

Creating a RESTful API using express.js and creating a database and index in MongoDB.

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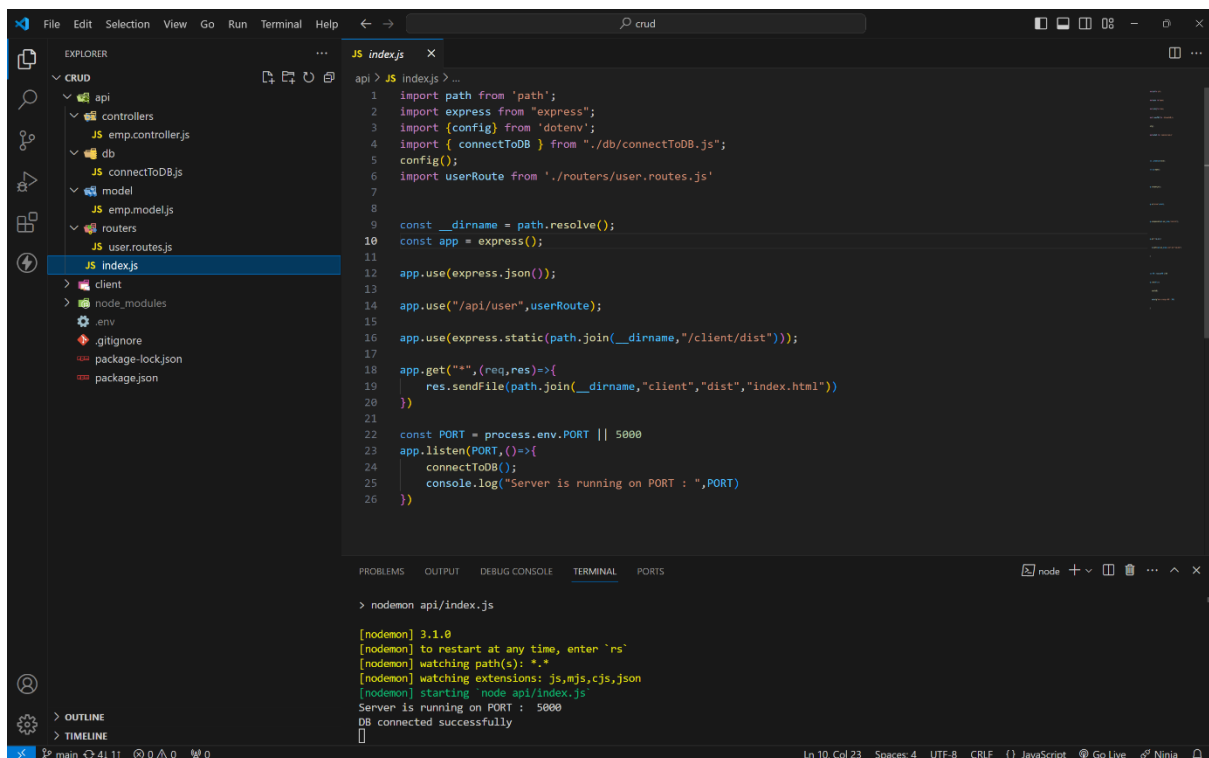
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source code :

index.js file :

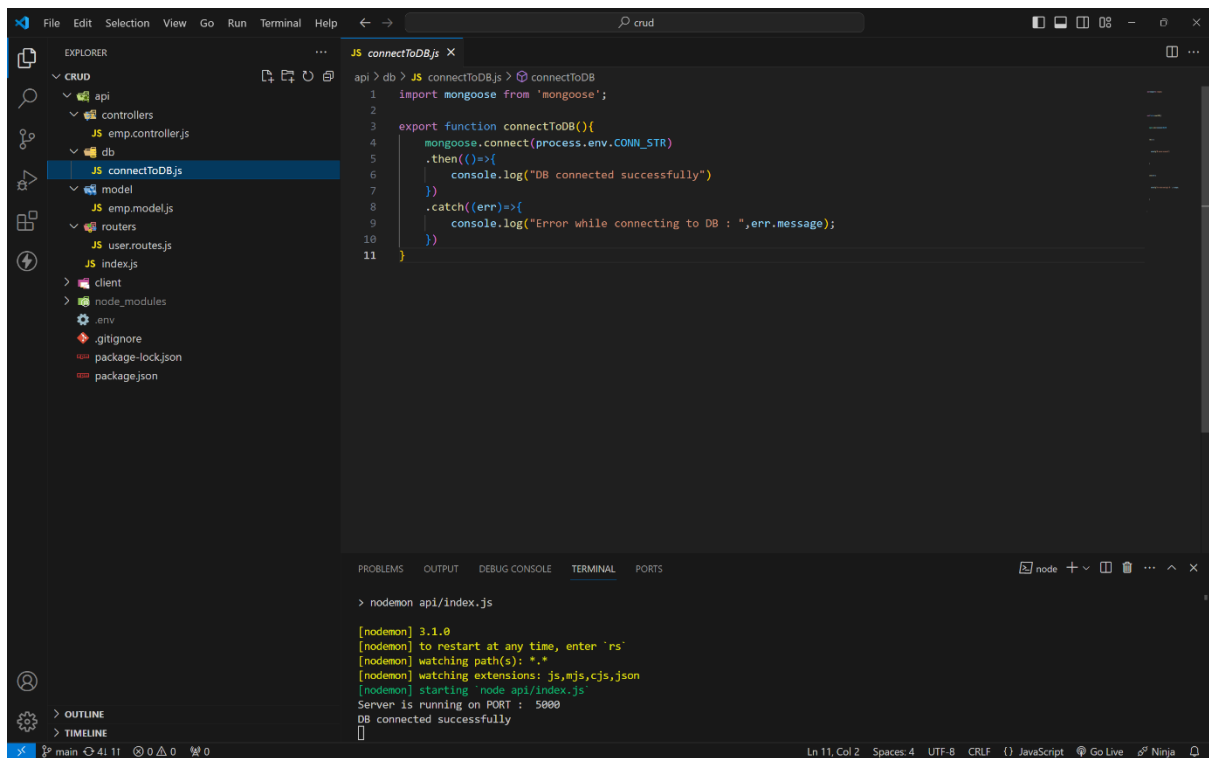


The screenshot shows a Visual Studio Code editor with a project named 'crud'. The Explorer sidebar on the left shows the file structure, with 'api/index.js' selected. The main editor displays the content of 'index.js', which is a Node.js script using Express.js to create a RESTful API. The script imports necessary modules, connects to a MongoDB database, and sets up routes for user management and static file serving. The terminal at the bottom shows the command 'nodemon api/index.js' being executed, with output indicating that the server is running successfully on port 5000.

```
1 import path from 'path';
2 import express from 'express';
3 import {config} from 'dotenv';
4 import { connectToDB } from './db/connectToDB.js';
5 config();
6 import userRoute from './routes/user.routes.js'
7
8
9 const __dirname = path.resolve();
10 const app = express();
11
12 app.use(express.json());
13
14 app.use("/api/user",userRoute);
15
16 app.use(express.static(path.join(__dirname,"client/dist")));
17
18 app.get("*",(req,res)=>{
19   res.sendFile(path.join(__dirname,"client","dist","index.html"))
20 })
21
22 const PORT = process.env.PORT || 5000
23 app.listen(PORT,()=>{
24   connectToDB();
25   console.log("Server is running on PORT : ",PORT)
26 })
```

```
> nodemon api/index.js
[nodemon] 3.1.0
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node api/index.js`
Server is running on PORT : 5000
DB connected successfully
```

