JS JavaScript
TUTORIAL

Array.prototype.splice()

Summary: In this tutorial, you will learn how to use the JavaScript Array `splice()` method to delete existing elements, insert new elements, and replace elements in an array.

JavaScript Array type provides a very powerful `splice()` method that allows you to insert, replace, and delete an element from an array.

The splice() method modifies (or muate) the original array. To create a new array from the original with some element inserted, deleted, and replaced, you can use the toSpliced() method.

Deleting elements using the splice() method

To delete elements in an array, you pass two arguments into the `splice()` method as follows:

```
const removedElements = array.splice(start, deleteCount);
```

The `start` argument specifies the position of the first item to delete and the `deleteCount` argument determines the number of elements to delete.

The `splice()` method changes the original array and returns an array that contains the deleted elements. For example:

```
let scores = [1, 2, 3, 4, 5];

let deletedScores = scores.splice(0, 3);

console.log({ scores });
console.log({ deletedScores });
```

Output:

```
{ scores: [ 4, 5 ] }
{ deletedScores: [ 1, 2, 3 ] }
```

How it works.

First, define an array `scores` that includes five numbers from 1 to 5.

```
let scores = [1, 2, 3, 4, 5];
```

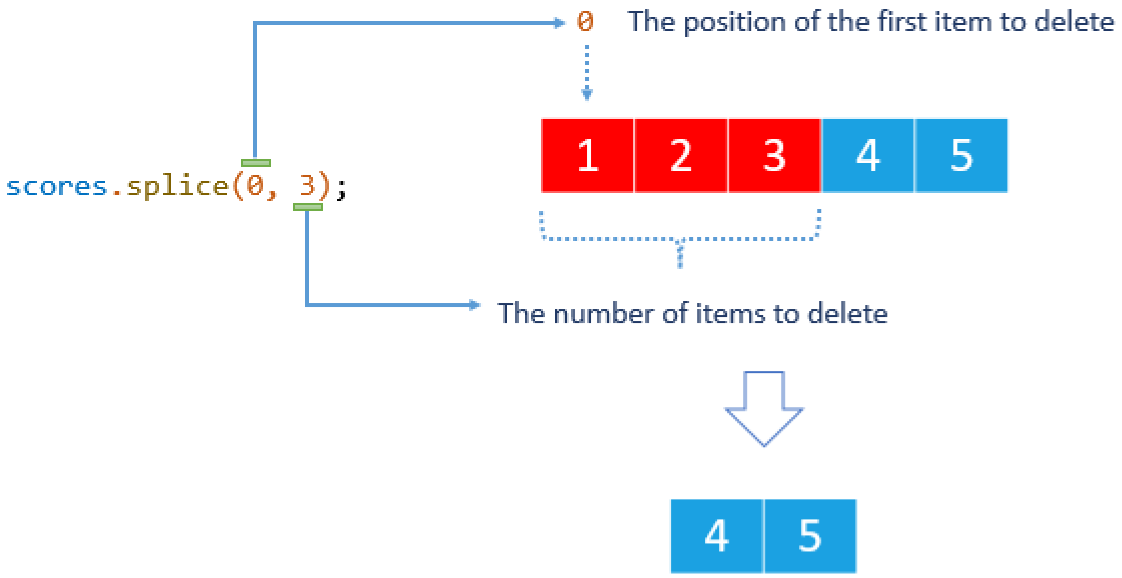
Second, delete three elements of the `scores` array starting from the first element.

```
let deletedScores = scores.splice(0, 3);
```

Third, display the `scores` array and return value to the console:

```
console.log(deletedScores); // [1, 2, 3]
```

The following picture illustrates how `scores.splice(0,3)` works:


0
The position of the first item to delete
scores.splice(0, 3);
1
2
3
4
5
The number of items to delete
4
5

Inserting elements using the JavaScript Array splice() method

You can insert one or more elements into an array by passing three or more arguments to the `splice()` method with the second argument is zero.

