

## BACKEND EXPERIMENT – 01

### (ERROR and MISTAKES)

Ques1.

```
JS module.js > greet > greet
1  exports.module = {
2    Name: 'Aprajita',
3    RollNo: 'R2142232085',
4    details: {
5      Branch: 'CSE',
6      Year: '3rd',
7    };
8

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Welcome to fish, the friendly interactive shell
Type help for instructions on how to use fish
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> node module.js
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> node app.js
node:internal/modules/cjs/loader:1408
  throw err;
  ^

Error: Cannot find module './myModule'
Require stack:
- /Users/aprajitakashyap/experiment01/app.js
    at Function._resolveFilename (node:internal/modules/cjs/loader:1405:15)
    at defaultResolveImpl (node:internal/modules/cjs/loader:1061:19)
    at resolveForCJSWithHooks (node:internal/modules/cjs/loader:1066:22)
    at Function._load (node:internal/modules/cjs/loader:1215:37)
    at TracingChannel.traceSync (node:diagnostics_channel:322:14)
    at wrapModuleLoad (node:internal/modules/cjs/loader:235:24)
    at Module.require (node:internal/modules/cjs/loader:1491:12)
    at require (node:internal/modules/helpers:135:16)
    at Object.<anonymous> (/Users/aprajitakashyap/experiment01/app.js:1:18)
    at Module._compile (node:internal/modules/cjs/loader:1734:14) {
  code: 'MODULE_NOT_FOUND',
  requireStack: [ '/Users/aprajitakashyap/experiment01/app.js' ]
}

Node.js v23.11.0
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main) [1]> |
```

1. The error is it cannot find my “module” file because module that I require to export in app.js file has different name (myModule)

```
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main) [1]> node app.js
Hello from Aprajita!
undefined
```

2. Here I got “undefined” because I didn’t pass any parameter.

```
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main) [1]> node app.js
Hello, World! Welcome to the module.
{
  Name: 'Aprajita',
  RollNo: 'R2142232085',
  details: { Branch: 'CSE', Year: '3rd' }
}
undefined
Hello, Aprajita! Welcome to the module.
```

3. I changed the name of object to student as it contains the details of students and passed the parameter in greet function with name

Another way: Using the import/ export function (ECMAScript)

```
JS module.js > ...
13 // Using ES6 module syntax
14
15 // Nested object
16 export const student = {
17   name: "Aprajita",
18   course: "BTech",
19   details: {
20     rollNo: 101,
21     branch: "CSE"
22   }
23 };
24
25 // Function export
26 export function greet(name) {
27   return `Hello, ${name}! Welcome to ES Modules.`;
28 }

Node.js v23.11.0
● aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main) [1]> node app.js
Hello, Aprajita! Welcome to ES Modules.
{
  name: 'Aprajita',
  course: 'BTech',
  details: { rollNo: 101, branch: 'CSE' }
}
```

Ques 2.

Errors and mistakes:

```
EXPLORER
  JS module.js U
  JS file.js U X
  {} package.json U
  JS app.js U

Ques02 > JS file.js > ...
1 const fs = require('fs');
2
3 fs.readFile('sample.txt', 'utf8', (err, data) => {
4   if (err) {
5     console.error("Error reading file:", err.message);
6     return;
7   }
8   console.log("File content:\n", data);
9 });
10
11

Type help for instructions on how to use fish
● aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques02
● aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main)> node file.js
/Users/aprajitakashyap/experiment01/ques02/file.js:3
fs.readFile('sample.txt', 'utf8', (err, data) => {
^
TypeError: fs.readFile is not a function
    at Object.<anonymous> (/Users/aprajitakashyap/experiment01/ques02/file.js:3:4)
    at Module._compile (node:internal/modules/cjs/loader:1734:14)
    at Object.<js> (node:internal/modules/cjs/loader:1899:10)
    at Module.load (node:internal/modules/cjs/loader:1469:32)
    at Function._load (node:internal/modules/cjs/loader:1286:12)
    at TracingChannel.traceSync (node:diagnostics_channel:322:14)
    at wrapModuleLoad (node:internal/modules/cjs/loader:235:24)
    at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:151:5)
    at node:internal/main/run_main_module:33:47

Node.js v23.11.0
● aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main) [1]>
```

1.

There was an error on where readfile is not a function, so it is a syntactical error and readfile got replaced by "readFile".