MONGODB CONNECTION :



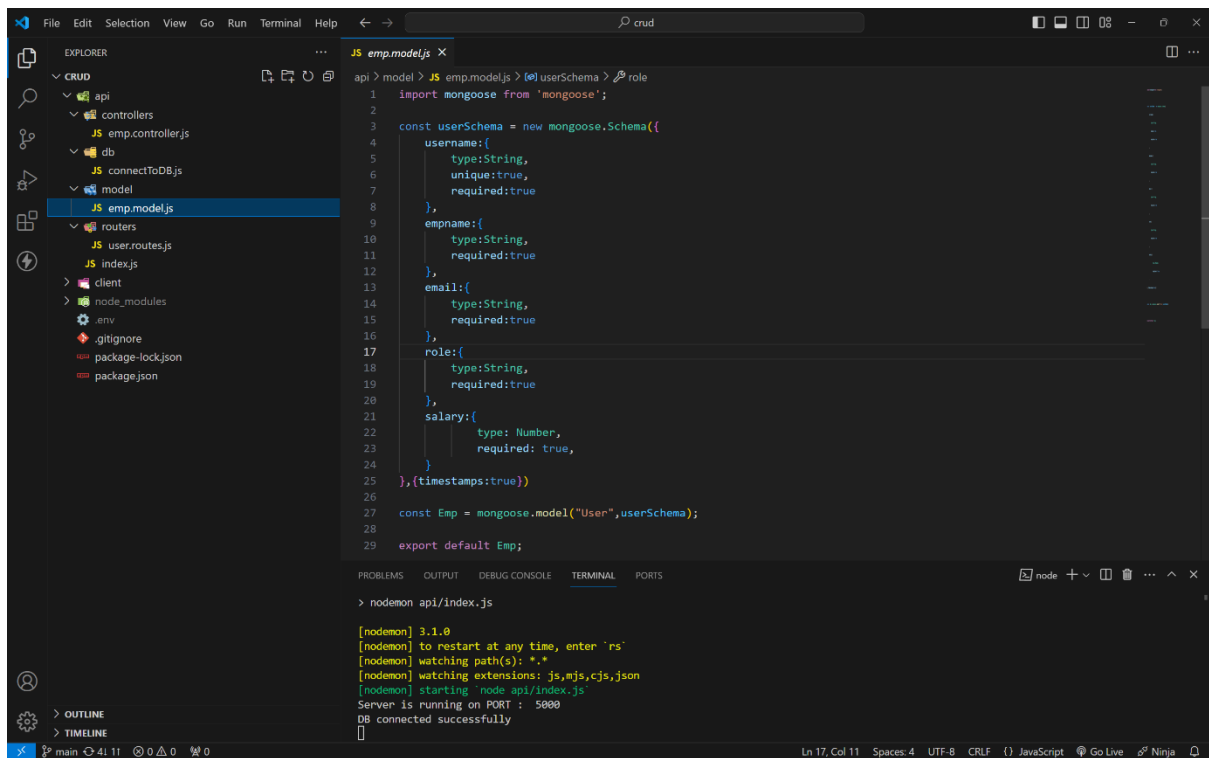
The screenshot shows a VS Code editor with a project named 'crud'. The Explorer panel on the left shows the file structure. The main editor window displays the file 'connectToDB.js' with the following code:

```
api > db > JS connectToDB.js > connectToDB
1 import mongoose from 'mongoose';
2
3 export function connectToDB(){
4   mongoose.connect(process.env.CONN_STR)
5   .then(()=>{
6     console.log("DB connected successfully")
7   })
8   .catch(err=>{
9     console.log("Error while connecting to DB : ",err.message);
10  })
11 }
```

The terminal at the bottom shows the output of running the application with nodemon:

```
> nodemon api/index.js
[nodemon] 3.1.0
[nodemon] to restart at any time, enter 'rs'
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting 'node api/index.js'
Server is running on PORT : 5000
DB connected successfully
```

MODEL :



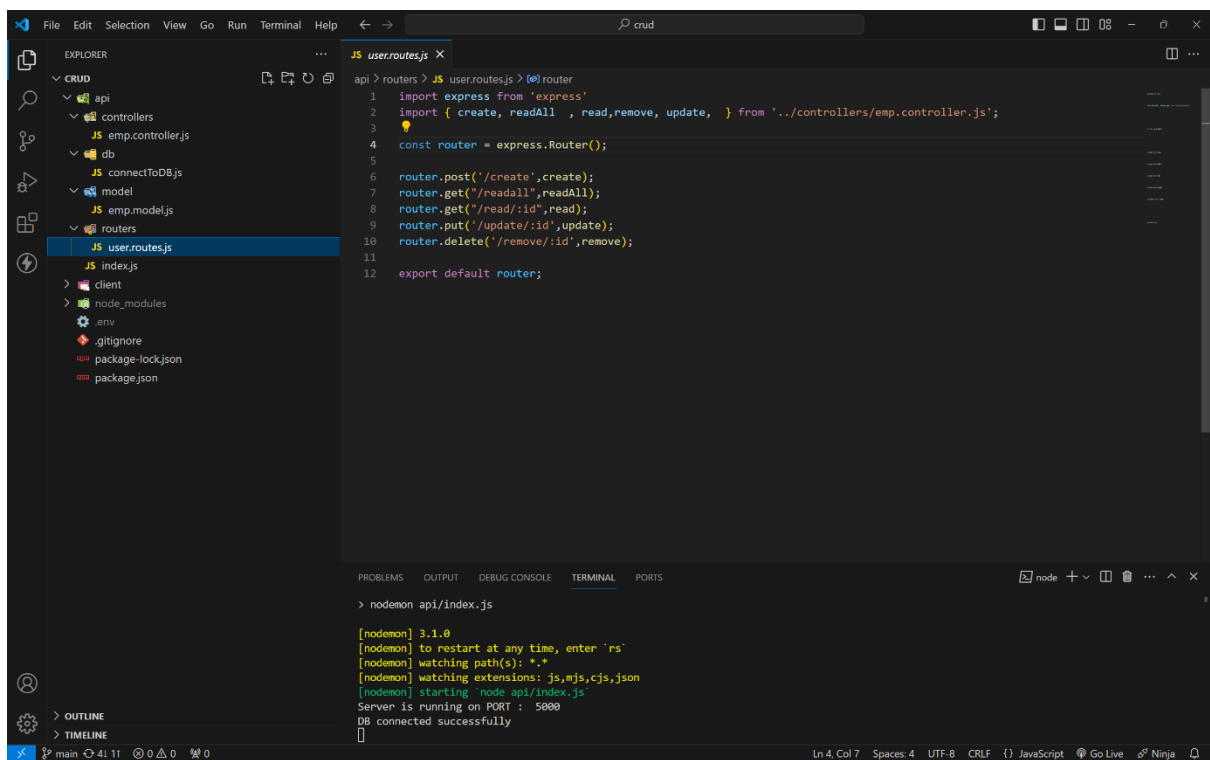
The screenshot shows a VS Code editor with the same project. The Explorer panel shows the file structure. The main editor window displays the file 'emp.model.js' with the following code:

```
api > model > JS emp.model.js > userSchema > role
1 import mongoose from 'mongoose';
2
3 const userSchema = new mongoose.Schema({
4   username:{
5     type:String,
6     unique:true,
7     required:true
8   },
9   empname:{
10    type:String,
11    required:true
12  },
13   email:{
14     type:String,
15     required:true
16   },
17   role:{
18     type:String,
19     required:true
20   },
21   salary:{
22     type: Number,
23     required: true,
24   }
25 },(timestamps:true))
26
27 const Emp = mongoose.model("User",userSchema);
28
29 export default Emp;
```

