

# 9 June 2025

Session 1 (10am – 1pm)

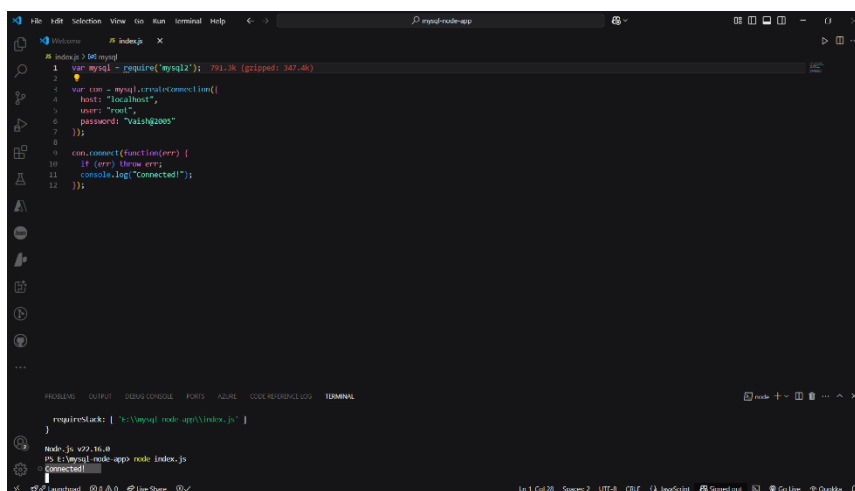
Topic:- Node.js MY SQL

1. Install My SQL :

npm install mysql2

2. Create Connection :

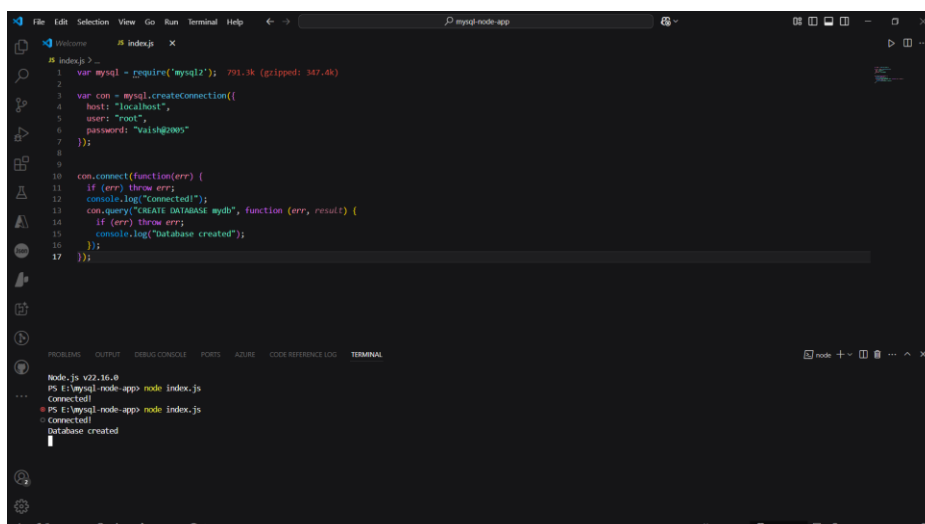
index.js file:-



```
1 var mysql = require('mysql2'); 791.3K (gripped: 347.4K)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "vaish@2005"
7 });
8
9 con.connect(function(err) {
10  if (err) throw err;
11  console.log("Connected");
12 });
```

node.js v22.16.0  
PS E:\mysql-node-app> node index.js  
Connected

3. Create DataBase:



```
1 var mysql = require('mysql2'); 791.3K (gripped: 347.4K)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "vaish@2005"
7 });
8
9 con.connect(function(err) {
10  if (err) throw err;
11  console.log("Connected");
12  con.query("CREATE DATABASE mydb", function (err, result) {
13    if (err) throw err;
14    console.log("Database created");
15  });
16 });
17 });
```

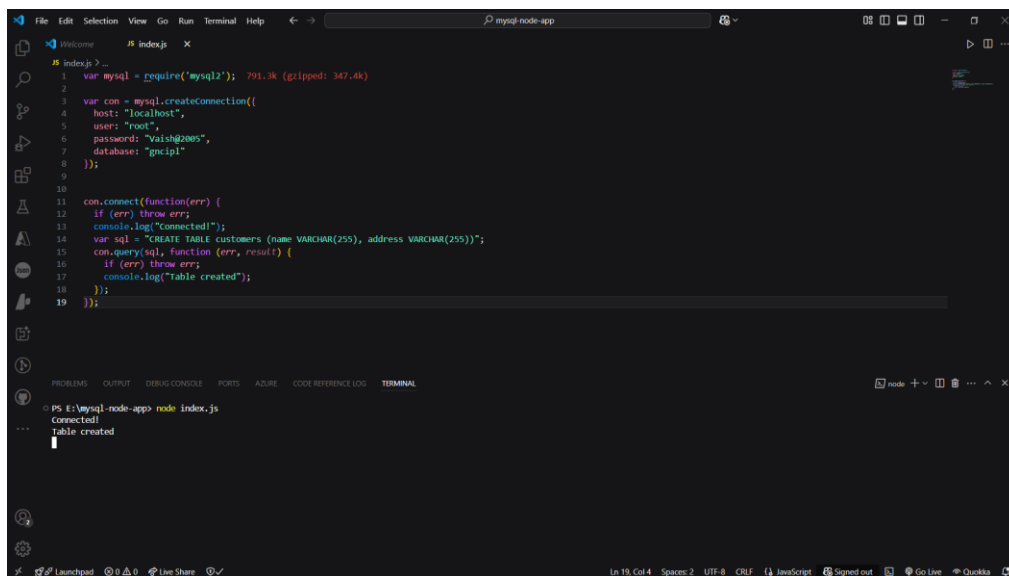
node.js v22.16.0  
PS E:\mysql-node-app> node index.js  
Connected  
PS E:\mysql-node-app> node index.js  
Connected  
Database created

Command - node index.js

Output- Connected!

Database created

#### 4. Create Table



```
1 var mysql = require('mysql2'); 791.3K (gzipped: 347.4K)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "Vaish@2005",
7   database: "gncipl"
8 });
9
10
11 con.connect(function(err) {
12   if (err) throw err;
13   console.log("Connected!");
14   var sql = "CREATE TABLE customers (name VARCHAR(255), address VARCHAR(255))";
15   con.query(sql, function (err, result) {
16     if (err) throw err;
17     console.log("Table created");
18   });
19 });
```

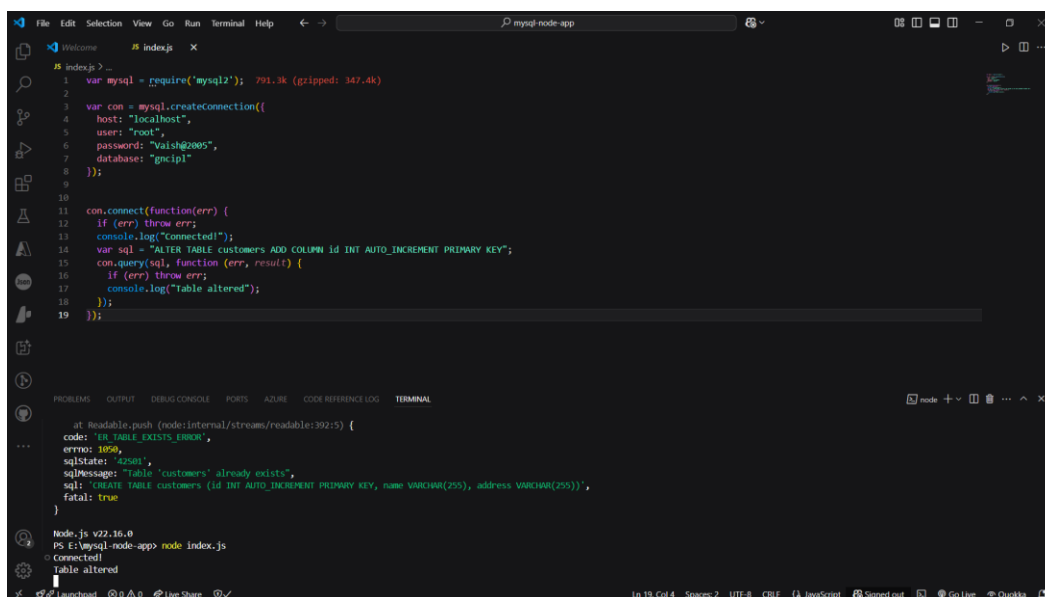
PS E:\mysql-node-app> node index.js  
Connected!  
Table created

Command – node index.js

Output- connected!

