2 = s1.toLowerCase();
      document.write(s2);
```

Length :

```
var s1 = "Hyderabad";
      var n = s1.length;
      document.write(n);
```

Char At :

```
var s1 = "Hyderabad";
      var ch = s1.charAt(5);
      document.write(ch);
```

Char Code At:

```
var s1 = "Hyderabad”;
      var n = s1.charCodeAt(5); // ASCII Code
      document.write(n);
```

index of

```
var s1 = "Hydrerabad";

      var n = s1.indexOf("r");
      document.write(n);
```

Replace :

```
var s1 = "Hyderabad is one of the cities in India Hyderabad";
      var s2 = "Hyderabad";
      var s3 = "Chennai";
      var s4 = s1.replace(s2,s3);
      document.write(s4); //Chennai is one of the cities in India
```

Slice :

```
var s1 = "Hyderabad";
      var n1 = 2;
      var n2 = 6;
      var s2 = s1.slice(n1, n2);
      document.write(s2); //dera
```

Split :

```
var s1 = "How are you you you you";
          document.write(s1.length);
          document.write("<br>");

      var a = s1.split(' ');

        document.write(a.length);
        document.write("<br>");

      for(var i=0; i < a.length; i++)
      {
            document.write(a[i]);
            document.write("<br/>");
      }
```

Trim :

```
var s1 = "          Hyderabad is one of the cities in India.     ";
      var s2 = s1.trim(); // remove all spaces from JS statement.

      var n1 = s1.length;
      var n2 = s2.length;

        document.write(s1);
        document.write("<br>");
      document.write("Before trim: " + n1); //55
      document.write("<br>");
      document.write("After trim: " + n2); //40
```

```
document.write("<br>");
  document.write(s2);
```

Concat :

```
var s1 = "peers ";
var s2 = " tech";
var s3 = s1.concat(s2);
document.write(s3); //PeersTech
```

Date: Date is a javascript function get current system Date

```
var d = new Date();
  document.write(d);
```

toLocaleDateString:

```
var d = new Date();
var s = d.toLocaleDateString();
document.write(s);
```

toLocaleTimeString:

```
var d = new Date();
var s = d.toLocaleTimeString();
document.write(s);
```

Get Time ::

```
var d = new Date();
var n = d.getTime(); //milliseconds since 01.01.1970
document.write(n); //1444533023043
//Note:  1000 milli sec = 1 sec
```

getDay:

```
var d = new Date();
      n = d.getDay();
      document.write(n); //1444533023043
      /*Note:
            Sunday = 0
            Saturday = 6
      */
```

getDate:

```
var d = new Date();
 var s = d.getDate();
 document.write(s);
```

getMonth :

```
var d = new Date();
 var s = d.getMonth();
 document.write("Current month is" + " " + s);

var monthNames = ["January", "February", "March", "April", "May", "June",
  "July", "August", "September", "October", "November", "December"
];

document.write("</br>")
var d = new Date();
document.write("The current month is " + monthNames[d.getMonth()]);
```

getFullYear:

```
var d = new Date();
 var s = d.getFullYear();
 document.write(s);
```

getHours

```
var d = new Date();
 var s = d.getHours();
 document.write(s);
```

getMinuts :

```
var d = new Date();
 var s = d.getMinutes();
 document.write(s);
```

getSeconds:

```
var d = new Date();
 var s = d.getSeconds();
 document.write(s);
```

getMilliSeconds:

```
var d = new Date();
        var s = d.getMilliseconds(); // 1 second = 1000 milliseconds
        document.write(s);
```

CustomDate :

```
var d = new Date();

        d.setDate(31);
        d.setMonth(11); //0 to 11
        d.setFullYear(2015);
        document.write(d.toLocaleDateString());

         document.write("</br>")

        var n = new Date();
        document.write(n.toLocaleDateString());
```

Set Timeout : This method will be used for setting up timeout

