JavaScript Array Methods

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Converting Arrays to Strings

The JavaScript method `toString()` converts an array to a string of (comma separated) array values.

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
document.getElementById("demo").innerHTML = fruits.toString();
```

Result:

Banana,Orange,Apple,Mango

Try it Yourself »

The `join()` method also joins all array elements into a string.

It behaves just like `toString()`, but in addition you can specify the separator:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
document.getElementById("demo").innerHTML = fruits.join(" * ");
```

Result:

Banana * Orange * Apple * Mango

Try it Yourself »

Popping and Pushing

When you work with arrays, it is easy to remove elements and add new elements.

This is what popping and pushing is:

Popping items **out** of an array, or pushing items **into** an array.

JavaScript Array pop()

The `pop()` method removes the last element from an array:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.pop();
```

Try it Yourself »

The `pop()` method returns the value that was "popped out":

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
```

```
let fruit = fruits.pop();
```

Try it Yourself »

JavaScript Array push()

The `push()` method adds a new element to an array (at the end):

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.push("Kiwi");
```

Try it Yourself »

The `push()` method returns the new array length:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
let length = fruits.push("Kiwi");
```

Try it Yourself »

Shifting Elements

Shifting is equivalent to popping, but working on the first element instead of the last.

JavaScript Array shift()

The `shift()` method removes the first array element and "shifts" all other elements to a lower index.

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.shift();
```

Try it Yourself »

The `shift()` method returns the value that was "shifted out":

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
let fruit = fruits.shift();
```

Try it Yourself »

JavaScript Array unshift()

The `unshift()` method adds a new element to an array (at the beginning), and "unshifts" older elements:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.unshift("Lemon");
```

Try it Yourself »

The `unshift()` method returns the new array length.

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.unshift("Lemon");
```

Try it Yourself »

Changing Elements

Array elements are accessed using their **index number**:

Array **indexes** start with 0:

[0] is the first array element
[1] is the second
[2] is the third ...

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits[0] = "Kiwi";
```

Try it Yourself »

JavaScript Array length

The `length` property provides an easy way to append a new element to an array:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits[fruits.length] = "Kiwi";
```

Try it Yourself »

JavaScript Array delete()

Warning !

Array elements can be deleted using the JavaScript operator `delete`.

Using `delete` leaves `undefined` holes in the array.

Use pop() or shift() instead.

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
delete fruits[0];
```

Try it Yourself »

Merging (Concatenating) Arrays

The `concat()` method creates a new array by merging (concatenating) existing arrays:

Example (Merging Two Arrays)

```
const myGirls = ["Cecilie", "Lone"];
const myBoys = ["Emil", "Tobias", "Linus"];
```

```
const myChildren = myGirls.concat(myBoys);
```

Try it Yourself »

The `concat()` method does not change the existing arrays. It always returns a new array.

The `concat()` method can take any number of array arguments:

Example (Merging Three Arrays)

```
const arr1 = ["Cecilie", "Lone"];
const arr2 = ["Emil", "Tobias", "Linus"];
const arr3 = ["Robin", "Morgan"];
const myChildren = arr1.concat(arr2, arr3);
```

Try it Yourself »

The `concat()` method can also take strings as arguments:

Example (Merging an Array with Values)

```
const arr1 = ["Emil", "Tobias", "Linus"];
const myChildren = arr1.concat("Peter");
```

Try it Yourself »

Splicing and Slicing Arrays

The `splice()` method adds new items to an array.

The `slice()` method slices out a piece of an array.

JavaScript Array splice()

The `splice()` method can be used to add new items to an array:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.splice(2, 0, "Lemon", "Kiwi");
```

Try it Yourself »

The first parameter (2) defines the position **where** new elements should be **added** (spliced in).

The second parameter (0) defines **how many** elements should be **removed**.

The rest of the parameters ("Lemon" , "Kiwi") define the new elements to be **added**.

The `splice()` method returns an array with the deleted items:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.splice(2, 2, "Lemon", "Kiwi");
```

Try it Yourself »

Using splice() to Remove Elements

With clever parameter setting, you can use `splice()` to remove elements without leaving "holes" in the array:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.splice(0, 1);
```

Try it Yourself »

The first parameter (0) defines the position where new elements should be **added** (spliced in).

The second parameter (1) defines **how many** elements should be **removed**.

The rest of the parameters are omitted. No new elements will be added.

JavaScript Array slice()

The `slice()` method slices out a piece of an array into a new array.

This example slices out a part of an array starting from array element 1 ("Orange"):

Example

```
const fruits = ["Banana", "Orange", "Lemon", "Apple", "Mango"];
const citrus = fruits.slice(1);
```

Try it Yourself »

Note

The `slice()` method creates a new array.

The `slice()` method does not remove any elements from the source array.

This example slices out a part of an array starting from array element 3 ("Apple"):

Example

```
const fruits = ["Banana", "Orange", "Lemon", "Apple", "Mango"];
const citrus = fruits.slice(3);
```

Try it Yourself »

The `slice()` method can take two arguments like `slice(1, 3)`.

The method then selects elements from the start argument, and up to (but not including) the end argument.

Example

```
const fruits = ["Banana", "Orange", "Lemon", "Apple", "Mango"];
const citrus = fruits.slice(1, 3);
```

Try it Yourself »

If the end argument is omitted, like in the first examples, the `slice()` method slices out the rest of the array.

Example

```
const fruits = ["Banana", "Orange", "Lemon", "Apple", "Mango"];
const citrus = fruits.slice(2);
```

Try it Yourself »

Automatic toString()

JavaScript automatically converts an array to a comma separated string when a primitive value is expected.

This is always the case when you try to output an array.

These two examples will produce the same result:

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
document.getElementById("demo").innerHTML = fruits.toString();
```

Try it Yourself »

Example

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
document.getElementById("demo").innerHTML = fruits;
```

Try it Yourself »

Note

All JavaScript objects have a toString() method.

Finding Max and Min Values in an Array

There are no built-in functions for finding the highest or lowest value in a JavaScript array.

You will learn how you solve this problem in the next chapter of this tutorial.

Sorting Arrays

Sorting arrays are covered in the next chapter of this tutorial.

Complete Array Reference

For a complete Array reference, go to our:

Complete JavaScript Array Reference.

The reference contains descriptions and examples of all Array properties and methods.

Test Yourself With Exercises

Exercise:

Use the correct Array method to remove the **last item** of the `fruits` array.

```
const fruits = ["Banana", "Orange", "Apple"];
           ;
```

Submit Answer »

Start the Exercise

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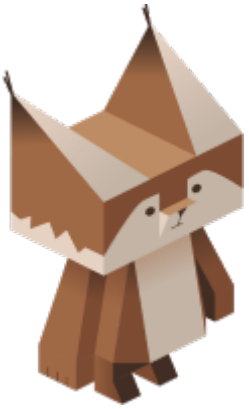
CODE GAME



Play Game