Table Created

#### 5. Primary Key:-



```
1 var mysql = require('mysql2'); 791.3K (gzipped: 347.4K)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "Vaish@2005",
7   database: "gncipl"
8 });
9
10
11 con.connect(function(err) {
12   if (err) throw err;
13   console.log("Connected!");
14   var sql = "ALTER TABLE customers ADD COLUMN id INT AUTO_INCREMENT PRIMARY KEY";
15   con.query(sql, function (err, result) {
16     if (err) throw err;
17     console.log("Table altered");
18   });
19 });
```

at Readable.push (node:internal/streams/readable:392:5) {  
 code: 'ER\_TABLE\_EXISTS\_ERROR',  
 ...  
 errors: 1050,  
 sqlState: '42001',  
 sqlMessage: 'Table \'customers\' already exists',  
 sql: 'CREATE TABLE customers (id INT AUTO\_INCREMENT PRIMARY KEY, name VARCHAR(255), address VARCHAR(255))',  
 fatal: true  
}

Node.js v22.16.0  
PS E:\mysql-node-app> node index.js  
Connected!  
Table altered

Output- Connected!

Table altered

#### 6. Insert Into Table/ Multiple Insert:-

Output- Connected!

1 record inserted

```
1 var mysql = require('mysql2'); 791.3k (gzipped: 347.4k)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "Vaish@2005",
7   database: "gncipl"
8 });
9
10
11 con.connect(function(err) {
12   if (err) throw err;
13   console.log("Connected!");
14   var sql = "INSERT INTO customers (name, address) VALUES ('Company Inc', 'Highway 37')";
15   con.query(sql, function (err, result) {
16     if (err) throw err;
17     console.log("1 record inserted");
18   });
19 });
```

Terminal Output:

```
sqlState: '42501',
sqlMessage: 'Table \'customers\' already exists',
sql: 'CREATE TABLE customers (id INT AUTO_INCREMENT PRIMARY KEY, name VARCHAR(255), address VARCHAR(255))',
fatal: true
}

Node.js v22.16.0
PS E:\mysql-node-app> node index.js
Connected!
PS E:\mysql-node-app> node index.js
Connected!
1 record inserted
```

Multiple:

```
11 con.connect(function(err) {
12   if (err) throw err;
13   console.log("Connected!");
14   var sql = "INSERT INTO customers (name, address) VALUES ?";
15   var values = [
16     ['John', 'Highway 71'],
17     ['Peter', 'Lowstreet 4'],
18     ['Amy', 'Apple st 652'],
19     ['Hannah', 'Mountain 21'],
20     ['Michael', 'Valley 345'],
21     ['Sandy', 'Ocean blvd 2'],
22     ['Betty', 'Green Grass 1'],
23     ['Richard', 'Sky st 331'],
24     ['Susan', 'One way 98'],
25     ['Vicky', 'Yellow Garden 2'],
26     ['Ben', 'Park Lane 38'],
27     ['William', 'Central st 954'],
28     ['Chuck', 'Main Road 989'],
29     ['Viola', 'Sideway 1633']
30   ];
31   con.query(sql, [values], function (err, result) {
32     if (err) throw err;
33     console.log("Number of records inserted: " + result.affectedRows);
34   });
35 });
```

Terminal Output:

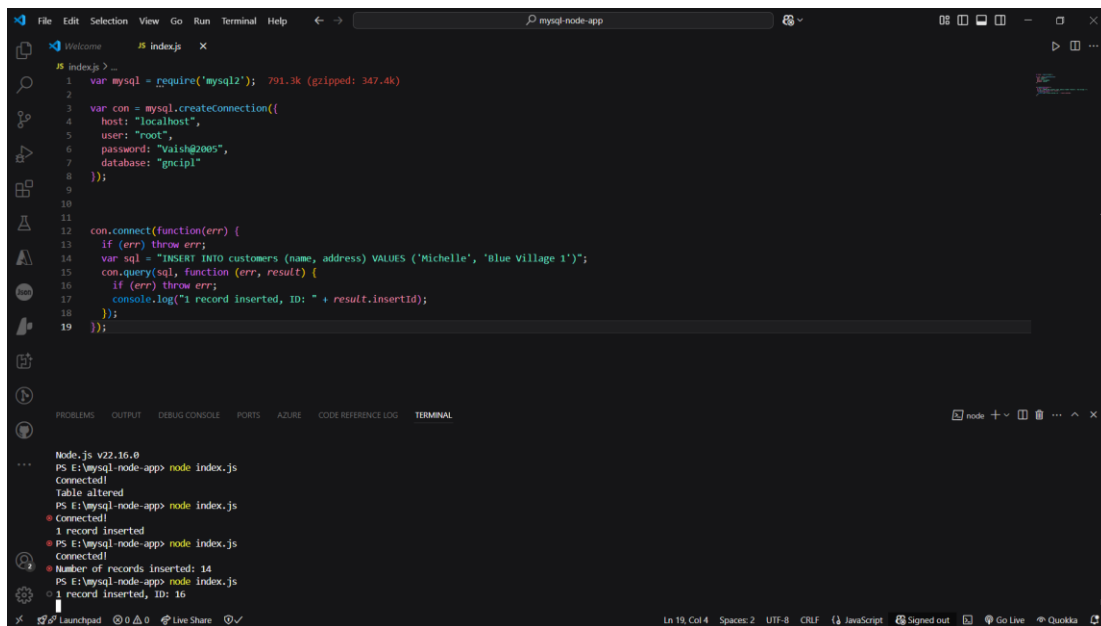
```
fatal: true
}

Node.js v22.16.0
PS E:\mysql-node-app> node index.js
Connected!
Table altered
PS E:\mysql-node-app> node index.js
Connected!
1 record inserted
PS E:\mysql-node-app> node index.js
Connected!
Number of records inserted: 14
```

Connected!

Number of records inserted: 14

## Get Inserted ID:-

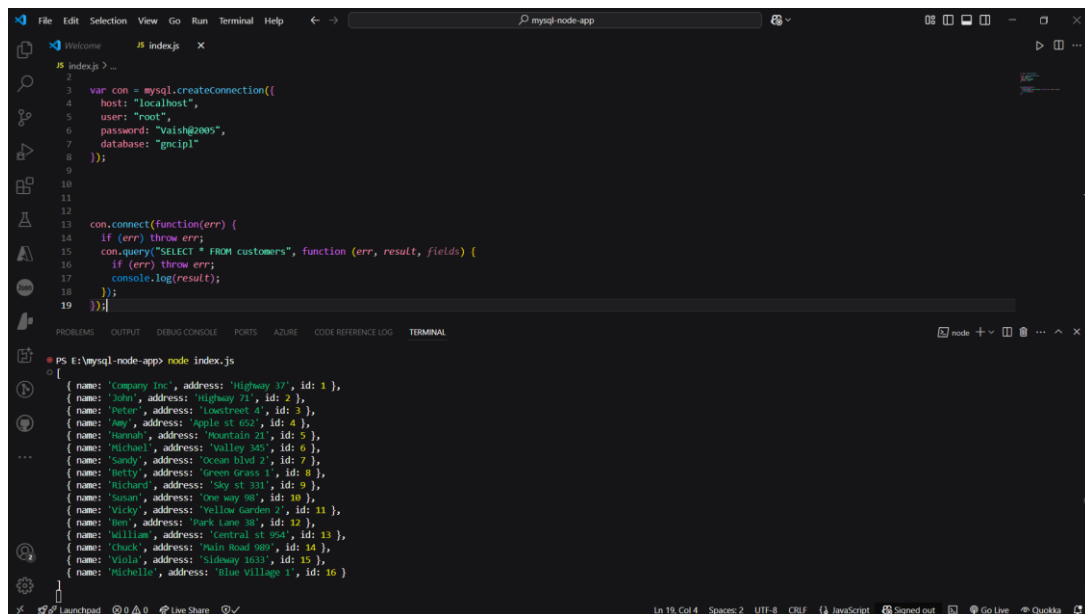


```
1 var mysql = require('mysql2'); 791.3k (gzipped: 347.4k)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "vaish@2005",
7   database: "gncipl"
8 });
9
10
11
12 con.connect(function(err) {
13   if (err) throw err;
14   var sql = "INSERT INTO customers (name, address) VALUES ('Michelle', 'blue village 1')";
15   con.query(sql, function (err, result) {
16     if (err) throw err;
17     console.log("1 record inserted, ID: " + result.insertId);
18   });
19 });
```

Node.js v22.16.0  
PS E:\mysql-node-app> node index.js  
Connected!  
Table altered  
PS E:\mysql-node-app> node index.js  
Connected!  
1 record inserted  
PS E:\mysql-node-app> node index.js  
Connected!  
Number of records inserted: 14  
PS E:\mysql-node-app> node index.js  
1 record inserted, ID: 16