```
<body onload="fun1()">
    <h1>setTimeout</h1>
    <input type="button" id="button1" value="Show Message after 3
seconds">
    <script type="text/javascript">
        document.getElementById("button1").addEventListener("click",
fun1);

        function fun1()
        {
            setTimeout(fun2, 3000);
        }
     // this function will call after 3 seconds
        function fun2()
        {
            alert("Sign Out here");
        }
    </script>
    </body>
```

setInterval : Set interval for any Object

```
<body>

    <h1>setInterval</h1>

    <input type="button" id="button1" value="Show Message for every 3
seconds">

    <script type="text/javascript">

        document.getElementById("button1").addEventListener("click",
fun1);

        function fun1()
        {
            setInterval(fun2, 3000);
        }
        function fun2()
        {

            var color = '#'; // hexadecimal starting symbol
            var letters =
['000000','FF0000','00FF00','0000FF','FFFF00','00FFFF','FF00FF','C0C0C0']; //
Set your colors here
            color += letters[Math.floor(Math.random() * letters.length)];
            document.body.style.background = color;

            // Setting the random color on your div element.

             }
    </script>

    </body>
```

SetInterval :

```
<body>
    <h1>setInterval - System Time</h1>
    <div id="div1">
    </div>
    </br>

    <img alt="Image here" src="img1.jpg" width="1000px" height="500px"
id="randomimage">
```

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

        setInterval(fun1, 2000); //for every 1000 milli sec (1 sec) it calls
fun1.

        function fun1()
        {

        var n = Math.floor(Math.random() * 10);
        var myimages = [ "img1.jpg", "img2.jpg", "img3.jpg", "img4.jpg",
"img5.jpg", "img6.jpg", "img7.jpg", "img8.jpg", "img9.jpg", "img10.jpg" ];
      document.getElementById("randomimage").setAttribute("src",
myimages[n]);


            var d = new Date();
            var t = d.toLocaleTimeString();
            document.getElementById("div1").innerHTML = t;
        }
    </script>

    </body>
```

History :

```
<body>

    <input type="button" id="btnBack" value="Back">
    <input type="button" id="btnForward" value="Forward">

    <br>
    <a href="http://www.google.com">Go to Page2</a>

    <script type="text/javascript">
        document.getElementById("btnBack") .addEventListener("click",
goBack);
        document.getElementById("btnForward") .addEventListener("click",
goForward);
        function goForward()
        {
            window.history.forward(); //go to next page
        }function goBack()
        {
```

```
            window.history.back(); //go to previous page
        }

    </script>

    </body>
```

Create Element :

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

<script>
function myFunction() {

    // 1. Create Tag
    var btn = document.createElement("BUTTON");
    // 2. Create text
    var text = document.createTextNode("CLICK ME");
    //3. add text on button
    btn.appendChild(text);
    //4. add button to body
    document.body.appendChild(btn);
}
</script>
```

Insert Before :

```
<body>
<div id="div1">
<p id="p1">This is a paragraph.</p>
<p id="p2">This is another paragraph.</p>
</div>
<script>
//create new element
var para = document.createElement("p");
// add text
var node = document.createTextNode("This is new.");
// text add to para
para.appendChild(node);
var element = document.getElementById("div1");
var child = document.getElementById("p1");
element.insertBefore(para,child);
</script>
</body>
```

Remove Element :

```
<body>
<div id="div1">
<p id="p1">This is a paragraph.</p>
<p id="p2">This is another paragraph.</p>
</div>

<script>
var parent = document.getElementById("div1");
var child = document.getElementById("p2");
parent.removeChild(child);
</script>

</body>
```

Replace element:

```
<body>
<div id="div1">
<p id="p1">This is a paragraph.</p>
<p id="p2">This is another paragraph.</p>
</div>

<script>

var parent = document.getElementById("div1");
var child = document.getElementById("p1");

var para = document.createElement("p");
var node = document.createTextNode("This is new.");
para.appendChild(node);
parent.replaceChild(para,child);

</script>
</body>
```

Print :