The terminal at the bottom shows the output of running the application with nodemon:

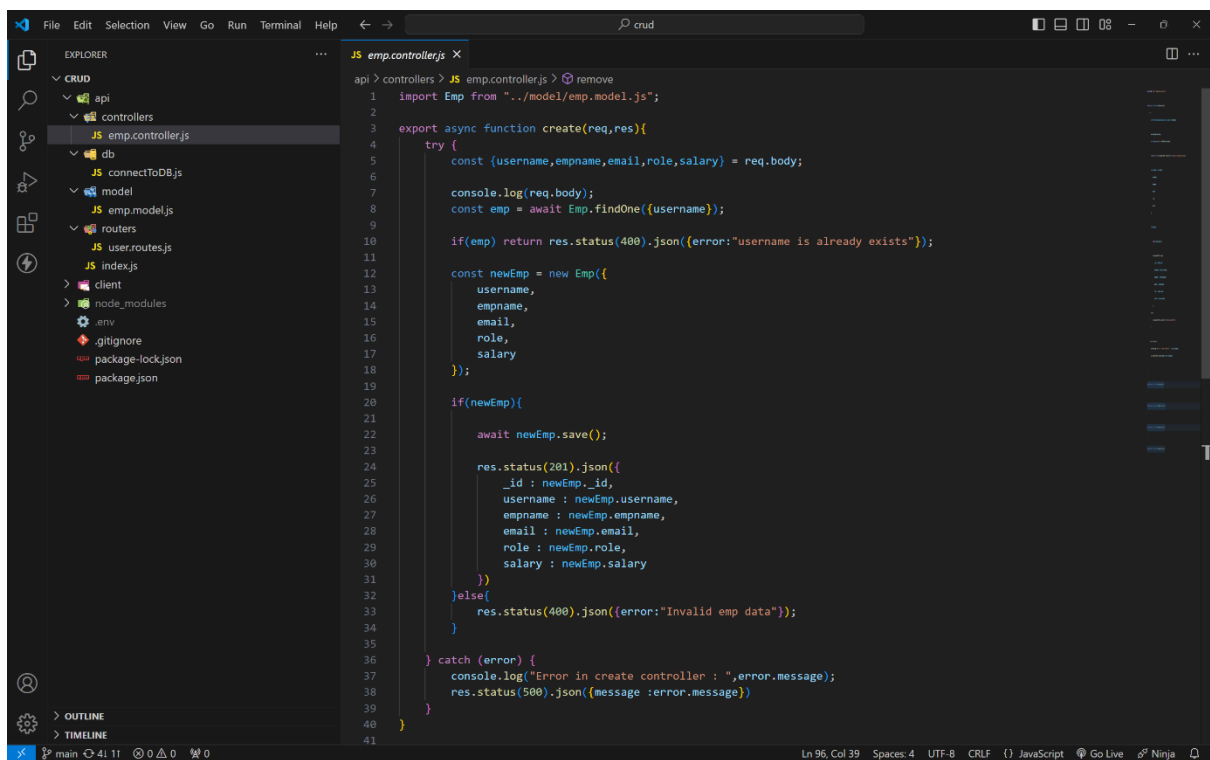
```
> nodemon api/index.js
[nodemon] 3.1.0
[nodemon] to restart at any time, enter 'rs'
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting 'node api/index.js'
Server is running on PORT : 5000
DB connected successfully
```

ROUTES:

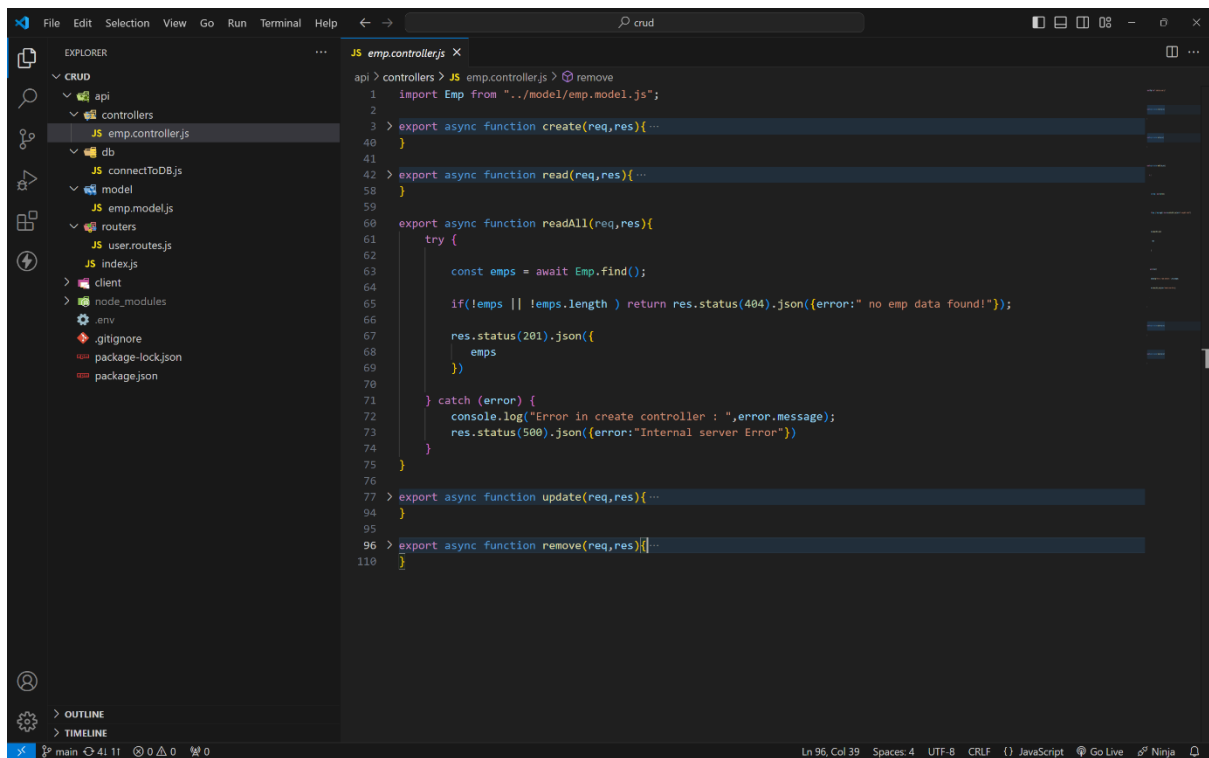


CONTROLLERS :

