

Array Functions to manipulate an Array

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1. .map()
2. .filter()
3. .forEach()
4. .find()
5. .indexOf()
6. .reduce()

- Each of these functions
 - takes a callback function
 - Loops through each items
 - Returns a result that is based on pu
 - Replaces direct need of a for loop.
- Map function internally uses a for loop so
- But map function is not a replacement of
- It has a specific purpose
- Each function here has specific purpose

map() function

- It is used for transforming one array to another array
 - Example
 - Array of Books to array of book titles
 - Array of department to array of employee count in that department
 - Array of department to array of object with department name and employee count
 - You take one array and return array
- Takes a callback function
- Calls the callback for each items
- Returns a result array containing the result of each call back
- It can be used instead of a for-of loop

```
let titles= books.map (book-> book.tit

let summary= departments.map( d-> {
    return new {name:d.name,
                employess: d.emp
            }
});
```

```
let names= ["India", "USA", "UK", "Fra
```

```
let lengths= names.map( n-> n.length);
```

We can pass a function as an argument

```
const numbers= [ 4, 9, 16, 25 ];
```

```
const result = numbers.map( Math.sqrt ); // [2, 3, 4, 5]
```

```
//how to get a array of squares
```

```
function sqr(num) {
    return num * num;
}
const newArr = numbers.map(sqr)
```

We can pass an Lambda Express as an argument

```
const squaredValues = numbers.map ( n => n*n ); //[16,81,256,625]
```

2. Filter

- Searches matching items in a given array
- Takes condition as a callback function
 - It is called for each item
 - Function should return true or false
- Returns a new list containing only those items that satisfy the condition
- Ideally the returned list would have sub set of items from the main list

```
let numbers= [2, 3, 11, 18, 15, 6, 22, 12 ];
```

```
let m3 = numbers.filter ( n -> n%3==0); // [3, 18, 15, 6, 12 ]
```

3. Foreach — If you just need a replace for for loop, you should use forEach method

- To perform a custom job we may use forEach loop
- It doesn't return an array or any result
- It just calls the given function for each item

4. find

- Just like filter except it returns the first matching item.
- It may not loop through all item if it gets first matching early

5. indexOf

- Just like find except it returns the index of the item instead of item itself.