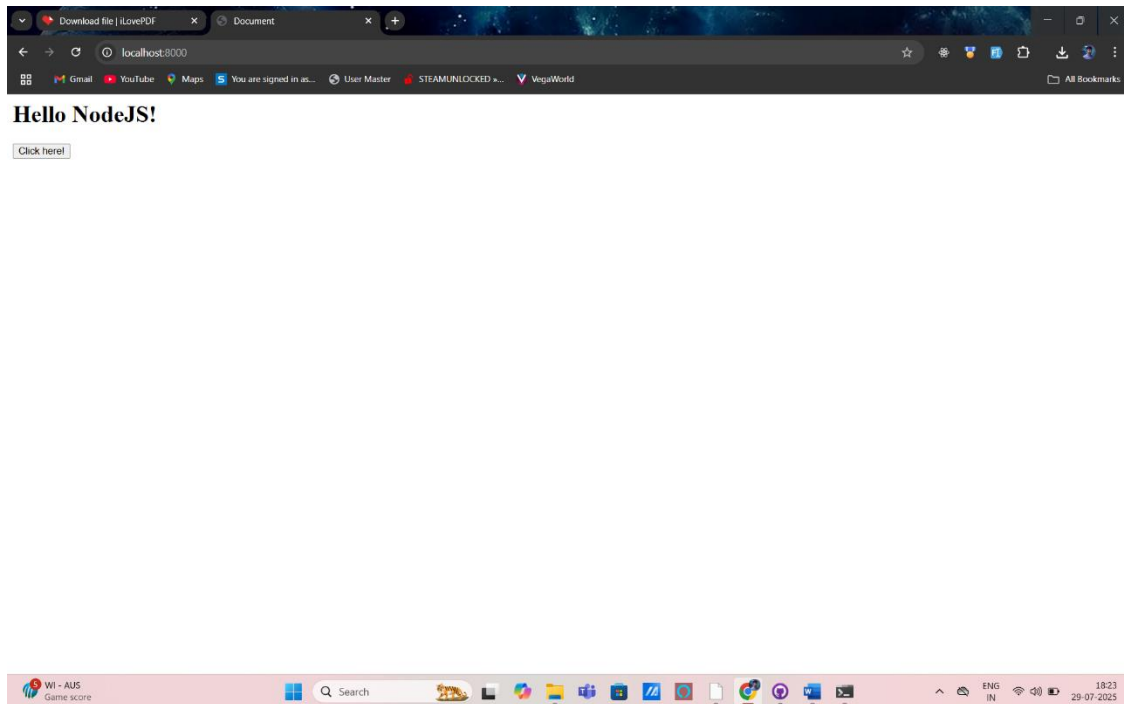


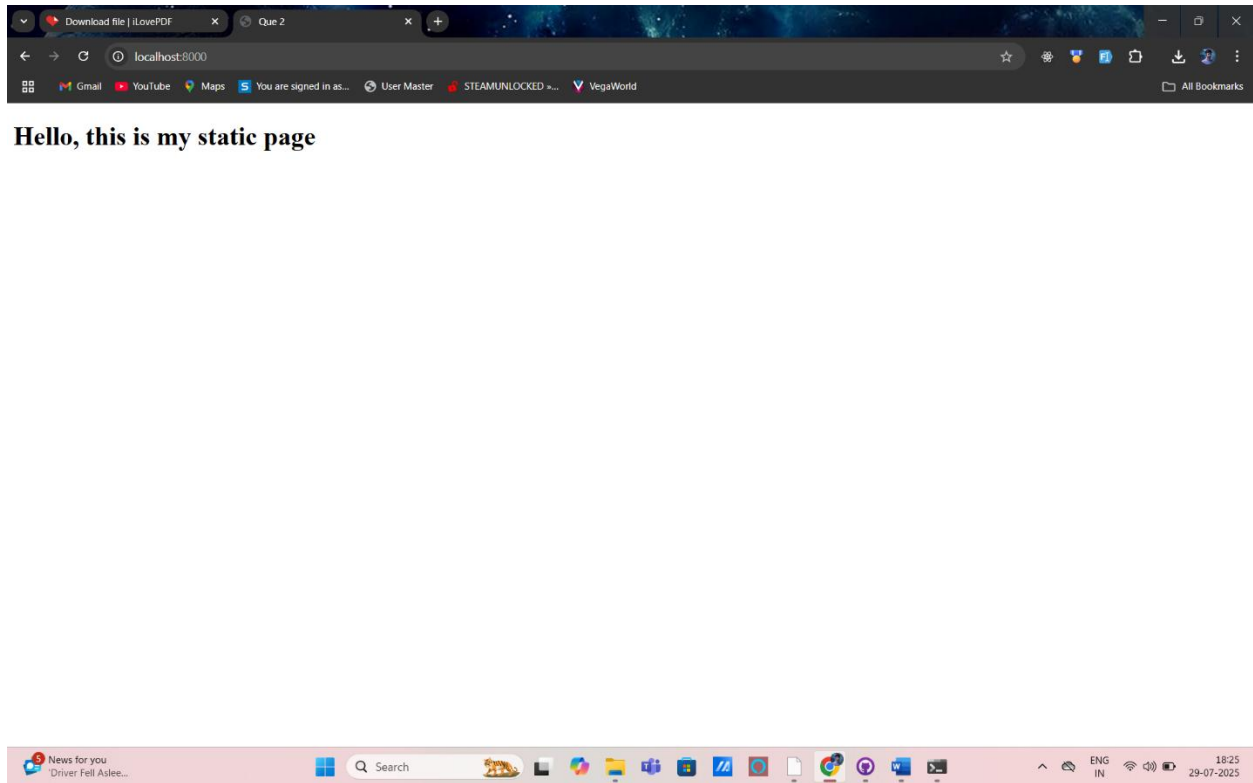
## 1. Develop nodejs application with following requirements:

- Develop a route `"/gethello"` with GET method. It displays `"Hello NodeJS!!"` as response.
- Make an HTML page and display.
- Call `"/gethello"` route from HTML page using AJAX call. (Any frontend AJAX call API can be used.)

## ScreenShot

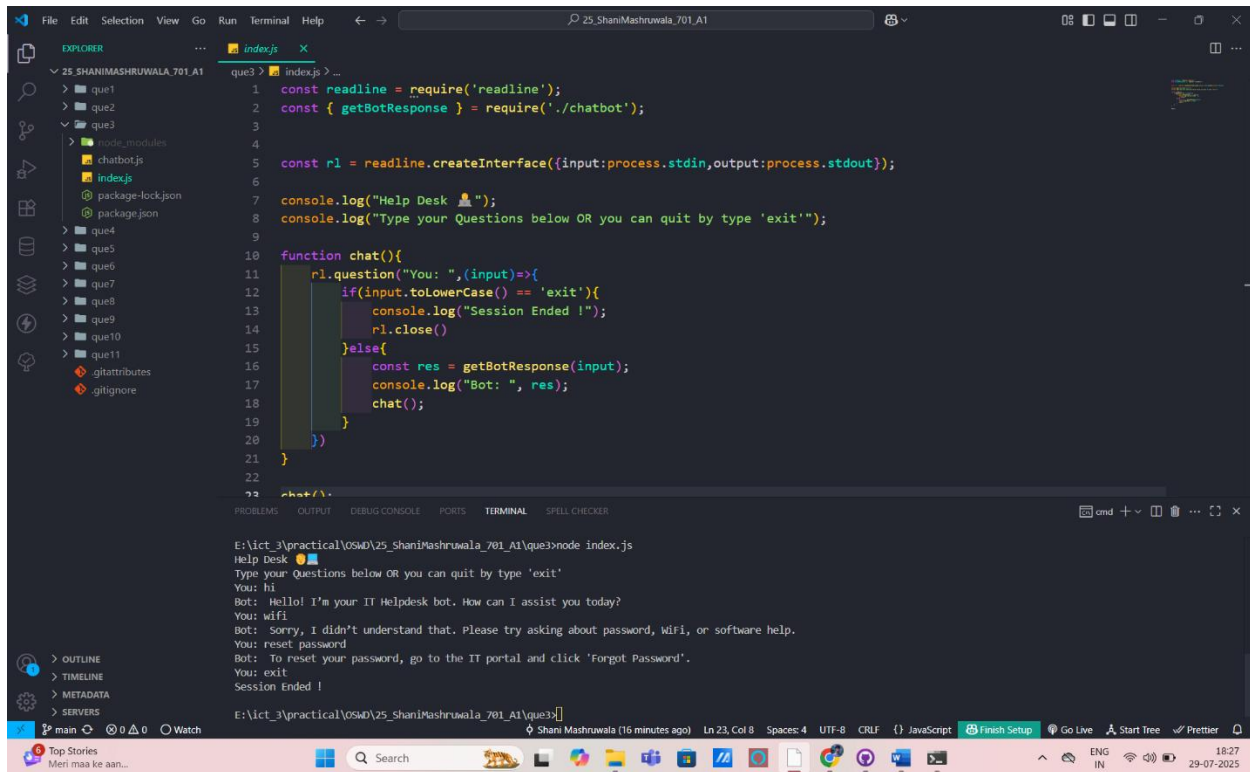


## ScreenShot



### 3. Develop a module for domain specific chatbot and use it in a command line application.

#### ScreenShot



The screenshot shows a Visual Studio Code editor with a project named '25\_SHANIMASHRUWALA\_701\_A1'. The file explorer on the left shows a directory structure with 'que3' containing 'index.js'. The editor displays the following JavaScript code in 'index.js':

```
1 const readline = require('readline');
2 const { getBotResponse } = require('./chatbot');
3
4
5 const rl = readline.createInterface({input:process.stdin,output:process.stdout});
6
7 console.log("Help Desk 🖨️");
8 console.log("Type your Questions below OR you can quit by type 'exit'");
9
10 function chat(){
11     rl.question("You: ",(input)=>{
12         if(input.toLowerCase() == 'exit'){
13             console.log("Session Ended !");
14             rl.close()
15         }else{
16             const res = getBotResponse(input);
17             console.log("Bot: ", res);
18             chat();
19         }
20     })
21 }
22
23 chat();
```