Here's the syntax for inserting a new element:

```
Array.splice(start, 0, new_element_1,new_element_2,...);
```

In this syntax:

- The `start` argument specifies the starting position in the original array in which the new elements will be inserted.
- The second argument is zero (`0`) that instructs the `splice()` method not to delete any array elements.
- The third argument, fourth argument, and so on are the new elements inserted into the array.

The following example uses the `splice()` method to insert a new element after the second position of an array:

```
const colors = ['red', 'green', 'blue'];

colors.splice(2, 0, 'purple');

console.log(colors);
```

Output:

```
[ 'red', 'green', 'purple', 'blue' ]
```

First, define an array that includes three strings:

```
const colors = ['red', 'green', 'blue'];
```

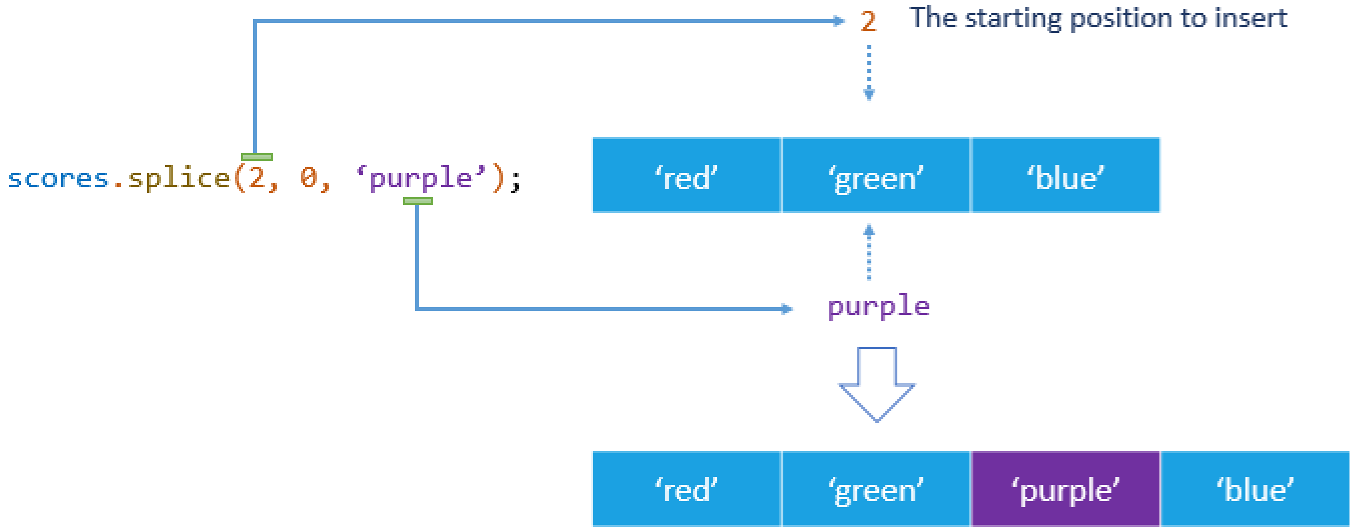
Second, insert a new element after the second element.

```
colors.splice(2, 0, 'purple');
```

Third, display the array to the console:

```
console.log(colors);
```

The following picture illustrates how the insertion works:



```
scores.splice(2, 0, ‘purple’);
```

You can insert more than one element by passing the fourth argument, the fifth argument, and so on to the `splice()` method like this:

```
const colors = ['red', 'green', 'blue'];
colors.splice(1, 0, 'yellow', 'pink');
console.log(colors);
```

Output:

```
[ 'red', 'yellow', 'pink', 'green', 'blue' ]
```

Replacing elements using the JavaScript Array splice() method

The `splice()` method lets you insert new elements into an array while simultaneously deleting existing elements.

To do this, you pass at least three arguments: the second argument specifies the number of items to delete, and the third argument indicates the element to insert.

Note that the number of elements to delete need not be the same as the number of elements to insert.