1 record inserted, ID: 16

## 7. Select From:-



```
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "vaish@2005",
7   database: "gncipl"
8 });
9
10
11
12 con.connect(function(err) {
13   if (err) throw err;
14   con.query("SELECT * FROM customers", function (err, result, fields) {
15     if (err) throw err;
16     console.log(result);
17   });
18 });
19 });
```

PS E:\mysql-node-app> node index.js  
[  
 { name: 'Company Inc', address: 'Highway 37', id: 1 },  
 { name: 'John', address: 'Highway 71', id: 2 },  
 { name: 'Peter', address: 'Lowstreet 4', id: 3 },  
 { name: 'Amy', address: 'Apple st 652', id: 4 },  
 { name: 'Hannah', address: 'Mountain 21', id: 5 },  
 { name: 'Michael', address: 'Valley 345', id: 6 },  
 { name: 'Sandy', address: 'Ocean blvd 2', id: 7 },  
 { name: 'Betty', address: 'Green Grass 1', id: 8 },  
 { name: 'Richard', address: 'Sky st 331', id: 9 },  
 { name: 'Susan', address: 'One way 98', id: 10 },  
 { name: 'Vicky', address: 'Yellow Garden 2', id: 11 },  
 { name: 'Ben', address: 'Park Lane 38', id: 12 },  
 { name: 'William', address: 'Central st 954', id: 13 },  
 { name: 'Chuck', address: 'Main Road 989', id: 14 },  
 { name: 'Viola', address: 'Sideway 5631', id: 15 },  
 { name: 'Michelle', address: 'blue Village 1', id: 16 }  
]

## Output-

```
[  
  { id: 1, name: 'John', address: 'Highway 71'},  
  { id: 2, name: 'Peter', address: 'Lowstreet 4'},  
  { id: 3, name: 'Amy', address: 'Apple st 652'},  
  { id: 4, name: 'Hannah', address: 'Mountain 21'},  
  { id: 5, name: 'Michael', address: 'Valley 345'},  
  { id: 6, name: 'Sandy', address: 'Ocean blvd 2'},  
  { id: 7, name: 'Betty', address: 'Green Grass 1'},  
  { id: 8, name: 'Richard', address: 'Sky st 331'},  
  { id: 9, name: 'Susan', address: 'One way 98'},  
  { id: 10, name: 'Vicky', address: 'Yellow Garden 2'},  
  { id: 11, name: 'Ben', address: 'Park Lane 38'},  
  { id: 12, name: 'William', address: 'Central st 954'},  
  { id: 13, name: 'Chuck', address: 'Main Road 989'},  
  { id: 14, name: 'Viola', address: 'Sideway 5631'},  
  { id: 15, name: 'Michelle', address: 'blue Village 1'}  
]
```

```
{ id: 10, name: 'Vicky', address: 'Yellow Garden 2'},
{ id: 11, name: 'Ben', address: 'Park Lane 38'},
{ id: 12, name: 'William', address: 'Central st 954'},
{ id: 13, name: 'Chuck', address: 'Main Road 989'},
{ id: 14, name: 'Viola', address: 'Sideway 1633'}
]
```

## 8. Select With a Filter

```
1 var mysql = require('mysql2'); 791.3k (gripped: 347.4k)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "Vaish@2005",
7   database: "gncipl"
8 });
9
10 con.connect(function(err) {
11   if (err) throw err;
12   con.query("SELECT * FROM customers WHERE address = 'Park Lane 38'", function (err, result) {
13     if (err) throw err;
14     console.log(result);
15   });
16 });
```

```
{ name: 'Hannah', address: 'Mountain 21', id: 5 },
{ name: 'Michael', address: 'Valley 345', id: 6 },
{ name: 'Sandy', address: 'Ocean Blvd 21', id: 7 },
{ name: 'Betty', address: 'Green Grass 1', id: 8 },
{ name: 'Richard', address: 'Sky st 331', id: 9 },
{ name: 'Susan', address: 'One way 98', id: 10 },
{ name: 'Vicky', address: 'Yellow Garden 2', id: 11 },
{ name: 'Ben', address: 'Park Lane 38', id: 12 },
{ name: 'William', address: 'Central st 954', id: 13 },
{ name: 'Chuck', address: 'Main Road 989', id: 14 },
{ name: 'Viola', address: 'Sideway 1633', id: 15 },
{ name: 'Michelle', address: 'Blue Village 1', id: 16 }
]
PS E:\mysql-node-app> node index.js
[ { name: 'Ben', address: 'Park Lane 38', id: 12 } ]
```

## 9. Wildcard Characters:-

```
1 var mysql = require('mysql2'); 791.3k (gripped: 347.4k)
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "Vaish@2005",
7   database: "gncipl"
8 });
9
10 con.connect(function(err) {
11   if (err) throw err;
12   con.query("SELECT * FROM customers WHERE address LIKE 'S%', function (err, result) {
13     if (err) throw err;
14     console.log(result);
15   });
16 });
```

```
{ name: 'Michael', address: 'Valley 345', id: 6 },
{ name: 'Sandy', address: 'Ocean Blvd 21', id: 7 },
{ name: 'Betty', address: 'Green Grass 1', id: 8 },
{ name: 'Richard', address: 'Sky st 331', id: 9 },
{ name: 'Susan', address: 'One way 98', id: 10 },
{ name: 'Vicky', address: 'Yellow Garden 2', id: 11 },
{ name: 'Ben', address: 'Park Lane 38', id: 12 },
{ name: 'William', address: 'Central st 954', id: 13 },
{ name: 'Chuck', address: 'Main Road 989', id: 14 },
{ name: 'Viola', address: 'Sideway 1633', id: 15 },
{ name: 'Michelle', address: 'Blue Village 1', id: 16 }
]
PS E:\mysql-node-app> node index.js
[ { name: 'Ben', address: 'Park Lane 38', id: 12 } ]
PS E:\mysql-node-app> node index.js
[
  { name: 'Richard', address: 'Sky st 331', id: 9 },
  { name: 'Viola', address: 'Sideway 1633', id: 15 }
]
```