```
<body>

   <h1>Print</h1>
```

```
    <p>Lorem Ipsum is simply dummy text of the printing and typesetting
industry. Lorem Ipsum has been the industry's standard dummy text ever
since the 1500s, when an unknown printer took a galley of type and
scrambled it to make a type specimen book. It has survived not only five
centuries, but also the leap into electronic typesetting, remaining essentially
unchanged. It was popularised in the 1960s with the release of Letraset
sheets containing Lorem Ipsum passages, and more recently with desktop
publishing software like Aldus PageMaker including versions of Lorem
Ipsum.</p>

    <input type="button" value="Print" id="button1">
    <script type="text/javascript">
        document.getElementById("button1").addEventListener("click",
fun1);
        function fun1()
        {
            window.print();  // This will print complete window
        }
    </script>

    </body>
```

Regular Expression :

```
 <body>

    <form id="form1" action=" http://wilder.azurewebsites.net/echo">
        <h1>Regular Expressions</h1>

        <label for="txt1">Person Name (Alphabets only):</label><br>
        <input type="text" name="txt1" id="txt1">

        <span id="span1" style="color:red">
        </span>
        <br>

        <input type="submit" value="Submit">
    </form>

    <script type="text/javascript">
        document.getElementById("form1").addEventListener("submit",
fun1);

        function fun1(event)
```

```
        {
            var personname = document.getElementById("txt1").value;

            //regular expression
            var p = /^[a-zA-Z ]*$/;
            if (p.test(personname))
            {
                document.getElementById("span1").innerHTML = "";
            }
            else
            {
                document.getElementById("span1").innerHTML = "Only
alphabets allowed.";
                event.preventDefault(); //invalid (stop submission)
            }
        }
    </script>

  </body>
```

Slide Show :

```
<body>

    <h1>Automatic Photo Slide Show (2 seconds)</h1>
    <img alt="MyImage" src="img1.jpg" width="100%"  height ="500px"
id="myimage">

    <script type="text/javascript">

        var allimages = [ "img1.jpg", "img2.jpg", "img3.jpg", "img4.jpg",
"img5.jpg", "img6.jpg", "img7.jpg", "img8.jpg", "img9.jpg", "img10.jpg" ];

        var c = 0;

        var repeat = setInterval(fun1, 2000); //1000 milli sec = 1 sec

        function fun1()
        {
            c++;

            // if (c == allimages.length)
            // {
            //     clearInterval(repeat);
```

```
            //    //alert("Done");
            // }
          if (c == allimages.length)
            {
                  c = 0;
            }

         // get image update
            var i = document.getElementById("myimage");
            i.setAttribute("src", allimages[c]);

        }

    </script>
    </body>
```

Multiple Validations :

```
    <body>

    <form action="test.aspx" id="form1" onsubmit="return fun1()">

        <h1>Registration Form</h1>

        <table>
            <tr>
                <td>
                    Username:
                </td>
                <td>
                    <input type="text" name="txtUsername"
id="txtUsername">
                    <span id="SpanUsername" class="error"></span>
                </td>
            </tr>

            <tr>
                <td>
                    Password:
                </td>
                <td>
                    <input type="password" name="txtPassword"
id="txtPassword">
                    <span id="SpanPassword" class="error"></span>
```

```
                </td>
            </tr>

            <tr>
                <td>
                    Confirm Password:
                </td>
                <td>
                    <input type="password"
name="txtConfirmPassword" id="txtConfirmPassword">
                    <span id="SpanConfirmPassword" class="error"></
span>
                </td>
            </tr>

            <tr>
                <td>
                    Amount:
                </td>
                <td>
                    <input type="text" name="txtAmount"
id="txtAmount">
                    <span id="SpanAmount" class="error"></span>
                </td>
            </tr>

            <tr>
                <td>
                    Payment Mode:
                </td>
                <td>
                    <select name="txtPaymentMode"
id="txtPaymentMode">
                        <option value="None">---Select---</option>
                        <option value="DC">Debit Card</option>
                        <option value="CC">Credit Card</option>
                        <option value="NB">Net Banking</option>
                    </select>
                    <span id="SpanPaymentMode" class="error">
</
span>
                </td>
            </tr>

