

## Lesson 04 Demo 05

### Creating an Event Loop

**Objective:** To create the event loop for handling asynchronous operations

**Tools required:** Visual Studio Code and Node Package Manager

**Prerequisites:** Basic Linux and NPM commands

Steps to be followed:

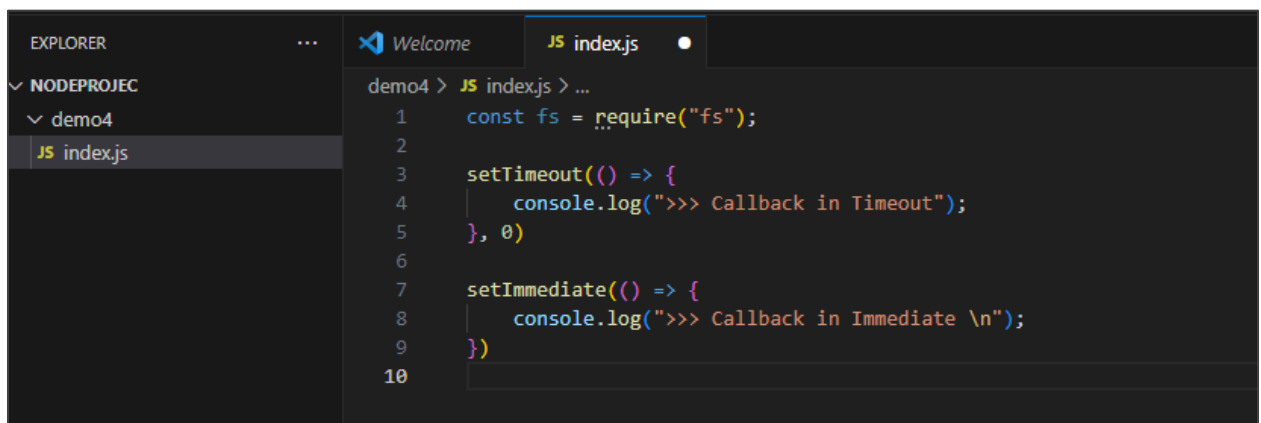
1. Execute `setImmediate()` and `setTimeout()`
2. Run the code

#### Step 1: Execute `setImmediate()` and `setTimeout()`

- 1.1 Execute the following code to import the file system module:

```
const fs = require("fs");
setTimeout(() => {
  console.log(">>> Callback in Timeout");
}, 0)
```

```
setImmediate(() => {
  console.log(">>> Callback in Immediate \n");
})
```

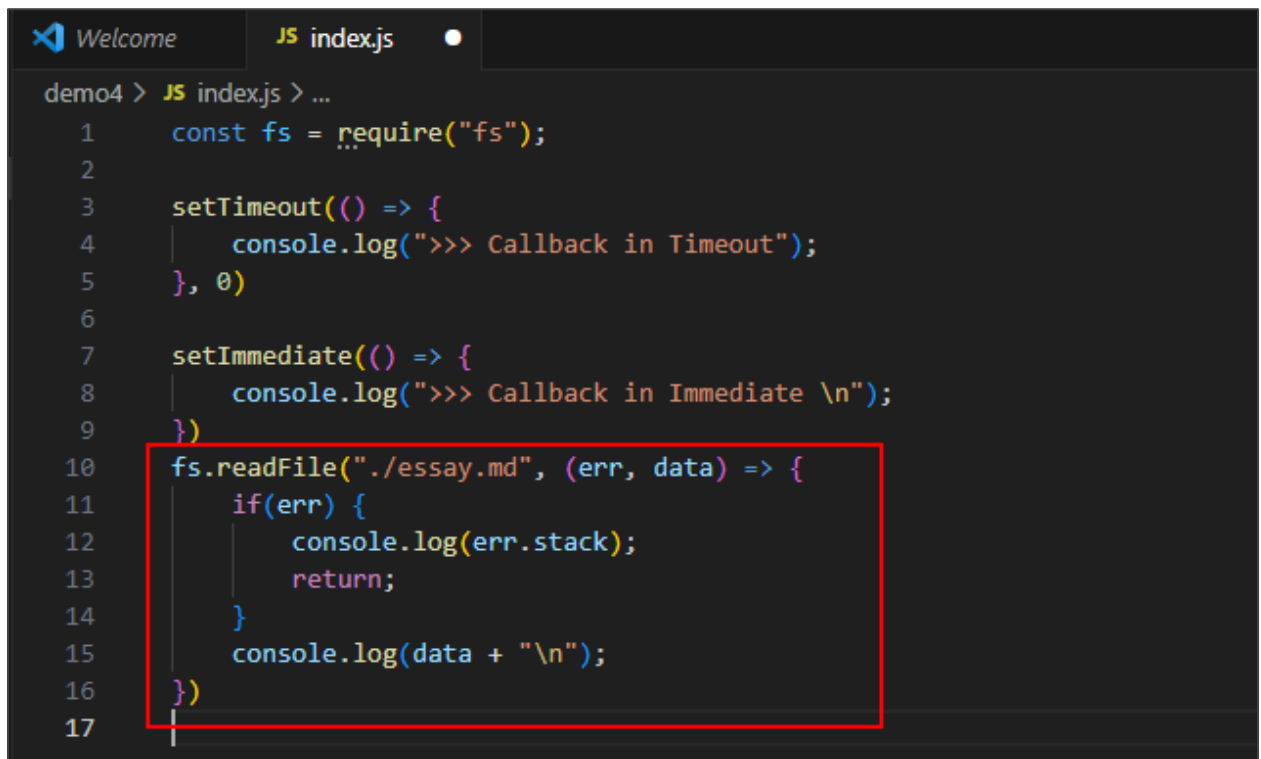


```
EXPLORER
...
NODEPROJECT
  demo4
    JS index.js

Welcome
JS index.js
demo4 > JS index.js > ...
1  const fs = require("fs");
2
3  setTimeout(() => {
4    console.log(">>> Callback in Timeout");
5  }, 0);
6
7  setImmediate(() => {
8    console.log(">>> Callback in Immediate \n");
9  })
10
```

