



# Java Script

## Study Guide

**Author**  
**Srinivas Dande**



*My* **JAVA  
LEARNING  
CENTER**



## Introduction to Java Script

- JavaScript (JS) is a lightweight interpreted or JIT-compiled programming language
- JavaScript (JS) is most well-known as the scripting language for Web pages,
- JavaScript is a
  - prototype-based,
  - multi-paradigm,
  - dynamic language,
  - object-oriented,
  - functional programming
- JavaScript was created in 1995 by Brendan Eich while he was an engineer at Netscape.
- JavaScript was first released with Netscape 2 early in 1996.
- It was originally going to be called LiveScript, but it was renamed in an ill-fated marketing decision that attempted to capitalize on the popularity of Sun Microsystem's Java language — despite the two having very little in common. This has been a source of confusion ever since.
- Microsoft released JScript with Internet Explorer 3.
- Do not confuse JavaScript with the Java programming language. Both "Java" and "JavaScript" are trademarks or registered trademarks of Oracle in the U.S. and other countries. However, the two programming languages have very different syntax, semantics, and uses.

### Java Script Engines

- The Mozilla project provides two JavaScript implementations.
- SpiderMonkey engine, created by Brendan Eich at Netscape is a JavaScript implementation written in C/C++.
- Rhino engine, created by Norris Boyd (also at Netscape) is a JavaScript implementation written in Java.
- TraceMonkey (Firefox 3.5),
- JägerMonkey (Firefox 4)
- Besides the above implementations, there are other popular JavaScript engines such as:-
  - Google's V8, which is used in the Google Chrome and recent versions of Opera browsers.
  - Google's V8 is also the engine used by Node.js.
  - The JavaScriptCore (SquirrelFish/Nitro) used in some WebKit browsers such as Safari.
  - Carakan in old versions of Opera.
  - The Chakra engine used in Internet Explorer
- The standard for JavaScript is ECMAScript.  
JavaScript Version: 1.8.5 ECMAScript:2018



| Edition | Date published | Name            | Short Name |
|---------|----------------|-----------------|------------|
| 3       | December 1999  | ECMAScript 3    | ES3        |
| 4       | July 2008      | ECMAScript 4    | ES4        |
| 5       | December 2009  | ECMAScript 5    | ES5        |
| 6       | June 2015      | ECMAScript 2015 | ES6**      |
| 7       | June 2016      | ECMAScript 2016 | ES7        |
| 8       | June 2017      | ECMAScript 2017 | ES8        |
| 9       | June 2018      | ECMAScript 2018 | ES9        |

They decided to release a new version of ECMAScript every year starting in 2015. A yearly update means no more big releases like ES6.

## demo1.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JS : Events -Listeners </title>
<style>
  p{
    font-size: 25px;
    font-family: Cambria;
    border-radius: 15px;
    border: 2px solid red;
    margin: 50px;
    padding: 25px;
  }
</style>
</head>
<body>
<h2>Welcome to JLC!!!</h2>
<p onclick="show1();"> JS Training </p>
<p ondblclick="show2();"> React Training </p>
```



`<p onmouseover="show3();" onmouseout="show4%;"> Angular Training </p>`

```
<script>
    window.alert("Hello Guys , How are You?");

    function show1(){
        window.alert("Click on JS Training");
        window.console.log('Click on JS Training');
    }

    function show2(){
        alert("Double Click on React Training");
        console.log('Double Click on JS Training');
    }

    function show3(){
        console.log('MouseOver on Angular Training');
    }

    function show4(){
        console.log('MouseOut on Angular Training');
    }
</script>
</body>
</html>
```

## demo2.html

```
<!DOCTYPE html>
<html>
<head>
    <title>JS : Events -Listeners </title>
<style>
    p{
        font-size: 25px;
        font-family: Cambria;
        border-radius: 15px;
        border: 2px solid red;
```



```
margin: 50px;
padding: 25px;
}
</style>
</head>
<body>
<h2>Welcome to JLC!!!</h2>
<p id="mypara1"> JS Training </p>
<p id="mypara2"> React Training </p>
<p id="mypara3"> Angular Training </p>

<script>
  //window.alert("Hello Guys , How are You?");

  var mypara1 = document.getElementById("mypara1");
  mypara1.addEventListener("click", function (){
    window.alert("Click on JS Training");
    window.console.log('Click on JS Training');
  });

  var mypara2 = document.getElementById("mypara2");
  mypara2.addEventListener("dblclick", function (){
    alert("Double Click on React Training");
    console.log('Double Click on JS Training');
  });

  var mypara3 = document.getElementById("mypara3");
  mypara3.addEventListener("mouseover", function (){
    console.log('MouseOver on Angular Training');
  });

  mypara3.addEventListener("mouseout", function (){
    console.log('MouseOut on Angular Training');
  });
</script>
</body>
</html>
```



## demo3.html

```
<!DOCTYPE html>
<html> <head>
<title>JS- Updating DOM </title>
<style>
h1,div,input{
margin: 50px;
border: 2px solid red;
border-radius: 15px;
height: 50px;
width: 500px;
font-size: 25px;
background-color: goldenrod;
text-align: center;
padding: 15px;
}
</style> </head>
<body>
<h1 id="myhello"> Hello Guys </h1>
<div id="myhai">Hai Guys</div>
<input type="button" value="Change Text" onclick="changeText()"/>
<script>
function changeText(){
var hello = document.getElementById("myhello");
console.log(hello.innerHTML);
hello.innerHTML = "Welcome to CourseCube !!!"
console.log(hello.innerHTML);

var hai = document.getElementById("myhai");
console.log(hai.innerHTML);
hai.innerHTML = hai.innerHTML + "OK!!!"
console.log(hai.innerHTML);
}
</script>
</body>
</html>
```



## demo4.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JLC Template </title>
<style>
  div{
    margin: 50px;
    border: 2px solid red;
    border-radius: 15px;
    width: 500px;
    font-size: 25px;
    background-color: goldenrod;
    padding-left: 50px;
  }
</style>
</head>
<body>
  <div id="mydiv"> </div>
<script>
  function myprint(data){
    var mydiv= document.getElementById("mydiv");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
  }
  print("<u>Topic Heading Here :")

  Topic Related Program Here
  var x=10;
  myprint(x);
  var y=20;
  myprint(y);
  var sum = x + y ;
  myprint("Sum : "+sum);
</script>
</body></html>
```



## demo5.html

```
<!DOCTYPE html>
<html>
<head>
  <title>Data Types and Variables </title>
<style>
  div{
    margin: 50px;
    border: 2px solid red;
    border-radius: 15px;
    width: 500px;
    font-size: 25px;
    background-color: goldenrod;
    padding-left: 50px;
  }
</style>
</head>
<body>
<div id="mydiv"> </div>

<script>

  function myprint(data){
    var mydiv= document.getElementById("mydiv");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
  }

  myprint("<u>Data Types and Variables<br/></u>")

  var x=10;
  myprint(x);
  myprint(typeof(x));

  var y= 9.9;
  myprint(y);
  myprint(typeof(y));
```





```
var flag1=true;
myprint(flag1);
myprint(typeof(flag1));
```

```
var flag2=false;
myprint(flag2);
myprint(typeof(flag2));
```

```
var myname="Srinivas";
myprint(myname);
myprint(typeof(myname));
```

```
var myarray= [10,20,30,40,50];
myprint(myarray);
myprint(typeof(myarray));
```

```
var mydob= new Date();
myprint(mydob);
myprint(typeof(mydob));
```

```
</script>
```

```
</body>
```

```
</html>
```

## demo6.html

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
  <title>Data Types and Variables </title>
```

```
<style>
```

```
  div{
```

```
    Same as Previous
```

```
  }
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div id="mydiv"> </div>
```



```
<script>
  function myprint(data){
    var mydiv= document.getElementById("mydiv");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
  }

  myprint("<u>Data Types and Variables<br/></u>")

  var x=10;
  myprint(x);
  myprint(typeof(x));

  x= 9.9;
  myprint(x);
  myprint(typeof(x));

  x=true;
  myprint(x);
  myprint(typeof(x));

  x=false;
  myprint(x);
  myprint(typeof(x));

  x="Srinivas";
  myprint(x);
  myprint(typeof(x));

  x = [10,20,30,40,50];
  myprint(x);
  myprint(typeof(x));
  x = new Date();
  myprint(x);
  myprint(typeof(x));

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



## demo7.html

```
<!DOCTYPE html>
<html> <head>
  <title>Data Types and Variables </title>
</style>
  div{
    Same as Previous
  }
</style>
</head>
<body>
<div id="mydiv"> </div>

<script>
  function myprint(data){
    var mydiv= document.getElementById("mydiv");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
  }
  myprint("<u> Variables<br/></u>")

var x=10;
myprint(x);

var x= "Hello Guys";
myprint(x);

let y=20;
myprint(y);

//let y= "Hai Guys"; //Error
y="Hai Guys";
myprint(y);

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



## demo8.html