            <tr>
```

```
                    <td>
                        Email:
                    </td>
                    <td>
                        <input type="text" name="txtEmail" id="txtEmail">
                        <span id="SpanEmail" class="error"></span>
                    </td>
                </tr>

                <tr>
                    <td></td>
                    <td>
                        <input type="submit" value="Submit" >
                    </td>
                </tr>

            </table>

            <ul id="ErrorsList" style="color:red">
            </ul>

    </form>

    <style type="text/css">
        .error{ color: red; }
        body, input, select { font: 19px corbel; }
    </style>

    <script type="text/javascript">

        function fun1(event) {

            document.getElementById("SpanUsername").innerHTML = "";
            document.getElementById("SpanPassword").innerHTML ="";
            document.getElementById("SpanConfirmPassword").innerHTML
= "";
            document.getElementById("SpanAmount").innerHTML = "";
            document.getElementById("SpanPaymentMode").innerHTML =
"";
            document.getElementById("SpanEmail").innerHTML = "";

            //get values from text boxes
            var Username =
document.getElementById("txtUsername").value;
```

```
            var pwd = document.getElementById("txtPassword").value;
            var ConfirmPassword =
document.getElementById("txtConfirmPassword").value;
            var Amount = document.getElementById("txtAmount").value;
            var PaymentMode =
document.getElementById("txtPaymentMode").value;
            var Email = document.getElementById("txtEmail").value;

            var Errors = [ ];


            //validation 1: Username can't be blank
            if (Username == "" || Username == null)
            {
                  var ErrorMsg = "Username can't blank";
                  Errors.push(ErrorMsg);
                  document.getElementById("SpanUsername") .innerHTML
= ErrorMsg;
            }

            //validation 2: Password can't be blank
            if (pwd == "" || pwd == null)
            {
                  var ErrorMsg = "Password can't blank";
                  Errors.push(ErrorMsg);
                  document.getElementById("SpanPassword") .innerHTML
= ErrorMsg;
            }

            //validation 3: Confirm Password can't be blank
            if (ConfirmPassword == "" || ConfirmPassword == null)
            {
                  var ErrorMsg = "Confirm Password can't blank";
                  Errors.push(ErrorMsg);

document.getElementById("SpanConfirmPassword") .innerHTML =
ErrorMsg;
            }

            //validation 4: Password & Confirm Password must match
            if (pwd!= ConfirmPassword)
            {
                  var ErrorMsg = "Password and Confirm Password do not
match";
```

```
                Errors.push(ErrorMsg);

document.getElementById("SpanConfirmPassword") .innerHTML +=
ErrorMsg;
            }

            //validation 5: Amount should be between 1000 to 100000
            if (Amount < 1000 || Amount > 100000)
            {
                var ErrorMsg = "Amount should be in between 1000 and
100000.";
                Errors.push(ErrorMsg);
                document.getElementById("SpanAmount") .innerHTML =
ErrorMsg;
            }

            //validation 6: Payment mode should be specified
            if (PaymentMode == "" || PaymentMode == "None")
            {
                var ErrorMsg = "Select any Payment Mode.";
                Errors.push(ErrorMsg);

document.getElementById("SpanPaymentMode") .innerHTML = ErrorMsg;
            }

            //validation 7: Email should be in proper format
            var patt1 = /^[A-Z0-9._%+-]+@[A-Z0-9.-]+\.[A-Z]{2,6}$/i;
            if (patt1.test(Email) == false)
            {
                //debugger;
                var ErrorMsg = "Email should be in proper format";
                Errors.push(ErrorMsg);
                document.getElementById("SpanEmail") .innerHTML +=
ErrorMsg;
            }

            //alert(Errors.length);

            var ErrorsList = document.getElementById("ErrorsList");
            ErrorsList.innerHTML = "";

            for (i=0; i<Errors.length; i++)
            {
                document.getElementById("ErrorsList").innerHTML +=
```

```
"<li>" + Errors[i] + "</li>";
                }

                if (Errors.length == 0)
                {
                      return true; //submit the form
                }
                else
                {
                      return false; //don't submit the form
                      event.preventDefault(); //don't submit the form
                }