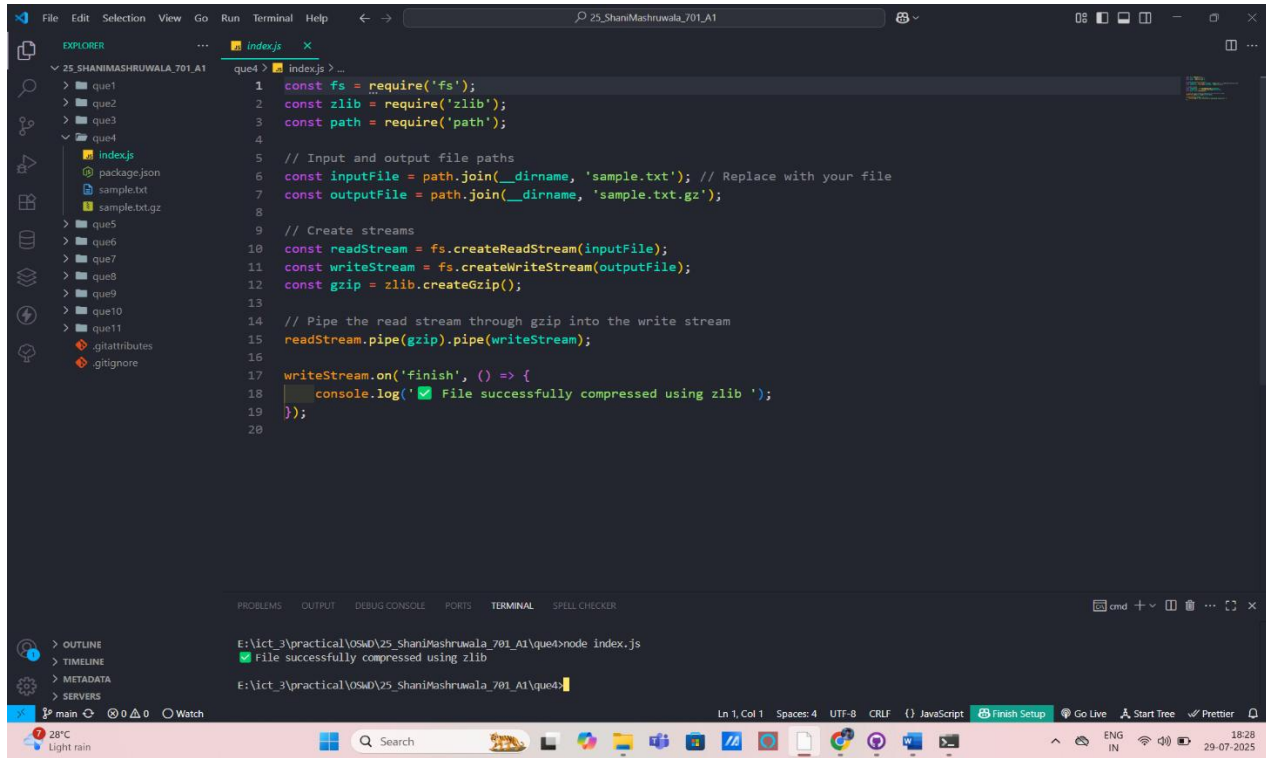
The terminal at the bottom shows the execution of the script:

```
E:\ict_3\practical\OSMD\25_ShaniMashruwala_701_A1\que3>node index.js
Help Desk 🖨️
Type your Questions below OR you can quit by type 'exit'
You: hi
Bot: Hello! I'm your IT Helpdesk bot. How can I assist you today?
You: wifi
Bot: Sorry, I didn't understand that. Please try asking about password, wifi, or software help.
You: reset password
Bot: To reset your password, go to the IT portal and click 'Forgot Password'.
You: exit
Session Ended !
```

The status bar at the bottom indicates the file is 'index.js' in the 'que3' directory, with a file size of 16 minutes ago, and the editor is using the 'JavaScript' language and 'Prettier' formatter.