```
<!DOCTYPE html>
<html> <head>
  <title> Variable Scope </title>
</style>
  div{
    Same as Previous
  }
</style>
</head>
<body>
<div id="mydiv"> </div>
<script>
  function myprint(data){
    var mydiv= document.getElementById("mydiv");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
  }
  myprint("<u> Variable Scope <br/></u>")
var x=10; //Global Scope
function show(){ //Function Definition
  var y=20; //Function Scope
  if(true){
    var z=30; //Not in Block Scope, In Function Scope
    myprint("Inside If- x = "+x);
    myprint("Inside If- y = "+y);
    myprint("Inside If- z = "+z);
  }
  myprint("After If- x = "+x);
  myprint("After If- y = "+y);
  myprint("After If- z = "+z);
}
  show(); //Function Call
  myprint("Outside show()- x = "+x);
  //myprint("Outside show()- y = "+y);
  //myprint("Outside show()- z = "+z);
</script>
</body> </html>
```



## demo9.html

```
<!DOCTYPE html>
<html> <head>
  <title> Variable Scope </title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
<div id="mydiv"> </div>
<script>
  function myprint(data){
    var mydiv= document.getElementById("mydiv");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
  }
  myprint("<u> Variable Scope <br/></u>"); //1
  var x=10; //Global Scope //2
  function show(){ //Function Definition
    var y=20; //Function Scope
    if(true){
      let z=30; //Block Scope
      myprint("Inside If- x = "+x);
      myprint("Inside If- y = "+y);
      myprint("Inside If- z = "+z);
    }
    myprint("After If- x = "+x);
    myprint("After If- y = "+y);
    // myprint("After If- z = "+z);
  }
  show(); //Function Call //3
  myprint("Outside show()- x = "+x); //4
  //myprint("Outside show()- y = "+y);
  //myprint("Outside show()- z = "+z);
</script>
</body> </html>
```



## demo10.html

```
<!DOCTYPE html>
<html> <head>
  <title>JS : Var Default Vals and Constants </title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u> Var Default Vals and Constants </u> :")

    var x;
    myprint(x); //Undefined
    myprint(typeof x); //Undefined

    //myprint(y);
    //myprint(typeof y);

    var a=10;
    myprint(a);
    a=20;
    myprint(a);

    let b=100;
    myprint(b);
    b=200;
    myprint(b);
```



```
const c= 99;
myprint(c);
//c=55; // Assignment to constant variable.
//myprint(c);
myprint("Done!!!");
```

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

## demo11.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>JS : Operators - Part 1</title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>1) Arithmetic Operators </u> :")

    var a=5;
    var b=2
    myprint(" a =>" + a);
    myprint(" b =>" + b);
    myprint("a + b => " + (a + b));
    myprint("a - b => " + (a - b));
    myprint("a * b => " + (a * b));
```



```
myprint("a ** b => "+ (a ** b)); //to the power
myprint("a / b => "+ (a / b)); // result is number
myprint("a % b => "+ (a % b));
```

## **myprint("<u>2) Assignment Operators </u> :")**

```
var a=5;
```

```
a+=2; // a=a+2;
myprint(" a =>" + a);
```

```
var a=5;
a-=2; // a=a-2;
myprint(" a =>" + a);
```

```
var a=5;
a*=2; // a=a*2;
myprint(" a =>" + a);
```

```
var a=5;
a**=2; // a=a**2;
myprint(" a =>" + a);
```

```
var a=5;
a/=2; // a=a/2;
myprint(" a =>" + a);
```

```
var a=5;
a%=2; // a=a%2;
myprint(" a =>" + a);
```

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





## demo12.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Operators - Part 2</title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
  </script>

```

**myprint("<u>3) Relational Operators </u> :")**

```
var a=10;
myprint(" a ==>" + a);

myprint(" a > 5 ==>" + (a > 5));
myprint(" a > 10 ==>" + (a > 10));
myprint(" a >= 10 ==>" + (a >= 10));
myprint(" a < 20 ==>" + (a < 20));
myprint(" a <10 ==>" + (a <10) );
myprint(" a <=10 ==>" + (a <=10) );

myprint(" a==10 ==>" + (a==10) );
myprint(" a=='10' ==>" + (a=="10") );
myprint(" a==10.0 ==>" + (a==10.0));

```



```
myprint(" a===10 =>" + (a===10) );  
myprint(" a==='10' =>" + (a==="10") );  
myprint(" a===10.0 =>" + (a===10.0));
```

```
myprint(" a!=10 =>" + (a!=10) );  
myprint(" a!='10' =>" + (a!="10") );  
myprint(" a!=10.0 =>" + (a!=10.0));
```

```
myprint(" a!==10 =>" + (a!==10) );  
myprint(" a!=='10' =>" + (a!== "10") );  
myprint(" a!==10.0 =>" + (a!==10.0));
```

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

## demo13.html

```
<!DOCTYPE html>  
<html lang="en">  
<head>  
  <title>JS : Operators - Part 3</title>  
  <style>  
    div{  
      Same as Previous  
    }  
  </style>  
</head>  
<body>  
  <div id="mydiv"> </div>  
  <script>  
    function myprint(data){  
      var mydiv= document.getElementById("mydiv");  
      console.log(mydiv);  
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";  
    }  
  
    myprint("<u>4) Logical Operators </u> :")
```



```
myprint(" true && true => "+ (true && true));  
myprint(" true && false => "+ (true && false));  
myprint(" false && true => "+ (false && true));  
myprint(" false && false => "+ (false && false));
```

```
myprint(" true || true => "+ (true || true));  
myprint(" true || false => "+ (true || false));  
myprint(" false || true => "+ (false || true));  
myprint(" false || false => "+ (false || false));
```

```
myprint(" ! true => "+ ( !true ));  
myprint(" ! false => "+ ( !false ));
```

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

## demo14.html

```
<!DOCTYPE html>  
<html lang="en">  
<head>  
  <meta charset="UTF-8">  
  <title>JS : Operators - Part 4</title>  
  <style>  
    div{  
      Same as Previous  
    }  
  </style>  
</head>  
<body>  
  <div id="mydiv"> </div>  
  <script>  
    function myprint(data){  
      var mydiv= document.getElementById("mydiv");  
      console.log(mydiv);  
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";  
    }  
  </script>  
</body>  
</html>
```



**myprint("<u>5) Inrement and Decrement Operators </u> :")**

```
var a=10;
myprint(a++); //10
myprint(a); //11
```

```
var b=10;
myprint(++b) //11
myprint(b); //11
```

```
//print(10++);
myprint("Done");
```

```
var a=5;
myprint(a); //5
myprint(++a); //6
myprint(++a); //7
myprint(a--); //7
myprint(a++); //6
myprint(--a); //6
myprint(a); //6
myprint("Done");
```

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

## demo15.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Operators - Part 5</title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
```



```
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>6) Ternary Operator ? : </u> ")
    var a=10;
    var b=20;

    var max=(a>b) ? a: b;
    myprint("Max : "+max);
    var min=(a<b) ? a: b;
    myprint("Min : "+min);

    myprint("-----");
    var a=10;
    var b=20;
    var c=30;
    var max=(a>b && a>c) ? a : (b>c) ? b :c;
    myprint("Max : "+max);
    var min=(a<b && a < c) ? a : (b < c) ? b :c;
    myprint("Min : "+min);

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

## demo16.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Operators - Part 6</title>
  <style>
```



```
div{
    Same as Previous
}
</style>
</head>
<body>
    <div id="mydiv"> </div>
    <script>
        function myprint(data){
            var mydiv= document.getElementById("mydiv");
            console.log(mydiv);
            mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
        }
        myprint("<u>7) Bitwise Operators </u> ")
        var a=19;

        myprint("a<<1 : "+ (a<<1));
        myprint("a<<2 : "+ (a<<2));
        myprint("a>>1 : "+ (a>>1));
        myprint("a>>2 : "+ (a>>2));

        var x=15;
        var y=17;
        myprint("x & y : "+ (x & y));
        myprint("x | y : "+ (x | y));
        myprint("x ^ y : "+ (x ^ y));
        myprint("~x : "+ (~x ));
        myprint("~y : "+ (~y ));

        myprint("0101<<1 : "+ (0101<<1));
        myprint("0101>>1 : "+ (0101>>1));
        myprint("0101>>2 : "+ (0101>>2));

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



## demo17.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Operators - Part 7</title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>8) typeof, 9) new , 10) instanceof  Operator</u> ")

    var a=19;
    myprint(a);
    myprint(typeof a);

    a=9.9;
    myprint(a);
    myprint(typeof a);

    a="Hello Guys";
    myprint(a);
    myprint(typeof a);

    var mystr=new String("Hello Guys");
    myprint(mystr);
    myprint(typeof mystr);
```



```
var arr=new Array(3);
arr[0]=10;
arr[1]=20;
arr[2]=30;
myprint(arr);
myprint(typeof arr);

var dob=new Date();
myprint(dob.getDate()+"-"+dob.getMonth()+"-"+dob.getFullYear());
myprint(typeof dob);

myprint("-----");
myprint(dob instanceof Date); //T
myprint(dob instanceof Array);
myprint(dob instanceof String);
myprint("-----");
myprint(arr instanceof Date);
myprint(arr instanceof Array); //T
myprint(arr instanceof String);
myprint("-----");
myprint(mystr instanceof Date);
myprint(mystr instanceof Array);
myprint(mystr instanceof String); //T

myprint("-----");

myprint(mystr instanceof Object);
myprint(arr instanceof Object);
myprint(dob instanceof Object);

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





## demo18.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Operators - Part 8</title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>11 in Operator 12) delete Operator  </u> ")

    var mystr=new String("Hello Guys");
    myprint(mystr);
    myprint(typeof mystr);

    for(x in mystr){
      myprint(x+" - "+mystr[x]);
    }

    myprint(0 in mystr);
    myprint(1 in mystr);
    myprint(2 in mystr);

    myprint(9 in mystr);
    myprint(10 in mystr);
    myprint(11 in mystr);
```



```
myprint(length in mystr);
myprint("-----");

myprint("1. "+mystr[0]);
delete mystr[0];
myprint("2. "+mystr[0]);
myprint("-----");

myprint("1. "+mystr);
delete mystr;
myprint("2. "+mystr);
myprint("-----");

x="hello";
myprint(x);
delete x;
//myprint(x);
myprint("Done");
</script>
</body>
</html>
```