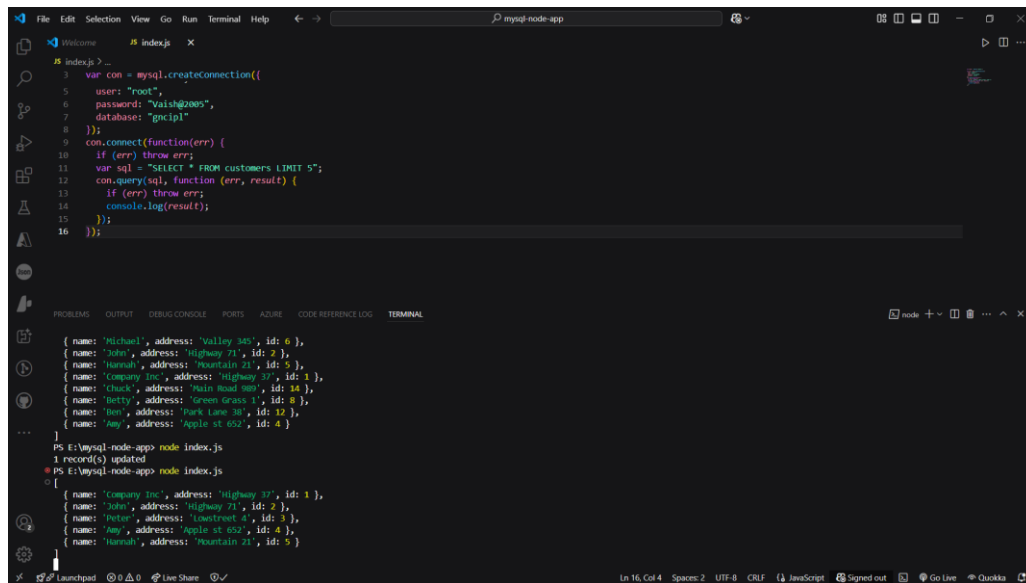
## 10. Sort the Result

Ascending Order:

```
File Edit Selection View Go Run Terminal Help
mysql-node-app

index.js
1 var con = mysql.createConnection({
2   user: "root",
3   password: "Vaish@2005",
4   database: "gncipl"
5 });
6
7 con.connect(function(err) {
8   if (err) throw err;
9   con.query("SELECT * FROM customers ORDER BY name", function (err, result) {
10     if (err) throw err;
11     console.log(result);
12   });
13 });
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## 12. Limit



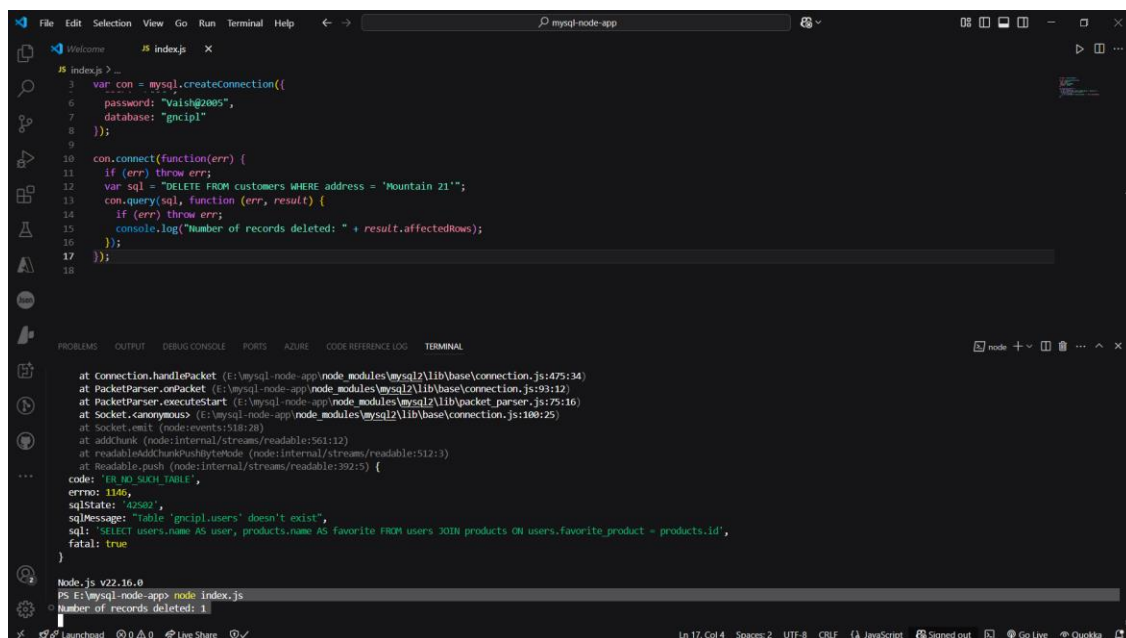
```
1 var con = mysql.createConnection({
2   user: "root",
3   password: "Vaish@2005",
4   database: "gncipl"
5 });
6 con.connect(function(err) {
7   if (err) throw err;
8   var sql = "SELECT * FROM customers LIMIT 5";
9   con.query(sql, function (err, result) {
10    if (err) throw err;
11    console.log(result);
12  });
13 });
```

```
{ name: 'Michael', address: 'Valley 345', id: 6 },
{ name: 'John', address: 'Highway 71', id: 2 },
{ name: 'Hannah', address: 'Mountain 21', id: 5 },
{ name: 'Company Inc', address: 'Highway 37', id: 1 },
{ name: 'Chuck', address: 'Main Road 989', id: 14 },
{ name: 'Betty', address: 'Green Grass 1', id: 8 },
{ name: 'Moe', address: 'Park Lane 38', id: 12 },
{ name: 'Amy', address: 'Apple st 652', id: 4 }
```

## 13. Join two or more tables

```
sql = "SELECT users.name AS user, products.name AS favorite FROM users JOIN products ON users.favorite_product = products.id";
```

## 14. Delete Record:-



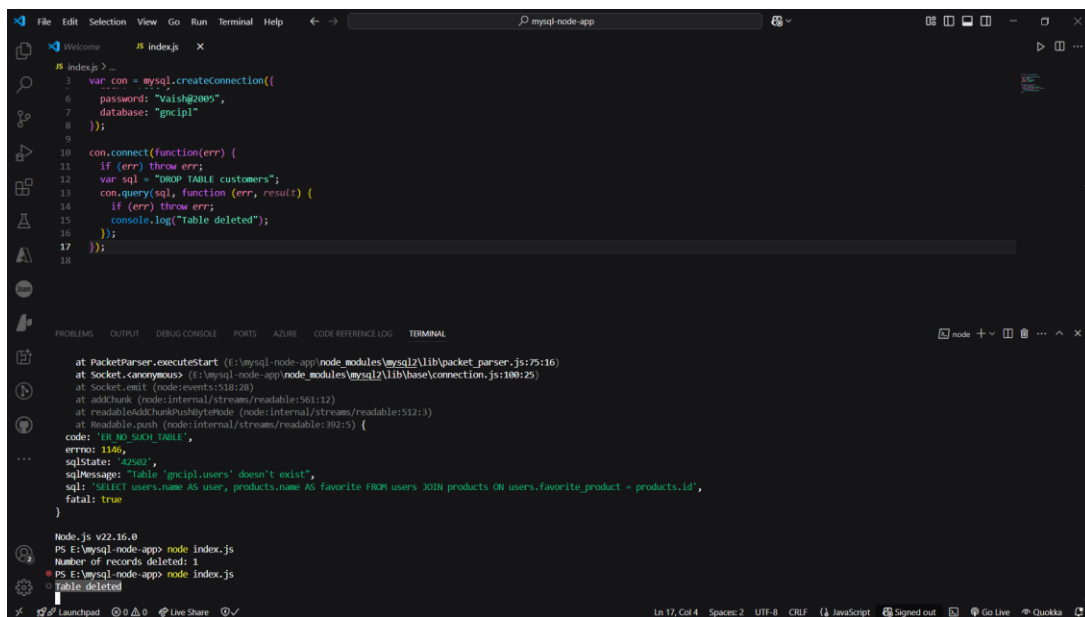
```
1 var con = mysql.createConnection({
2   user: "root",
3   password: "Vaish@2005",
4   database: "gncipl"
5 });
6 con.connect(function(err) {
7   if (err) throw err;
8   var sql = "DELETE FROM customers WHERE address = 'Mountain 21'";
9   con.query(sql, function (err, result) {
10    if (err) throw err;
11    console.log("Number of records deleted: " + result.affectedRows);
12  });
13 });
```

```
at Connection.handlePacket (E:\mysql-node-app\node_modules\mysql2\lib\base\connection.js:475:34)
at PacketParser.onPacket (E:\mysql-node-app\node_modules\mysql2\lib\base\connection.js:93:12)
at PacketParser.executeStart (E:\mysql-node-app\node_modules\mysql2\lib\packet_parser.js:75:16)
at Socket.<anonymous> (E:\mysql-node-app\node_modules\mysql2\lib\base\connection.js:100:25)
at Socket.emit (node:events:518:20)
at addChunk (node:internal/streams/readable:561:12)
at readableAddChunkPushByteMode (node:internal/streams/readable:512:3)
at Readable.push (node:internal/streams/readable:392:5)
{ code: 'ER_NO_SUCH_TABLE',
  errno: 1146,
  sqlState: '42S02',
  sqlMessage: "Table 'gncipl.users' doesn't exist",
  sql: 'SELECT users.name AS user, products.name AS favorite FROM users JOIN products ON users.favorite_product = products.id',
  fatal: true }
```

## 15. Drop Table / Delete Table:

Output-

Table Deleted!



```
File Edit Selection View Go Run Terminal Help
mysql-node-app

index.js
3 var con = mysql.createConnection({
4   password: "Vaish@2005",
5   database: "gncipl"
6 });
7
8
9
10 con.connect(function(err) {
11   if (err) throw err;
12   var sql = "DROP TABLE customers";
13   con.query(sql, function (err, result) {
14     if (err) throw err;
15     console.log("Table deleted");
16   });
17 });
18