The screenshot shows a VS Code editor with two files open: `sample.txt` and `file.js`. The `sample.txt` file contains the text "This is the sample file.". The `file.js` file contains the following code:

```
1 const fs = require('fs');
2
3 fs.readFile('sample.txt', 'utf8', (err, data) => {
4   if (err) {
5     console.error("Error reading file:", err);
6     return;
7   }
8   console.log("File content:\n", data);
9 });
10
11
```

The terminal output shows the execution of `node file.js` and the resulting error and file content:

```
TypeError: fs.readFile is not a function
    at Object.<anonymous> (/Users/aprajitakashyap/experiment01/Ques02/file.js:3:4)
    at Module._compile (node:internal/modules/cjs/loader:1734:14)
    at Object._js (node:internal/modules/cjs/loader:1899:10)
    at Module.load (node:internal/modules/cjs/loader:1469:32)
    at Function._load (node:internal/modules/cjs/loader:1286:12)
    at TracingChannel.traceSync (node:diagnostics_channel:322:14)
    at wrapModuleLoad (node:internal/modules/cjs/loader:235:24)
    at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:151:5)
    at node:internal/main/run_main_module:33:47

Node.js v23.11.0
● aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main) [1] > node file.js
Error reading file: ENOENT: no such file or directory, open 'sample.txt'
● aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main) > node file.js
File content:
This is the sample file.
❖ aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main) >
```

2.

Also got one more error regarding the file, where sample.txt file was not mentioned

Ques3

Error and mistakes:

```
Ques03 > JS server.js > fs.readFile('sample.txt', 'utf8') callback > server > http.createServer() callback
4 fs.readFile('sample.txt', 'utf8', (err, data) => {
5     return;
6 }
7
8
9
10 const server = http.createServer((req, res) => {
11     res.writeHead(200, { 'Content-Type': 'text/plain' });
12
13 });
14
15 const PORT = 3000;
16 server.listen(PORT, () => {
17     console.log(`Server is running at http://localhost:${PORT}`);
18 });
```

```
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main)> node server.js
node:internal/modules/cjs/loader:1408
  throw err;
  ^

Error: Cannot find module '/Users/aprajitakashyap/experiment01/Ques02/server.js'
    at Function._resolveFilename (node:internal/modules/cjs/loader:1405:15)
    at defaultResolveImpl (node:internal/modules/cjs/loader:1061:19)
    at resolveForCJSWithHooks (node:internal/modules/cjs/loader:1066:22)
    at Function._load (node:internal/modules/cjs/loader:1215:37)
    at TracingChannel.traceSync (node:diagnostics_channel:322:14)
    at wrapModuleLoad (node:internal/modules/cjs/loader:235:24)
    at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:151:5)
    at node:internal/main/run_main_module:33:47 {
  code: 'MODULE_NOT_FOUND',
  requireStack: []
}

Node.js v23.11.0
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main) [1]>
```

1.

Forget to change the directory

```
Ques03 > JS server.js > fs.readFile('sample.txt', 'utf8') callback > server > http.createServer() callback
4 fs.readFile('sample.txt', 'utf8', (err, data) => {
5     return;
6 }
7
8
9
10 const server = http.createServer((req, res) => {
11     res.writeHead(200, { 'Content-Type': 'text/plain' });
12     res.end(data);
13 });
14
15 const PORT = 3000;
16 server.listen(PORT, () => {
17     console.log(`Server is running at http://localhost:${PORT}`);
18 });
```

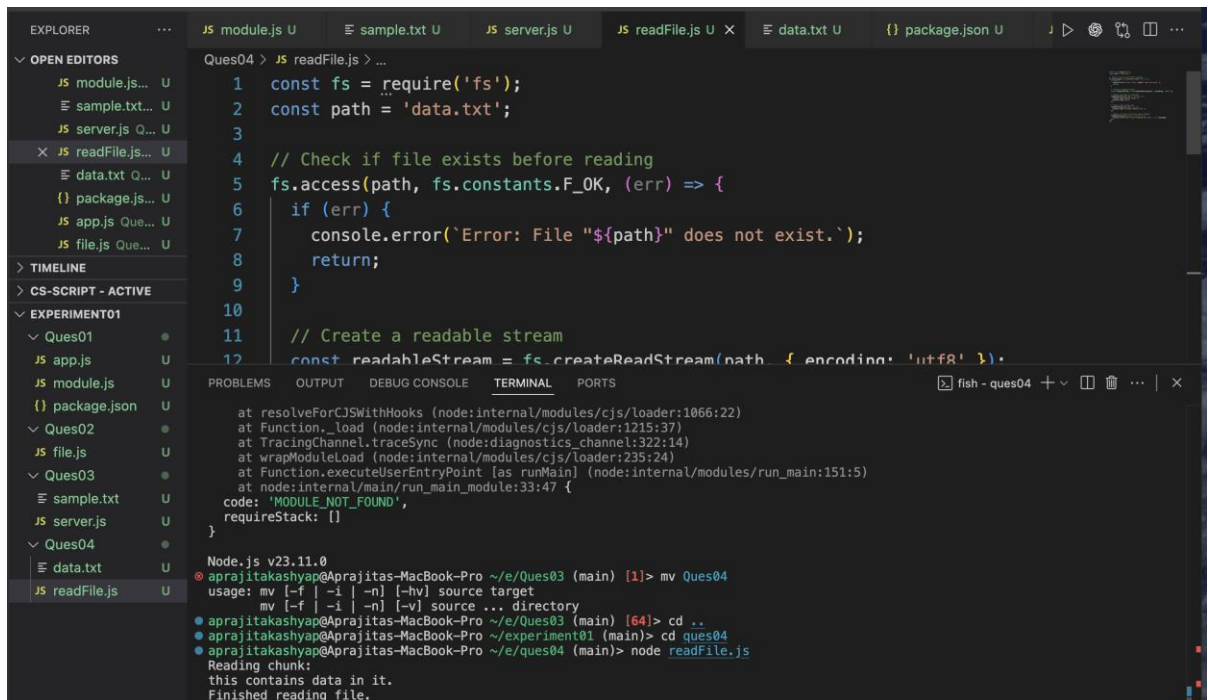
```
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques02 (main) [1]> cd ..
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques03
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques03 (main)> node server.js
Error reading file: ENOENT: no such file or directory, open 'sample.txt'
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques03 (main)> node server.js
Server is running at http://localhost:3000
```