## demo19.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Operators - Part 9</title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
```



```
var mydiv= document.getElementById("mydiv");
console.log(mydiv);
mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
}
myprint("<u>11) in Operator 12) delete Operator  </u> ")
var arr=new Array(3);
arr[0]=10;
arr[1]=99.99;
arr[2]="Srinivas Dande";
arr[3]=true;
myprint(arr);
myprint(typeof arr);

for(x in arr){
    myprint(x+ " - "+arr[x]);
}
myprint("-----");

myprint(0 in arr);
myprint(1 in arr);
myprint(2 in arr);
myprint(4 in arr);
myprint(5 in arr);
myprint(length in arr);

myprint("-----");

myprint(arr[2]);
delete arr[2];
myprint(arr[2]);

myprint(arr[1]);
delete arr[1];
myprint(arr[1]);
myprint("-----");
myprint(" Array Size - "+arr.length);
```



```
for(x in arr){
    myprint(x+ " - "+arr[x]);
}
myprint("-----");

myprint(arr);
delete arr;
//myprint(arr);
myprint("Done");
</script>
</body>
</html>
```

## demo20.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>JS: Literals </title>
    <style>
        div{
            Same as Previous
        }
    </style>
</head>
<body>
    <div id="mydiv"> </div>
    <script>
        function myprint(data){
            var mydiv= document.getElementById("mydiv");
            console.log(mydiv);
            mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
        }
        myprint("<u> Literals </u> ")

        x=101;
        myprint(x);
```



```
x=0101;
myprint(x);
x=0X101;
myprint(x);
x=0B101;
myprint(x);
myprint("-----");

x=9.9;
myprint(x);
x=9.999E2;
myprint(x);
myprint("-----");

x=true;
myprint(x);
x=false;
myprint(x);
myprint("-----");

x="Hello";
myprint(x);
x="A";
myprint(x);
x="\u0041";
myprint(x);
x='\u0041\u0042';
myprint(x);
x="\101";
myprint(x);
x="\101";
myprint(x);
x='\101\102';
myprint(x);
myprint("Done");
</script>
</body>
</html>
```



## demo21.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : If Statement </title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>If Statement </u> ")
    myprint("<u>If Statement </u> ")

    var a = 10;

    if (a > 10) {
      myprint("a is greater than 10");
    }

    if (a == 10) {
      myprint("a is equals to 10");
    }
    myprint("-----");

    var a = 10;
    var b = 20;
    var max;
```



```
if (a > b) {
    max = a;
} else {
    max = b;
}
myprint("Max : " + max);

myprint("-----");
var a = 10;
var b = 20;
var c = 30;
var max;
if (a > b && a > c) {
    max = a;
} else if ((b > c)) {
    max = b;
} else {
    max = c;
}

myprint("Max : " + max);
myprint("Done");
</script>
</body>
</html>
```

## demo22.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>JS : Swicth Statement </title>
    <style>
        div{
            Same as Previous
        }
    </style>
</head>
```



```
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>Swicth Statement </u> ")

    // var day=5;
    // var day=9;
    var day = new Date().getDay();
    switch (day) {
      case 0:
        myprint("Sunday");
        break;
      case 1:
        myprint("Monday");
        break;
      case 2:
        myprint("Tuesday");
        break;
      case 3:
        myprint("Wednesday");
        break;
      case 4:
        myprint("Thursday");
        break;
      case 5:
        myprint("Friday");
        break;
      case 6:
        myprint("Saturday");
        break;
      default:
        myprint("Invalid");
    }
  }
</script>
</body>
```





```
var x = "0";
switch (x) {
  case 0:
    myprint("Zero");
    break;
  case 1:
    myprint("One");
    break;
  default:
    myprint("Invalid");
}
```

```
var x = "0";
switch (x) {
  case "0":
    myprint("Zero");
    break;
  case "1":
    myprint("One");
    break;
  default:
    myprint("Invalid");
}
myprint("Done");
</script>
</body>
</html>
```

## demo23.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : for loop </title>
  <style>
  div{
    Same as Previous
```



```
}
</style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>for loop </u> ")

    for (var i = 1; i <= 5; i++) {
      myprint(i);
    }
    myprint("-----");
    for (var i = 1; i <= 5; i++) {
      if (i % 2 == 0)
        myprint(i);
    }
    myprint("Done");
  </script>
</body>
</html>
```

## demo24.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : while and do-while loop </title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
```



```
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>while and do-while loop </u> ")

    var i = 1;
    while (i <= 5) {
      myprint(i);
      i++;
    }
    myprint("-----");

    var i = 1;
    do {
      myprint(i);
      i++;
    } while (i <= 5);

    myprint("Done");
  </script>
</body>
</html>
```

## demo25.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : break and continue </title>
  <style>
    div{
      Same as Previous
    }
  </style>
</head>
<body>
```



```
</style>
</head>
<body>
  <div id="mydiv"> </div>
  <script>
    function myprint(data){
      var mydiv= document.getElementById("mydiv");
      console.log(mydiv);
      mydiv.innerHTML = mydiv.innerHTML + data + "<br/>";
    }
    myprint("<u>break and continue </u> ")

    for (var i = 1; i <= 5; i++) {
      myprint(i);
      if (i >= 3)
        break;
      myprint("Inside Loop");
    }
    myprint("-----");
    for (var i = 1; i <= 5; i++) {
      myprint(i);
      if (i >= 3)
        continue;
      myprint("Inside Loop");
    }

    myprint("Done");
  </script>
</body>
</html>
```



## demo26.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Arrays - 1 </title>
  <style>
    input,h1,div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      /* height: 600px;*/
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u>Arrays -1 </u> ")

    var arr=[10,20,30]; //One Way
    print(arr);
    print(typeof arr);
    for(var i=0;i<arr.length;i++){
      print(arr[i]);
    }
    print("-----");
```



```
var arr=["Java","JavaScript","Angular"];
print(arr);
print(typeof arr);

for(i in arr){ //use with Arrays
    print(arr[i]);
}
print("-----");

var arr=new Array(10,20,30);//Constructor
for(i in arr){
    print(arr[i]);
}
print("-----");

var arr=new Array("Java","JavaScript","Angular");
for(var i=0;i<arr.length;i++){
    print(arr[i]);
}
print("-----");
print("Done");
</script>
</body>
</html>
```

## demo27.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>JS : Arrays - 2</title>
    <style>
        input,h1,div{
            margin: 50px;
            border:2px solid red;
            border-radius: 10px;
            /* height: 600px;*/
        }
```



```
width:500px;
font-size:25px;
background-color: goldenrod;
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>
<script>
function print(data) {
    var mydiv=document.getElementById("my-data-div");
    mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
}

```

**print("<u>Arrays - 2 </u> ")**

```
var arr=new Array("Hello Guys"); //Element
print(arr.length);
print(arr);
print("-----");
```

```
var arr=new Array(5); //Size
print("Before Assigning - Size : "+arr.length);
print(arr);
print("-----");
```

```
arr[0]=10;
arr[2]=99.9;
arr[4]="Hello Guys";
arr[5]=true;
arr[99]="OK";
print("After Assigning - Size : "+arr.length);
for(i in arr){ //returns the index if element is found
    print(i+" : "+arr[i]);
}
print("-----");
```