#### 4. Write a program to create a compressed zip file for a folder.

##### ScreenShot



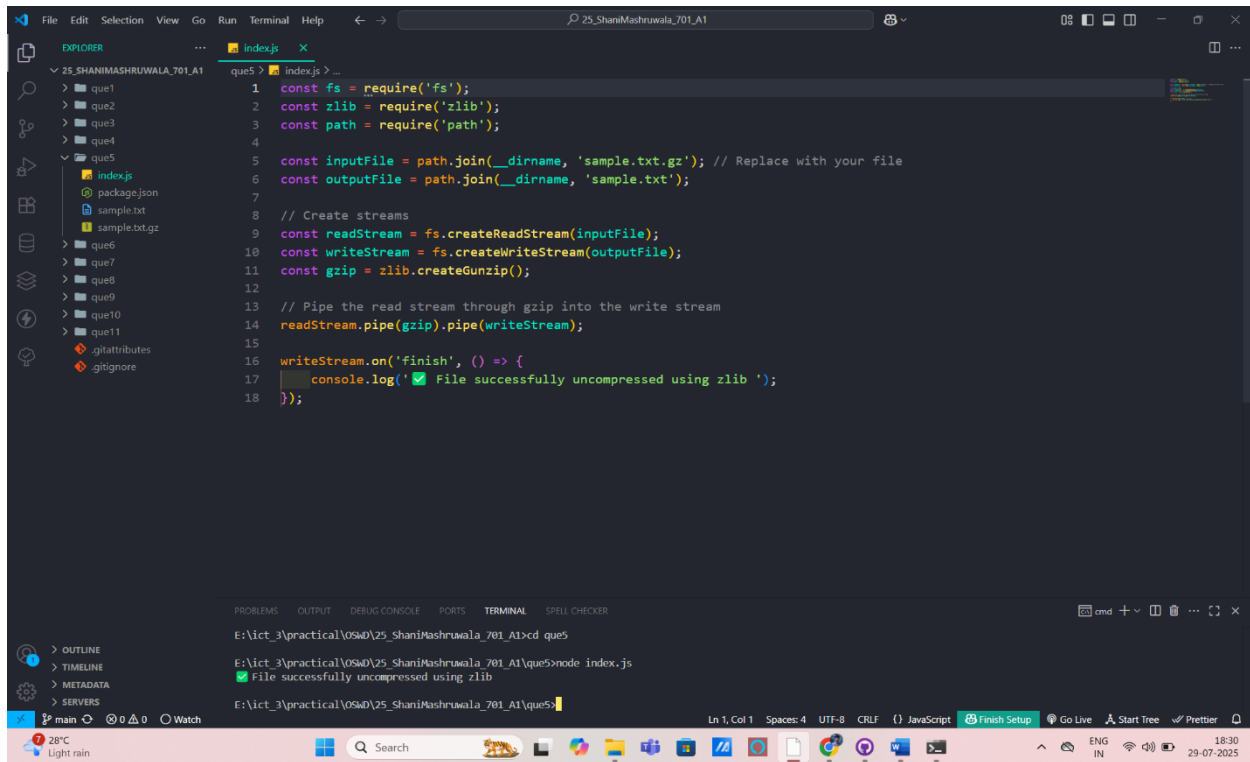
The screenshot shows a Visual Studio Code editor window with a file explorer on the left and a code editor in the center. The file explorer shows a project structure with folders 'que1' through 'que11' and files 'package.json', 'sample.txt', and 'sample.txt.gz'. The code editor displays a JavaScript file named 'index.js' with the following code:

```
1 const fs = require('fs');
2 const zlib = require('zlib');
3 const path = require('path');
4
5 // Input and output file paths
6 const inputFile = path.join(__dirname, 'sample.txt'); // Replace with your file
7 const outputFile = path.join(__dirname, 'sample.txt.gz');
8
9 // Create streams
10 const readStream = fs.createReadStream(inputFile);
11 const writeStream = fs.createWriteStream(outputFile);
12 const gzip = zlib.createGzip();
13
14 // Pipe the read stream through gzip into the write stream
15 readStream.pipe(gzip).pipe(writeStream);
16
17 writeStream.on('finish', () => {
18   console.log('✅ File successfully compressed using zlib ');
19 });
```

The terminal at the bottom shows the command 'node index.js' being executed, resulting in the output '✅ File successfully compressed using zlib '.

## 5. Write a program to extract a zip file.

### ScreenShot



The screenshot shows a Visual Studio Code editor window with a file explorer on the left and a code editor in the center. The file explorer shows a project structure with folders 'que1' through 'que11' and files 'package.json', 'sample.txt', and 'sample.txt.gz'. The code editor shows a file named 'index.js' with the following JavaScript code:

```
1 const fs = require('fs');
2 const zlib = require('zlib');
3 const path = require('path');
4
5 const inputFile = path.join(__dirname, 'sample.txt.gz'); // Replace with your file
6 const outputFile = path.join(__dirname, 'sample.txt');
7
8 // Create streams
9 const readStream = fs.createReadStream(inputFile);
10 const writeStream = fs.createWriteStream(outputFile);
11 const gzip = zlib.createGunzip();
12
13 // Pipe the read stream through gzip into the write stream
14 readStream.pipe(gzip).pipe(writeStream);
15
16 writeStream.on('finish', () => {
17   console.log('✅ File successfully uncompressed using zlib ');
18 });
```

