



JavaScript Strings

- Strings in JavaScript are contained within a pair of either single quotation marks ' ' or double quotation marks " ".

```
<!DOCTYPE html>
<html>
<body>
<script>
var text="This is a String";
document.write(text);
</script>
</body>
</html>
```

- JavaScript String concat(str) Method

The JavaScript String concat(str) method concatenates or joins two strings.

```
<!DOCTYPE html>
<html>
<body>
<script>
var s1="FirstName";
var s2="LastName";
var s3=s1+" "+s2;
document.write(s3);
</script>
</body>
</html>
```

- **JavaScript String toLowerCase() Method**

The JavaScript String toLowerCase() method returns the given string in lowercase letters.

```
<!DOCTYPE html>
<html>
<body>
<script>
var s1="My Name is ROSE";
var s2=s1.toLowerCase();
document.write(s2);
</script>
</body>
</html>
```

- **JavaScript String toUpperCase() Method**

The JavaScript String toUpperCase() method returns the given string in uppercase letters.

```
<!DOCTYPE html>
<html>
<body>
<script>
var s1="My Name is Rose";
var s2=s1.toUpperCase();
document.write(s2);
</script>
</body>
</html>
```

- **JavaScript String split() Method**

The JavaScript String split() method splits the string by commas.

```
1  const str = 'Walter,White,Heisenberg';  
2  const arr = str.split(',');  
3  document.write(arr);
```

- **JavaScript String indexOf(str) Method**

The JavaScript String indexOf(str) method returns the index position of the given string.

```
<!DOCTYPE html>  
<html>  
<body>  
<script>  
var s1="My name is Rose";  
var n=s1.indexOf("name");  
document.write(n);  
</script>  
</body>  
</html>
```

Activity 01

01. Write a JavaScript function that takes two strings **"Programmo"** and **"Phobia"** as parameters and concatenates them using the `concat()` method. The function should return the concatenated string.
02. Now Assume this as a string **"ProgrammoPhobia"**.
 - a. Write a JavaScript function that takes this string as a parameter and converts it to lowercase using the `toLowerCase()` method. The function should return the lowercase string
 - b. Write a JavaScript function that takes a string as a parameter and converts it to uppercase using the `toUpperCase()` method. The function should return the uppercase string.
 - c. Write a JavaScript function that takes **"Programmo,Phobia"** as a string and splits it by commas using the `split()` method. The function should return an array of the split values.
The output should be like this ['Programmo', 'Phobia']
 - d. Write a JavaScript function that takes this string as a parameter. The function should find the index position of **Phobia** within the string using the `indexOf()` method.

Javascript Date

Get current date and time

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

<h1>JavaScript Dates</h1>
<h2>Using new Date()</h2>
<p>new Date() without arguments, creates a date object with the current date and time:</p>

<p id="demodate"></p>

<script>
const d = new Date();
document.getElementById("demodate").innerHTML = d;
</script>

</body>
</html>
```

Javascript Boolean and Comparisons

JavaScript Boolean is an object that represents value in two states: true or false. You can create the JavaScript Boolean object by using Boolean() constructor.

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

<p>Display the value of Boolean(10 > 9):</p>

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

<script>
document.getElementById("demo").innerHTML = Boolean(10 > 9);
</script>

</body>
</html>
```

The comparison expressions return boolean values to indicate whether the comparison is true or false.

```
1 <!DOCTYPE html>
2 <html>
3 <body>
4   <p id="p1">1 > 2 = </p>
5   <p id="p2">a < b = </p>
6   <p id="p3">a > b = </p>
7   <p id="p4">a + 20 > b + 5 = </p>
8   <script>
9     var a = 10, b = 20;
10
11     var result = 1 > 2;
12     document.getElementById("p1").textContent += result;
13
14     result = a < b;
15     document.getElementById("p2").textContent += result;
16
17     result = a > b;
18     document.getElementById("p3").textContent += result;
19
20     result = a + 20 > b + 5;
21     document.getElementById("p4").textContent += result;
22   </script>
23 </body>
24 </html>
25
```

Javascript typeof Operator

You can use the **typeof** operator to find the data type of a JavaScript variable.