```
for(var i=0;i<arr.length;i++){  
    print(arr[i]);  
}  
    print("Done");  
</script>  
</body>  
</html>
```

## demo28.html

```
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <title>JS : const keyword</title>  
    <style>  
        div{  
            margin: 50px;  
            border:2px solid red;  
            border-radius: 10px;  
            width:500px;  
            font-size:25px;  
            background-color: goldenrod;  
            padding-left: 20px;  
        }  
    </style>  
</head>  
<body>  
    <div id="my-data-div"> </div>  
  
    <script>  
        function print(data) {  
            var mydiv=document.getElementById("my-data-div");  
            mydiv.innerHTML=mydiv.innerHTML+data+"<br>"  
        }  
  
        print("<u>const keyword </u> ")
```





```
var x = 10;
print(x)
x=20;
print(x)

const y=100;
print(y);
//y=200;
//print(y);

const arr = [10,20,30,40,50]; //900
print(arr);
arr[1]=99;
print(arr);

//arr=[99,88,77,66,55]; //800
//print(arr);
  print("Done");
</script>
</body>
</html>
```

## demo29.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Creating HTML elements with JS </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
```



```
}
#mytable{
    margin: 50px;
    border:2px solid red;
    border-radius: 10px;
    width:30%;
    padding: 20px;
    line-height: 1.5;
}
ul{
    list-style:circle;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>
<script>
function print(data) {
    var mydiv=document.getElementById("my-data-div");
    mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
}

    print("<u> Creating HTML elements with JS </u> ")

var arr=["Java","Angular","Python"];

var str="<ul>";
for (i in arr){
    str=str+"<li>"+arr[i]+"</li>"; //<li>Java</li>
}
str=str+"</ul>"
print(str);

var str="<table id='mytable'>";

for (i in arr){
    str=str+"<tr><td>"+arr[i]+"</td></tr>";
}
}
```



```
str=str+"</table>"
print(str);
print("Done");
</script>
</body>
</html>
```

## demo30.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Functions - 1 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u>Exploring Functions -1</u> ")
```



```
function show(){
    var x=10;
    print(x)
    print("Hello Guys");
    console.log("I am show()");
    // return "undefined";
}
show();

var res = show();
print(res);
print("-----");

function sum(a,b){ //2 arguments
    print("a type : "+ typeof a);
    print("b type : "+ typeof b);
    var s=a+b;
    return s;
}

var res1=sum(10,20);
print(res1);
var res2=sum("10","20");
print(res2);
print("-----");

print("Done");
</script>
</body>
</html>
```



## demo31.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Functions - 2 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u> Functions -2</u> ")

    var arr=[10,20,30,40,50]; //900

    function showArray(arr1){ //
      print("in func : before: "+arr1); //A
      arr1[2]=99;
      print("in func : After: "+arr1); //A
    }
```



```
showArray(arr)

print("out func : "+arr); //A
print("-----");

function sumArray(arr1){
    var sum=0;
    for(i in arr1){
        sum+=arr1[i];
    }
    return sum;
}
var res=sumArray(arr);
print(res);

print("-----");
print("Done");
</script>
</body>
</html>
```

## demo32.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>JS : Functions - 3 </title>
    <style>
    div{
        margin: 50px;
        border:2px solid red;
        border-radius: 10px;
        height:500px;
        width:500px;
        font-size:25px;
        background-color: goldenrod;
        padding-left: 20px;
```



```
}
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
    function print(data) {
        var mydiv=document.getElementById("my-data-div");
        mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u> Functions-3 </u> ")

    var show=function(){
        print("i am show()")
        print("i am show()")
    };

    show();
    print(typeof show);
    print("-----");
    var add=function(a,b){
        var s=a+b;
        return s;
    };

    var res=add(10,20);
    print(res);
    print(typeof add);

    print("-----");
    print("Done");
</script>
</body>
</html>
```



## demo33.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Functions - 4 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:500px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u> Functions-4 </u> ")

    function sum(){
      print("sum()")
      var sum=0;
      for(var i=0;i<arguments.length;i++){
        sum+=arguments[i];
      }
      return sum;
    }
  </script>
</body>
</html>
```





```
var a1=sum(); //1
print(a1);

var a2=sum(10,20);
print(a2);

var a3=sum(10,20,30,40);
print(a3);

var a4=sum(10,20,30,40,50);
print(a4);

print("-----");
print("Done");
</script>
</body>
</html>
```

## demo34.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Functions- 5 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:500px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
```



```
<body>
<div id="my-data-div"> </div>
<script>
  function print(data) {
    var mydiv=document.getElementById("my-data-div");
    mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
  }

  print("<u>JS : Functions- 5 </u> ")

  function show1(){
    var a=55; //Local
    print(a);
    a=a+10;
    print(a);
  }

  show1();
  show1();
  print("-----");

  var x=66; //Global
  function show2(){
    print(x);
    x=x+10;
    print(x);
  }
  show2();
  show2();
  print("-----");

  print("Done");
</script>
</body>
</html>
```



## demo35.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Functions- 5 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:500px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u>JS : Functions- 5 </u> ")

    var p=10; //Global
    print("1-"+p);//10
    function show(){
      var p=20; //Local to show
      function inner(){
        var p=30 //Local to Inner
        print("3-"+p); //30
      }
    }
  </script>
</body>
</html>
```



```
print("2-"+p); //20
inner();
print("4-"+p); //20
}
show();
print("5-"+p); //10
print("-----");
print("Done");
</script>
</body>
</html>
```

## demo36.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Functions - 6 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    "use strict";
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
  </script>
</body>
```



**print("<u> Functions - 6</u> ")**

```
function show1(){
  var x=20; //Local to show1
  print(x) //2-> 20
  {
    var x = 30; //
    print(x) //3-> 30
  }
  print(x) //4-> 30
}
```

```
var x = 10; //Global
print(x) //1-> 10
show1();
print(x);
print("-----")
```

```
function show2(){
  var x=20; //Local to show2
  print(x)
  {
    let x = 30; //Local to block
    print(x)
  }
  print(x) //show2 local x
}
```

```
var x = 10;
print(x)
show2();
print(x);
```

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



## demo37.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Functions -7 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:500px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u>JS : Functions- 7 </u> ")

    var p=10;
    print("Outside show : "+p);

    function show(){
      var p=20; //
      function display1(){
        var p=30
        print("Inside display1 : "+p);
      }
    }
  </script>
</body>
</html>
```



```
function display2(){
    var p=40
    print("Inside display2 : "+p);
}
print("Inside show : "+p);
display1();
print("Inside show : "+p);
display2();
print("Inside show : "+p);
}

show();
print("Outside show : "+p);

print("-----");
print("Done");
</script>
</body>
</html>
```

## demo38.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>JS : Functions -8 </title>
    <style>
        div{
            margin: 50px;
            border:2px solid red;
            border-radius: 10px;
            height:500px;
            width:500px;
            font-size:25px;
            background-color: goldenrod;
            padding-left: 20px;
        }
    </style>
</head>
<body>
```



```
</style>
</head>
<body>
<div id="my-data-div"> </div>
<script>
    function print(data) {
        var mydiv=document.getElementById("my-data-div");
        mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u>JS : Functions- 8 </u> ")

    var p=10;
    print("Outside show : "+p);
    function show(){
        var p=20;
        function display1(){
            var p=30
            print("Inside display1 : "+p);
            function display2(){
                var p=40
                print("Inside display2 : "+p);
            }
            print("Inside display1 : "+p);
            display2();
        }
        print("Inside show : "+p);
        display1();
        print("Inside show : "+p);
    }
    show();
    print("Outside show : "+p);

    print("-----");
    print("Done");
</script>
</body>
</html>
```





## demo39.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Closures </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:700px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u>JS : Closures </u> ")

    var counter=0;
    function increment1(){
      counter++;
    }

    increment1();
    print("Counter : "+counter);
    increment1();
```



```
print("Counter : "+counter);
increment1();
print("Counter : "+counter);
print("-----");

counter=counter+5; // Problem
```

```
increment1();
print("Counter : "+counter);
print("-----");
```

```
function increment2(){
    var counter=0;
    counter++;
    return counter;
}
print("Counter : "+increment2());
print("Counter : "+increment2());
print("Counter : "+increment2());
// Problem
print("-----");
```

```
//use Java Script Closure to fix
var increment = (
    function () {
        var counter = 0; //Only Once
        console.log("Hello Guys"); ////Only Once
        return function () {
            counter++;
            return counter
        }
    }
);
```

```
print("Counter : "+increment());
print("Counter : "+increment());
print("Counter : "+increment());
print("Counter : "+increment());
```



```
print("Counter : "+increment());
print("Counter : "+increment());
print("Done");
// A closure is a function having access to the parent scope,
// even after the parent function has closed.
//The self-invoking function only runs once.
// It sets the counter to zero (0), and returns a function expression.
</script>
</body>
</html>
```

