



## Arrays and Objects In JavaScript | JavaScript Tutorial In Hindi #7



[Overview](#) [Q&A](#) [Downloads](#) [Announcements](#)

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In today's tutorial, we will study about arrays and objects in JavaScript. If you are familiar with any programming language, then you have a fair idea about arrays. If you do not have any experience with any other programming language, then do not worry. We are going to study about arrays and object in JavaScript in detail in this tutorial.

### Arrays in JavaScript:-

Arrays are the objects in which we can store multiple values in a single variable. An array stores a sequential collection of elements of fix sizes. There are two syntaxes used for creating an empty array:

```
let arr = new Array();  
let arr = [];
```

### Accessing array elements:-

Arrays are zero-indexed. The first element of an array is store at 0 indexes and the second element store at index 1 and so on. If we use an invalid index number it returns undefined.

```
let arr = ['first element', 'second element', 'last element']  
console.log(arr[0]) // output ' first element'  
console.log(arr[1]) // output ' second element'  
console.log(arr[arr.length - 1]) // output ' last element'
```

Following are some arrays method:

- **Length of an Array:-** The property length sets or returns the number of elements in an array.

```
let age = [33,55,67,18]
console.log(age.length)
```

- **indexOf()**:- This method Search the array for an element and returns its position

```
let std = ["Mark", "John", "Jonas", "Jack"];
let a = std.indexOf("John");
```

- **sort()**: This method is used to sort the elements of an array

```
let age = [33,55,67,18]
let s_age= age.sort(age)
//18,33,55,67
```

- **reverse()**: This method is used to reverses the element of an array. The first array element becomes the last and the last becomes the first.

```
let age = [33,55,67,18]
let r_age= age.reverse(age)
//18,67,55,33
```

- **concat()**: This method will returns a new array comprised of this array joined with an other array or value

```
let alpha = ["a", "b", "c"];
let numeric = [1, 2, 3];
var alphaNumeric = alpha.concat(numeric); // a,b,c,1,2,3
```

Here are some methods which are used to modify an array. Remember that, when we modify an array, we are modifying the original array.

- **push()**: This method is used to add an item to the end of an Array

```
let fruits = ["Banana", "Orange", "Apple"];
let len = fruits.push('Mango')
// ["Apple", "Banana", "Orange", "Mango"]
```

- **pop()**:- This method is used to remove an item from the end of an Array

```
let last = fruits.pop() // remove Mango (from the end)
["Apple", "Banana", "Orange"]
```

- **shift()**:- This method is used to remove an item from the beginning of an Array

```
let first = fruits.shift() // remove Apple from the front
// ["Banana", "Orange"]
```

- **unshift()**:- This method is used to add an item to the beginning of an Array

```
let newLength = fruits.unshift('Strawberry') // add to the front
// ["Strawberry", "Banana", "Orange"]
```

- **splice()**: This method is used to remove an item by index position

```
let removedItem = fruits.splice(pos, 1) // this is how to remove an item
// ["Strawberry", "Orange"]
```

#### JavaScript Object:-

In JavaScript, Object is a non-primitive data type. The object is like other variables, but the only difference is that an object holds multiple values, arrays, functions etc. We create an object with figure brackets {...} with an optional list of *properties*. A property is a "key: value" pair, where the key is a string/ property name, and value can be anything.

**The syntaxs of creating object are following:-**

```
let user = new Object(); // "object constructor" syntax
let user = {}; // "object literal" syntax
```

#### Example :-

```
let user = {
  name: "Harry", // by key "name" store value "Harry"
  age: 25, // by key "age" store value 25
  language: "JavaScript" // by key "language" store value " JavaScript"
};
```

In the user object, there are three properties:

- The first property has the name "name" and the value "Harry".
- The second property has the name "age" and the value 25.
- The third one has the name "language" and the value "JavaScript".

**The syntax for accessing the property of an object is:**

1. **The dot notation (.)**: The syntax of dot notation to access a property of an object is:

```
objectName.property
```

For example, to access the "name" property of the user object, we use the following expression:

```
user.name
```

2. **Array-like notation ( [])**: The syntax to access the value of an object's property via the bracket notation is:

```
objectName['propertyName'];
```

For example:

```
console.log(user['name']);  
console.log(user['age']);
```

To change the value of a property, you use the assignment operator. For example:

```
user.age = 27;
```

**Code index.html as described/written in the video**

```
<!DOCTYPE html>  
<html lang="en">  
<head>  
  <meta charset="UTF-8">  
  <meta name="viewport" content="width=device-width, initial-scale=1.0">  
  <meta http-equiv="X-UA-Compatible" content="ie=edge">  
  <title>Tutorial on Js</title>  
</head>
```

```
<body>
  <h1>This is Js tutorial by Harry</h1>
</body>

<!-- <script src="js/tut2.js"></script> -->
<!-- <script src="js/tut3.js"></script> -->
<!-- <script src="js/tut4.js"></script> -->
<!-- <script src="js/tut5.js"></script> -->
<!-- <script src="js/tut6.js"></script> -->
<!-- <script src="js/tut7.js"></script> -->
<!-- <script src="js/tut8.js"></script> -->
<!-- <script src="js/tut9.js"></script> -->
<!-- <script src="js/tut10.js"></script> -->
<script src="js/tut11.js"></script>
</html>
```

#### Js code as described/written in the video

```
console.log('We are in tut7.js and lets discuss about arrays');
let marks = [34, 23, 24, 93 ,73, 25];
const fruits = ['Orange', 'Apple', 'Pineapple'];
const mixed = ['str', 89, [3, 5]];

const arr = new Array(23,123,21, 'Orange');
// console.log(marks);
// console.log(mixed);
// console.log(fruits[1]);

// console.log(arr.length);
// console.log(Array.isArray('dfd'));
arr[0] = 'harry';
let arrement = arr[0];
// console.log('element :', arrement);
// console.log(arr);

let value = marks.indexOf(73);
// console.log(value)
```

```
// Mutating or Modifying arrays
// marks.push(3564);
// marks.unshift(1009);
// marks.pop()
// marks.shift()
// marks.splice(2, 3);
// marks.reverse()
let marks2 = [1, 2,3, 7]
marks = marks.concat(marks2);
// console.log(marks);

let myobj = {
  'first name': 'harry',
  channel: 'CodeWithHarry',
  isActive: true,
  marks: [1,5,3,6]
}

console.log(myobj)
console.log(myobj['channel'])
console.log(myobj.channel)
```

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