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

<h2>The typeof Operator</h2>

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

<script>
document.getElementById("demo").innerHTML =
"'John' is " + typeof "John" + "<br>" +
"3.14 is " + typeof 3.14 + "<br>" +
"false is " + typeof false + "<br>" +
"[1, 2, 3, 4] is " + typeof [1, 2, 3, 4] + "<br>" +
"{name:'John', age:34} is " + typeof {name:'John', age:34} + "<br>" +
"new Date() is " + typeof new Date() + "<br>" +
"function () {} is " + typeof function () {} + "<br>" +
"myCar is " + typeof myCar + "<br>"
</script>

</body>
</html>
```

Activity 02

1. Write a JavaScript function that takes two boolean values as input and returns true if both values are true, otherwise returns false.
2. Write a JavaScript function that takes a natural number as a variable input and returns its data type using the typeof operator.(Natural numbers are the numbers that are used for counting).
3. Write a javascript function to get the current date and check the data type using the typeof operator. Write the output.
4. Create a string variable "**OceanGate**" and check if its length is greater than 10 characters using a comparison expression. Display the result.

Hint: In JavaScript, you can use the .length property of a string to get its length.

Here's an example:

```
var str = "Hello, World!";
var length = str.length;
document.write(length);    // Output: 13
```

Javascript Arrays.

```
<!DOCTYPE html>
<html>
<body>
<h1>JavaScript Arrays</h1>

<p id="democourses"></p>

<script>
const courses = ["BIT", "IS", "CS"];
document.getElementById("democourses").innerHTML = courses;
</script>

</body>
</html>
```

Javascript Maps

- A Map holds key-value pairs where the keys can be any datatype.
- A Map remembers the original insertion order of the keys.

- **Essential Map Methods**

Method	Description
new Map()	Creates a new Map
set()	Sets the value for a key in a Map
get()	Gets the value for a key in a Map
delete()	Removes a Map element specified by the key
has()	Returns true if a key exists in a Map
forEach()	Calls a function for each key/value pair in a Map
entries()	Returns an iterator with the [key, value] pairs in a Map
Property	Description
size	Returns the number of elements in a Map

- You can create a JavaScript Map by:

- a. Passing an Array to `new Map()`

```
<!DOCTYPE html>
<html>
<body>
<h2>Creating a Map from an Array</h2>

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

<script>
// Create a Map
const colors = new Map([
  ["green", 500],
  ["blue", 300],
  ["red", 200]
]);

document.getElementById("demo").innerHTML = colors.get("green");
</script>

</body>
</html>
```

- b. Create a Map and use `Map.set()`

```
<!DOCTYPE html>
<html>
<body>
<h2>Using Map.set()</h2>

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

<script>
// Create a Map
const colors = new Map();

// Set Map Values
colors.set("green", 500);
colors.set("blue", 300);
colors.set("red", 200);

document.getElementById("demo").innerHTML = colors.get("green");
</script>

</body>
</html>
```


- c. **The Get() Method** - The `get()` method gets the value of a key in a Map.

```
<!DOCTYPE html>
<html>
<body>
<h2>Using Map.get()</h2>

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

<script>
// Create a Map
const colors = new Map([
  ["green", 500],
  ["blue", 300],
  ["red", 200]
]);

document.getElementById("demo").innerHTML = colors.get("blue");
</script>

</body>
</html>
```

- d. **Size property** - The `size` property returns the number of elements in a Map.

```
<!DOCTYPE html>
<html>
<body>
<h2>Using Map.size</h2>

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

<script>
// Create a Map
const colors = new Map([
  ["green", 500],
  ["blue", 300],
  ["red", 200]
]);

document.getElementById("demo").innerHTML = colors.size;
</script>

</body>
</html>
```

- e. **The Delete() Method** - The `delete()` method removes a Map element.

```
<!DOCTYPE html>
<html>
<body>
<h2>Deleting Map elements</h2>

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

<script>
// Create a Map
const colors = new Map([
  ["green", 500],
  ["blue", 300],
  ["red", 200]
]);

// Delete an Element
colors.delete("red");

document.getElementById("demo").innerHTML = colors.size;
</script>

</body>
</html>
```

Activity 03

- Given the following array of PlayStation games
const games = ["The Last of Us", "Uncharted", "God of War", "Bloodborne"];
Write a JS program to find the index of the game "God of War" and print it.
- Write a JavaScript function that takes an array of key-value pairs as input and creates a Map by passing the array to the new Map() constructor. Return the created Map.
Use the following as key values :
Name = John
Age = 30
City =Colombo
- Write a JavaScript function for the above created Map and use the Map.delete() method to remove the **Age** key-value pair associated with the given key. Return the updated Map.
- Create a Map and use the Map.set() method to add the following key-value pairs: "apple" - 5, "banana" - 3, "orange" - 2. Use the Map.get() method to get the value of the key "banana" and print it. Use the size property to get the number of elements in the above created Map and print it.