## demo40.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Custom Objects - 1 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:600px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
  </script>
```



**print("<u>- Custom Objects - 1</u> ")**

```
var cust = {
    cid:101,
    cname:"Sri",
    email:"sri@cc",
    phone:12345
}

console.log(cust);
print(typeof cust);
print("Way to access Object properties");
print(cust.cid);
print(cust.cname);
print(cust.email);
print(cust.phone);

print("Another Way to access Object properties");
print(cust["cid"]);
print(cust["cname"]);
print(cust["email"]);
print(cust["phone"]);

print("Updating Object properties");
cust.cname="Srinivas";
cust.phone=99999;

print("Object properties After Update");
print(cust.cid);
print(cust.cname);
print(cust.email);
print(cust.phone);
console.log(cust);
print("Done");
</script>
</body>
</html>
```



## demo41.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Custom Objects - 2 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:600px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u>Custom Objects - 2 </u> ")

    var cust={
      cid:101,
      cname:"Sri",
      phone:12345,
      active:true,
      emails:["sri@jlc","vas@cc"],
      address:{
        city:"bangalore",
        state:"KA"
```



```
    },
    isCustomerActive:function(){
        return this.active;
    },
    getCity:function(){
        return this.address.city;
    },
    getPhone:function(){
        return this.phone;
    }
}

console.log(cust);
print(typeof cust);

print("Way to access Object properties");
print(cust.cid);
print(cust.cname);
print(cust.phone);
print(cust.active);
print(cust.emails[0]);
print(cust.emails[1]);
print(cust.address.city);
print(cust.address.state);

print("Way to call Object functions");

var x=cust.isCustomerActive();
print(x);
    var city=cust.getCity();
    print(city);
    var ph=cust.getPhone();
    print(ph);

    print("Done");
</script>
</body>
</html>
```



## demo42.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Custom Objects - 3 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:600px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u>Custom Objects - 3 </u> ")

    var cust={
      cid:101,
      cname:"Sri",
      phone:12345,

      getCid:function(){
        return this.cid;
      },
```



```
    getCname:function(){
        return this.cname;
    },
    getPhone:function(){
        return this.phone;
    },
    setCid:function(cid){
        this.cid=cid;
    },
    setCname:function(cname){
        this.cname=cname;
    },
    setPhone:function(phone){
        this.phone=phone;
    }
}

console.log(cust);
print(typeof cust);

print("Way to call Object functions");
print(cust.getCid());
print(cust.getCname());
print(cust.getPhone());
cust.setCname("Srinivas");
cust.setPhone(9999);
print(cust.getCid());
print(cust.getCname());
print(cust.getPhone());

print("Done");
</script>
</body>
</html>
```





## demo43.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Custom Objects - 4 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:600px;
      width:500px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u> Custom Objects - 4 </u> ")

    var cust={
      cid:99,
      cname:"SD",
      phone:9999,

      get customerId(){
        return this.cid;
      },
    },
```



```
get customerName(){
    return this.cname;
},
get customerPhone(){
    return this.phone;
},
set customerId(cid){
    this.cid=cid;
},
set customerName(cname){
    this.cname=cname;
},
set customerPhone(phone){
    this.phone=phone;
}
}
```

```
print("Way to access Object getters");
print(cust.customerId);
print(cust.customerName);
print(cust.customerPhone);
```

```
print("Way to access Object setters");
cust.customerName="Srinivas";
cust.customerPhone=12345;
```

```
print("Way to access Object getters");
print(cust.customerId);
print(cust.customerName);
print(cust.customerPhone);
```

```
print("Done");
</script>
</body>
</html>
```



## demo44.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Custom Objects - 5 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height:600px;
      width:800px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    print("<u> Custom Objects - 5 </u> ")

    function show(){ }

    function Customer(cid,cname,email,phone){
      this.cid=cid;
      this.cname=cname;
      this.email=email;
      this.phone=phone;
    }
```



```
var cust1=new Customer(55,"sri","sri@jlc",55555);
var cust2=new Customer(99,"vas","vas@jlc",99999);
var cust3=new Customer();

print(cust1.cid+" "+cust1.cname+" "+cust1.email+" "+cust1.phone);
print(cust2.cid+" "+cust2.cname+" "+cust2.email+" "+cust2.phone);
print(cust3.cid+" "+cust3.cname+" "+cust3.email+" "+cust3.phone);

print(typeof cust1)
print(typeof cust2)
print(typeof Customer)
print(typeof show)

cust1.accno=101;
cust1.bal=25000;

print(cust1.cid+" "+cust1.cname+" "+cust1.email+" "+cust1.phone+" "
      +cust1.accno+" "+cust1.bal);
print(cust2.cid+" "+cust2.cname+" "+cust2.email+" "+cust2.phone+" "
      +cust2.accno+" "+cust2.bal);

Customer.prototype.branchCode="B-111";
Customer.prototype.city="Bangalore";

print(cust1.cid+" "+cust1.cname+" "+cust1.email+" "+cust1.phone+" "+
      cust1.accno+" "+cust1.bal+" "+cust1.branchCode+" "+cust1.city);

print(cust2.cid+" "+cust2.cname+" "+cust2.email+" "+cust2.phone+" "+
      cust2.accno+" "+cust2.bal+" "+cust2.branchCode+" "+cust2.city);

print("Done");
</script>
</body>
</html>
```



## demo45.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Math Object </title>
  <style>
    div {
      margin: 50px;
      border: 2px solid red;
      border-radius: 10px;
      height: 600px;
      width: 500px;
      font-size: 25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv = document.getElementById("my-data-div");
      mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
    }

    print("<u>Exploring - Math Object </u> ")

    print(Math.sqrt(25));
    print(Math.cbrt(27));
    print(Math.pow(5, 2));

    print(Math.ceil(1.234));
    print(Math.ceil(1.567));
    print(Math.floor(1.234));
    print(Math.floor(1.567));
```



```
print(Math.round(5.234));
print(Math.round(5.567));

print(Math.sign(-99));
print(Math.sign(99));
print(Math.trunc(123.456));

print(Math.max(10, 20, 30, 40, 50));
print(Math.min(10, 20, 30, 40, 50));

print(Math.random()); //between 0 and 1

var rnum = Math.trunc(Math.random() * 10);
print(rnum);
var rnum = Math.trunc(Math.random() * 100);
print(rnum);
var rnum = Math.trunc(Math.random() * 1000);
print(rnum);
print("Done");
</script>
</body>
</html>
```

## demo46.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>JS : Exploring - Number Object - 1 </title>
<style>
div {
margin: 50px;
border: 2px solid red;
border-radius: 10px;
/* height:800px;*/
width: 500px;
font-size: 25px;
```



```
background-color: goldenrod;
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
function print(data) {
    var mydiv = document.getElementById("my-data-div");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
}

print("<u>Exploring - Number Object - 1 </u> ")

var x = "10";
var y = "20";
var z = x + y;
print(z);
var a = parseInt(x);
var b = parseInt(y);
var c = a + b;
print(c);

var x = "10.5";
var y = "20.5";
var z = x + y;
print(z);
var a = parseInt(x);
var b = parseInt(y);
var c = a + b;
print(c);

var a = parseFloat(x);
var b = parseFloat(y);
var c = a + b;
print(c);
```



```
var p = "JLC";
var q = parseFloat(p);
var r = parseInt(p);
print(q);
print(r);
print("-----")
print("Done");
</script>
</body>
</html>
```

## demo47.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>JS : Exploring - Number Object - 2 </title>
<style>
div {
margin: 50px;
border: 2px solid red;
border-radius: 10px;
width: 500px;
font-size: 25px;
background-color: goldenrod;
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>
<script>
function print(data) {
var mydiv = document.getElementById("my-data-div");
mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
}
</script>
```





**print("<u>Exploring - Number Object - 2</u> ")**

```
var num1 = 12345.2789;
```

```
print(num1.toFixed()); // 12345
print(num1.toFixed(1)); // 12345.3
print(num1.toFixed(2)); // 12345.28
print(num1.toFixed(5));
print(num1.toFixed(6));
print("-----")
```

```
var num2 = 2.34;
print(num2.toFixed()); //2
print(num2.toFixed(1)); //2.3
print(num2.toFixed(2)); //2.34
```

```
var num3 = 2.35;
print(num3.toFixed()); //2
print(num3.toFixed(1)); //2.4
print(num3.toFixed(2));
```

```
var num4 = 2.55;
print(num4.toFixed());
print(num4.toFixed(1));
print(num4.toFixed(2));
print("-----")
```

```
var num1 = 5.123456;
```

```
print(num1.toPrecision());
print(num1.toPrecision(5));
print(num1.toPrecision(4));
print(num1.toPrecision(3));
print(num1.toPrecision(2));
print(num1.toPrecision(1));
print("-----")
```



```
num2 = 0.000123;
```

```
print(num2.toPrecision());  
print(num2.toPrecision(5));  
print(num2.toPrecision(4));  
print(num2.toPrecision(3));  
print(num2.toPrecision(2));  
print(num2.toPrecision(1));  
print("-----")
```

```
num3 = 1234.5;
```

```
print(num3.toPrecision());  
print(num3.toPrecision(5));  
print(num3.toPrecision(4));  
print(num3.toPrecision(3));  
print(num3.toPrecision(2));  
print(num3.toPrecision(1));  
print("-----")
```

```
print("Done");
```

```
</script>
```

```
</body>
```

```
</html>
```