2.

Now changed the directory but still ERROR: Error reading file: ENOENT: no such file or directory, open 'sample.txt' is showing So, placed the sample file inside ques03 folder. Then run the server and hence it is running on port 3000.

Ques04:

Errors and Mistakes:



The screenshot shows a VS Code editor with a file named `readFile.js` open. The code in the file is as follows:

```
1 const fs = require('fs');
2 const path = 'data.txt';
3
4 // Check if file exists before reading
5 fs.access(path, fs.constants.F_OK, (err) => {
6   if (err) {
7     console.error(`Error: File "${path}" does not exist.`);
8     return;
9   }
10
11 // Create a readable stream
12 const readableStream = fs.createReadStream(path, { encoding: 'utf8' });
```

The terminal window at the bottom shows the following output:

```
Node.js v23.11.0
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/Ques03 (main) [1]> mv Ques04
usage: mv [-f | -i | -n] [-hv] source target
mv [-f | -i | -n] [-v] source ... directory
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/Ques03 (main) [64]> cd ..
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques04
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques04 (main)> node readFile.js
Reading chunk:
this contains data in it.
Finished reading file.
```

1. NO ERROR!

Ques05:

Error and mistakes:

The screenshot shows a VS Code editor with the following components:

- EXPLORER:** A list of files including `module.js`, `sample.txt`, `server.js`, `readFile.js`, `writeFile.js` (selected), `output.txt`, `data.txt`, `package.js`, and `app.js`.
- EDITOR:** The `writeFile.js` file is open, showing the following code:

```
11
12 // End the stream
13 writableStream.end();
14
15 // Handle finish event
16 writableStream.on("finish", () => {
17   console.log("Data written successfully to output.txt");
18 });
19
20 writableStream.on("error", (err) => {
21   console.error("Error writing to file:", err);
22 });
```
- TERMINAL:** The terminal shows the command history and output:

```
Node.js v23.11.0
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/Ques03 (main) [1]> mv Ques04
usage: mv [-f | -i | -n] [-hy] source target
mv [-f | -i | -n] [-v] source ... directory
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/Ques03 (main) [64]> cd ..
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques04
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques04 (main)> node readFile.js
Reading chunk:
this contains data in it.
Finished reading file.
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques04 (main)> cd ..
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques05
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques05 (main)> node writeFile.js
Data written successfully to output.txt
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques05 (main)> []
```

No error

Ques 06:

Error and mistakes:

The screenshot shows a VS Code editor with the following components:

- EXPLORER:** A file tree on the left showing a project structure with files like `pipeFile.js`, `input.txt`, `output.txt`, `data.txt`, `package.js`, `app.js`, and `file.js`.
- OPEN EDITORS:** A list of open files including `pipeFile.js`, `input.txt`, `output.txt`, and `data.txt`.
- EDITOR:** The main workspace shows two files: `input.txt` and `output.txt`. Both files contain the same text:

```
1 This is a test file.
2 We are learning about Node.js streams
3 Piping makes it easy to transfer data
4
```
- TERMINAL:** The bottom panel shows a terminal window with the following commands and output:

```
Node.js v23.11.0
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques03 (main) [1]> mv ques04
usage: mv [-f | -i | -n] [-hv] source target
mv [-f | -i | -n] [-v] source ... directory
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques03 (main) [64]> cd ..
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques04
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques04 (main)> node readFile.js
Reading chunk:
this contains data in it.
Finished reading file.
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques04 (main)> cd ..
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques05
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques05 (main)> node writeFile.js
Data written successfully to output.txt
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques05 (main)> cd ..
aprajitakashyap@Aprajitas-MacBook-Pro ~/experiment01 (main)> cd ques06
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques06 (main)> node pipeFile.js
aprajitakashyap@Aprajitas-MacBook-Pro ~/e/ques06 (main)> node pipeFile.js
Data successfully piped from input.txt to output.txt
```

NO ERROR!