

# 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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