## demo48.html

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
<meta charset="UTF-8">
```

```
<title>JS : Exploring - Date Object -1</title>
```

```
<style>
```

```
div {
```

```
margin: 50px;
```

```
border: 2px solid red;
```

```
border-radius: 10px;
```

```
height: 600px;
```



```
width: 800px;
font-size: 25px;
background-color: goldenrod;
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
function print(data) {
    var mydiv = document.getElementById("my-data-div");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
}
print("<u>Exploring - Date Object - 1</u> ")

var cd = new Date(); //Current Date
print(cd);
var yy = cd.getFullYear();
var mm = cd.getMonth() + 1;
var dd = cd.getDate();
var day = cd.getDay();
print(dd + " / " + mm + " / " + yy + " : " + day);

var hh = cd.getHours();
var mi = cd.getMinutes();
var ss = cd.getSeconds();
var ms = cd.getMilliseconds();
print(hh + "-" + mi + "-" + ss + "-" + ms);
print("getTime() : " + cd.getTime()) //Timestamp

var dueDate = new Date();
print(dueDate);
dueDate.setDate(5);
dueDate.setMonth(1);
dueDate.setFullYear(2021);
dueDate.setHours(4);
```



```
dueDate.setMinutes(30);
dueDate.setSeconds(30);
dueDate.setMilliseconds(500);
print(dueDate);
```

```
var dd = new Date(2021, 1, 5, 4, 30, 30, 500);
print(dd);
```

```
    print("Done");
</script>
</body>
</html>
```

## demo49.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Date Object - 2</title>
  <style>
    div {
      height: 100px;
      width: 300px;
      background-color: bisque;
      font-size: 50px;
      text-align: center;
      padding-top: 25px;
    }
    span {
      font-size: 25px;
    }
  </style>
</head>
```



```
<body onload="formatTime();">
  <div id="mydata-div"> </div>
  <script>
    function formatTime() {

      var cd = new Date();

      var hh = cd.getHours();
      var mm = cd.getMinutes();
      var ss = cd.getSeconds();
      var dStr = hh + ":" + mm + ":" + ss;

      document.getElementById("mydata-div").innerHTML = dStr;
      setTimeout("formatTime()", 1000);
    }
  </script>
</body>
</html>
```

## demo50.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Date Object - 3</title>
  <style>
    div {
      height: 100px;
      width: 300px;
      background-color: bisque;
      font-size: 50px;
      text-align: center;
      padding-top: 25px;
    }
    span {
      font-size: 25px;
    }
  </style>
```



```
</head>
```

```
<body onload="formatTime();">
```

```
<div id="mydata-div"> </div>
```

```
<form name="myclock">
```

```
<span> <input type="radio" id="format-12" name="mytime" checked>
```

```
12 Hour Format </span>
```

```
<span> <input type="radio" id="format-24" name="mytime" >
```

```
24 Hour Format </span>
```

```
</form>
```

```
<script>
```

```
function formatTime() {
```

```
    var cd = new Date();
```

```
    var hh = cd.getHours();
```

```
    var mm = cd.getMinutes();
```

```
    var ss = cd.getSeconds();
```

```
    var dStr = hh + ":" + mm + ":" + ss;
```

```
    document.getElementById("mydata-div").innerHTML = dStr;
```

```
    if (document.myclock.mytime[0].checked) {
```

```
        if (mm <= 9)
```

```
            mm = "0" + mm;
```

```
        if (ss <= 9)
```

```
            ss = "0" + ss;
```

```
        if (hh > 12) {
```

```
            hh = hh - 12;
```

```
            ad = "P.M";
```

```
        } else {
```

```
            hh = hh;
```

```
            ad = "A.M";
```

```
        }
```



```
        if (hh == 12)
            ad = "P.M";
        if (hh == 00)
            hh = "12";

        dStr = ((hh <= 9) ? "0" + hh : hh) + ":" + mm + ":" + ss + ad;
        document.getElementById("mydata-div").innerHTML = dStr;
    }

    if (document.myclock.mytime[1].checked) {
        if (mm <= 9)
            mm = "0" + mm;
        if (ss <= 9)
            ss = "0" + ss;
        if (hh <= 9)
            hh = "0" + hh;

        dStr = ((hh <= 9) ? "0" + hh : hh) + ":" + mm + ":" + ss;
        document.getElementById("mydata-div").innerHTML = dStr;

    }

    setTimeout("formatTime()", 1000);

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

## demo51.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>JS : Exploring - String Object - 1</title>
    <style>
        div{
```



```
margin: 50px;
border: 2px solid red;
border-radius: 10px;
width: 600px;
font-size: 25px;
background-color: goldenrod;
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
function print(data) {
    var mydiv=document.getElementById("my-data-div");
    mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
}

    print("<u>Exploring - String Object - 1</u> ")
    var str="Hello Guys";
    print(str.length);
    print(str.charAt(0))
    print(str.charAt(1))
    print(str.charCodeAt(0))
    print(str.charCodeAt(1))
    print(str.codePointAt(0))
    print(str.codePointAt(1))
    print("-----");

    var str="srinivas";

    print(str.indexOf("s"));
    print(str.indexOf("r"));
    print(str.indexOf("i"));
    print("-----");
```





```
print(str.lastIndexOf("s"));
print(str.lastIndexOf("r"));
print(str.lastIndexOf("i"));
print("-----");

print(str.startsWith("sri"))
print(str.startsWith("vas"))
print(str.endsWith("sri"))
print(str.endsWith("vas"))
print("-----");

var str="Hello Guys";
print(str);
print(str.toLocaleLowerCase());
print(str.toLocaleUpperCase());
print(str.toLowerCase());
print(str.toUpperCase());
print("-----");

var str1="Hello";
var str2=str1.concat("Guys");
print(str1);
print(str2);
print("-----");

var str3=str1.repeat(3);
print(str3);
print("-----");
    print("Done");
</script>
</body>
</html>
```



## demo52.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - String Object - 2</title>
  <style>
    div {
      margin: 50px;
      border: 2px solid red;
      border-radius: 10px;
      width: 600px;
      font-size: 25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv = document.getElementById("my-data-div");
      mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
    }
    print("<u>Exploring - String Object - 2</u> ")

    var str = "Hello Guys How are you Guys Now";

    var strArray = str.split(" ");
    print(strArray);
    print(strArray.length);
    print("-----");
```



```
var strArray = str.split("Guys");
print(strArray);
print(strArray.length);
print("-----");
print(str);

var resultString = str.replace("Guys", "Students");
print(str);
print(resultString);
var resultString = str.replace("H", "X");
print(str);
print(resultString);
print("-----");

var str = "Hello Guys-CourseCube";
print(str);
var resStr = str.substring(6);
print(resStr);
var resStr = str.substring(6, 9);
print(resStr);
var resStr = str.substring(6, 10);
print(resStr);

print("-----");
var str = "Hello Guys-CourseCube";
print(str);
var resStr = str.substr(6);
print(resStr);
var resStr = str.substr(6, 9);
print(resStr);
var resStr = str.substr(6, 10);
print(resStr);

print("Done");
</script>
</body>
</html>
```



## demo53.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>JS : Exploring - String Object - 3</title>
<style>
div {
margin: 50px;
border: 2px solid red;
border-radius: 10px;
width: 600px;
font-size: 25px;
background-color: goldenrod;
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
function print(data) {
var mydiv = document.getElementById("my-data-div");
mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
}
print("<u>Exploring - String Object - 3</u> ")

var str = "Hello Guys-CourseCube";
print(str);
var resStr = str.slice(6);
print(resStr);
var resStr = str.slice(6, 9);
print(resStr);
var resStr = str.slice(6, 10);
print(resStr);
print("-----");
```



```
var str = "Hello Guys Course Cube";  
print(str);  
var res = str.includes("Hello");  
print(res);  
var res = str.includes("Cube");  
print(res);
```

```
var res = str.includes("Guys");  
print(res);  
var res = str.includes("Course");  
print(res);
```

```
var res = str.includes("Hai");  
print(res);
```

```
print("-----");
```

```
var myString = "Hello Guys Course Cube";  
var myword1 = 'Guys';  
var myword2 = 'JLC';
```

```
var myresult = `The word ${myword1} ${myString.includes(myword1)? 'is' : 'is not'} found`  
print(myresult)  
var myresult = `The word ${myword2} ${myString.includes(myword2)? 'is' : 'is not'} found`  
print(myresult)
```