CREATE :



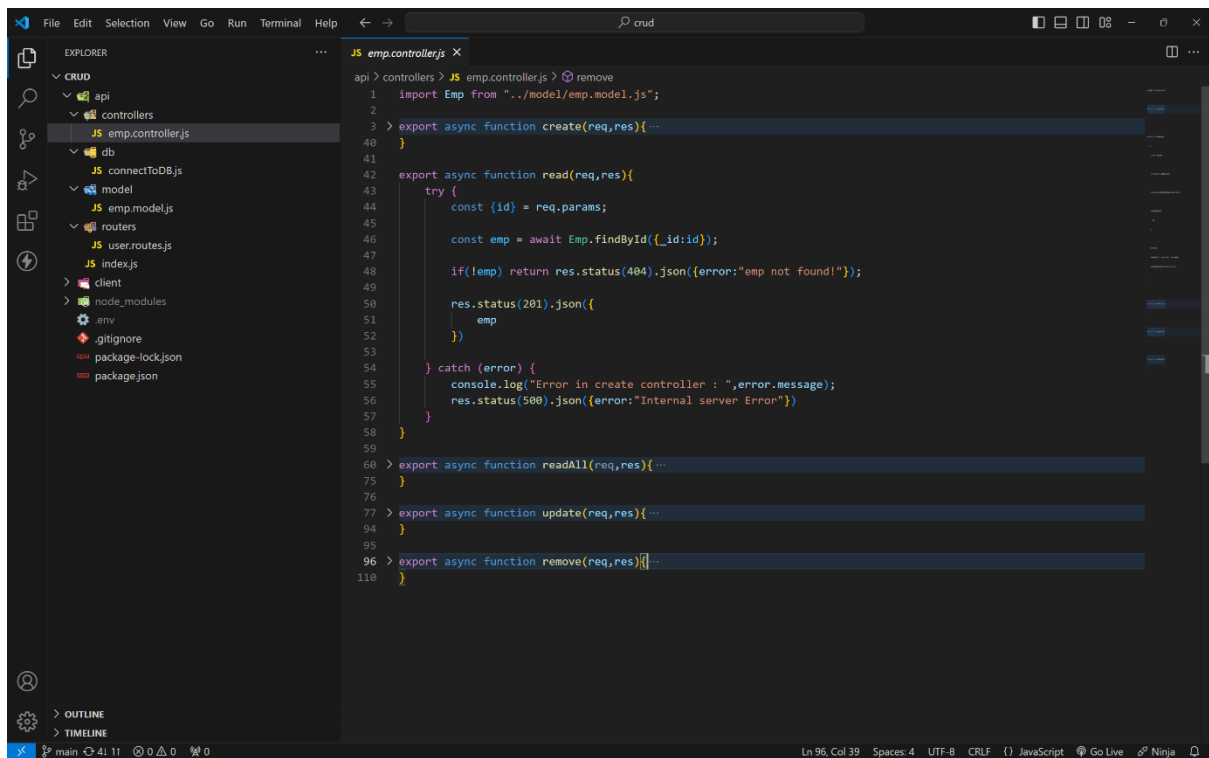
READALL:



The image shows a VS Code editor with the file explorer on the left and the code editor in the center. The file explorer shows a project structure with folders like api, controllers, db, model, routers, and user.routes.js. The code editor shows the implementation of the readAll function in emp.controller.js. The code is as follows:

```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){ ...
40 }
41
42 > export async function read(req,res){ ...
58 }
59
60 export async function readAll(req,res){
61   try {
62     const emps = await Emp.find();
63
64     if(!emps || !emps.length ) return res.status(404).json({error:" no emp data found!"});
65
66     res.status(201).json({
67       emps
68     })
69   } catch (error) {
70     console.log("Error in create controller : ",error.message);
71     res.status(500).json({error:"Internal server Error"})
72   }
73 }
74
75 > export async function update(req,res){ ...
94 }
95
96 > export async function remove(req,res){ ...
110 }
```

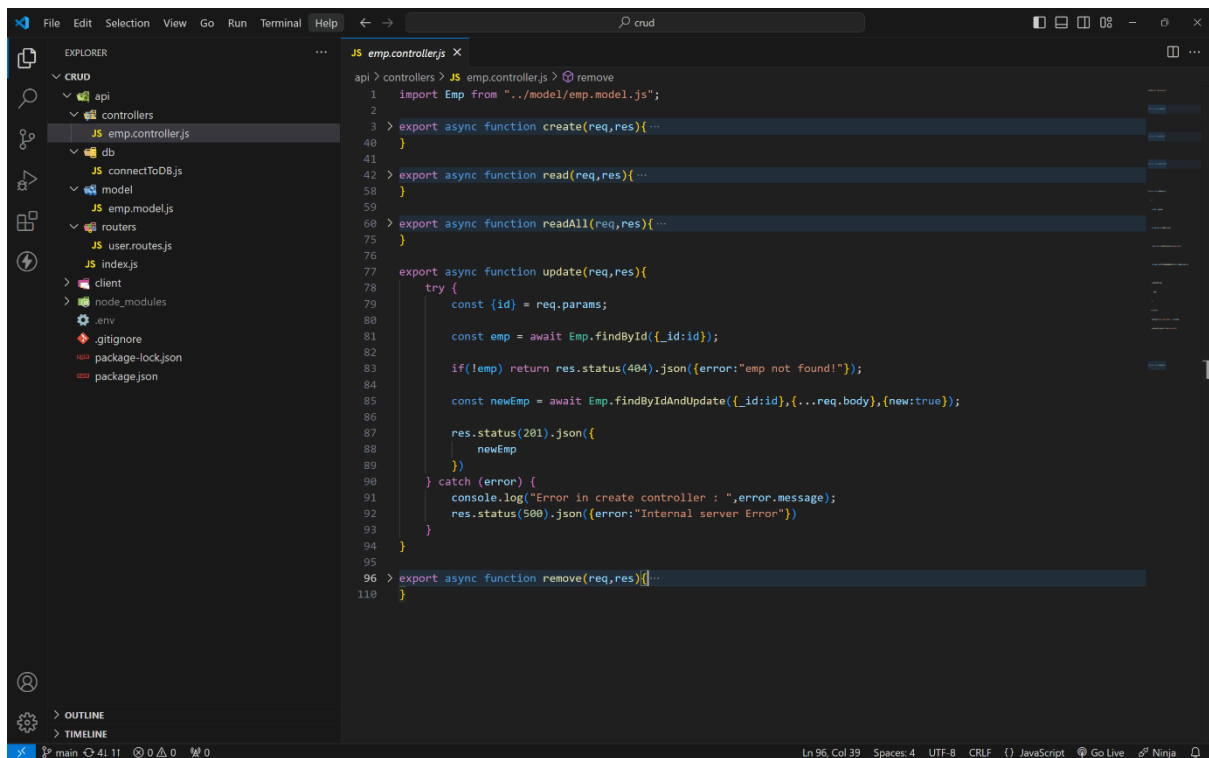
READONE :