                /**/

          }
//document.getElementById("form1") .addEventListener("submit", fun1);

    </script>

    </body>
```

Create Object from JSON String

```
<!DOCTYPE html>
<html>
<body>

<h2>Create Object from JSON String</h2>

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

<script>
var text = '{"employees":[' +
'{"firstName":"Srinivas","lastName":"Gorantla" },' +
'{"firstName":"Suresh","lastName":"Thota" },' +
'{"firstName":"Sridhar","lastName":"Jarugula" }]}';

obj = JSON.parse(text);
document.getElementById("demo").innerHTML =
obj.employees[1].firstName + " " + obj.employees[1].lastName;
</script>
```

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

Create JSON string from a JavaScript object.

```
<!DOCTYPE html>
<html>
<body>

<h2>Create JSON string from a JavaScript object.</h2>

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

<script>

var obj = { "name":"John", "age":30, "city":"New York"};
var myJSON = JSON.stringify(obj);
document.getElementById("demo").innerHTML = myJSON;

</script>

</body>
</html>
```

JSON Object

```
<html>
   <head>
   <title>JavaScript - JSON - Object Example</title>
   <style type="text/css">
         body
         {
               font-family: 'Tahoma';
               font-size: 30px;
         }
   </style>
   </head>
   <body>

      <script type="text/javascript">
        var emp = { "empid": 101, "empname": “Srinivas”, "salary": 4500 };

        document.write(emp.empid);
        document.write("<br>");
```

```
        document.write(emp.empname);
        document.write("<br>");

        document.write(emp.salary);
      </script>

   </body>
</html>
```

JSON Array

```
<html>
   <head>
   <title>JavaScript - JSON - Array Example</title>
   <style type="text/css">
        body,table
        {
              font-family: 'Tahoma';
              font-size: 30px;
        }
   </style>
   </head>
   <body>

   <table border="1" id="table1">

        <tr style="background-color:gold">
              <th>Emp ID</th>
              <th>Emp Name</th>
              <th>Salary</th>
        </tr>

   </table>

      <script type="text/javascript">

        var emp = [
              { "empid": 101, "empname": "Scott", "salary": 4500 },
              { "empid": 102, "empname": "Allen", "salary": 5500 },
              { "empid": 103, "empname": "Jones", "salary": 7500 },
              { "empid": 104, "empname": "James", "salary": 9000 }
        ];
```

```
        for (i=0; i < emp.length; i++)
        {
            var s = "<tr> <td>" + emp[i].empid + "</td> <td>" +
emp[i].empname + "</td> <td>" + emp[i].salary + "</td> </tr>";
            document.getElementById("table1").innerHTML += s;
        }
      </script>

   </body>
</html>
```

JSON From User :

```
<html>
   <head>
   <title>JavaScript - JSON User Data Example</title>
   <style type="text/css">
        body,input
        {
            font-family: 'Tahoma';
            font-size: 30px;
        }
   </style>
   </head>
   <body>

   <h3>Employee Details</h3>

   <div id="div1">
        Emp ID:<br>
        <input type="text" id="txt1"><br>

        Emp Name:<br>
        <input type="text" id="txt2"><br>

        Salary:<br>
        <input type="text" id="txt3"><br>
   </div>

   <input type="button" id="button1" value="Add">

      <script type="text/javascript">
        document.getElementById("button1").addEventListener("click",
fun1);
```

```
        //global variable
        var emps = [ ];

        function fun1()
        {
            var emp =
                {
                    "empid": document.getElementById("txt1").value,
                    "empname": document.getElementById("txt2").value,
                    "salary": document.getElementById("txt3").value
                };

            emps.push(emp);

            alert(JSON.stringify(emps));

            document.getElementById("txt1").value = "";
            document.getElementById("txt2").value = "";
            document.getElementById("txt3").value = "";
            document.getElementById("txt1").focus();
        };
    </script>

  </body>
</html>
```

OOPS Cretae Object

```
<html>
  <head>
  <title>JavaScript OOPS - First Example</title>
  <style type="text/css">
      body,input
      {
          font-family: 'Tahoma';
          font-size: 30px;
      }
  </style>
  </head>
  <body>