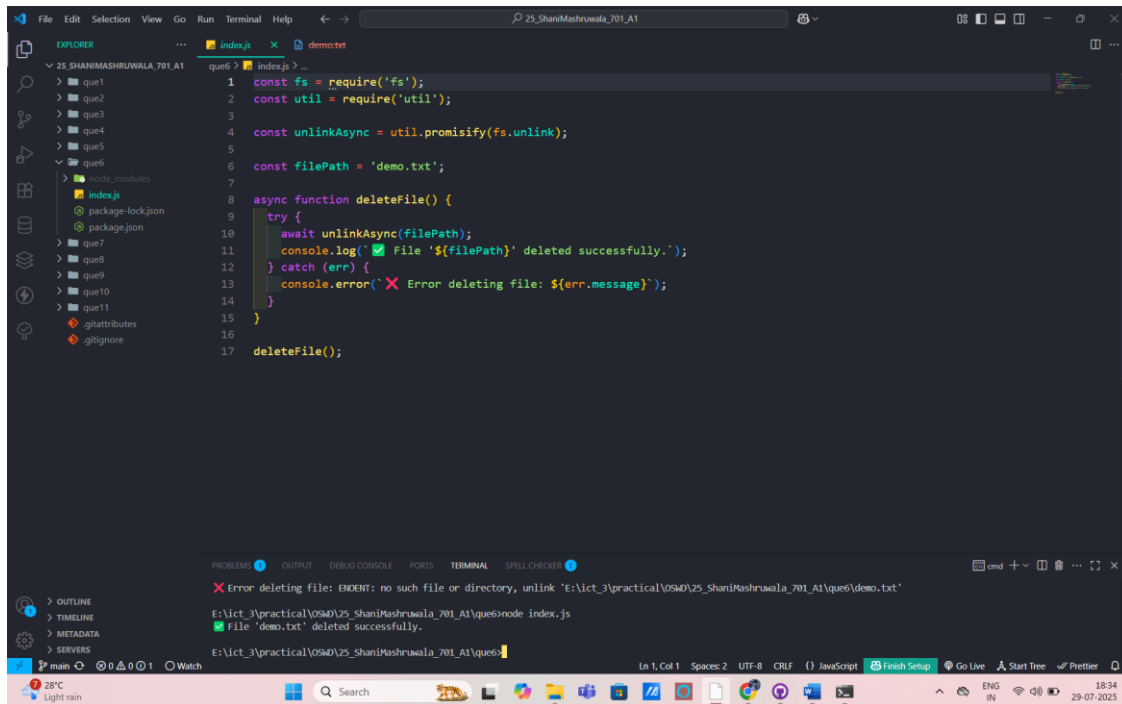
The terminal at the bottom shows the command prompt and the execution of the program:

```
E:\ict_3\practical\OS&D\25_ShaniMashruwala_701_A1>cd que5
E:\ict_3\practical\OS&D\25_ShaniMashruwala_701_A1\que5>node index.js
✅ File successfully uncompressed using zlib
```

The status bar at the bottom indicates the file is 'main', the encoding is 'UTF-8', and the language is 'JavaScript'. The system tray shows the temperature is 28°C, it is raining, and the time is 18:30 on 29-07-2025.

6. Write a program to promisify fs.unlink function and call it.

ScreenShot



```
1 const fs = require('fs');
2 const util = require('util');
3
4 const unlinkAsync = util.promisify(fs.unlink);
5
6 const filePath = 'demo.txt';
7
8 async function deleteFile() {
9   try {
10     await unlinkAsync(filePath);
11     console.log('✔ File `${filePath}` deleted successfully.');

PROBLEMS OUTPUT DEBUG CONSOLE PORTS TERMINAL SPELL CHECKER



✖ Error deleting file: ENOENT: no such file or directory, unlink 'E:\ict_3\practical\OSMD\25_ShaniMashruwala_701_A1\ques\demo.txt'



E:\ict_3\practical\OSMD\25_ShaniMashruwala_701_A1\ques>node index.js



✔ File 'demo.txt' deleted successfully.

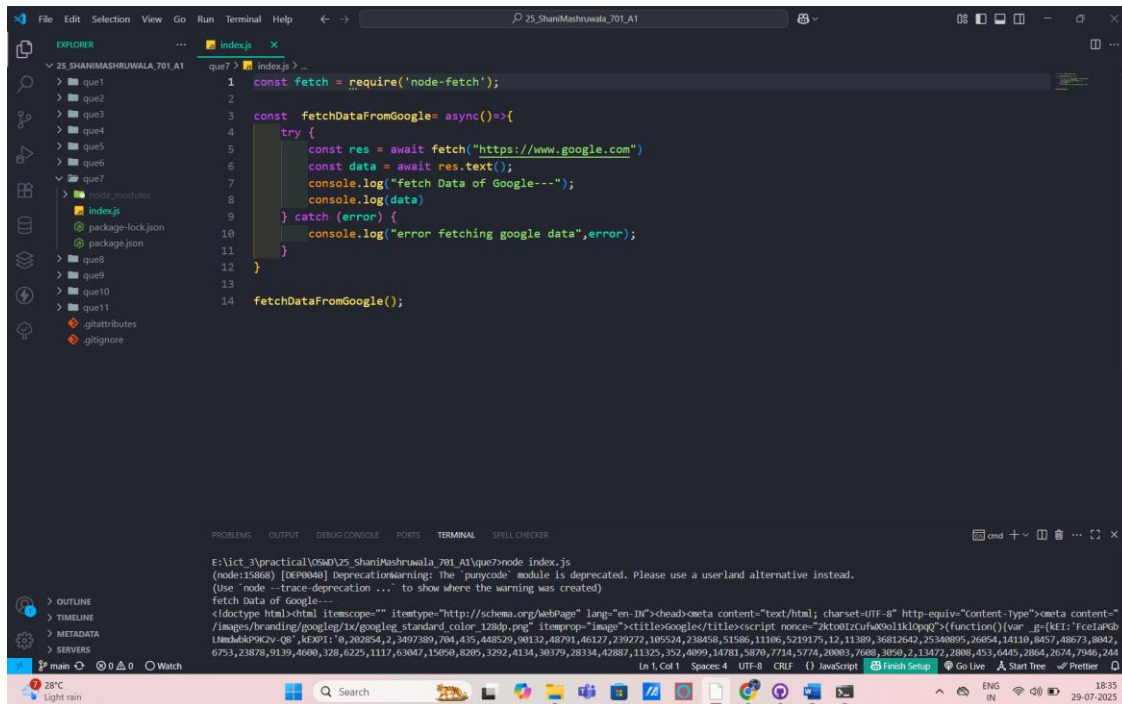


E:\ict_3\practical\OSMD\25_ShaniMashruwala_701_A1\ques>