PROBLEMS OUTPUT DEBUG CONSOLE PORTS AZURE CODE REFERENCE LOG TERMINAL
at PacketParser.executeStart (E:\mysql-node-app\node_modules\mysql2\lib\packet_parser.js:75:16)
at Socket.<anonymous> (E:\mysql-node-app\node_modules\mysql2\lib\base\connection.js:100:25)
at Socket.emit (node:events:518:28)
at addChunk (node:internal/stream/readable:561:12)
at readableAddChunkPushByteMode (node:internal/stream/readable:512:3)
at Readable.push (node:internal/stream/readable:392:5) {
  code: 'ER_NO_SUCH_TABLE',
  errno: 1146,
  sqlState: '42502',
  sqlMessage: "Table 'gncipl.users' doesn't exist",
  sql: 'SELECT users.name AS user, products.name AS favorite FROM users JOIN products ON users.favorite_product = products.id',
  fatal: true
}
Node.js v22.16.0
PS E:\mysql-node-app> node index.js
Number of records deleted: 1
PS E:\mysql-node-app> node index.js
Table deleted
```

## Session 2 (4pm – 6pm)

### Topic: Express.js

#### 1. What is Express.js?

Express.js is a streamlined web application framework for Node.js designed to facilitate the creation of web application and APIs.

#### 2. Key features of Express.js:

- Middleware
- Routing
- Template Engines
- Extensibility
- Performance

#### 3. Why Use Express.js?

- Simplicity
- Flexibility
- Community Support
- Scalability

#### 4. Conclusion:-

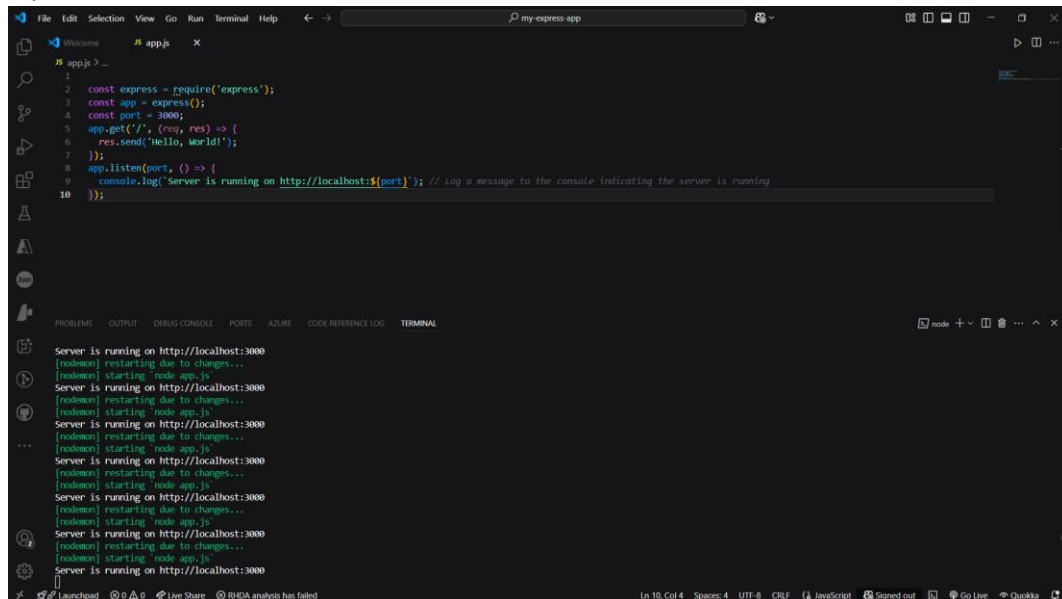
We Learned the basic of Express.js including its purpose, key features, and benefits for building web applications and APIs. We are now equipped with the fundamental knowledge to create robust and scalable web applications using Express.js. You can leverage its middleware, routing capabilities, template engine support, and extensibility to build efficient web applications with ease and flexibility.



- Setting Up Express.js  
mkdir my-express-app  
cd my-express-app  
npm init  
npm install express --save

CREATE THE SERVER FILE:-

Input:



```
1
2 const express = require('express');
3 const app = express();
4 const port = 3000;
5 app.get('/', (req, res) => {
6   res.send('Hello, World!');
7 });
8 app.listen(port, () => {
9   console.log(`Server is running on http://localhost:${port}`); // Log a message to the console indicating the server is running
10 });
```

Terminal output:

```
Server is running on http://localhost:3000
[nodemon] restarting due to changes...
[nodemon] starting 'node app.js'
Server is running on http://localhost:3000
[nodemon] restarting due to changes...
[nodemon] starting 'node app.js'
Server is running on http://localhost:3000
[nodemon] restarting due to changes...
[nodemon] starting 'node app.js'
Server is running on http://localhost:3000
[nodemon] restarting due to changes...
[nodemon] starting 'node app.js'
Server is running on http://localhost:3000
[nodemon] restarting due to changes...
[nodemon] starting 'node app.js'
Server is running on http://localhost:3000
[nodemon] restarting due to changes...
[nodemon] starting 'node app.js'
Server is running on http://localhost:3000
```

Output:

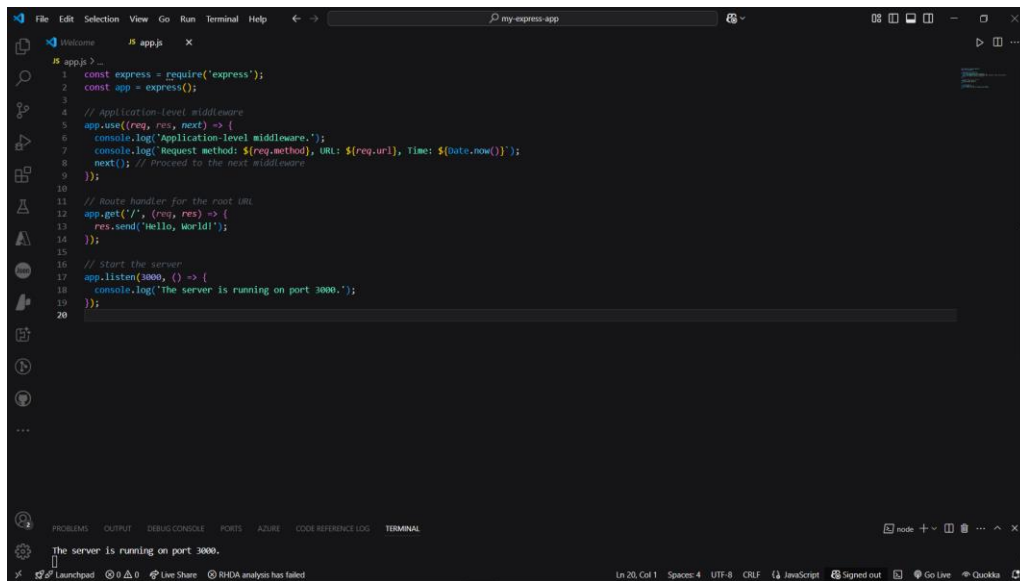


- What is Middleware in Express.js?

Middleware in Express.js refers to functions that have access to the request and response objects, as well as the next middleware function in the application's request-response cycle.

- Types Of Middleware:

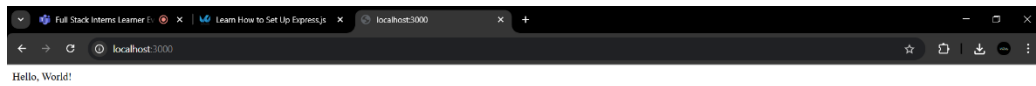
- APPLICATION-LEVEL MIDDLEWARE:-



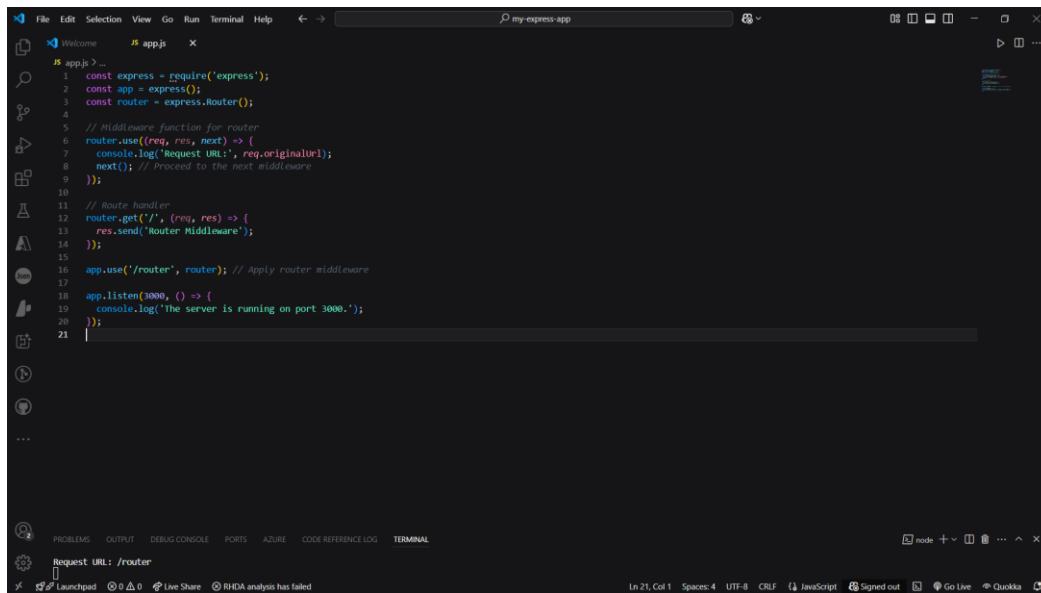
```
1 const express = require('express');
2 const app = express();
3
4 // Application-level middleware
5 app.use((req, res, next) => {
6   console.log('Application-level middleware');
7   console.log('Request method: ${req.method}, URL: ${req.url}, Time: ${Date.now()}');
8   next(); // Proceed to the next middleware
9 });
10
11 // Route handler for the root URL
12 app.get('/', (req, res) => {
13   res.send('Hello, World!');
14 });
15
16 // Start the server
17 app.listen(3000, () => {
18   console.log('The server is running on port 3000.');
19 });
20
```

The server is running on port 3000.

Output:-



- ROUTER-LEVEL MIDDLEWARE:

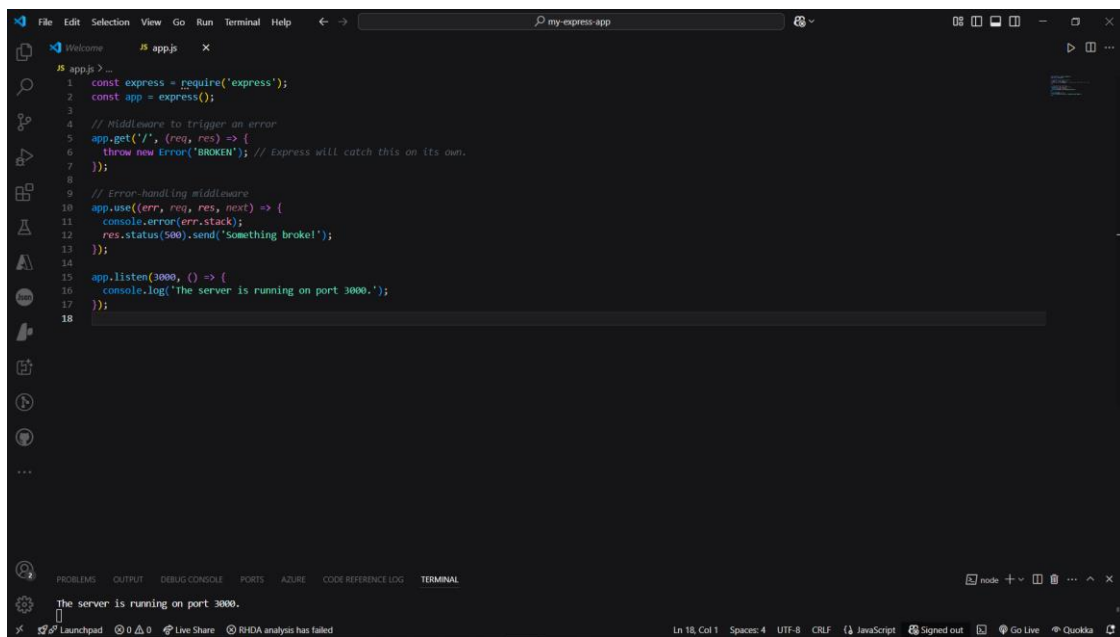


