

Practical No 4

Aim : JavaScript Object

A. String Object

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>String Object</title>
  <style>
    body {
      background: aliceblue;
      color: blueviolet;
    }

    h1 {
      text-align: center;
    }
  </style>
</head>
<body>
  <h1>JavaScript String Object</h1>
  <script>
    // JavaScript String Object
    // String Object Is Used For String Manipulation
    let a = new String("Hello World");
    let str = "Hello World";

    document.write("Through New Keyword = ", a,"<br>");
    document.write("Through String Literal = ", str,"<br>");
    document.write("<br>");

    // String Object Methods
    // charAt() Method Is Used For Returning The Character At Specified Index
    document.write("charAt() Method Is Used For Returning The Character At Specified Index<br>");
    document.write("string = ", str,"<br>");
    document.write("index = 0 = ", a.charAt(0),"<br>");
    document.write("index = 1 = ", a.charAt(1),"<br>");
    document.write("<br>");

    // concat() Method Is Used For Concatenating Two Or More Strings
    document.write("concat() Method Is Used For Concatenating Two Or More Strings<br>");
    document.write("string1 = ", str,"<br>");
    document.write("string2 = ", str.concat(" How Are You"),"<br>");
    document.write("<br>");

    // indexOf() Method Is Used For Returning The Index Of The First Occurrence Of A Substring
```

document.write("indexOf() Method Is Used For Returning The Index Of The First Occurrence Of A Substring
");

```
document.write("string = ", str,"<br>");
document.write("substring = How = ", str.indexOf("How"),"<br>");
document.write("<br>");
```

// lastIndexOf() Method Is Used For Returning The Index Of The Last Occurrence Of A Substring

document.write("lastIndexOf() Method Is Used For Returning The Index Of The Last Occurrence Of A Substring
");

```
document.write("string = ", str,"<br>");
document.write("substring = How = ", str.lastIndexOf("How"),"<br>");
document.write("<br>");
```

// length() Method Is Used For Returning The Length Of A String

document.write("length() Method Is Used For Returning The Length Of A String
");

```
document.write("string = ", str,"<br>");
document.write("length = ", str.length,"<br>");
document.write("<br>");
```

// slice() Method Is Used For Returning A Section Of A String

document.write("slice() Method Is Used For Returning A Section Of A String
");

```
document.write("string = ", str,"<br>");
document.write("start = 0 end = 5 = ", str.slice(0, 5),"<br>");
document.write("<br>");
```

// toLowerCase() Method Is Used For Converting A String To Lowercase

document.write("toLowerCase() Method Is Used For Converting A String To Lowercase
");

```
document.write("string = ", str,"<br>");
document.write("string = ", str.toLowerCase(),"<br>");
document.write("<br>");
```

// toUpperCase() Method Is Used For Converting A String To Uppercase

document.write("toUpperCase() Method Is Used For Converting A String To Uppercase
");

```
document.write("string = ", str,"<br>");
document.write("string = ", str.toUpperCase(),"<br>");
document.write("<br>");
```

// trim() Method Is Used For Removing Whitespace From Both Ends Of A String

document.write("trim() Method Is Used For Removing Whitespace From Both Ends Of A String
");

```
let unTrim = "    Hello World    ";
document.write("string = ", unTrim,"<br>");
document.write("string = ", unTrim.trim(),"<br>");
document.write("<br>");
```

</script>

</body>

</html>

JavaScript String Object

Through New Keyword = Hello World

Through String Literal = Hello World

charAt() Method Is Used For Returning The Character At Specified Index

string = Hello World

index = 0 = H

index = 1 = e

concat() Method Is Used For Concatenating Two Or More Strings

string1 = Hello World

string2 = Hello World How Are You

indexOf() Method Is Used For Returning The Index Of The First Occurrence Of A Substring

string = Hello World

substring = How = -1

lastIndexOf() Method Is Used For Returning The Index Of The Last Occurrence Of A Substring

string = Hello World

substring = How = -1

length() Method Is Used For Returning The Length Of A String

string = Hello World

length = 11

slice() Method Is Used For Returning A Section Of A String

string = Hello World

start = 0 end = 5 = Hello

toLowerCase() Method Is Used For Converting A String To Lowercase

string = Hello World

string = hello world

toUpperCase() Method Is Used For Converting A String To Uppercase

string = Hello World

string = HELLO WORLD

trim() Method Is Used For Removing Whitespace From Both Ends Of A String

string = Hello World

string = Hello World

B. RegEx Object

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

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>RegEx Object</title>
  <style>
    body {
      background: aliceblue;
      color: blueviolet;
    }

    h1 {
      text-align: center;
    }
  </style>
</head>

<body>
  <h1>JavaScript RegEx Object</h1>
  <script>
    // JavaScript RegEx Object
    // RegEx Object Is Used For Pattern Matching
    let a = "This Is An Example Of JavaScript RegEx";
    let reg = /JavaScript/i;
    document.write("String : ", a, "<br>")

    // test() Method Is Used For Checking If A String Matches A Pattern
    document.write("test() Method Is Used For Checking If A String Matches A Pattern<br>");
    document.write("RegEx : ", reg, "<br>");
    document.write("test() Method Result = ", reg.test(a), "<br>");
    document.write("<br>");
  </script>
</body>

</html>
```

