

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

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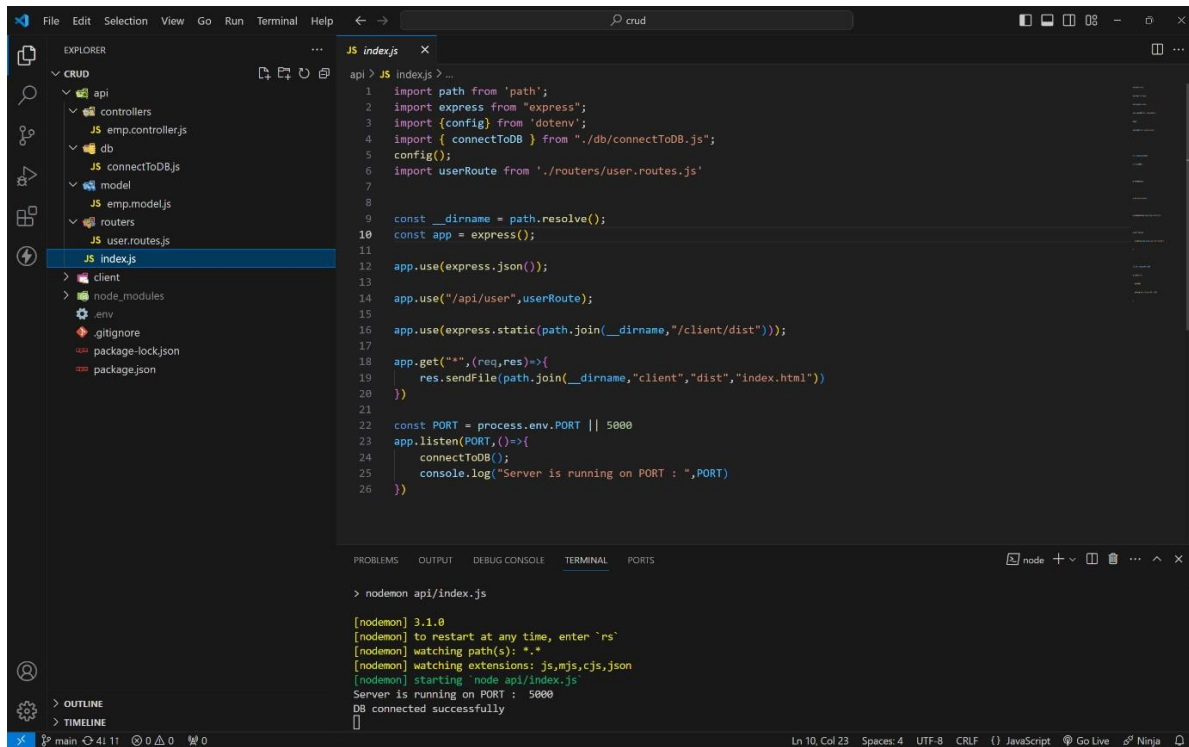
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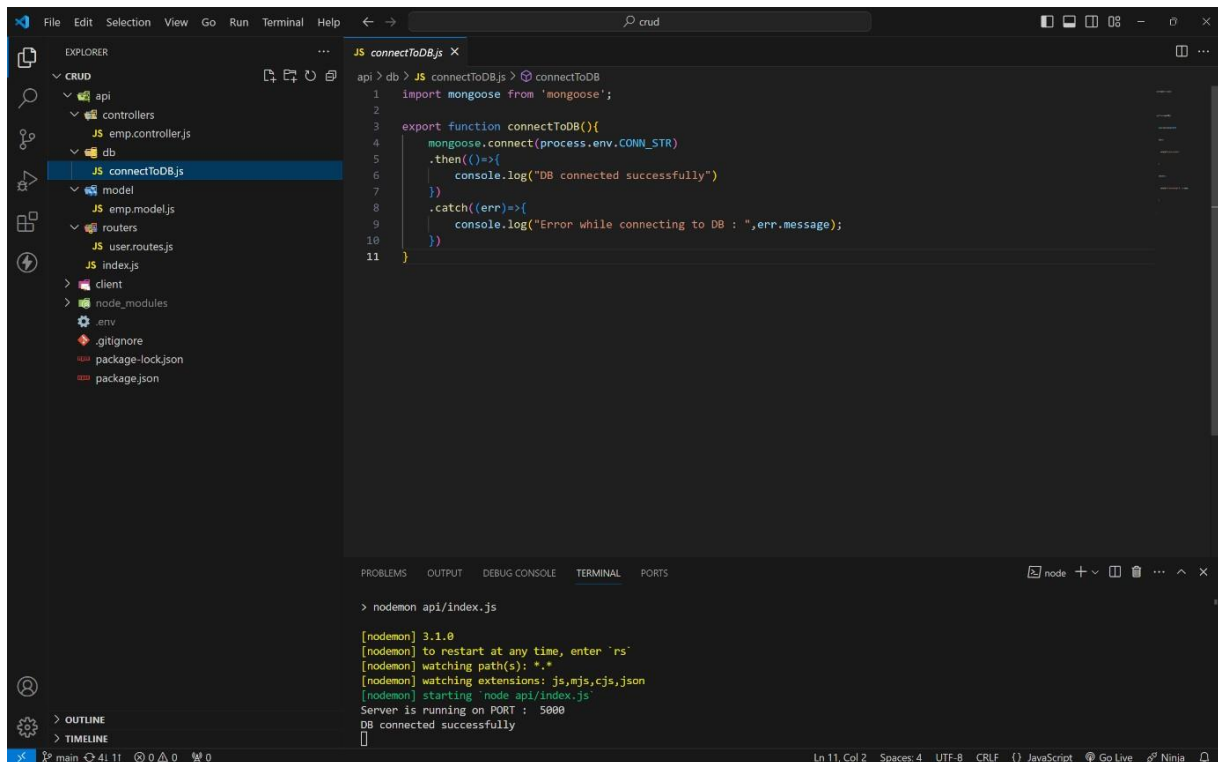
**College Name : Vignans Nirula Institute Of
Technology and Science for Women**