```
1 const express = require('express');
2 const app = express();
3 const router = express.Router();
4
5 // Middleware function for router
6 router.use((req, res, next) => {
7   console.log('Request URL:', req.originalUrl);
8   next(); // Proceed to the next middleware
9 });
10
11 // Route handler
12 router.get('/', (req, res) => {
13   res.send('Router Middleware');
14 });
15
16 app.use('/router', router); // Apply router middleware
17
18 app.listen(3000, () => {
19   console.log('The server is running on port 3000.');
```

## Output:



- ERROR-HANDLING MIDDLEWARE:-



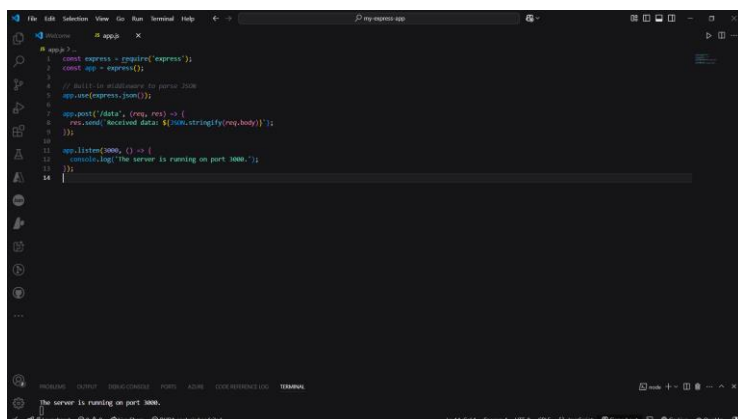
```
1 const express = require('express');
2 const app = express();
3
4 // Middleware to trigger an error
5 app.get('/', (req, res) => {
6   throw new Error('BROKEN'); // Express will catch this on its own.
7 });
8
9 // Error-handling middleware
10 app.use((err, req, res, next) => {
11   console.error(err.stack);
12   res.status(500).send('Something broke!');
13 });
14
15 app.listen(3000, () => {
16   console.log('The server is running on port 3000.');
```

The server is running on port 3000.

Output-



- BUILD-IN MIDDLEWARE

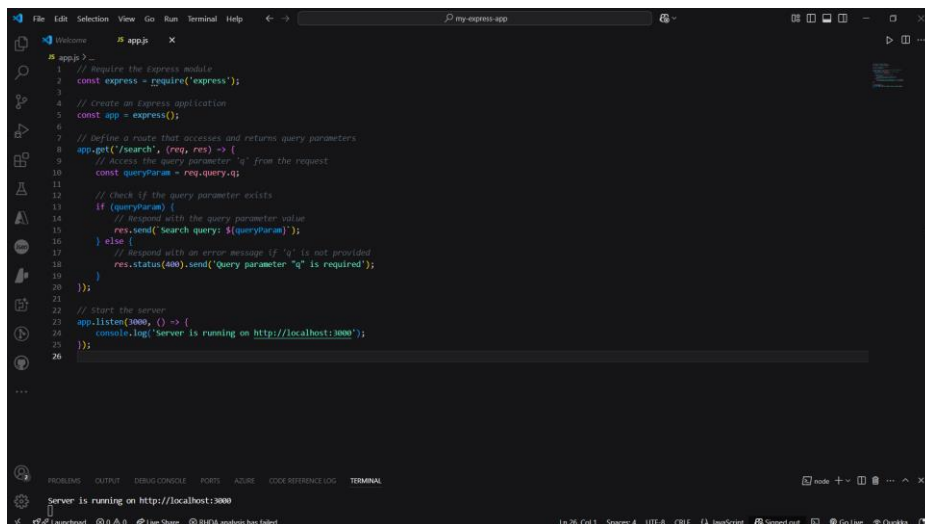


```
1 const express = require('express');
2 const app = express();
3
4 // Set up the middleware for port 3000
5 app.use(express.json());
6
7 app.post('/data', (req, res) => {
8   res.send('Received data: ' + JSON.stringify(req.body));
9 });
10
11 app.listen(3000, () => {
12   console.log('The server is running on port 3000.');
```

The server is running on port 3000.

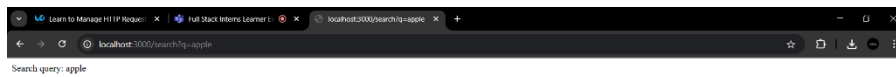
## 8. Understanding the Request Object:-

- req.query

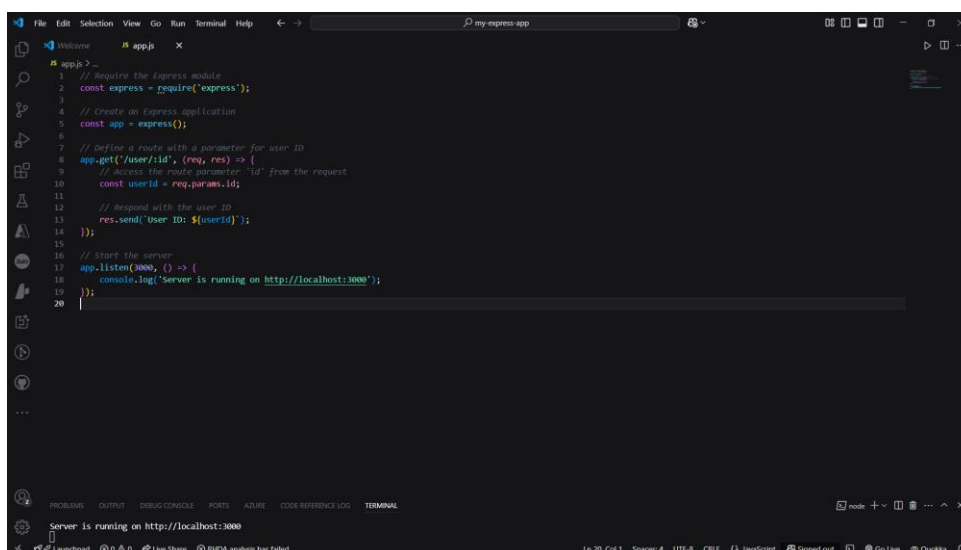