The image shows a VS Code editor with the file explorer on the left and the code editor in the center. The file explorer shows a project structure with folders like api, controllers, db, model, routers, and user.routes.js. The code editor shows the implementation of the read function in emp.controller.js. The code is as follows:

```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){ ...
40 }
41
42 export async function read(req,res){
43   try {
44     const {id} = req.params;
45
46     const emp = await Emp.findById(_id:id);
47
48     if(!emp) return res.status(404).json({error:"emp not found!"});
49
50     res.status(201).json({
51       emp
52     })
53   } catch (error) {
54     console.log("Error in create controller : ",error.message);
55     res.status(500).json({error:"Internal server Error"})
56   }
57 }
58
59
60 > export async function readAll(req,res){ ...
75 }
76
77 > export async function update(req,res){ ...
94 }
95
96 > export async function remove(req,res){ ...
110 }
```

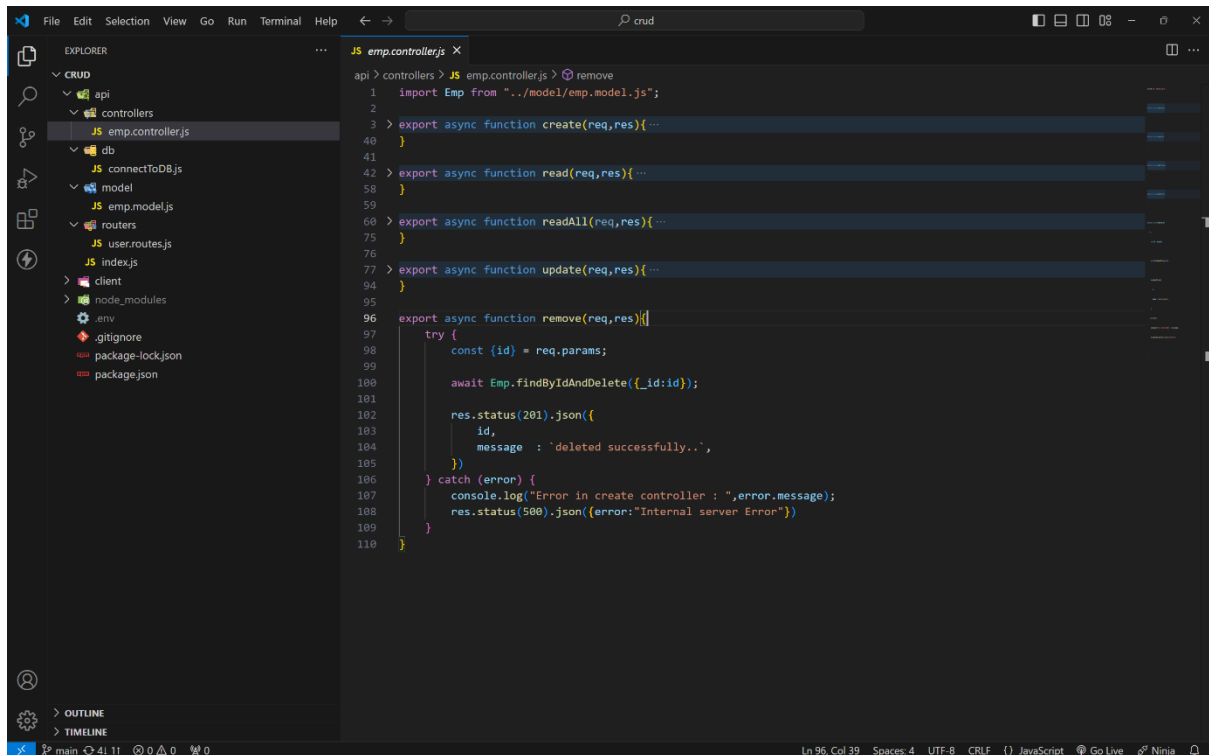
UPDATE :



The image shows a VS Code editor window with the file explorer on the left and the code editor in the center. The file explorer shows a project structure with a 'crud' folder containing 'api', 'controllers', 'db', 'model', 'routers', and 'index.js'. The 'api' folder contains 'emp.controller.js'. The code editor shows the 'emp.controller.js' file with the following code:

```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){ ...
40 }
41
42 > export async function read(req,res){ ...
58 }
59
60 > export async function readAll(req,res){ ...
75 }
76
77 export async function update(req,res){
78   try {
79     const {id} = req.params;
80
81     const emp = await Emp.findById({_id:id});
82
83     if(!emp) return res.status(404).json({error:"emp not found!"});
84
85     const newEmp = await Emp.findByIdAndUpdate({_id:id},{...req.body},{new:true});
86
87     res.status(201).json({
88       newEmp
89     })
90   } catch (error) {
91     console.log("Error in create controller : ",error.message);
92     res.status(500).json({error:"Internal server Error"})
93   }
94 }
95
96 > export async function remove(req,res){ ...
110 }
```

DELETE :



The image shows a VS Code editor window with the file explorer on the left and the code editor in the center. The file explorer shows a project structure with a 'crud' folder containing 'api', 'controllers', 'db', 'model', 'routers', and 'index.js'. The 'api' folder contains 'emp.controller.js'. The code editor shows the 'emp.controller.js' file with the following code:

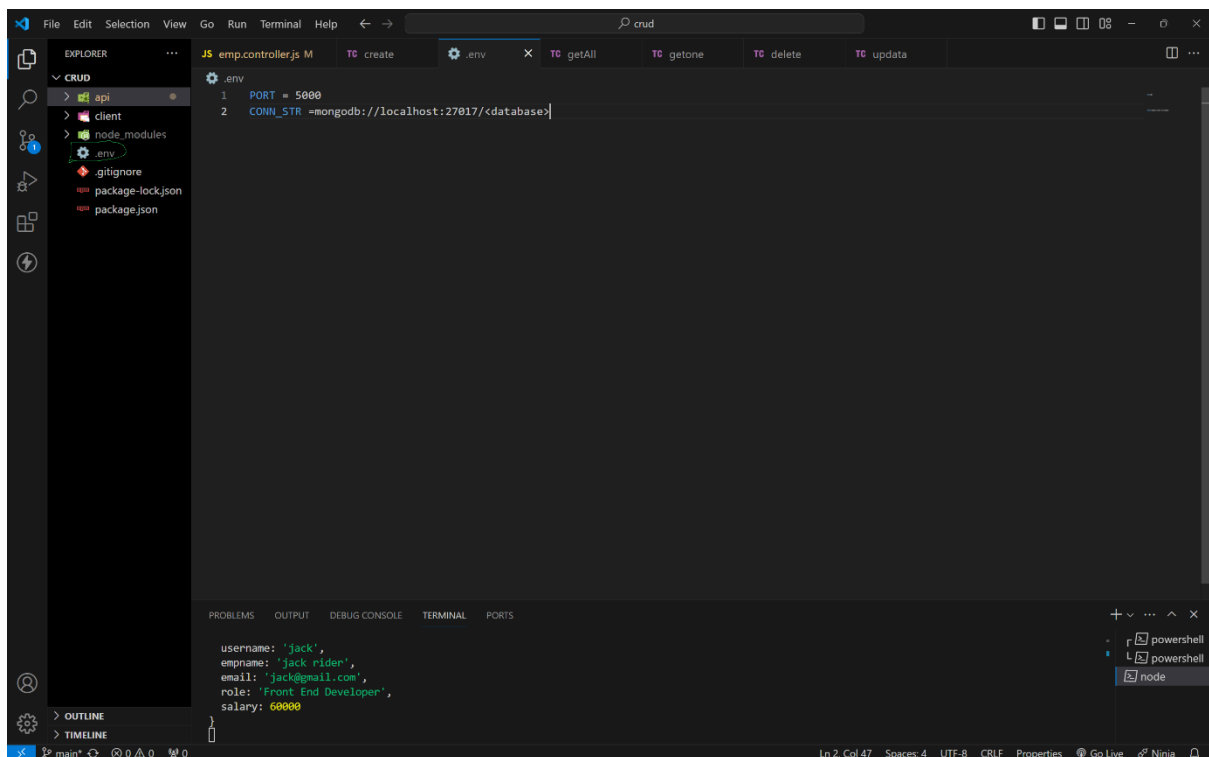
```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){ ...
40 }
41
42 > export async function read(req,res){ ...
58 }
59
60 > export async function readAll(req,res){ ...
75 }
76
77 > export async function update(req,res){ ...
94 }
95
96 export async function remove(req,res){
97   try {
98     const {id} = req.params;
99
100     await Emp.findByIdAndDelete({_id:id});
101
102     res.status(201).json({
103       id,
104       message : 'deleted successfully..',
105     })
106   } catch (error) {
107     console.log("Error in create controller : ",error.message);
108     res.status(500).json({error:"Internal server Error"})
109   }
110 }
```

HOW TO RUN ON LOCALLY :

- 1 . Create a folder as any name.
- 2 . Open that folder in any code editor (vs code).
- 3 . Open terminal (ctrl + ~) on code editor.
- 4 . Type this code to get code locally.
git clone <https://github.com/4727yesuraju/crud.git>
- 5 . Now move to crud folder (cd crud in terminal)
- 6 . Ignore client folder.
- 7 . Here crud is root folder.
- 8 . In root folder create a .env file and create a PORT and
CONN_STR variables and assign value.

ex : PORT = 3000 (commonly any number between 3000 - 8080).

CONN_STR = your mongodb_connection_string.



--- trouble in above process ? :

simply paste this code in .env file .

PORT = 5000

**CONN_STR=mongodb+srv://4727yesuraju:rough@cluster0.wbclvtg.mongodb.net
/?retryWrites=true&w=majority&appName=Cluster0**

9 . After in terminal (in crud folder as root folder) type this command to run server.

npm i (installing all dependencies)

npm run dev (to run server)

10 . if you get below message in terminal then your server will running successfully.

```
PS C:\Users\4727y\OneDrive\Desktop\internshala\crud> npm run dev

> crud@1.0.0 dev
> nodemon api/index.js

[nodemon] 3.1.0
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node api/index.js`
Server is running on PORT : 5000
DB connected successfully
█
```

route and its functionality :

For this use any API using tools like Postman or Thunder Client.

i use THUNDER CLIENT.

CREATE ROUTE :

1 . This route is used to create a new employee in database with a below fields.

username, empname, email, role, salary

**2 . in thunder client click on new request and select this options
method as post**

url as `http://localhost:5000/api/user/create`

pass this json data as a body as your required value.

```
{  
  "username": "jack",  
  "empname": "jack rider",  
  "email": "jack@gmail.com",  
  "role": "Front End Developer",  
  "salary": 60000  
}
```

**3 . finally press send to insert data in mongodb data base and get a
inserted**

data as a response.

**4 . If user is already in db it will return User is already exist as
response.**

for more details visit below output images...

READONE :

- 1 . This route is used to read specific user info by passing that user id as a param.**

method as get

url as

http://localhost:5000/api/user/read/65ed7b3d76e1dcc9a51654ca

- 2 . After sending you will get that specific user details as response.**

READALL :

- 1 . Read all route is used to get all the user data existing in the mongodb data base .**

method as get

url as http://localhost:5000/api/user/readall

- 2 . After sending you will get that all user details as response.**

UPDATE :

- 1 . This route is used to update specific user by passing that user id as a param.**

method as put

url as

http://localhost:5000/api/user/update/65ed7b3d76e1dcc9a51654ca

- 2 . After sending you will get updated user details as response.**

DELETE :

- 1 . This route is used to delete specific user by passing that user id as a param.