source code :

index.js file :



MONGODB CONNECTION :



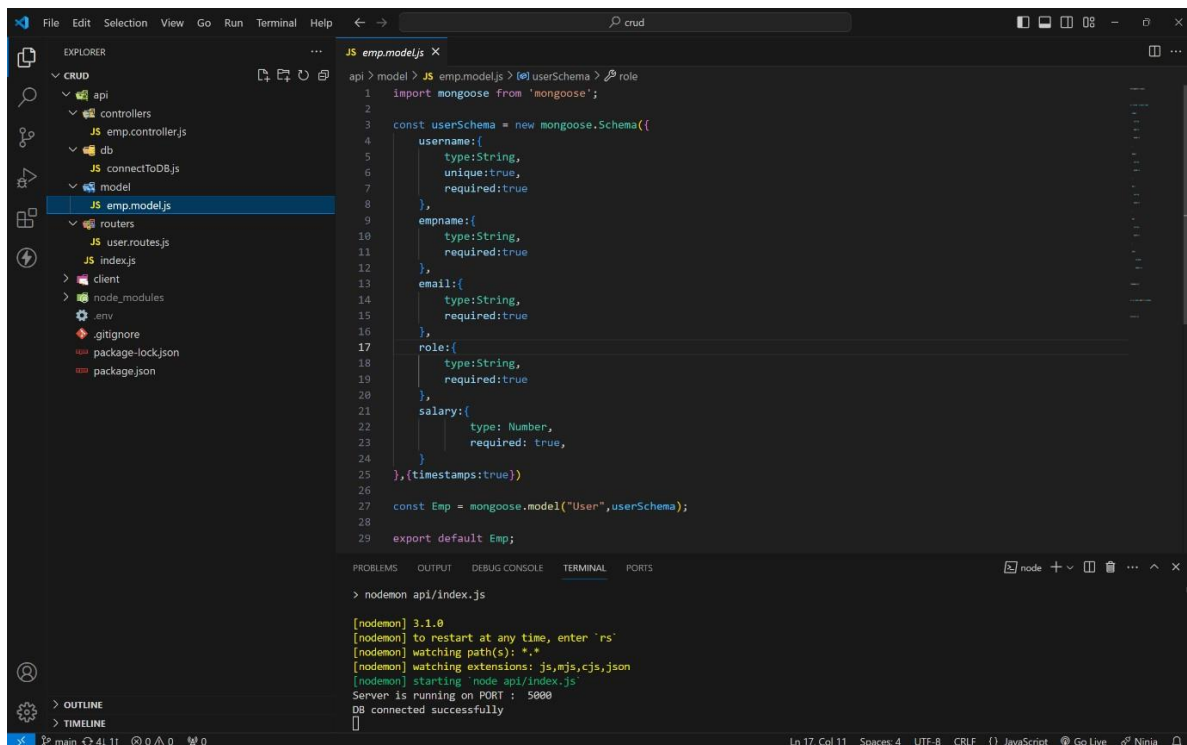
The screenshot shows the VS Code editor with the Explorer sidebar on the left. The file explorer shows a project structure with folders like 'api', 'controllers', 'db', 'model', 'routers', and 'index.js'. The file 'connectToDB.js' is selected in the Explorer. The main editor window displays the code for 'connectToDB.js'.

```
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 'nodemon api/index.js'.