```

## 7. Fetch data of google page using node-fetch using async-await model.

### ScreenShot



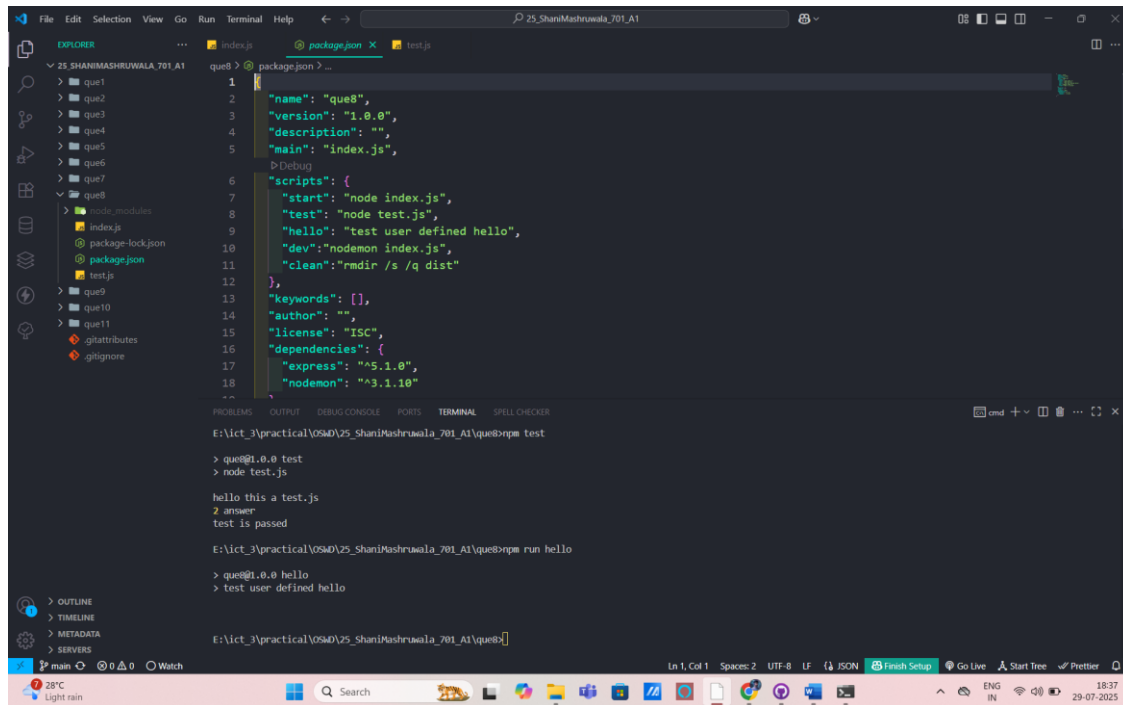
```
1 const fetch = require('node-fetch');
2
3 const fetchDataFromGoogle = async() => {
4   try {
5     const res = await fetch("https://www.google.com")
6     const data = await res.text();
7     console.log("fetch Data of Google---");
8     console.log(data)
9   } catch (error) {
10    console.log("error fetching google data",error);
11  }
12 }
13
14 fetchDataFromGoogle();
```