JavaScript RegEx Object

String : This Is An Example Of JavaScript RegEx
test() Method Is Used For Checking If A String Matches A Pattern
RegEx : /JavaScript/i
test() Method Result = true

C. Math Object

1. Math Object Demo

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

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Math Object Demo</title>
  <style>
    body {
      background: aliceblue;
      color: blueviolet;
    }

    h1 {
      text-align: center;
    }
  </style>
</head>

<body>
  <h1>JavaScript Math Object Demo</h1>
  <script>
    // JavaScript Math Object
    // Math Object Is Used For Mathematical Operations
    document.write("Math Object Is Used For Mathematical Operations");
    document.write("<br>");
    document.write("<br>");

    // abs() Method Is Used For Returning The Absolute Value Of A Number
    document.write("abs() Method Is Used For Returning The Absolute Value Of A Number<br>");
    document.write("abs(-10.81) = ", Math.abs(-10.81));
    document.write("<br>");
    document.write("<br>");

    // round() Method Is Used For Returning The Value Of A Number Rounded To The Nearest Integer
    document.write("round() Method Is Used For Returning The Value Of A Number Rounded To The Nearest
Integer<br>");
    document.write("round(10.81) = ", Math.round(10.81));
    document.write("<br>");
    document.write("<br>");

    // ceil() Method Is Used For Returning The Smallest Integer Greater Than Or Equal To A Number
    document.write("ceil() Method Is Used For Returning The Smallest Integer Greater Than Or Equal To A
Number<br>");
    document.write("ceil(10.81) = ", Math.ceil(10.81));
    document.write("<br>");
    document.write("<br>");

    // floor() Method Is Used For Returning The Largest Integer Less Than Or Equal To A Number
```

```
document.write("floor() Method Is Used For Returning The Largest Integer Less Than Or Equal To A  
Number<br>");  
document.write("floor(10.81) = ", Math.floor(10.81));  
document.write("<br>");  
document.write("<br>");  
  
// max() Method Is Used For Returning The Largest Of Two Or More Numbers  
document.write("max() Method Is Used For Returning The Largest Of Two Or More Numbers<br>");  
document.write("max(10, 20, 30, 40) = ", Math.max(10, 20, 30, 40));  
document.write("<br>");  
document.write("<br>");  
  
// min() Method Is Used For Returning The Smallest Of Two Or More Numbers  
document.write("min() Method Is Used For Returning The Smallest Of Two Or More Numbers<br>");  
document.write("min(10, 20, 30, 40) = ", Math.min(10, 20, 30, 40));  
document.write("<br>");  
document.write("<br>");  
  
// pow() Method Is Used For Returning The First Number Raised To The Power Of The Second Number  
document.write("pow() Method Is Used For Returning The First Number Raised To The Power Of The  
Second Number<br>");  
document.write("pow(2, 3) = ", Math.pow(2, 3));  
document.write("<br>");  
document.write("<br>");  
  
// sqrt() Method Is Used For Returning The Square Root Of A Number  
document.write("sqrt() Method Is Used For Returning The Square Root Of A Number<br>");  
document.write("sqrt(9) = ", Math.sqrt(9));  
document.write("<br>");  
document.write("<br>");  
  
// random() Method Is Used For Returning Random Number Between 0 to 1  
document.write("random() Method Is Used For Returning Random Number Between 0 to 1<br>");  
document.write("random() = ", Math.random());  
document.write("<br>");  
document.write("<br>");  
  
