

## Arrays

Arrays are variables which can hold more than one value

Const fruits = [ "banana" , "apple" , "grapes"]

Const a<sub>1</sub> = [7, "harry" , false]

→ Can be different types

## Accessing values

Let numbers = [1,7,9,21]

Numbers[0] → 1

Numbers.length → 4

## Changing the values

Let numbers = [7,2,40,9]

Numbers[2] = 8 → "numbers" now becomes [7,2,8,9]  
Arrays are mutable , arrays can be changed

In JS , arrays are objects the typeof operator on arrays returns object

Const n = [1,7,9]

Typeof n → returns "object"

## Array methods

There are some important array methods in Js . Some of them are as follows :

1. **toString()** - converts an array to a string of comma separated values

let n = [1,7,12]

n.toString() ----> 1,7,9

2. **join()** - join all the array elements using a separator

Let n = [7,9,13]

n.join(" - ") -----> 7-9-13

3. **pop()** - removes last element from the array

Let n = [1,3,5]

n.pop() -----> updates the original array returns the popped value

4. push() - adds a new element at the end of the array

Let a = [7,1,2,8]

A. push(9) -----> modifies the original array

|  
-----> returns the new array length

5. Shift() - removes first element and returns it

6. Unshift() - adds element to the beginning returns the new array length

7. Delete() - array elements can be deleted using the delete operator

Let d = [7,8,9,10]

Delete d[1] -----> delete is an operator

8. Concat() - used to join arrays to the given

Let a1 = [1,2,3]

Let  $a_2 = [4, 5, 6]$   
Let  $a_3 = [9, 8, 7]$

a1.concat(a2,a3) -----> returns [ 1,2, 3,4,5,6,7,8,9]

1

Returns a new array does not change existing arrays

9. Sort() - sort() method is used to sort an array alphabetically

Let  $a = [7, 9, 8]$

a.sort() -----> a changes to [7,8,9]

Sort() takes optional compare function . if this function is provided as the first argument , the sort() function will consider these values ( the values returned from the compare function ) as the basis of sorting

10. `Splice()` - splice can be used to add new items to an array

Const numbers = [1,2,3,4,5]

```
Numbers.splice(2,1,23,24)
```

Position to  
Add

no of elements  
To remove

elements to be added

Returns deleted  
Items, modifies the  
Array

11. `Slice()` - slices out a piece from an array it creates a new array

```
Const num = [1,2,3,4]
```

num.slice(2) -----> [3,4]

```
num.slice(1,3) -----> [2,3]
```

12. Reverse() - reverses the elements in the source array

## Looping through Arrays -

Arrays can be looped through using the classical Js for loop or through some other methods discussed below -

1. For...each loop - calls a function , once for each array element

```
Const a = [1,2,3]
```

```
a.      forEach((value , index , array) =>{
           // function logic
       })
```

2. Map() - creates a new array by performing some operation on each array element.

Const a = [1,2,3]

```
a.      map( ( value , index , array) => {
                                Return value*value
                                })
```

3. `Filter()` - filters an array with values that passes a test. Creates a new array

```
Const a = [1,2,3,4,5]  
a.filter(greater_than_5)
```

4. Reduce method - reduces an array to a single value

```
Const n = [1,8,7,11]  
Let sum = n.reduce(add) -----> a function
```

5. Array.from() - used to create an array from any other object

```
Array.from("harry")
```

6. For.....of loop - for.....of loop can be used to get the values from an array

7. For.....in loop - for.....in loop can be used to get the keys from an array