Terminal Output:

```
E:\ict_3\practical\OSAD\25_ShaniMashruwala_701_A1\que7>node index.js
(node:15868) [DEP0040] DeprecationWarning: The 'punycode' module is deprecated. Please use a userland alternative instead.
(Use 'node --trace-deprecation ...' to show where the warning was created)
fetch Data of Google---
<doctype html><html itemscope="" itemtype="http://schema.org/WebPage" lang="en-IN"><head><meta content="text/html; charset=UTF-8" http-equiv="Content-Type"><meta content="
/images/branding/google/1x/google_standard_color_128dp.png" itemprop="image"><title>Google</title><script nonce="2kto8lrcufu800l1k10pg">(function(){var _g={REI:"fceaA0b
lmsduke9c2v-Q8",kx0P1:"0,202854,2,3497380,704,435,448529,98132,48791,46127,239272,105524,238458,51586,11106,5219175,12,11389,36812642,25348895,26054,14110,8452,48673,8842,
6753,23878,9139,4600,328,6225,1117,63047,15850,8205,3292,4134,30379,28334,42887,11325,352,4099,14781,5870,7714,5774,20083,7608,3050,2,13472,2808,453,6445,2864,2674,7946,244
```

8. Set a server script, a test script and 3 user defined scripts in package.json file in your nodejs application.

ScreenShot



The screenshot shows a Visual Studio Code editor with a project named '25\_SHANIMASHRUWALA\_701\_A1'. The Explorer sidebar on the left shows a directory structure with folders 'que1' through 'que11', a 'node\_modules' folder, and files 'index.js', 'package-lock.json', 'package.json', and 'test.js'. The main editor displays the 'package.json' file with the following content:

```
1 {
2   "name": "que8",
3   "version": "1.0.0",
4   "description": "",
5   "main": "index.js",
6
7   "scripts": {
8     "start": "node index.js",
9     "test": "node test.js",
10    "hello": "test user defined hello",
11    "dev": "nodemon index.js",
12    "clean": "rmdir /s /q dist"
13  },
14  "keywords": [],
15  "author": "",
16  "license": "ISC",
17  "dependencies": {
18    "express": "^5.1.0",
19    "nodemon": "^3.1.10"
20  }
21 }
```

Below the editor, the TERMINAL panel shows the following commands and output:

```
E:\ict_3\practical\OSAD\25_ShaniMashruwala_701_A1\que8>npm test
> que8@1.0.0 test
> node test.js

hello this a test.js
2 answer
test is passed

E:\ict_3\practical\OSAD\25_ShaniMashruwala_701_A1\que8>npm run hello
> que8@1.0.0 hello
> test user defined hello

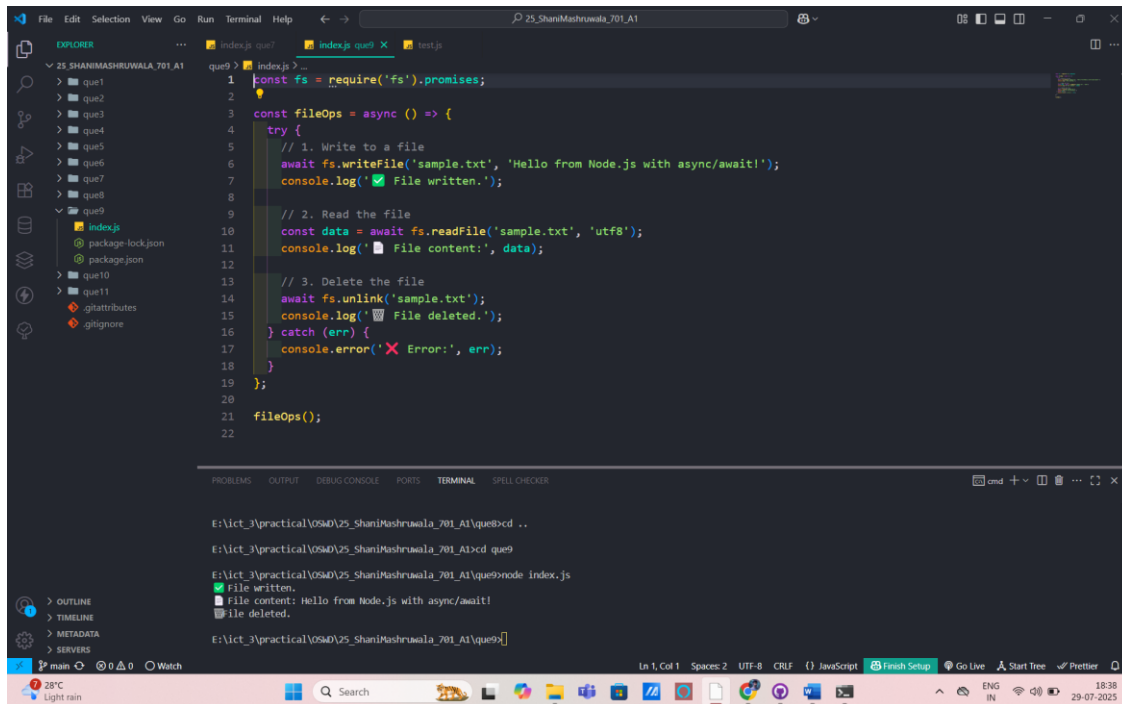
E:\ict_3\practical\OSAD\25_ShaniMashruwala_701_A1\que8>
```

The status bar at the bottom indicates the current file is 'main', there are 0 errors and 0 warnings, and the encoding is UTF-8.



