

## JavaScript Arrays

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Array kya hota hai?

Array aik data structure hota hai jo multiple values ko aik hi variable main store karta hai. Is se data ko manage karna, update karna aur use karna asaan ho jata hai.

```
<script>  
let students = ["Ali", "Ahmed", "Sara"];  
document.write(students);  
</script>
```

Arrays kyun use karte hain?

Zyada values aik jagah rakhne ke liye.

Related data ko organize karne ke liye

Loop aur methods ke zariye data par kaam karne ke liye

Real-life

Lists (students, products, marks) banane ke liye

Array index

Array ka index 0 se start hota hai.

```
<script>  
let students = ["Ali", "Ahmed", "Sara"];  
document.write(students[0]);  
</script>
```

## JavaScript Array Methods

### 1. push()

Array ke end main value add karta hai.

```
<script>  
let students = ["Ali", "Ahmed"];  
students.push("Sara");  
document.write(students);  
</script>
```

### 2. pop()

Array ke end se value remove karta hai.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
students.pop();
document.write(students);
</script>
```

### 3. unshift()

Array ke start main value add karta hai.

```
<script>
let students = ["Ahmed", "Sara"];
students.unshift("Ali");
document.write(students);
</script>
```

### 4. shift()

Array ke start se value remove karta hai.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
students.shift();
document.write(students);
</script>
```

### 5. length

Array main total elements batata hai.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
document.write(students.length);
</script>
```

### 6. indexOf()

Kisi value ka index number batata hai.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
document.write(students.indexOf("Ahmed"));
</script>
```

### 7. includes()

Check karta hai value array main mojud hai ya nahi.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
document.write(students.includes("Sara"));
</script>
```

### 8. slice()

Array ka hissa copy karta hai (original array change nahi hota).

```
<script>
let students = ["Ali", "Ahmed", "Sara", "Hina"];
let newList = students.slice(0, 2);
document.write(newList);
</script>
```

#### 9. splice()

Array se value remove ya add karta hai (original array change hota hai).

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
students.splice(1, 1);
document.write(students);
</script>
```

#### 10. join()

Array ko string main convert karta hai.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
document.write(students.join(" - "));
</script>
```

#### 11. reverse()

Array ka order ulta kar deta hai.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
students.reverse();
document.write(students);
</script>
```

#### 12. sort()

Array ko alphabetical ya numerical order main sort karta hai.

```
<script>
let students = ["Sara", "Ali", "Ahmed"];
students.sort();
document.write(students);
</script>
```

#### 13. forEach()

Har element par loop chalata hai.

```
<script>
let students = ["Ali", "Ahmed", "Sara"];
students.forEach(function(name){
  document.write(name + "<br>");
});
</script>
```

14. map()  
Har value par operation laga kar new array banata hai.

```
<script>
let numbers = [10, 20, 30];
let newNumbers = numbers.map(function(n){
  return n + 5;
});
document.write(newNumbers);
</script>
```

15. filter()  
Condition ke mutabiq values filter karta hai.

```
<script>
let marks = [30, 60, 80, 45];
let pass = marks.filter(function(m){
  return m >= 50;
});
document.write(pass);
</script>
```

16. concat()  
Do arrays ko jorta hai.

```
<script>
let a = ["Ali", "Ahmed"];
let b = ["Sara", "Hina"];
let c = a.concat(b);
document.write(c);
</script>
```

17. Array.isArray()  
Check karta hai variable array hai ya nahi.

```
<script>
let students = ["Ali", "Ahmed"];
```

```
document.write(Array.isArray(students));  
</script>
```

### 18. Spread Operator (...)

Multiple arrays ko aik main combine karta hai.

```
<script>  
let a = ["Ali", "Ahmed"];  
let b = ["Sara", "Hina"];  
let all = [...a, ...b];  
document.write(all);  
</script>
```

### 19. Destructuring

Array ki values alag-alag variables main assign karta hai.

```
<script>  
let students = ["Ali", "Ahmed", "Sara"];  
let [first, second] = students;  
document.write(first + "<br>");  
document.write(second);  
</script>
```

### Summary

Array multiple values store karta hai

Index 0 se start hota hai

push/pop end ke liye

shift/unshift start ke liye

map/filter advanced use ke liye

forEach looping ke liye