

# TYPES OF FUNCTIONS IN JAVACSRIPT





### FUNCTION DECLARATIONS

A function declaration defines a named function that can be called later in the code.

```
// Function declaration
function add(a, b) {
    console.log(a + b);
}
```



### FUNCTION EXPRESSIONS

A function expression assigns an anonymous function to a variable. The function can be invoked using the variable name.

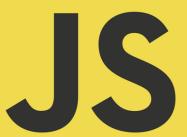
```
// Function Expression
const add = function(a, b) {
   console.log(a+b);
}
```



### ARROW FUNCTIONS

Arrow functions provide a shorter syntax for writing functions. They are commonly used for concise function definitions.

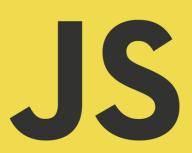
```
// Single line of code
const add = (a, b) ⇒ a + b;
```



## IMMEDIATELY INVOKED FUNCTION EXPRESSIONS (IIFE)

An IIFE is a function that is executed immediately after it is defined. It is often used to create a private scope for variables.

```
//IIFE
(function() {
  console.log(a + b);
})();
```



### GENERATOR FUNCTIONS

Generator functions are a special kind of function that can be paused and resumed during execution. They are denoted by an asterisk (\*) after the function keyword.

```
// An example of generator function
function* gen(){
    yield 1;
    yield 2;
    ...
}
```



### CALLBACK FUNCTIONS

A callback function is a function that is passed as an argument to another function and is called when a certain event occurs or when the parent function completes its execution.

```
// higher order function
function calculateSquare(num, callback) {
  const square = num * num;
  callback(square);
}

function displayResult(result) {
  console.log("The result is: " + result);
}
```



### HIGHER-ORDER FUNCTIONS

Higher-order functions are functions that take one or more functions as arguments or return a function as their result. They enable functional programming paradigms and can be used for tasks like function composition and currying.

```
function calculateSquare(num, callback) {
  const square = num * num;
  callback(square);
}
// callback function
function displayResult(result) {
  console.log("The result is: " + result);
}
```







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