

## WDD 131

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# JavaScript Arrays and Array Methods

## Overview

An array is a data structure that contains a list of elements which store multiple values in a single variable. Arrays are used to store multiple values in a single variable, instead of declaring separate variables for each value.

## Prepare

In JavaScript, arrays can be declared like this:

```
let scores = [100, 72, 83, 94, 88, 87];
```

```
let names = ['Nancy', 'Blessing', 'Jorge', 'Svetlana'];
```

Arrays are zero-based indexed, meaning the first element is at index 0, the second element is at index 1, and so on.

Arrays can be accessed by an index reference:

```
let aScore = scores[0]; // The aScore variable is assigned the value of 100
```

Arrays values can be modified:

```
scores[0] = 99; // This assignment expression changed the first score in the ar
```

Arrays can be iterated over using a classic for loop:

```
for (let i = 0; i < scores.length; i++) {  
    console.log(scores[i]);  
}
```

**Preferred:** Arrays can be iterated over using other looping structures like **forEach**:

```
scores.forEach(function(score) {  
  console.log(score);  
});
```

Arrays have a **length** property:

```
let numScores = scores.length; // The numScores variable is assigned the value
```

## Array Methods

Arrays have a number of methods that can be used to manipulate (change) them:

```
scores.push(100); // Adds a new element to the end of the array
```

```
scores.pop(); // Removes the last element from the array
```

```
scores.shift(); // Removes the first element from the array
```

```
scores.unshift(100); // Adds a new element to the beginning of the array
```

```
scores.slice(2,3); // Cut out a portion of the array starting at an index for a
```

```
scores.splice(2, 1); // Removes 1 element from the array starting at index 2
```

```
scores.join(', '); // transform the array into a single string with a comma and
```

- Reference [JavaScript Arrays Reference](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array) - MDN web docs

This reference provides a complete list of array methods of which some will be used extensively in this course.

## Check Your Understanding

Given this array declaration:

```
let names = ['Nancy', 'Blessing', 'Jorge', 'Svetlana'];
```

✓ What is the value of the following expression?

```
names[2];
```

► Answer

✓ What is the value of the following expression?

```
names.length;
```

► Answer

✓ What is the index of the last item in the array? (Svetlana)

► Answer

✓ What does the following expression do?

```
names.push('Sally');
```

► Answer

## Optional Resources

- [Master JavaScript Array Methods Like a Pro](https://byui-cse.github.io/wdd131-ww-course/week03/prepare-arrays-and-array-methods.html)