```
> 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 :



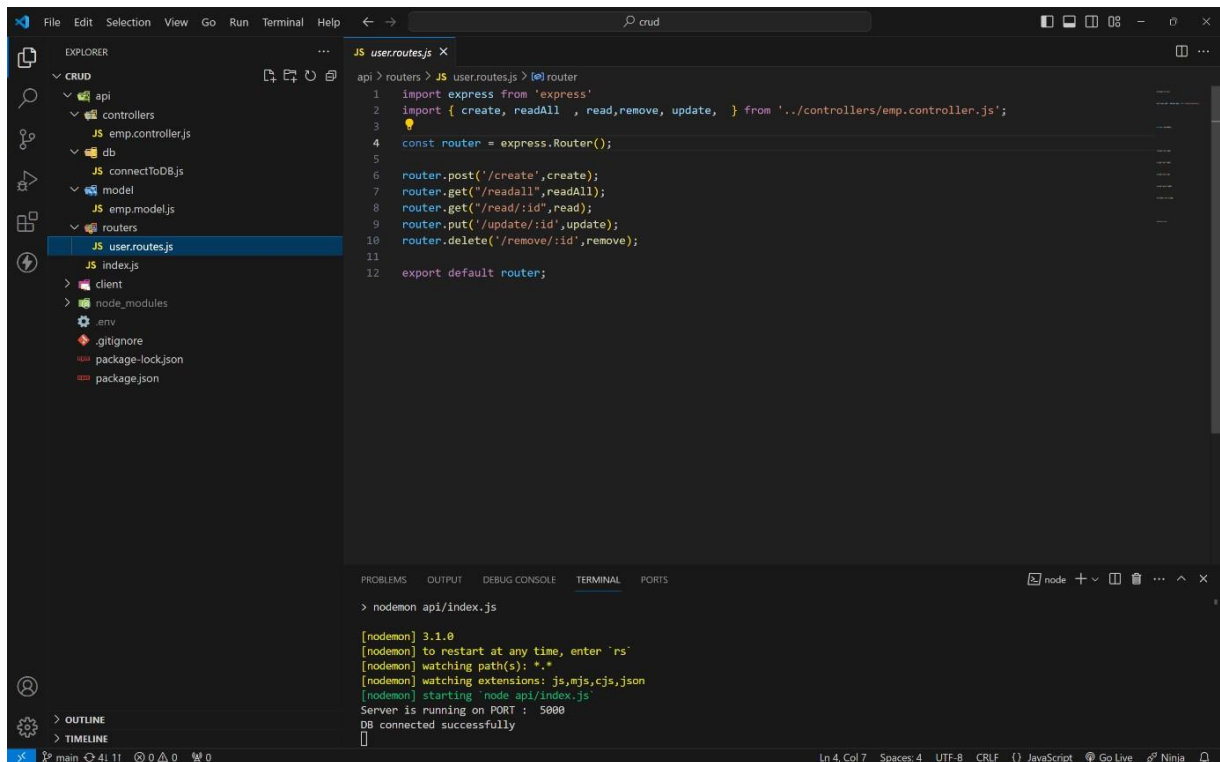
The screenshot shows the VS Code editor with the Explorer sidebar on the left. The file explorer shows a project structure with folders like 'api', 'controllers', 'db', 'model', 'routers', and 'index.js'. The file 'emp.model.js' is selected in the Explorer. The main editor window displays the code for 'emp.model.js'.

```
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 'nodemon api/index.js'.