</script>  
</body>  
  
</html>
```

JavaScript Math Object Demo

Math Object Is Used For Mathematical Operations

abs() Method Is Used For Returning The Absolute Value Of A Number

`abs(-10.81) = 10.81`

round() Method Is Used For Returning The Value Of A Number Rounded To The Nearest Integer

`round(10.81) = 11`

ceil() Method Is Used For Returning The Smallest Integer Greater Than Or Equal To A Number

`ceil(10.81) = 11`

floor() Method Is Used For Returning The Largest Integer Less Than Or Equal To A Number

`floor(10.81) = 10`

max() Method Is Used For Returning The Largest Of Two Or More Numbers

`max(10, 20, 30, 40) = 40`

min() Method Is Used For Returning The Smallest Of Two Or More Numbers

`min(10, 20, 30, 40) = 10`

pow() Method Is Used For Returning The First Number Raised To The Power Of The Second Number

`pow(2, 3) = 8`

sqrt() Method Is Used For Returning The Square Root Of A Number

`sqrt(9) = 3`

random() Method Is Used For Returning Random Number Between 0 to 1

`random() = 0.16479627351091497`

2. Math Object Properties

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

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Math Object Properties</title>
  <style>
    body {
      background: aliceblue;
      color: blueviolet;
    }

    h1 {
      text-align: center;
    }
  </style>
</head>

<body>
  <h1>JavaScript Math Object Properties</h1>
  <script>
    // Math Object Properties
    // PI Property Is Used For Returning The Value Of PI
    document.write("PI Property Is Used For Returning The Value Of PI<br>");
    document.write("PI = ", Math.PI);
    document.write("<br>");
    document.write("<br>");

    // E Property Is Used For Returning The Value Of E
    document.write("E Property Is Used For Returning The Value Of E<br>");
    document.write("E = ", Math.E);
    document.write("<br>");
    document.write("<br>");

    // LN2 Property Is Used For Returning The Value Of LN2
    document.write("LN2 Property Is Used For Returning The Value Of LN2<br>");
    document.write("LN2 = ", Math.LN2);
    document.write("<br>");
    document.write("<br>");

    // LN10 Property Is Used For Returning The Value Of LN10
    document.write("LN10 Property Is Used For Returning The Value Of LN10<br>");
    document.write("LN10 = ", Math.LN10);
    document.write("<br>");
    document.write("<br>");

    // LNG2E Property Is Used For Returning The Value Of LNG2E
    document.write("LNG2E Property Is Used For Returning The Value Of LNG2E<br>");
    document.write("LNG2E = ", Math.LNG2E);
    document.write("<br>");
    document.write("<br>");
```



```
// LOG2E Property Is Used For Returning The Value Of LOG2E
document.write("LOG2E Property Is Used For Returning The Value Of LOG2E<br>");
document.write("LOG2E = ", Math.LOG2E);
document.write("<br>");
document.write("<br>");

// SQRT1_2 Property Is Used For Returning The Value Of SQRT1_2
document.write("SQRT1_2 Property Is Used For Returning The Value Of SQRT1_2<br>");
document.write("SQRT1_2 = ", Math.SQRT1_2);
document.write("<br>");
document.write("<br>");

// SQRT2 Property Is Used For Returning The Value Of SQRT2
document.write("SQRT2 Property Is Used For Returning The Value Of SQRT2<br>");
document.write("SQRT2 = ", Math.SQRT2);
document.write("<br>");
document.write("<br>");

</script>
</body>

</html>
```

JavaScript Math Object Properties

PI Property Is Used For Returning The Value Of PI
PI = 3.141592653589793

E Property Is Used For Returning The Value Of E
E = 2.718281828459045

LN2 Property Is Used For Returning The Value Of LN2
LN2 = 0.6931471805599453

LN10 Property Is Used For Returning The Value Of LN10
LN10 = 2.302585092994046

LNG2E Property Is Used For Returning The Value Of LNG2E
LNG2E = undefined

LOG2E Property Is Used For Returning The Value Of LOG2E
LOG2E = 1.4426950408889634

SQRT1_2 Property Is Used For Returning The Value Of SQRT1_2
SQRT1_2 = 0.7071067811865476

SQRT2 Property Is Used For Returning The Value Of SQRT2
SQRT2 = 1.4142135623730951

D. Date Object

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

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Date Object</title>
  <style>
    body {
      background: aliceblue;
      color: blueviolet;
    }

    h1 {
      text-align: center;
    }
  </style>
</head>

<body>
  <h1>JavaScript Date Object</h1>
  <script>
    // JavaScript Date Object
    // Date Object Is Used For Working With Dates
    let d = new Date();
    document.write(d);
    document.write("<br>");

    // Date Methods
    document.write("For Full Year : ")
    document.write(d.getFullYear());
    document.write("<br>");

    document.write("For Month : ")
    document.write(d.getMonth());
    document.write("<br>");

    document.write("For Date : ")
    document.write(d.getDate());
    document.write("<br>");

    document.write("For Day : ")
    document.write(d.getDay());
    document.write("<br>");

    document.write("For Hours : ")
    document.write(d.getHours());
    document.write("<br>");

    document.write("For Minutes : ")
    document.write(d.getMinutes());
    document.write("<br>");
```

```
document.write("For Seconds : ")
document.write(d.getSeconds());
document.write("<br>");

document.write("For Milliseconds : ")
document.write(d.getMilliseconds());
document.write("<br>");

document.write("For Time : ")
document.write(d.getTime());
document.write("<br>");

document.write("For Timezone Offset : ")
document.write(d.getTimezoneOffset());
document.write("<br>");

document.write("For Date String : ")
document.write(d.toString());
document.write("<br>");

document.write("For Time String : ")
document.write(d.toTimeString());
document.write("<br>");

document.write("For Locale Date String : ")
document.write(d.toLocaleDateString());
document.write("<br>");

document.write("For Locale Time String : ")
document.write(d.toLocaleTimeString());
</script>
</body>

</html>
```

JavaScript Date Object

Mon Feb 24 2025 20:27:38 GMT+0530 (India Standard Time)
For Full Year : 2025
For Month : 1
For Date : 24
For Day : 1
For Hours : 20
For Minutes : 27
For Seconds : 38
For Milliseconds : 277
For Time : 1740409058277
For Timezone Offset : -330
For Date String : Mon Feb 24 2025
For Time String : 20:27:38 GMT+0530 (India Standard Time)
For Locale Date String : 2/24/2025
For Locale Time String : 8:27:38 PM