```
var x = myString.includes(myword1) ? 'is' : 'is not'  
var myresult1 = "The word" + myword1 + " " + x + " found";  
print(myresult1)
```

```
print("Done");  
</script>  
</body>  
</html>
```



## Array Variables and Functions

|               |   |
|---------------|---|
| length        | Reflects the number of elements in an array.  |
| pop()         | Removes the last element from an array and returns that element.  |
| push()        | Adds one or more elements to the end of an array and returns the new length of the array.                                   |
| reverse()     | Reverses the order of the elements of an array in place   |
| sort()        | Sorts the elements of an array in place and returns the array.  |
| shift()       | Removes the first element from an array and returns that element.   |
| unshift()     | Adds one or more elements to the front of an array and returns the new length of the array.                                 |
| concat()      | Returns a new array that is this array joined with other array(s) and/or value(s).  |
| join()        | Joins all elements of an array into a string.   |
| includes()    | Determines whether an array contains a certain element, returning true or false as appropriate.                             |
| indexOf()     | Returns the first (least) index of an element within the array equal to the specified value, or -1 if none is found.        |
| lastIndexOf() | Returns the last (greatest) index of an element within the array equal to the specified value, or -1 if none is found.      |
| slice()       | Extracts a section of an array and returns a new array.   |
| fill()        | Fills all the elements of an array from a start index to an end index with a static value.                                  |
| forEach()     | Calls a function for each element in the array.   |
| entries()     | Returns a new Array Iterator object that contains the key/value pairs for each index in the array.                          |
| keys()        | Returns a new Array Iterator that contains the keys for each index in the array.  |
| values()      | The values() method returns a new Array Iterator object that contains the values for each index in the array.               |
| filter()      | Creates a new array with all of the elements of this array for which the provided filtering function returns true.          |
| map()         | Creates a new array with the results of calling a provided function on every element in this array.                         |
| reduce()      | Apply a function against an accumulator and each value of the array (from left-to-right) as to reduce it to a single value. |
| reduceRight() | Apply a function against an accumulator and each value of the array (from right-to-left) as to reduce it to a single value. |



## demo54.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object - 1</title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:600px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u>Exploring - Array Object - 1 </u> ")

    var arr=[10,59,20,35,30,25,40,50];
    print(arr);
    print(arr.length)

    var first=arr[0];
    var last=arr[arr.length-1];

    print(first);
    print(last);
    print("-----");
```



```
print(arr);
var x= arr.push("Hello");
print(arr);
print("x = "+ x)

var y= arr.push("99","Hai Guys");
print(arr);
print("y = "+y)

var x= arr.pop();
print(x)
print(arr);
var x= arr.pop();
print(x)
print(arr);
print("-----");

print("Done");
</script>
</body>
</html>
```

## demo55.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object - 2</title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:600px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
```





```
</style>
</head>
<body>
<div id="my-data-div"> </div>
<script>
function print(data) {
    var mydiv=document.getElementById("my-data-div");
    mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
}
    print("<u>Exploring - Array Object - 2 </u> ")

    var arr=[10,59,20,35,30,25,40,50];
    print(arr);

    arr.reverse();
    print(arr)

    arr.sort();
    print(arr)

    var arr=[10,20,30,40,50,60];
    print(arr)
    var x= arr.shift();
    print(arr);
    print(x)
    var x=arr.shift();
    print(arr);
    print(x)

    var y=arr.unshift(99);
    print(y)
    print(arr);
    var y=arr.unshift(123);
    print(y)
    print(arr);
    print("-----");
</script>
</body></html>
```



## demo56.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object -3</title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:600px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u>Exploring - Array Object - 3</u> ")

    var arr1=[10,20,30];
    print(arr1);
    var arr2=[11,22,33];
    print(arr2);
    print("-----");

    var x=arr1.concat(arr2);
    print(x);
    print(arr1);
    print(arr2);
```



```
var x=arr2.concat(arr1);
print(x);

print("-----");
var p=arr1.join();
print(typeof p);
print(p) //"10,20,30"
print(p[0])
print(p[1])
print(p[2])

var p=arr1.join("--*--");
print(typeof p);
print(p) // "10--*--20--*--30"
print(p[0])
print(p[1])
print(p[2])

print("-----");
var myarray=[10,20,30,20,30,40,50];
var q=myarray.includes(10); //true
print(q)
var q=myarray.includes(50); //true
print(q)
var q=myarray.includes(99); //false
print(q)
print("-----");

var arr1=new Array(5);
arr1[0]=10;
arr1[1]=20;
print(arr1)

arr1.fill(99);
print(arr1)
print("Done");
</script>
</body></html>
```



## demo57.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object -4</title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:600px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u>Exploring - Array Object - 4</u> ")

    var myarray=[10,20,30,20,30,40,50];

    var myindex=myarray.indexOf(20); //1
    print(myindex)
    var myindex=myarray.indexOf(30); //2
    print(myindex)
    var myindex=myarray.lastIndexOf(20); //3
    print(myindex)
    var myindex=myarray.lastIndexOf(30); //4
    print(myindex)
```



```
var myindex=myarray.indexOf(50);//6
print(myindex)
var myindex=myarray.lastIndexOf(50);//6
print(myindex)
var myindex=myarray.indexOf(60); //-1
print(myindex)
var myindex=myarray.lastIndexOf(60);// -1
print(myindex)
print("-----");

var myarray=[10,20,30,40,50,60,70];
var arrX=myarray.slice(); //10,20,30,40,50,60,70
print(arrX)
var arrX=myarray.slice(1,3); //20,30
print(arrX)
var arrX=myarray.slice(1,5); //20,30,40,50
print(arrX)
print("Done");
</script>
</body>
</html>
```

## demo58.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object-5 </title>
  <style>
    div {
      margin: 50px;
      border: 2px solid red;
      border-radius: 10px;
      width: 600px;
      font-size: 25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
```



```
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
function print(data) {
    var mydiv = document.getElementById("my-data-div");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
}

    print("<u>Exploring - Array Object - 5</u> ")

    var myarr = ["Angular", "React", "MicroServices"];

    var iterator = myarr.keys();
    for (let myindex of iterator) {
        print(myindex);
        console.log(myindex);
    }
    print("-----");

    var iterator = myarr.values();
    for (let myvalue of iterator) {
        print(myvalue);
        console.log(myvalue);
    }
    print("-----");
    var iterator = myarr.entries();
    for (let myentry of iterator) {
        print(myentry);
        console.log(myentry);
    }
    print("Done");
</script>
</body>
</html>
```



## demo59.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object-6 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:600px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u>Exploring - Array Object - 6</u> ")

    var arr=["Angular","NodeJS","ReactJS","ExpressJS"];
    print(arr);
    for(var index in arr){
      print(index+"    "+arr[index]);
    }

    print("-----");
```



```
function showArray1(item,index){  
    print(index+"    "+item);  
}
```

```
function showArray2(item,index){  
    if(index%2==0){  
        print(index+"    "+item);  
    }  
}
```

```
arr.forEach(showArray1);  
print("-----");
```

```
arr.forEach(showArray2);  
print("-----");
```

```
print("Done");  
/*
```

function that takes another function as an argument is called as higher-order function.  
function that returns a function as a result is also called as higher-order function.

```
*/
```

```
</script>
```

```
</body>
```

```
</html>
```

## demo60.html

```
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <title>JS : Exploring - Array Object - 7 </title>  
<style>  
    div {  
        margin: 50px;  
        border: 2px solid red;  
        border-radius: 10px;  
        width: 600px;
```