```
> nodemon api/index.js
[nodemon] 3.1.0
[nodemon] to restart at any time, enter `rs`
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[nodemon] starting `node api/index.js`
Server is running on PORT : 5000
DB connected successfully
[]
```

ROUTES:



The screenshot shows the VS Code editor with the file explorer on the left. The file explorer shows a project structure with folders like api, controllers, db, model, routers, and user.routes.js. The user.routes.js file is open in the editor, showing the following code:

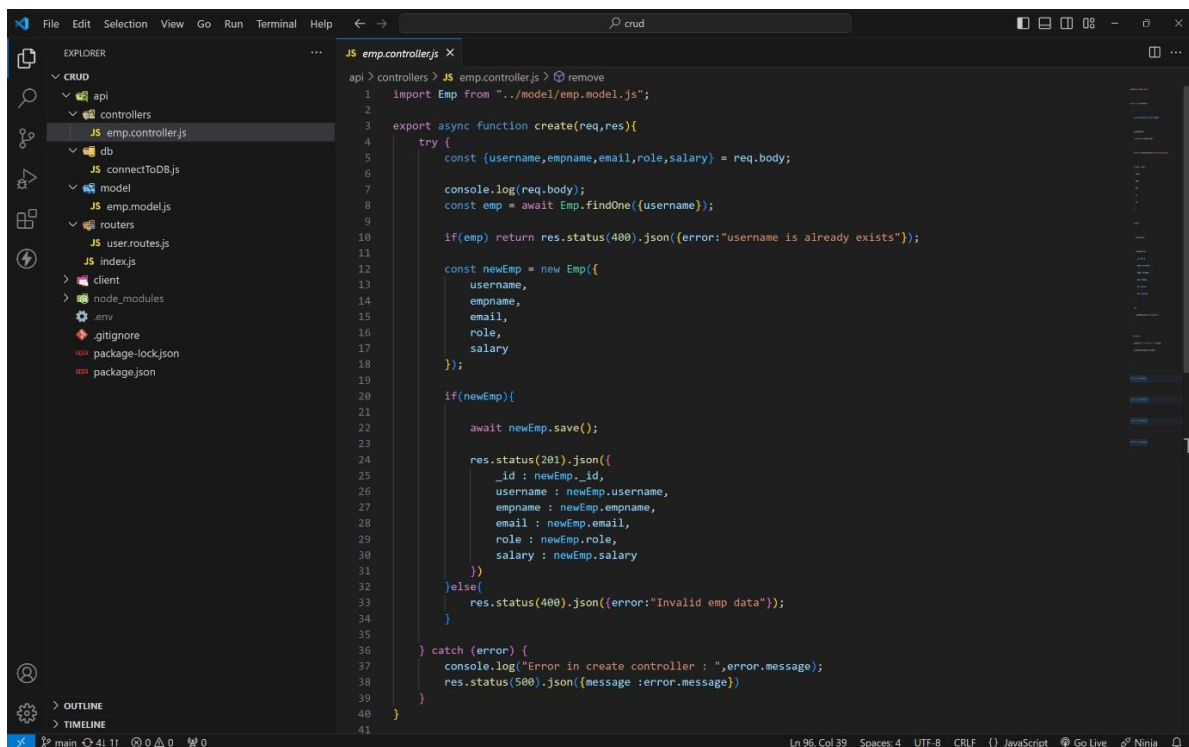
```
1 import express from 'express'
2 import { create, readAll, read, remove, update, } from '../controllers/emp.controller.js';
3
4 const router = express.Router();
5
6 router.post('/create', create);
7 router.get('/readall', readAll);
8 router.get('/read/:id', read);
9 router.put('/update/:id', update);
10 router.delete('/remove/:id', remove);
11
12 export default router;
```

The terminal at the bottom shows the command `nodemon api/index.js` and the output:

```
[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
```

CONTROLLERS :

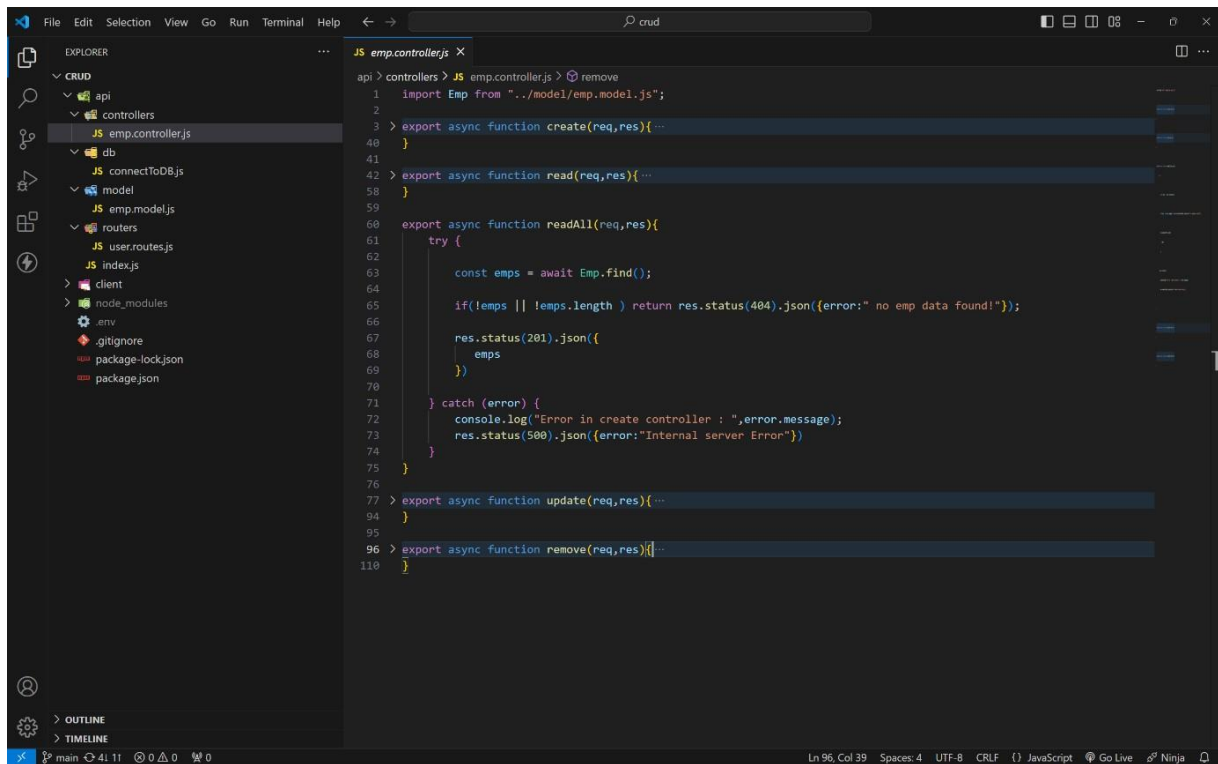
CREATE :



The screenshot shows the VS Code editor with the file explorer on the left. The file explorer shows a project structure with folders like api, controllers, db, model, routers, and user.routes.js. The emp.controller.js file is open in the editor, showing the following code:

```
1 import Emp from '../model/emp.model.js';
2
3 export async function create(req,res){
4   try {
5     const {username,empname,email,role,salary} = req.body;
6
7     console.log(req.body);
8     const emp = await Emp.findOne({username});
9
10    if(emp) return res.status(400).json({error:"username is already exists"});
11
12    const newEmp = new Emp({
13      username,
14      empname,
15      email,
16      role,
17      salary
18    });
19
20    if(newEmp){
21      await newEmp.save();
22
23      res.status(201).json({
24        _id : newEmp._id,
25        username : newEmp.username,
26        empname : newEmp.empname,
27        email : newEmp.email,
28        role : newEmp.role,
29        salary : newEmp.salary
30      });
31    }
32  } else {
33    res.status(400).json({error:"Invalid emp data"});
34  }
35 }
36
37 catch (error) {
38   console.log("Error in create controller : ",error.message);
39   res.status(500).json({message : error.message})
40 }
41 }
```

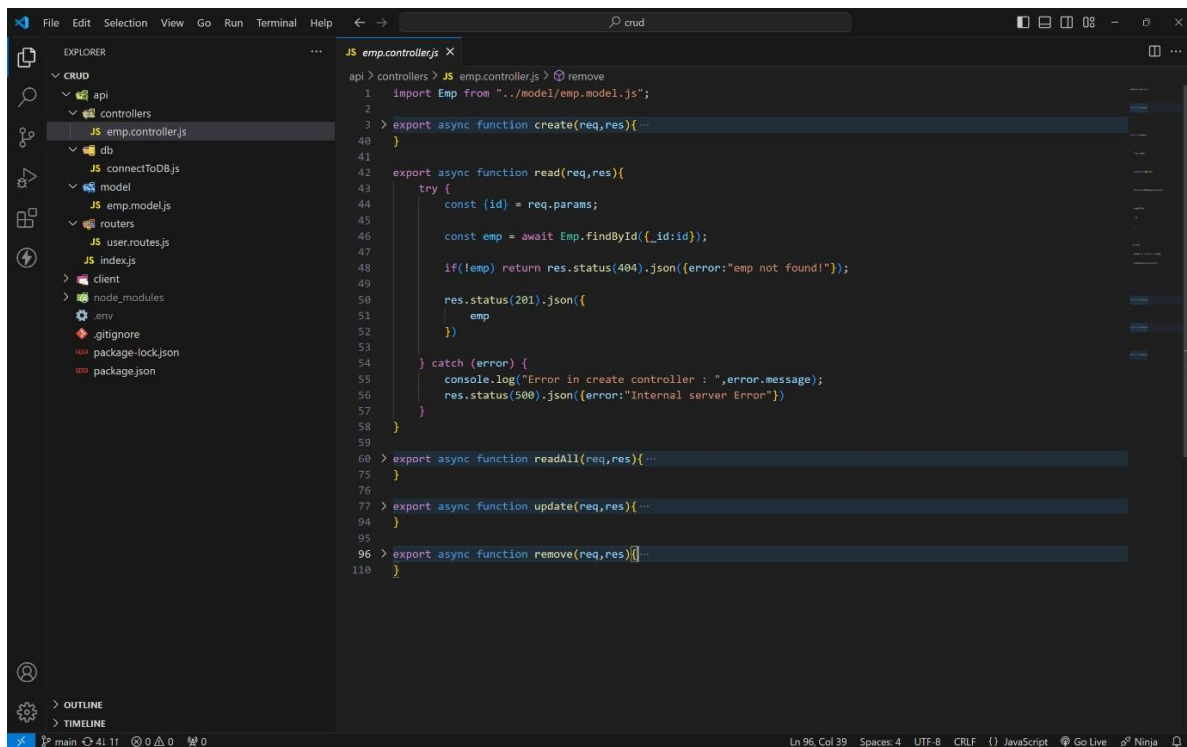
READALL:



The screenshot shows the VS Code editor with the file explorer on the left and the code editor in the center. The file explorer shows the project structure with folders like api, controllers, db, model, routers, and client. The code editor displays the file `emp.controller.js` 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){
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   }
70   catch (error) {
71     console.log("Error in create controller : ",error.message);
72     res.status(500).json({error:"Internal server Error"});
73   }
74 }
75
76
77 > export async function update(req,res){ ...
94 }
95
96 > export async function remove(req,res){ ...
110 }
```