  <h1>JavaScript OOPS - First Example</h1>
```

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

        //class cum function
        function Student()
        {
            document.write("<p>Object created</p>");
        }

        //creating variables
        var student1, student2, student3;

        //creating objects
        student1 = new Student();
        student2 = new Student();
        student3 = new Student();
    </script>

    </body>
</html>
```

OOPS - Properties:

```
<html>
    <head>
    <title>JavaScript OOPS - Properties</title>
    <style type="text/css">
        body,input
        {
            font-family: 'Tahoma';
            font-size: 30px;
        }
    </style>
    </head>
    <body>

    <h1>JavaScript OOPS - Properties</h1>

    <script type="text/javascript">
        /*creating class*/
        function Student()
        {
            this.studentid = 101;
            this.studentname = "scott";
```

```
            this.marks = 70;

            //this = current object (either student1 or student2)
        }

        /*creating objects*/
        var student1 = new Student();
        var student2 = new Student();

        document.write(student1.studentid);
        document.write("<br>");
        document.write(student1.studentname);
        document.write("<br>");
        document.write(student1.marks);
        document.write("<hr>");

        document.write(student2.studentid);
        document.write("<br>");
        document.write(student2.studentname);
        document.write("<br>");
        document.write(student2.marks);
    </script>

    </body>
</html>
```

JavaScript OOPS - Constructor

```
<html>
    <head>
    <title>JavaScript OOPS - Constructor</title>
    <style type="text/css">
        body,input
        {
            font-family: 'Tahoma';
            font-size: 30px;
        }
    </style>
    </head>
    <body>

    <h1>JavaScript OOPS - Constructor</h1>

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

```
        /*creating class*/
        function Student(a, b, c)
        {
              this.studentid = a;
              this.studentname = b;
              this.marks = c;

              //this = current object (either student1 or student2)
        }

        /*creating objects*/
        var student1 = new Student(101, “Srikanth”, 70);
        var student2 = new Student(102, “Sudhir”, 80);

        document.write(student1.studentid);
        document.write("<br>");
        document.write(student1.studentname);
        document.write("<br>");
        document.write(student1.marks);
        document.write("<hr>");

        document.write(student2.studentid);
        document.write("<br>");
        document.write(student2.studentname);
        document.write("<br>");
        document.write(student2.marks);
    </script>

    </body>
</html>
```

JavaScript OOPS - functions

```
<html>
    <head>
    <title>JavaScript OOPS - Methods</title>
    <style type="text/css">
        body,input
        {
            font-family: 'Tahoma';
            font-size: 30px;
        }
    </style>
    </head>
```

```
    <body>

    <h1>JavaScript OOPS - Methods</h1>

    <script type="text/javascript">

        /*creating class*/

        function Student(a, b, c, d, e)
        {
            this.studentid = a;
            this.studentname = b;

            this.marks1 = c;
            this.marks2 = d;
            this.marks3 = e;

            this.totalmarks = 0;
            this.averagemarks = 0;
            this.grade = "";

            this.calculatetotalmarks = function()
            {
                this.totalmarks = this.marks1 + this.marks2 +
this.marks3;
            };

            this.calculateaveragemarks = function()
            {
                this.averagemarks = this.totalmarks / 3;
            };

            this.calculategrade = function()
            {
                if (this.marks1 >= 35 && this.marks2 >=35 &&
this.marks3 >= 35)
                {
                    if (this.averagemarks >= 80 && this.averagemarks
<=100)
                    {
                        this.grade = "A grade";
                    }
                    else if (this.averagemarks >= 60 &&
this.averagemarks < 80)
```

```
                        {
                              this.grade = "B grade";
                        }
                        else if (this.averagemarks >= 50 &&
this.averagemarks < 60)
                        {
                              this.grade = "C grade";
                        }
                        else if (this.averagemarks >= 35 &&
this.averagemarks < 50)
                        {
                              this.grade = "D grade";
                        }
                  }
                  else
                  {
                        this.grade = "Fail";
                  }
            };