1.2 Run the following code to read the **essay.md** file

```
fs.readFile("./essay.md", (err, data) => {  
  if(err) {  
    console.log(err.stack);  
    return;  
  }  
  console.log(data + "\n");  
})
```

A screenshot of a code editor with a dark theme. The editor has a tab labeled 'JS index.js'. The code is as follows:

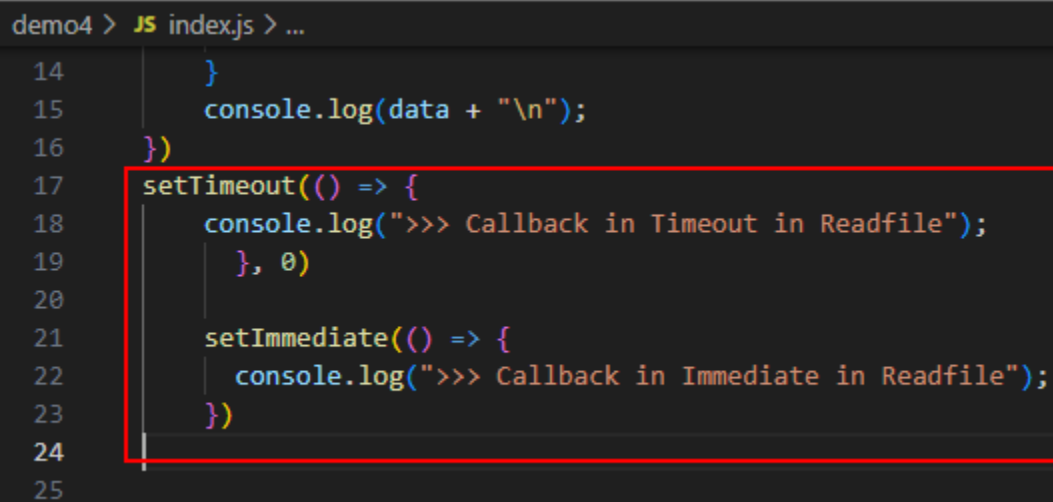
```
demo4 > JS index.js > ...  
1  const fs = require("fs");  
2  
3  setTimeout(() => {  
4    console.log(">>> Callback in Timeout");  
5  }, 0)  
6  
7  setImmediate(() => {  
8    console.log(">>> Callback in Immediate \n");  
9  })  
10 fs.readFile("./essay.md", (err, data) => {  
11   if(err) {  
12     console.log(err.stack);  
13     return;  
14   }  
15   console.log(data + "\n");  
16 })  
17
```

The code block from line 10 to line 16 is highlighted with a red rectangular border. The editor interface includes a 'Welcome' sidebar on the left and a file explorer on the right showing 'index.js'.

1.3 Implement `setTimeout` and `setImmediate`:

```
setTimeout(() => {  
  console.log(">>> Callback in Timeout in Readfile");  
}, 0)
```

```
setImmediate(() => {  
  console.log(">>> Callback in Immediate in Readfile");  
})
```



```
demo4 > JS index.js > ...  
14     }  
15     console.log(data + "\n");  
16   })  
17   setTimeout(() => {  
18     console.log(">>> Callback in Timeout in Readfile");  
19     }, 0)  
20  
21   setImmediate(() => {  
22     console.log(">>> Callback in Immediate in Readfile");  
23     })  
24  
25
```

## Step 2: Run the code

2.1 Open the terminal window and execute the following command to run the code:

**node index.js**

```
demopython1yopm@ip-172-31-16-204:~/Desktop/nodeProjec/demo4$ node index.js
>>> Callback in Immediate
>>> Callback in Timeout
Mechanical Engineering Student Sample
In the first sample essay from mechanical engineering, what stands out immediately are the length and the photographs. In this case, the student was applying for an engineering scholarship, so he was given room to flesh out technical material as well as address issues such as personal motivations one would expect to read in a personal statement.

>>> Callback in Immediate in Readfile
>>> Callback in Timeout in Readfile
```

By following these steps, you have successfully created the event loop for handling asynchronous operations.