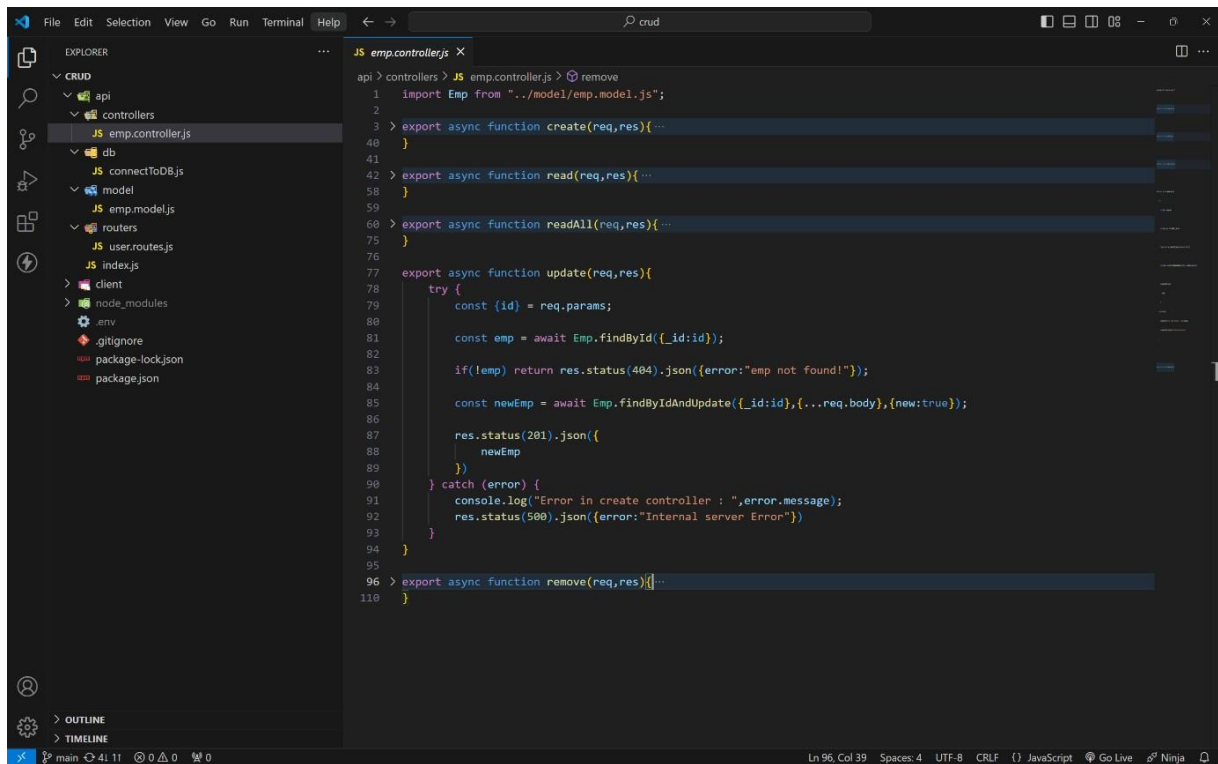
READONE :



The screenshot shows the VS Code editor with the file explorer on the left and the code editor in the center. The file explorer shows the project structure with folders like api, controllers, db, model, routers, and client. The code editor displays the file `emp.controller.js` 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){
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   }
54   catch (error) {
55     console.log("Error in create controller : ",error.message);
56     res.status(500).json({error:"Internal server Error"});
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 :