      }

      /*creating objects*/
      var student1 = new Student(101, "scott", 70, 85, 90);
      var student2 = new Student(102, "allen", 80, 45, 77);

      /* call methods */
      student1.calculatetotalmarks();
      student1.calculateaveragemarks();
      student1.calculategrade();
      student2.calculatetotalmarks();
      student2.calculateaveragemarks();
      student2.calculategrade();

      /* display output */
      document.write("Student ID: " + student1.studentid);
      document.write("<br>");
      document.write("Student Name: " + student1.studentname);
      document.write("<br>");
      document.write("Marks 1: " + student1.marks1);
      document.write("<br>");
      document.write("Marks 2: " + student1.marks2);
      document.write("<br>");
      document.write("Marks 3: " + student1.marks3);
```

```
        document.write("<br>");
        document.write("Total Marks: " + student1.totalmarks);
        document.write("<br>");
        document.write("Average Marks: " + student1.averagemarks);
        document.write("<br>");
        document.write("Grade: " + student1.grade);
        document.write("<hr>");

        document.write("Student ID: " + student2.studentid);
        document.write("<br>");
        document.write("Student Name: " + student2.studentname);
        document.write("<br>");
        document.write("Marks 1: " + student2.marks1);
        document.write("<br>");
        document.write("Marks 2: " + student2.marks2);
        document.write("<br>");
        document.write("Marks 3: " + student2.marks3);
        document.write("<br>");
        document.write("Total Marks: " + student2.totalmarks);
        document.write("<br>");
        document.write("Average Marks: " + student2.averagemarks);
        document.write("<br>");
        document.write("Grade: " + student2.grade);
    </script>

    </body>
</html>
```

JavaScript OOPS - Prototype

```
<html>
    <head>
    <title>JavaScript OOPS - Prototype</title>
    <style type="text/css">
        body,input
        {
            font-family: 'Tahoma';
            font-size: 30px;
        }
    </style>
    </head>
    <body>

    <h1>JavaScript OOPS - Prototype</h1>
```

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

	/*creating class*/
	function Student(a, b, c, d, e)
	{
		this.studentid = a;
		this.studentname = b;

		this.marks1 = c;
		this.marks2 = d;
		this.marks3 = e;

		this.totalmarks = 0;
		this.averagemarks = 0;
		this.grade = "";
	}

	Student.prototype.calculatetotalmarks = function()
	{
		this.totalmarks = this.marks1 + this.marks2 + this.marks3;
	};

	Student.prototype.calculateaveragemarks = function()
	{
		this.averagemarks = this.totalmarks / 3;
	};

	Student.prototype.calculategrade = function()
	{
		if (this.marks1 >= 35 && this.marks2 >=35 && this.marks3
>= 35)
		{
			if (this.averagemarks >= 80 && this.averagemarks
<=100)
			{
				this.grade = "A grade";
			}
			else if (this.averagemarks >= 60 && this.averagemarks <
80)
			{
				this.grade = "B grade";
			}
			else if (this.averagemarks >= 50 && this.averagemarks <
```

```
60)
                {
                        this.grade = "C grade";
                }
                else if (this.averagemarks >= 35 && this.averagemarks <
50)
                {
                        this.grade = "D grade";
                }
        }
        else
        {
                this.grade = "Fail";
        }
};


/*creating objects*/
var student1 = new Student(101, "scott", 70, 85, 90);
var student2 = new Student(102, "allen", 80, 45, 77);

/* call methods */
student1.calculatetotalmarks();
student1.calculateaveragemarks();
student1.calculategrade();
student2.calculatetotalmarks();
student2.calculateaveragemarks();
student2.calculategrade();

/* display output */
document.write("Student ID: " + student1.studentid);
document.write("<br>");
document.write("Student Name: " + student1.studentname);
document.write("<br>");
document.write("Marks 1: " + student1.marks1);
document.write("<br>");
document.write("Marks 2: " + student1.marks2);
document.write("<br>");
document.write("Marks 3: " + student1.marks3);
document.write("<br>");
document.write("Total Marks: " + student1.totalmarks);
document.write("<br>");
document.write("Average Marks: " + student1.averagemarks);
document.write("<br>");
```

```
        document.write("Grade: " + student1.grade);
        document.write("<hr>");

        document.write("Student ID: " + student2.studentid);
        document.write("<br>");
        document.write("Student Name: " + student2.studentname);
        document.write("<br>");
        document.write("Marks 1: " + student2.marks1);
        document.write("<br>");
        document.write("Marks 2: " + student2.marks2);
        document.write("<br>");
        document.write("Marks 3: " + student2.marks3);
        document.write("<br>");
        document.write("Total Marks: " + student2.totalmarks);
        document.write("<br>");
        document.write("Average Marks: " + student2.averagemarks);
        document.write("<br>");
        document.write("Grade: " + student2.grade);
    </script>

    </body>
</html>
```