method as delete

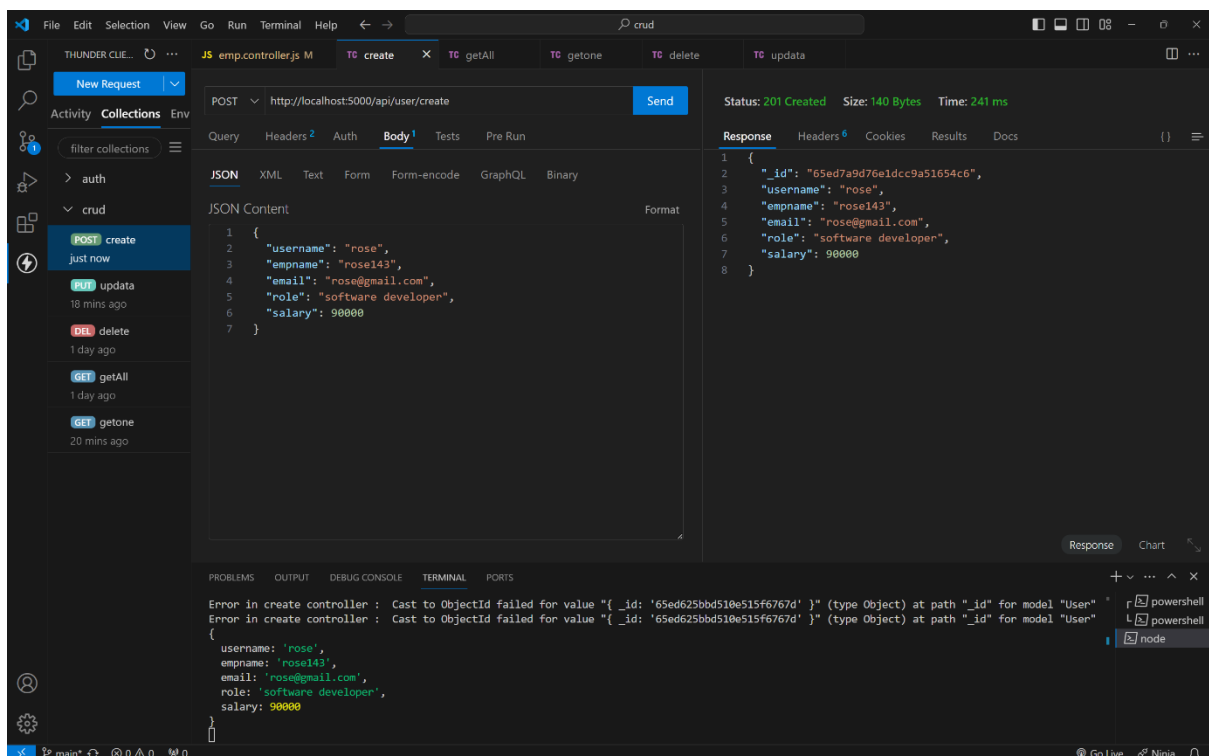
url as

<http://localhost:5000/api/user/delete/65ed7b3d76e1dcc9a51654ca>

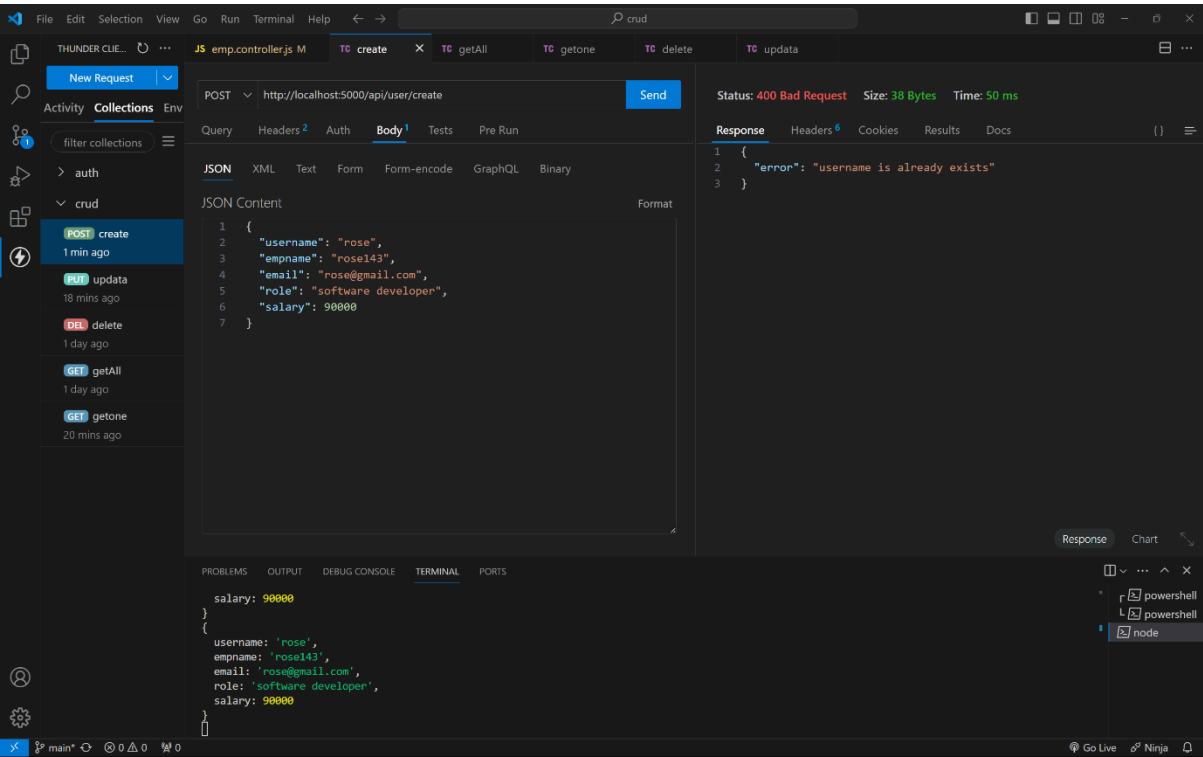
- 2 . After sending you will deleted successfully as response.

OUTPUT :

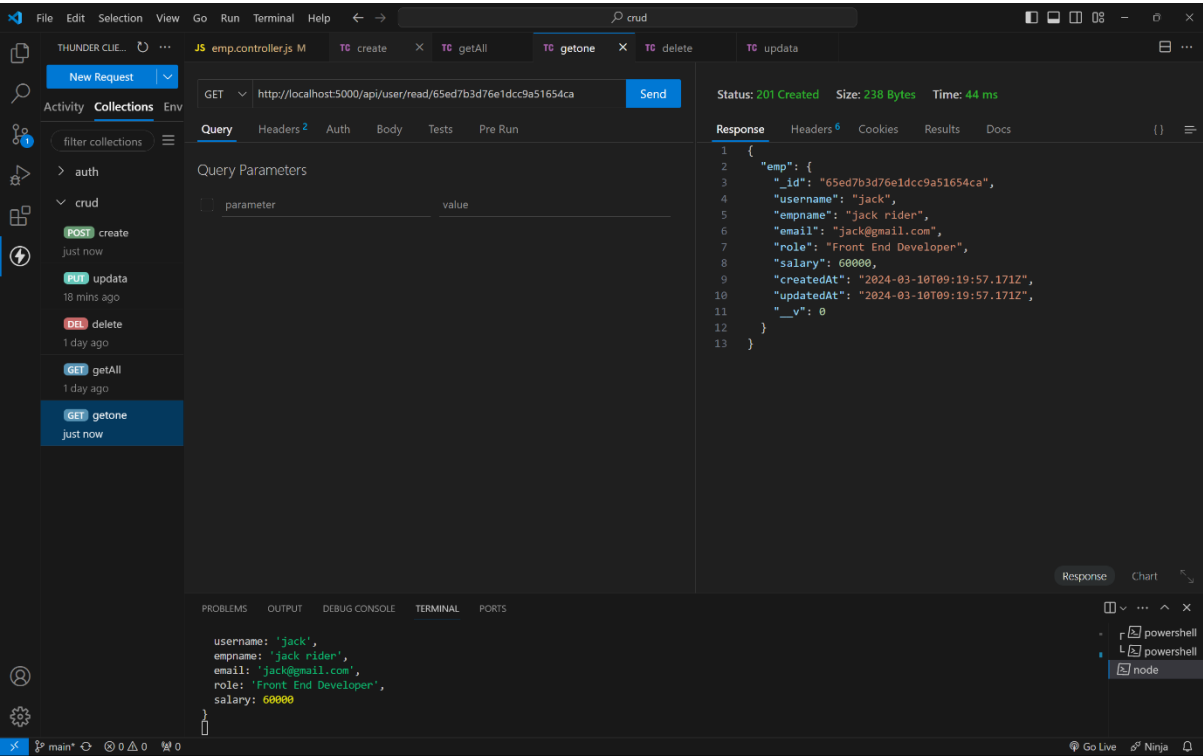
CREATE A NEW USER :



