

Functional programming for JavaScript



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What is Functional Programming?

Functional programming is not a new concept, but in the past few years, it has seen a sharp growth in usage and general interest.

Functions are "**self contained**" modules of code that accomplish a specific task. Functions usually "**take in**" data, process it, and "**return**" a result. Once a function is written, it can be used over and over again.



Pure Functions

Pure Functions are one of the most important concepts in the functional programming and they are functions that, given a specific input., will always return the same output.



```
const greeting = (person) => 'How are you ${person}';  
greeting("Bob") // "How are you Bob"  
// with same input result is always same
```

Pure



```
let count = 0;  
  
const increaseCount = (value) => count += value;  
increaseCount(1);  
increaseCount(1);  
  
// returns different value with same input
```

Not pure



Swipe →

Higher-Order Functions

A high-order function is a function that receives another **function as a parameter** or returns a function as a return value.



```
const persons = [  
  {firstname : "Malcom", lastname: "Reynolds"},  
  {firstname : "Kaylee", lastname: "Frye"},  
  {firstname : "Jayne", lastname: "Cobb"},  
];  
  
persons.map((item) => [item.firstname, item.lastname].join(" "));
```

function as parameter



Composition

Composition can also be expressed as **combination** – it's a process of combining **multiple functions** in a hierarchy to produce a new function or perform a computation.



```
const stichName = (name) => name.split(' ').join('_');  
const lowerName = (name) => name.toLowerCase();  
console.log(lowerName(stichName('Bob Gaj'))); // bob_gaj
```



Immutability

Immutability is a concept where you **can't** change the object once it's created. When you want to change something or add you should create a **new** object.



```
const dog = {  
  breed: 'poodle',  
};  
  
const newDog = Object.assign({}, dog, {  
  breed: 'dobermann'  
});
```



```
const dog = {  
  breed: 'poodle',  
};  
  
const newDog = dog;  
newDog.breed = 'dobermann';
```



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