```
font-size: 25px;
background-color: goldenrod;
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
function print(data) {
    var mydiv = document.getElementById("my-data-div");
    mydiv.innerHTML = mydiv.innerHTML + data + "<br>"
}

print("<u>Exploring - Array Object - 7 </u> ")

var numArray = [1, 2, 3, 4, 5];
print(numArray);

var sameArray = numArray.map(x => x);
print(sameArray)

var squareArray = numArray.map(x => x * x);
print(squareArray)

var cubeArray = numArray.map(x => x * x * x);
print(cubeArray)

print("-----");

function get(x){
    return x;
}

function square(x){
    return x * x;
}
```



```
function cube(x){
    return x * x * x;
}

var numArray=[1,2,3,4,5];
print(numArray);

var sameArray=numArray.map(get);
print(sameArray)

var squareArray=numArray.map(square);
print(squareArray)

var cubeArray=numArray.map(cube);
print(cubeArray)
print("Done");
</script>
</body>
</html>
```

## demo61.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object - 8 </title>
  <style>
    div {
      margin: 50px;
      border: 2px solid red;
      border-radius: 10px;
      width: 600px;
      font-size: 25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
```



```
<body>
<div id="my-data-div"> </div>

<script>
function print(data) {
    var mydiv = document.getElementById("my-data-div");
    mydiv.innerHTML = mydiv.innerHTML + data + "</br>"
}

print("<u>Exploring - Array Object - 8 </u> ")

var ageArray = [10, 30, 15, 25, 17, 16, 39];

print(ageArray) //1
function validAgeForVote(age) {
    console.log(age)
    if (age >= 18)
        return true;
    else
        return false;
}

function invalidAgeForVote(age) {
    console.log(age)
    if (age < 18)
        return true;
    else
        return false;
}

var resultArray = ageArray.map(validAgeForVote);
print(resultArray) //2

var resultArray = ageArray.filter(validAgeForVote);
print(resultArray) //3

var resultArray = ageArray.filter(invalidAgeForVote);
print(resultArray) //4
```



```
print("-----");
var numArray=[1,2,3,4,5];
print(numArray);
function findEven(num){
  if(num%2==0)
    return true;
  else
    return false;
}

var evenArray=numArray.map(findEven);
print(evenArray)

var evenArray=numArray.filter(findEven);
print(evenArray)
print("-----");

function findOdd(num){
  if(num%2!=0)
    return true;
  else
    return false;
}
var oddArray=numArray.map(findOdd);
print(oddArray)

var oddArray=numArray.filter(findOdd);
print(oddArray)
print("-----");

var evenArray=numArray.filter(x => x%2==0);
print(evenArray)
var oddArray=numArray.filter(x => x%2!=0);
print(oddArray)
print("Done");
</script>
</body> </html>
```



## demo62.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Exploring - Array Object - 9 </title>
  <style>
    div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      width:600px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function print(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    print("<u>Exploring - Array Object - 9 </u> ")

    var numArray=[1,2,3,4,5];
    print(numArray);

    function sumNumbers(x,y){
      return x+y;
    }

    function mulNumbers(x,y){
```



```
        return x*y;
    }
    result=numArray.reduce(sumNumbers);
    print(result);

    result=numArray.reduce(mulNumbers);
    print(result);
    print("-----");

    result=numArray.reduce((x,y) => x+y);
    print(result);
    result=numArray.reduce((x,y) => x*y);
    print(result);
    print("-----");

    result=numArray.reduce((x,y) => x+y ,10);
    print(result);
    result=numArray.reduce((x,y) => x*y ,10);
    print(result);
    print("-----");

    result=numArray.reduceRight((x,y) => x+y ,0);
    print(result);
    result=numArray.reduceRight((x,y) => x*y ,1);
    print(result);
    print("-----");

    result=numArray.reduce((x,y) => (x>y) ?x:y ,1);
    print(result);
    result=numArray.reduce((x,y) => (x<y) ?x:y ,1);
    print(result);

    print("Done");
```

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



## demo63.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Window Object </title>
  <style>
    div {
      margin: 50px;
      border: 2px solid red;
      border-radius: 10px;
      width: 500px;
      height: 100px;
      font-size: 25px;
      background-color: goldenrod;
      padding-left: 20px;
    }

    li {
      list-style-type: none;
      padding: 10px;
    }

    input {
      font-size: 20px;
      color: red;
      border: 2px red solid;
      border-radius: 5px;
      padding: 5px;
    }
  </style>
</head>
```



```
<body>
```

```
  <div id="my-data-div"> </div>
```

```
  <form name="myform">
```

```
    <ol>
```

```
      <li> <input type="button" value="Display Alert Message" onclick="openAlert()" /> </li>
```

```
      <li> <input type="button" value="Display Confirmation" onclick="openConfirm()" /> </li>
```

```
      <li> <input type="button" value="Display Prompt" onclick="openPrompt()" /> </li>
```

```
      <li> <input type="button" value="Open New Window " onclick="openNewWin()" /> </li>
```

```
      <li> <input type="button" value="Close New Window " onclick="closeNewWin()" /> </li>
```

```
      <li><input type="button" value="Print this Page" onclick="printPage()" /> </li>
```

```
    </ol>
```

```
  </form>
```

```
  <script>
```

```
    function display(data) {
```

```
      var mydiv = document.getElementById("my-data-div");
```

```
      mydiv.innerHTML = data;
```

```
    }
```

```
    function openAlert() {
```

```
      window.alert("hello Gys");
```

```
      var x = alert("Welcome to CourseCube!");
```

```
      display(x);
```

```
    }
```

```
    function openConfirm() {
```

```
      var result = confirm("Do you want to Delete the Student Record?");
```

```
      if (result) {
```

```
        display("Yes , I want to Delete");
```

```
      } else {
```

```
        display("No , I don't want to Delete");
```

```
      }
```

```
    }
```





```
function openPromt() {
    var name = window.prompt("Enter Student Name", "Srinivas Dande");
    display(name);
}

var newWin;

function openNewWin() {
    newWin = window.open("hello.html", "newWin",300,300);
}
function closeNewWin() {
    newWin.close();
}

function printPage() {
    self.print();
}
</script>
</body>
</html>
```

## demo64.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>JS : Navigator and Histroy Object</title>
    <style>
        input,h1,div{
            margin: 50px;
            border:2px solid red;
            border-radius: 10px;
            height: 500px;
            width:800px;
            font-size:25px;
            background-color: goldenrod;
        }
```



```
padding-left: 20px;
}
</style>
</head>
<body>
<div id="my-data-div"> </div>

<script>
function display(data) {
    var mydiv=document.getElementById("my-data-div");
    mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
}

display("<u>Navigator Object :")

display("Browser :" +navigator.appName);
display("Browser Code:" +navigator.appCodeName);

display("Browser Version:" +navigator.appVersion);
display("PlatForm :" +navigator.platform);
display("Cookies Enabled :" +navigator.cookieEnabled);
display("Java Enabled :" +navigator.javaEnabled());
display("languages :" +navigator.languages);
display("User Agent :" +navigator.userAgent);
display("Vendor :" +navigator.vendor);

display("History Length :" +history.length);
// history.back();
// history.forward();
// history.go(-1);
// history.go(1);
</script>
</body>
</html>
```

## demo65.html

```
<!DOCTYPE html>
```



```
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Location Object</title>
  <style>
    input,h1,div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height: 500px;
      width:800px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>

  <script>
    function display(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }

    display("<u>Location Object:</u>")

    display("Location :" +window.location);
    display("href :" +window.location.href);
    display("host :" +window.location.host);
    display("hostname :" +window.location.hostname);
    display("pathname :" +window.location.pathname);
    display("port :" +window.location.port);
    display("protocol :" +window.location.protocol);

    display("History Length :" +history.length);
```



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

## demo66.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Screen Object</title>
  <style>
    input,h1,div{
      margin: 50px;
      border:2px solid red;
      border-radius: 10px;
      height: 500px;
      width:800px;
      font-size:25px;
      background-color: goldenrod;
      padding-left: 20px;
    }
  </style>
</head>
<body>
  <div id="my-data-div"> </div>
  <script>
    function display(data) {
      var mydiv=document.getElementById("my-data-div");
      mydiv.innerHTML=mydiv.innerHTML+data+"<br>"
    }
    display("<u>Screen Object:</u>")
```



```
display("Total Width :" +window.screen.width);
display("Total Height :" +window.screen.height);
display("Available Width :" +window.screen.availWidth);
display("Available Height :" +window.screen.availHeight);
display("colorDeptht :" +window.screen.colorDepth);
display("pixelDepth :" +window.screen.pixelDepth);
display("History Length :" +history.length);
console.log("History Length :" +history.length);
</script>
</body> </html>
```

## demo67.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>JS : Document Object</title>
</head>
<body>
<script>
document.write("<h1> Hello Guys</h1>");

function show(){
console.log("Button Clicked");
var fn= document.getElementById("fname").value;
console.log("fname : "+fn);

var em1= document.getElementById("email1").value;
console.log("email 1 : "+em1);

var em2= document.getElementById("email2").value;
console.log("email 2 : "+em2);

var ph= document.getElementById("phone").value;
console.log("phone : "+ph);

var fn= document.myform.fname.value;
```



```
var em1= document.myform.email[0].value;
var em2= document.myform.email[1].value;
var ph= document.myform.phone.value;
```

```
console.log("fname : "+fn);
console.log("email 1: "+em1);
console.log("email 2 : "+em2);
console.log("phone : "+ph);
```

```
}
</script>
```

```
<form name="myform">
  <table>
    <tr>
      <td> Full Name</td>
      <td> <input type="text" id="fname" name="fname"/> </td>
    </tr>
    <tr>
      <td> First Email </td>
      <td> <input type="text" id="email1" name="email"/> </td>
    </tr>
    <tr>
      <td> Second Email </td>
      <td> <input type="text" id="email2" name="email"/> </td>
    </tr>
    <tr>
      <td> Phone </td>
      <td> <input type="text" id="phone" name="phone"/> </td>
    </tr>
    <tr>
      <td> <input type="button" value="Click Here" onclick="show();"/> </td>
    </tr>
  </table>
</form>
</body>
```



</html>