JavaScript OOPS - Inheritance:

```
<html>
    <head>
    <title>JavaScript OOPS - Inheritance</title>
    <style type="text/css">
        body,input
        {
            font-family: 'Tahoma';
            font-size: 30px;
        }
    </style>
    </head>
    <body>

    <h1>JavaScript OOPS - Inheritance</h1>

    <script type="text/javascript">

        /*parent class*/
```

```
        function Person(a, b)
        {
            this.name = a;
            this.email = b;
        }

        /*child class 1*/
        function Student(a, b, c)
        {
            Person.call(this, a, b);
            this.marks = c;
        }

        /*child class 2*/
        function Teacher(a, b, c)
        {
            Person.call(this, a, b);
            this.specialization = c;
        }

        /*creating objects*/
        var student1 = new Student("scott", "scott@gmail.com", 70);
        var teacher1 = new Teacher("allen", "allen@gmail.com", "wad");

        /* display output */
        document.write("<h3>Student</h3>");
        document.write("Name: " + student1.name);
        document.write("<br>");
        document.write("Email: " + student1.email);
        document.write("<br>");
        document.write("Marks: " + student1.marks);
        document.write("<hr>");

        document.write("<h3>Teacher</h3>");
        document.write("Name: " + teacher1.name);
        document.write("<br>");
        document.write("Email: " + teacher1.email);
        document.write("<br>");
        document.write("Specialization: " + teacher1.specialization);
    </script>

    </body>
</html>
```

JSON Array Complex:

```
<html>
   <head>
   <title>Complex JSON array</title>
   <style type="text/css">
         body,input,table
         {
               font-family: 'Tahoma';
               font-size: 30px;
         }
   </style>
   </head>
   <body>

   <h1>Nested JSON array</h1>

   <div id="div1"></div>

   <script type="text/javascript">

         var departments =
         [
               { deptno: 10, deptname: "Accounting", loc: "New York",
employees: [
                     { empid: 1, empname: "Scott" },
                     { empid: 2, empname: "Allen" },
                     { empid: 3, empname: "Smith" }
               ] },

               { deptno: 20, deptname: "Sales", loc: "New Delhi", employees:
[
                     { empid: 4, empname: "Jones" },
                     { empid: 5, empname: "John" }
               ] },

               { deptno: 30, deptname: "R&D", loc: "New Mumbai",
employees: [
                     { empid: 6, empname: "James" },
                     { empid: 7, empname: "Mark" },
                     { empid: 8, empname: "Potter" },
                     { empid: 9, empname: "Jord" }
               ] }
```

```
        ];
        var temp = "";

        for (i=0; i < departments.length; i++)
        {
            var dept = departments[i];

            temp += "<p>" + dept.deptno + ", " + dept.deptname + ", "
+ dept.loc + "</p>";

            temp += "<table border='1' cellpadding='4px'>";

            for (j=0; j < dept.employees.length; j++)
            {
                var emp = dept.employees[j];

                temp += "<tr>";
                temp += "<td>" + emp.empid + "</td>";
                temp += "<td>" + emp.empname + "</td>";
                temp += "</tr>";
            }

            temp += "</table>";
        }

        document.getElementById("div1").innerHTML  = temp;

    </script>

    </body>
</html>
```