

filter

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Goals

- Understand what filter does
- Write your own filter function

filter

- Creates a new array
- Loops through an array
- Runs a callback function on each value in the array
- If the callback function returns true, that value is pushed to the new array
- If the callback function returns false, that value will not be included in the new array
- the result of the callback will always be evaluated into a boolean

An Example

```
let letters = ["a", "b", "c", "b", "c"];

letters.filter(function(value, index, array){
  return value === "b";
});

// ["b", "b"]
```

Another Example

```
let friends = [
  { name: "Amanda" },
  { name: "Tommy" },
  { name: "Nathan" },
  { name: "Pat" }
```

```
];  
friends.filter(function(value, index, array){  
    return value.name.includes("n")  
});
```

```
// [{name: "Amanda"}, {name: "Nathan"}];
```

How Does It Work?

```
function filter(array, callback){  
    let newArray = [];  
    for(let i = 0; i < array.length; i++){  
        if(callback(array[i], i, array)){  
            newArray.push(array[i]);  
        }  
    }  
    return newArray;  
}
```

- Creates a new array
- Iterates through an array
- Runs a callback function on each value in the array
- If the callback function returns true, that value will be added to the new array
- If the callback function returns false, that value will be ignored from the new array

Using Filter In A Function

```
function fourOrLessNames(names){  
    return names.filter(function(value){  
        return value.length <= 4;  
    });  
}
```

```
fourOrLessNames(['Fido', 'Blue', 'Rascal']); // ['Fido', 'Blue']
```

```
function onlyInstructors(arr) {  
    return arr.filter(function(value) {
```

```
    return arr.isInstructor;
  });
}
```

```
onlyInstructors([
  { name: "Colt", isInstructor: true },
  { name: "Beth", isInstructor: false },
  { name: "Daniel" }
]); // [{name: "Colt", isInstructor: true}]
```

When You Would Use Filter

- You want to “transform” an array into another array of the same length or smaller length depending on a condition
- You want to see how many elements in an array satisfy a certain condition
- You do not want to modify the existing array you are filtering

Recap

- filter creates a new array
- filter runs a callback on each value
- if the result of the callback returns true, that value is added to the new array