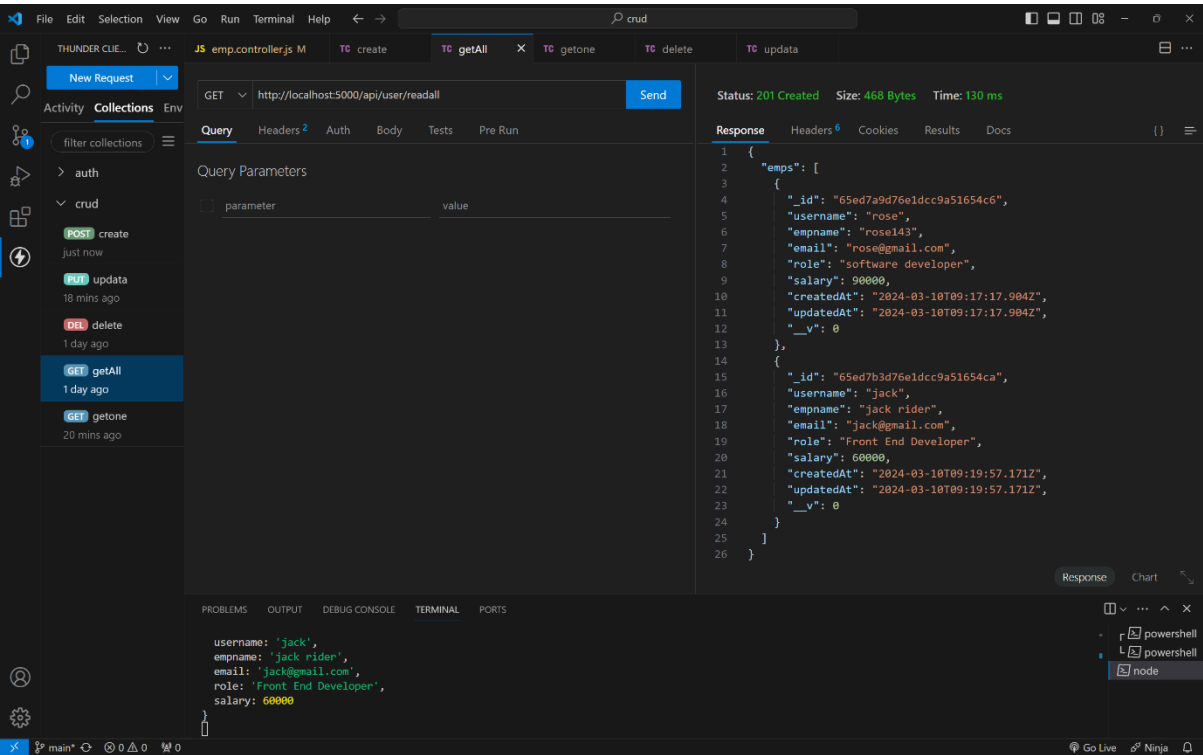
CREATING USER WITH EXISTING USERNAEM :



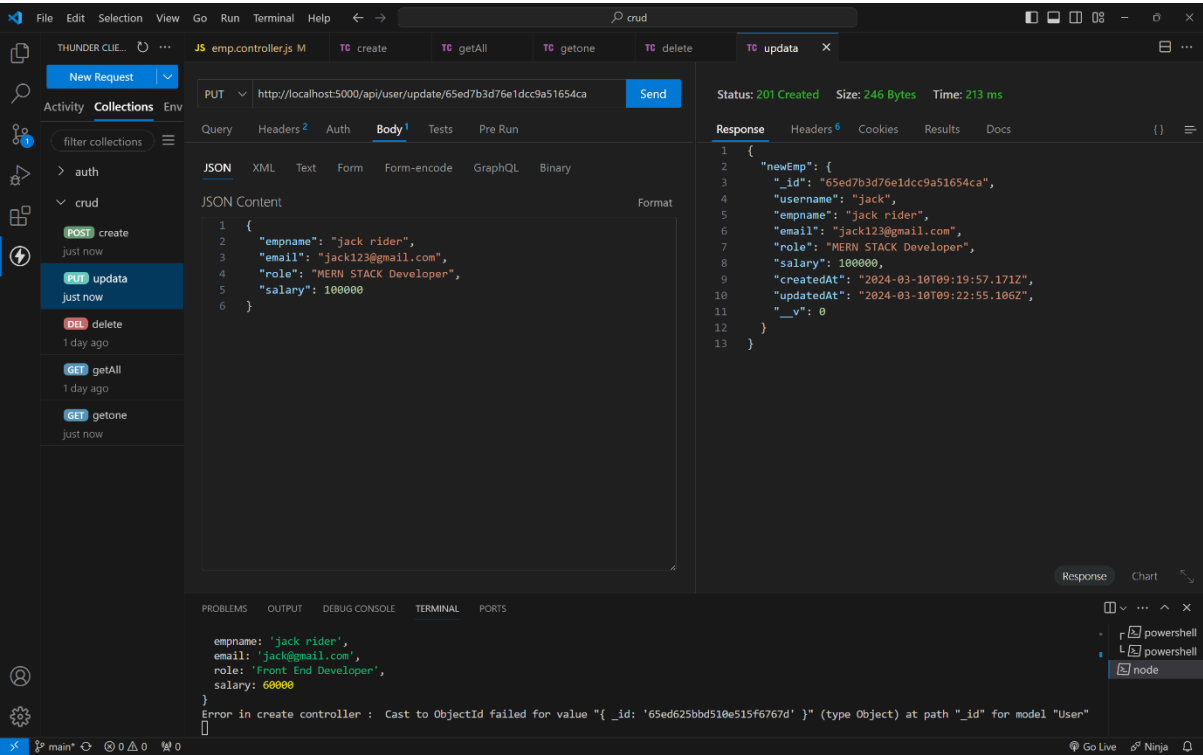
READONE :



READ ALL :



UPDATE :



DELETE :

The screenshot displays the VS Code interface with a REST client extension. The main editor shows a DELETE request to `http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca`. The request is configured with the following details:

- Method:** DELETE
- URL:** `http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca`
- Query Parameters:** A table with two columns: `parameter` and `value`.

The response is shown on the right, indicating a **Status: 201 Created**, **Size: 68 Bytes**, and **Time: 111 ms**. The response body is a JSON object:

```
{
  "id": "65ed7b3d76e1dcc9a51654ca",
  "message": "deleted successfully.."
}
```

The bottom panel shows the **TERMINAL** with the following output:

```
Node.js v20.11.0
[nodemon] app crashed - waiting for file changes before starting...
[nodemon] restarting due to changes...
[nodemon] starting node api/index.js
Server is running on PORT : 5000
DB connected successfully
```