For example:

```
let languages = ['C', 'C++', 'Java', 'JavaScript'];
languages.splice(1, 1, 'Python');
console.log(languages);
```

Output:

```
[ 'C', 'Python', 'Java', 'JavaScript' ]
```

How it works.

First, define an array of four strings:

```
let languages = ['C', 'C++', 'Java', 'JavaScript'];
```

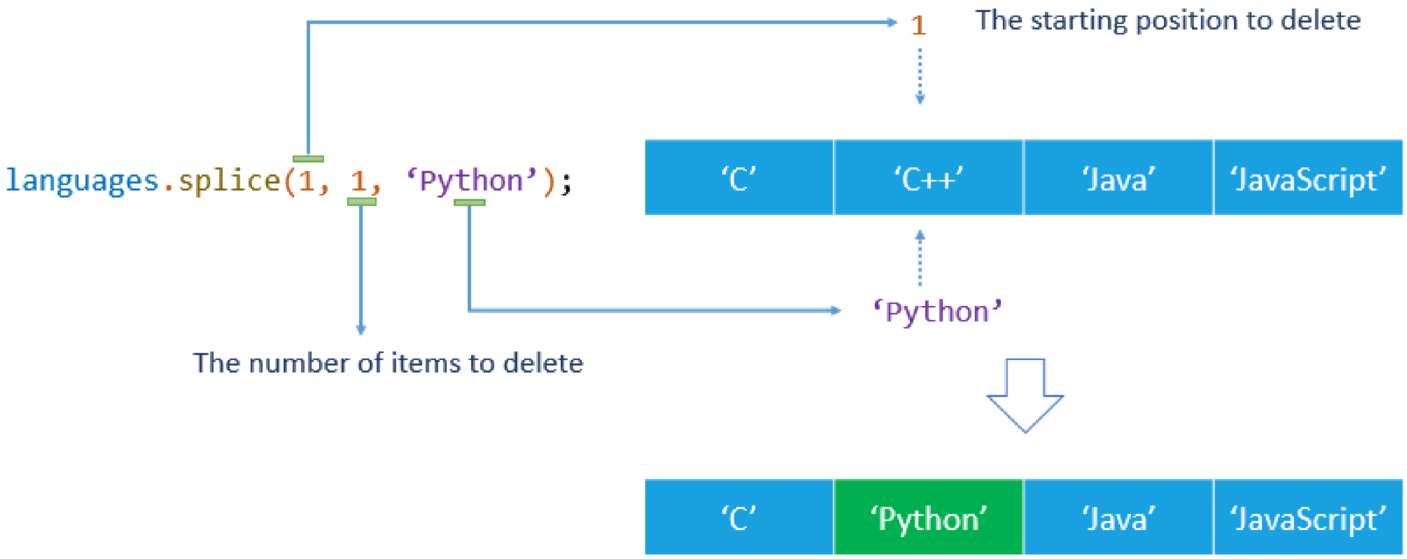
Second, replace the second element with a new one.

```
languages.splice(1, 1, 'Python');
```

Third, display the languages array to the console:

```
console.log(languages);
```

The following figure illustrates the replacement works:


1
The starting position to delete
languages.splice(1, 1, 'Python');
'C'
'C++'
'Java'
'JavaScript'
'Python'
The number of items to delete
'C'
'Python'
'Java'
'JavaScript'

You can replace one element with multiple elements by passing more arguments into the `splice()` method as follows:

```
let languages = ['C', 'C++', 'Java', 'JavaScript'];
languages.splice(2, 1, 'C#', 'Swift', 'Go');

console.log(languages);
```

Output:

```
[ 'C', 'C++', 'C#', 'Swift', 'Go', 'JavaScript' ]
```

The statement deletes one element from the second element i.e., `Java` and inserts three new elements into the `languages` array.

In this tutorial, you have learned how to use the JavaScript Array `splice()` method to delete existing elements, insert new elements, and replace elements in an array.