```
1 // Require the Express module
2 const express = require('express');
3
4 // Create an Express application
5 const app = express();
6
7 // Define a route that accesses and returns query parameters
8 app.get('/search', (req, res) => {
9   // Access the query parameter "q" from the request
10   const queryParam = req.query.q;
11
12   // Check if the query parameter exists
13   if (queryParam) {
14     // Respond with the query parameter value
15     res.send('Search query: ' + queryParam);
16   } else {
17     // Respond with an error message if "q" is not provided
18     res.status(400).send('Query parameter "q" is required');
19   }
20 });
21
22 // Start the server
23 app.listen(3000, () => {
24   console.log('Server is running on http://localhost:3000');
25 });
26
```

## Output-

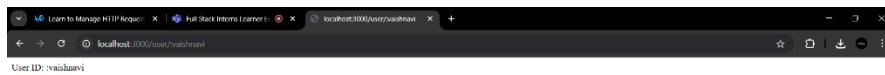


- req.params



```
1 // Require the Express module
2 const express = require('express');
3
4 // Create an Express application
5 const app = express();
6
7 // Define a route with a parameter for user ID
8 app.get('/user/:id', (req, res) => {
9   // Access the route parameter "id" from the request
10   const userId = req.params.id;
11
12   // Respond with the user ID
13   res.send('User ID: ' + userId);
14 });
15
16 // Start the server
17 app.listen(3000, () => {
18   console.log('Server is running on http://localhost:3000');
19 });
20
```

## Output-



- req.body

## app.js

```
1 // Require the Express module
2 const express = require('express');
3
4 // Create an Express application
5 const app = express();
6
7 // Use the middleware to parse JSON bodies
8 app.use(express.json());
9
10 // Define a route to access and respond with data from the request body
11 app.post('/profile', (req, res) => {
12   // Access the body from the request
13   const requestBody = req.body;
14
15   // Respond with the data from the request body
16   res.send(`Received the following data: ${JSON.stringify(requestBody)}`);
17 });
18
19 // Start the server
20 app.listen(3000, () => {
21   console.log('Server is running on http://localhost:3000');
22 });
23
```

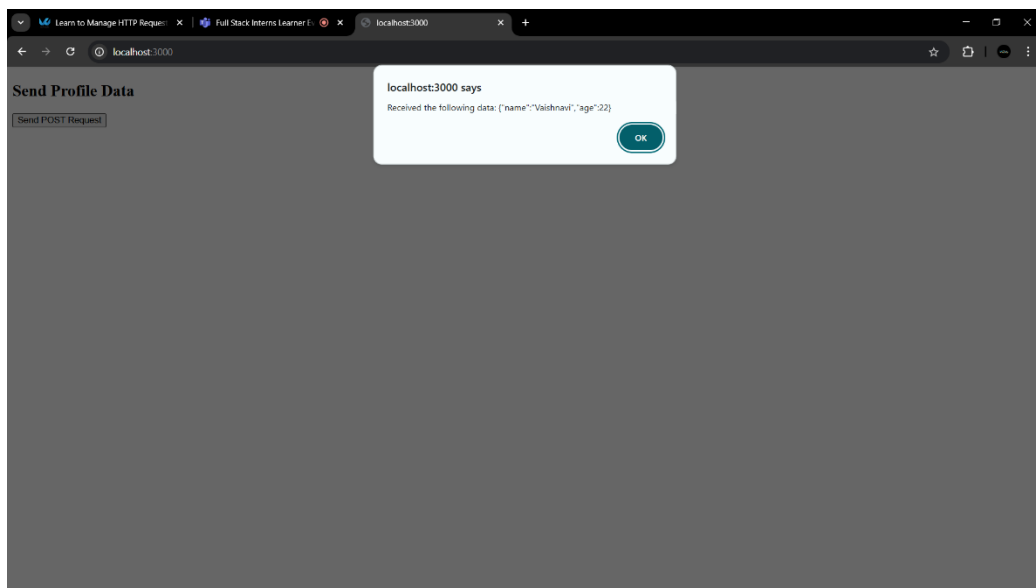
Server is running on http://localhost:3000

## Index.html

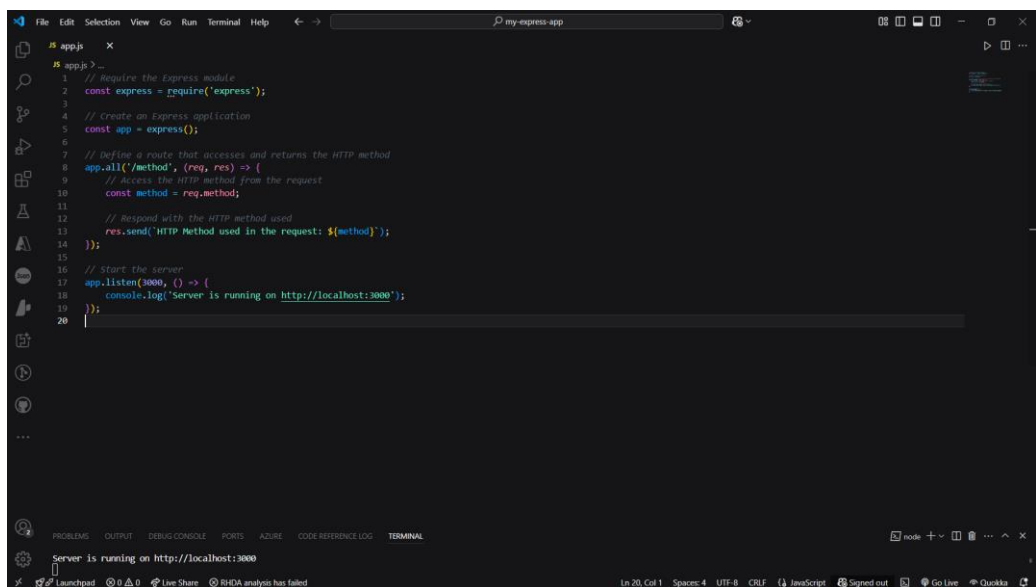
```
1 <html>
2 <body>
3   <div>Send Profile Data</div>
4   <button onclick="sendData()">Send POST Request</button>
5
6   <script>
7     function sendData() {
8       fetch("http://localhost:3000/profile", {
9         method: "POST",
10         headers: {
11           "Content-Type": "application/json"
12         },
13         body: JSON.stringify({ name: "Vaishnavi", age: 19 })
14       })
15       .then(response => response.text())
16       .then(data => alert(data));
17     }
18   </script>
19 </body>
20 </html>
```

Server is running on http://localhost:3000

## Output-



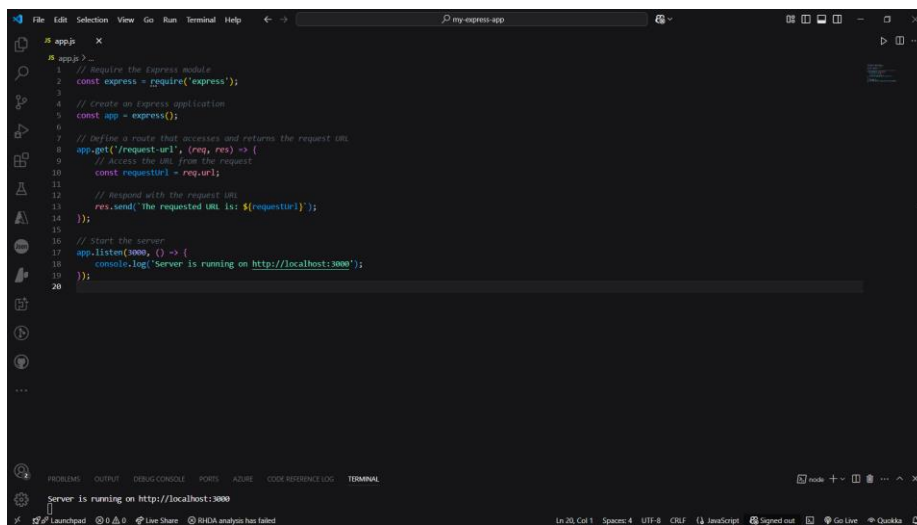
- `req.method`



## Output-



- req.url

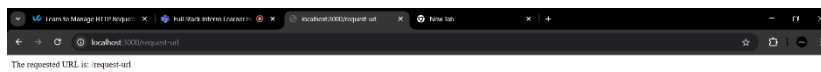


The image shows a VS Code editor window with a file named 'my-express-app'. The code is as follows:

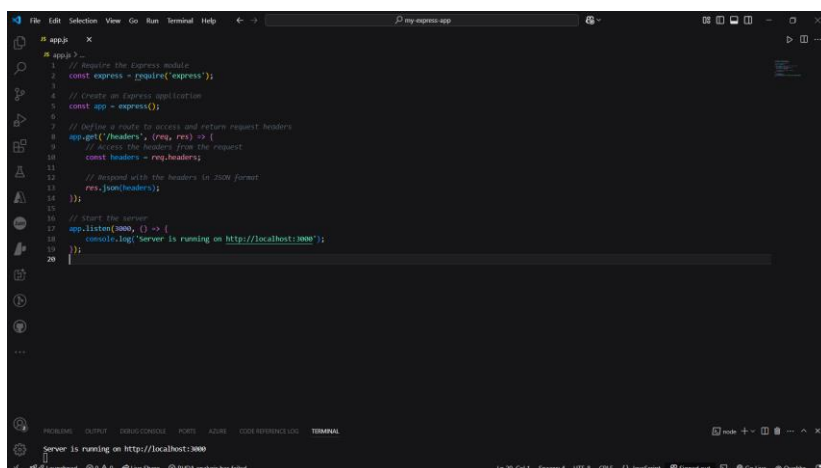
```
1 // Require the express module
2 const express = require('express');
3
4 // Create an express application
5 const app = express();
6
7 // Define a route that accesses and returns the request url
8 app.get('/request-url', (req, res) => {
9   // Access the url from the request
10   const requestUrl = req.url;
11
12   // Respond with the request url
13   res.send(`The requested url is: ${requestUrl}`);
14 });
15
16 // Start the server
17 app.listen(3000, () => {
18   console.log('Server is running on http://localhost:3000');
19 });
20
```

The bottom panel shows the 'TERMINAL' tab with the output: 'Server is running on http://localhost:3000'.

Output:-



- req.header



The image shows a VS Code editor window with a file named 'my-express-app'. The code is as follows:

```
1 // Require the express module
2 const express = require('express');
3
4 // Create an express application
5 const app = express();
6
7 // Define a route to access and return request headers
8 app.get('/headers', (req, res) => {
9   // Access the headers from the request
10   const headers = req.headers;
11
12   // Respond with the headers in JSON format
13   res.json(headers);
14 });
15
16 // Start the server
17 app.listen(3000, () => {
18   console.log('Server is running on http://localhost:3000');
19 });
20
```

The bottom panel shows the 'TERMINAL' tab with the output: 'Server is running on http://localhost:3000'.



## Output-

```
Learn to Manage HTTP Request  x  Full Stack Interns Learner  x  localhost:3000/index  x  New Tab  x  +
localhost:3000/index
Pretty print
{
  "host": "localhost:3000",
  "connection": "keep-alive",
  "sec-ch-ua": "\"Google Chrome\";v=1137\", \"Chromium\";v=1137\", \"Not;A=Brand\";v=\"39\"",
  "sec-ch-ua-mobile": "0",
  "sec-ch-ua-platform": "Windows",
  "user-agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/117.0.0.0 Safari/537.36",
  "accept": "text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.4",
  "accept-encoding": "gzip",
  "accept-language": "en-US,en;q=0.9"
}
```

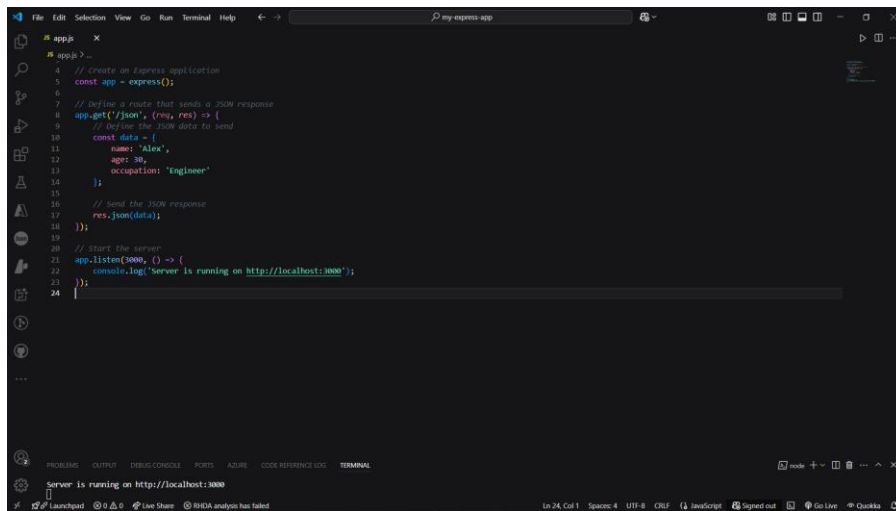
- res.send()

```
File Edit Selection View Go Run Terminal Help
my-express-app
app.js
1 // Create an Express application
2 const app = express();
3
4 // Define a route to send a plain text response
5
6 app.get('/text', (req, res) => {
7   // send plain text response
8   res.send('hello, this is a plain text response!');
9 });
10
11 // Define a route to send HTML content
12
13 app.get('/html', (req, res) => {
14   // send html response
15   res.send('<h1>Hello World</h1><p>this is an HTML response.</p>');
16   // optionally, log the response to the console
17   console.log('sent an HTML response');
18 });
19
20 // Define a route to send a JSON response
21
22 app.get('/json', (req, res) => {
23   // send JSON response
24   res.send({ message: 'This is a JSON response', status: 'success' });
25   // optionally, log the response to the console
26   console.log('sent a JSON response');
27 });
28
29 // start the server
30 app.listen(3000, () => {
31   console.log('server is running on http://localhost:3000');
32 });
33
PROBLEMS OUTPUT DEBUG CONSOLE PORTS AZURE CODE REFERENCE LOGS TERMINAL
Server is running on http://localhost:3000
Launched 0.5 Live Share Browsers analysis has failed
Ln 33, Col 1 Spans 4 UTF-8 CRLF JavaScript Signed out Go Live QuickBlox
```

## Output-

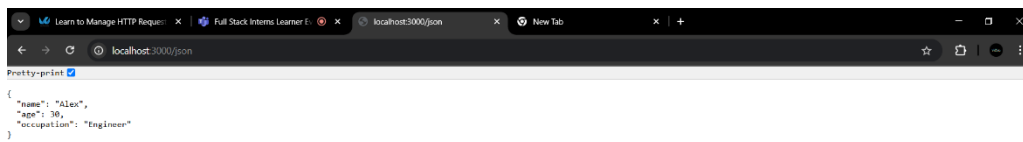
```
Learn to Manage HTTP Request  x  Full Stack Interns Learner  x  localhost:3000/html  x  New Tab  x  +
localhost:3000/html
Hello World
This is an HTML response.
```

- res.json()



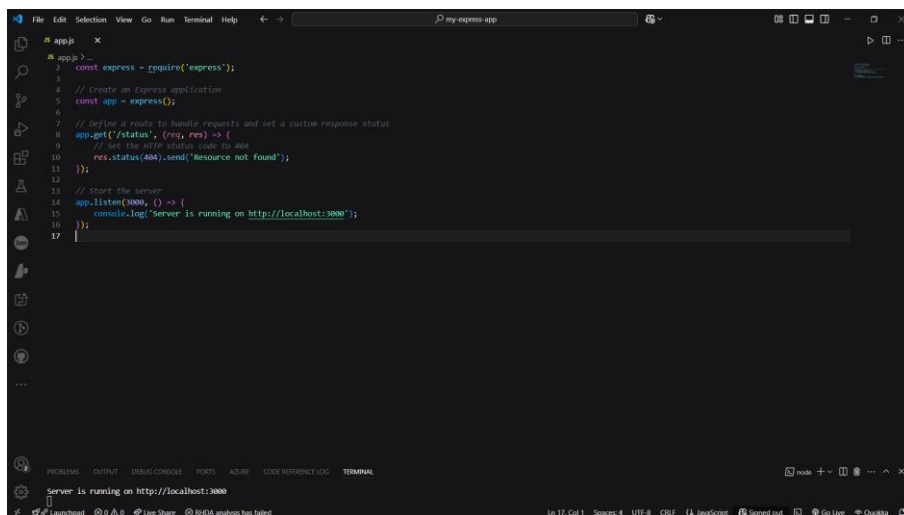
```
1 // Create an Express application
2 const app = express();
3
4 // Define a route that sends a JSON response
5 app.get('/json', (req, res) => {
6   // Define the JSON data to send
7   const data = {
8     name: 'Alex',
9     age: 30,
10    occupation: 'Engineer'
11  };
12  // Send the JSON response
13  res.json(data);
14});
15
16 // Start the server
17 app.listen(3000, () => {
18   console.log('Server is running on http://localhost:3000');
19});
```

## Output-



```
{
  "name": "Alex",
  "age": 30,
  "occupation": "Engineer"
}
```

- `res.status()`



```
1 const express = require('express');
2 const app = express();
3
4 // Define a route to handle requests and set a custom response status
5 app.get('/status', (req, res) => {
6   // Set the HTTP status code to 404
7   res.status(404).send('Resource not found');
8 });
9
10 // Start the server
11 app.listen(3000, () => {
12   console.log('Server is running on http://localhost:3000');
13 });
```

Output:-



---

Submitted By:- VAISHNAVI ASTHA GUPTA