## 9. A program which calls useful functions in fs module.

### ScreenShot



```
1  const fs = require('fs').promises;
2
3  const fileOps = async () => {
4    try {
5      // 1. Write to a file
6      await fs.writeFile('sample.txt', 'Hello from Node.js with async/await!');
7      console.log('✔ File written.');

Terminal Output:

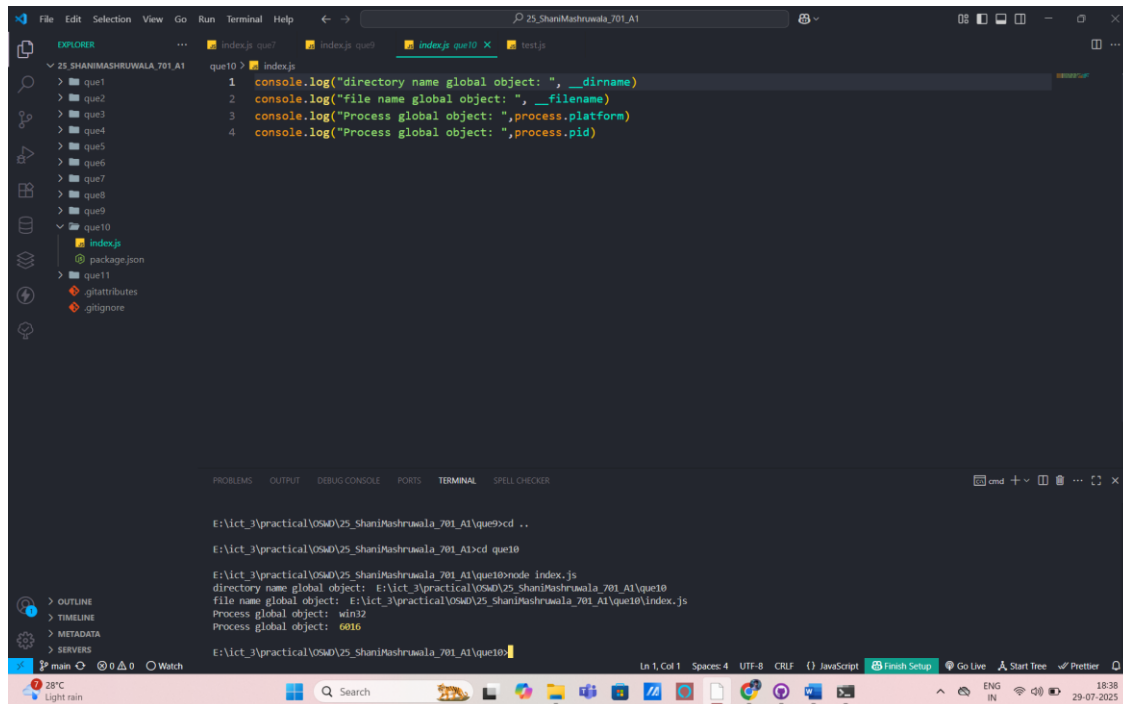


```
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1>cd ..
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1>cd que9
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1\que9>node index.js
✔ File written.
📄 File content: Hello from Node.js with async/await!
🗑 File deleted.
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1\que9>
```


```

## 10. A program which uses global objects in nodejs.

### ScreenShot



The screenshot shows a Visual Studio Code editor window with a file explorer on the left and a terminal at the bottom. The file explorer shows a project structure with folders 'que1' through 'que11' and files 'index.js', 'package.json', 'que11', 'gitattributes', and 'gitignore'. The 'index.js' file is open in the editor, showing the following code:

```
1 console.log("directory name global object: ", __dirname)
2 console.log("file name global object: ", __filename)
3 console.log("Process global object: ", process.platform)
4 console.log("Process global object: ", process.pid)
```

The terminal at the bottom shows the command prompt and the output of the program:

```
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1\que9>cd ..
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1>cd que10
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1\que10>node index.js
directory name global object: E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1\que10
file name global object: E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1\que10\index.js
Process global object: win32
Process global object: 6016
E:\ict_3\practical\0940\25_ShaniMashruwala_701_A1\que10>
```

The status bar at the bottom indicates the current file is 'index.js' and the editor is in 'JavaScript' mode. The system tray at the bottom shows the date and time as 18:38 on 29-07-2025.

## 11. Develop a useful package and publish it on npmjs.com

### ScreenShot

