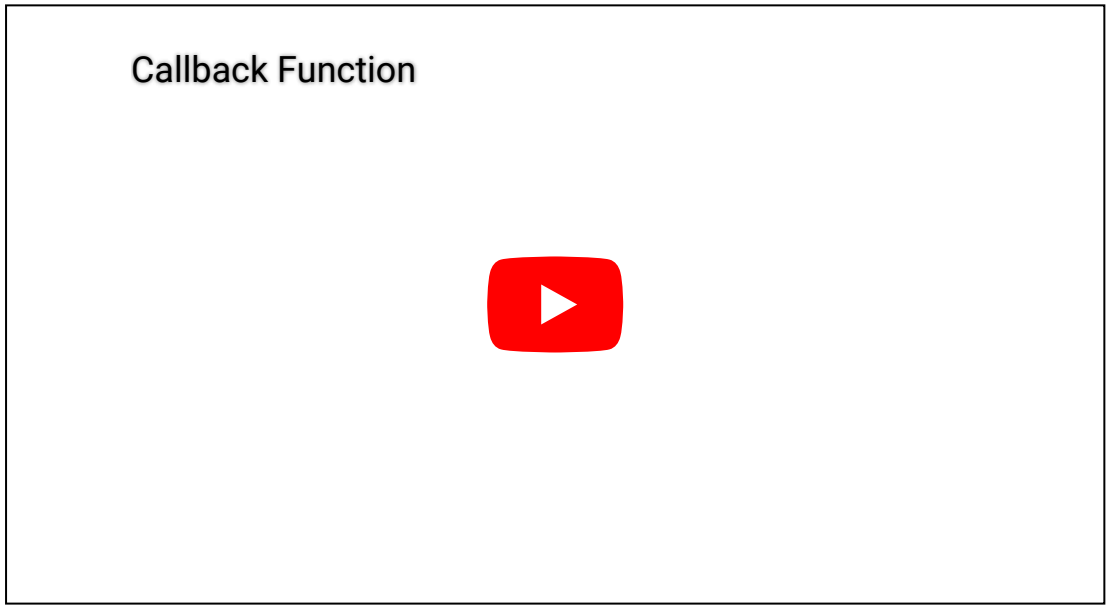
Current Skill Callbacks Concept

What is Callback?

Callback is an asynchronous equivalent of a function. A callback function is called at the completion of a given task. Node makes heavy use of callbacks. All the Node APIs are written in such a way that they support callbacks.

For example, a file reading function may start reading files and return control to the execution environment immediately so that the next instruction can be executed. Once file I/O is complete, it will call the callback function while passing the callback function, the content of the file as a parameter. So there is no blocking or wait for File I/O. This makes Node.js highly scalable as it can process a high number of requests without waiting for any function to return results.



Blocking Code Example

Create a text file named **input.txt** with the following content:

```
Random Text Just For Testing!!!
```

Create a .js file named **main.js** with the following code:

```
var fs = require("fs");
// fs is the file system module we will see it later
var data = fs.readFileSync('input.txt');
```

```
console.log(data.toString());
console.log("Program Ended");
```

Now run the **main.js** to see the result:

```
$ node main.js
```

Verify the Output:

```
Random Text Just For Testing!!!
Program Ended
```

Non-Blocking Code Example

Create a text file named **input.txt** with the following content:

```
Random Text Just For Testing!!!
```

Update **main.js** to have the following code:

```
var fs = require("fs");

fs.readFile('input.txt', function (err, data) {
//this is the callBack function
   if (err) return console.error(err);
   console.log(data.toString());
});

console.log("Program Ended");
```

Now run the main.js to see the result:

```
$ node main.js
```

Verify the Output:

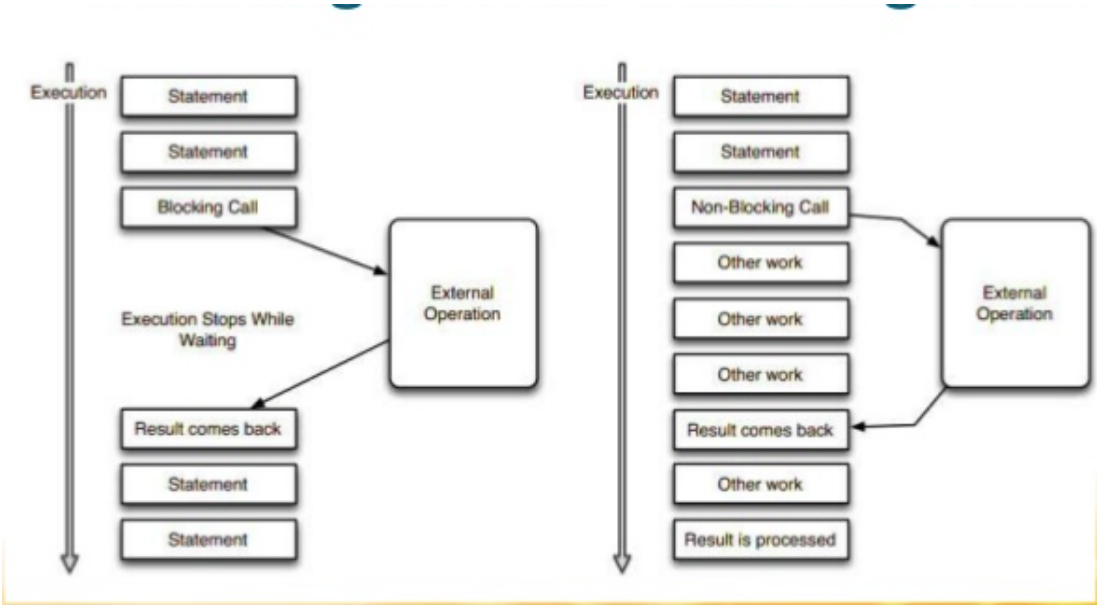
```
Program Ended

Random Text Just For Testing!!!
```

Blocking vs Non-Blocking

These two examples explain the concept of blocking and non-blocking calls.

- The first example shows that the program blocks the call until it reads the file and only then it proceeds to end the program.
- The second example shows that the program does not wait for file reading and proceeds to print "Program Ended" and at the same time, the program, without blocking, continues reading the file.

Thus, a blocking program is executed in a sequence. From a programming point of view, it is easier to implement the logic but non-blocking programs do not execute in a sequence. In case a program needs to use any data to be processed, it should be kept within the same block to make it a sequential execution.



Previous next