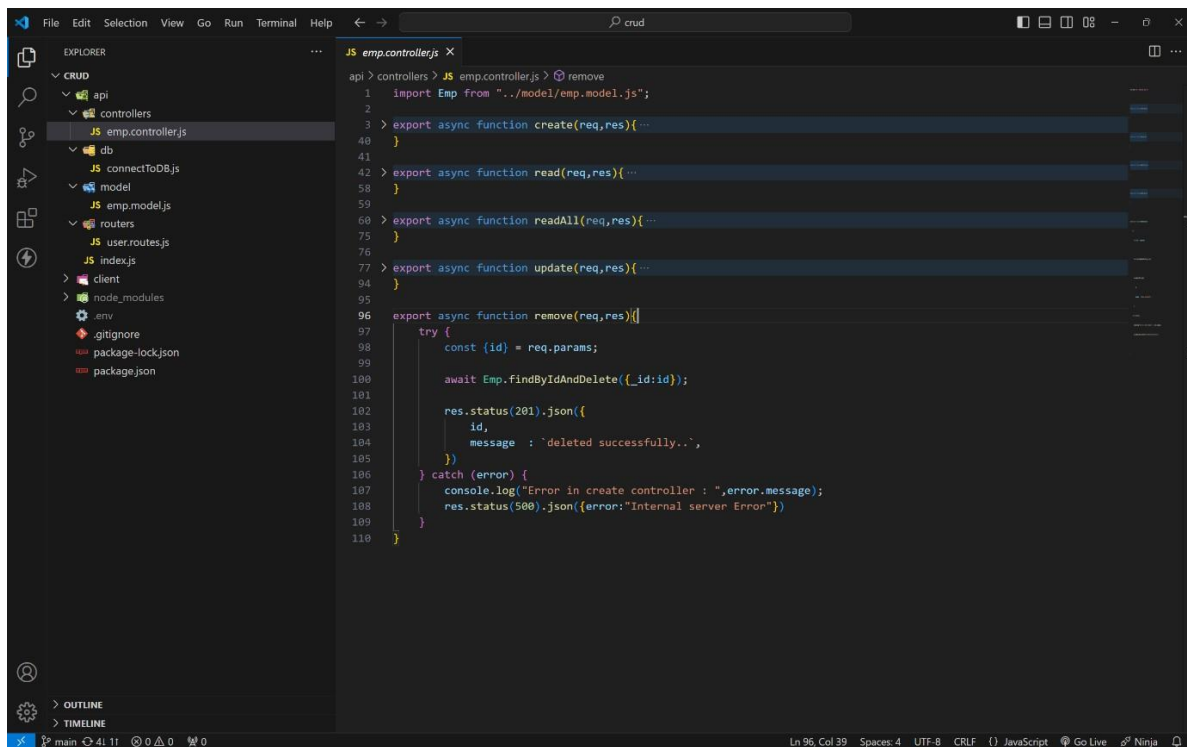
The screenshot shows the VS Code editor with the file explorer on the left and the code editor on the right. The file explorer shows the project structure with the following folders and files:

- CRUD
 - api
 - controllers
 - JS emp.controller.js**
 - db
 - JS connectToDB.js
 - model
 - JS emp.model.js
 - routers
 - JS user.routes.js
 - index.js
 - client
 - node_modules
 - .env
 - .gitignore
 - package-lock.json
 - package.json

The code editor shows the following code in `JS emp.controller.js`:

```
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 screenshot shows the VS Code editor with the file explorer on the left and the code editor on the right. The file explorer shows the project structure with the following folders and files:

- CRUD
 - api
 - controllers
 - JS emp.controller.js**
 - db
 - JS connectToDB.js
 - model
 - JS emp.model.js
 - routers
 - JS user.routes.js
 - index.js
 - client
 - node_modules
 - .env
 - .gitignore
 - package-lock.json
 - package.json

The code editor shows the following code in `JS emp.controller.js`:

```
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 }
```

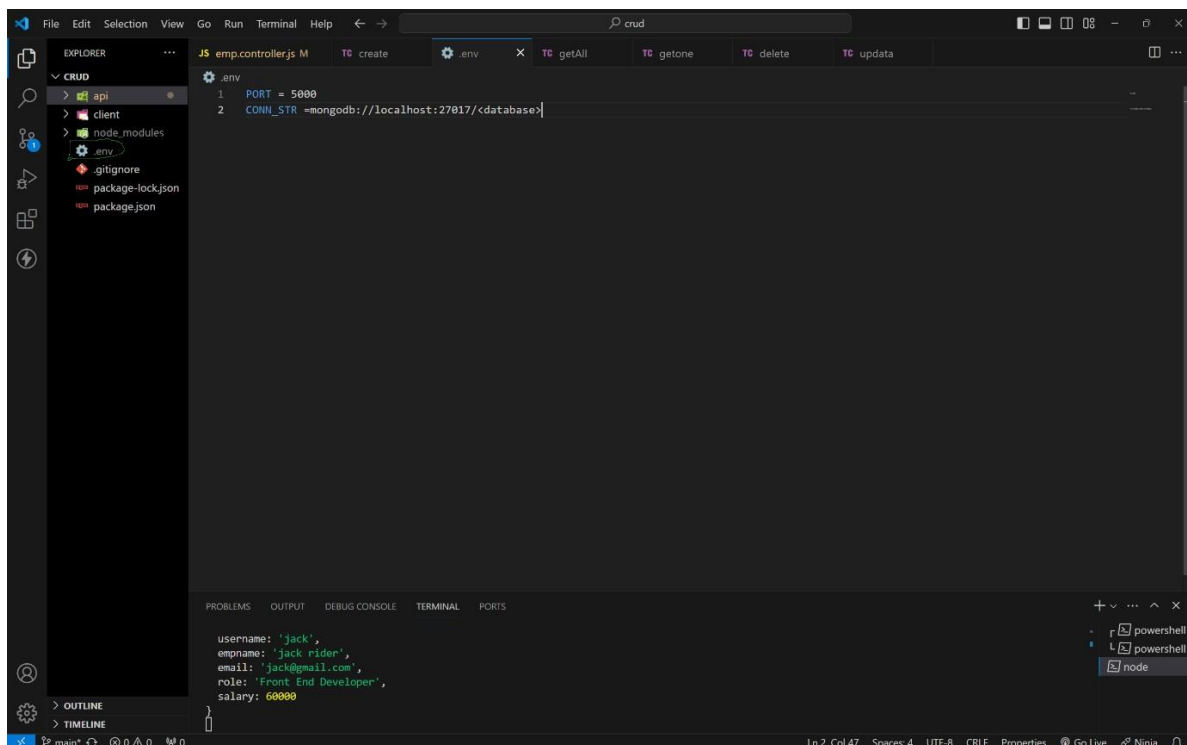
HOW TO RUN ON LOCALLY :

- 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

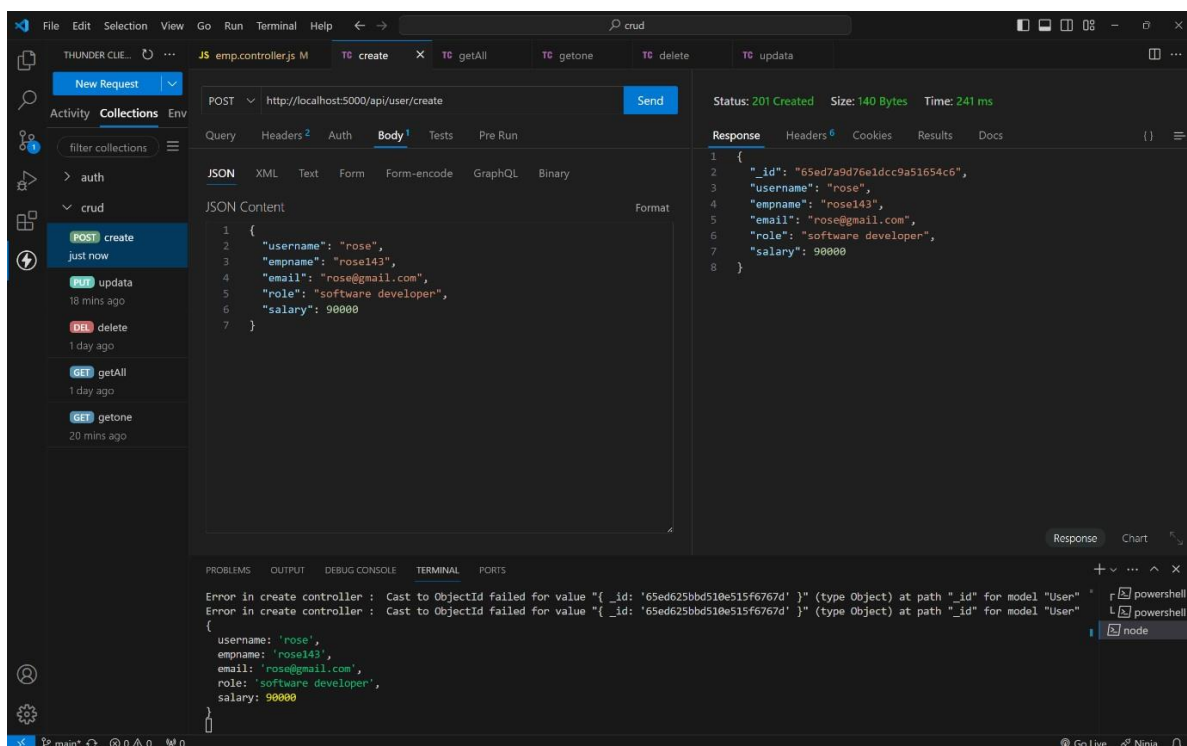
url as

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

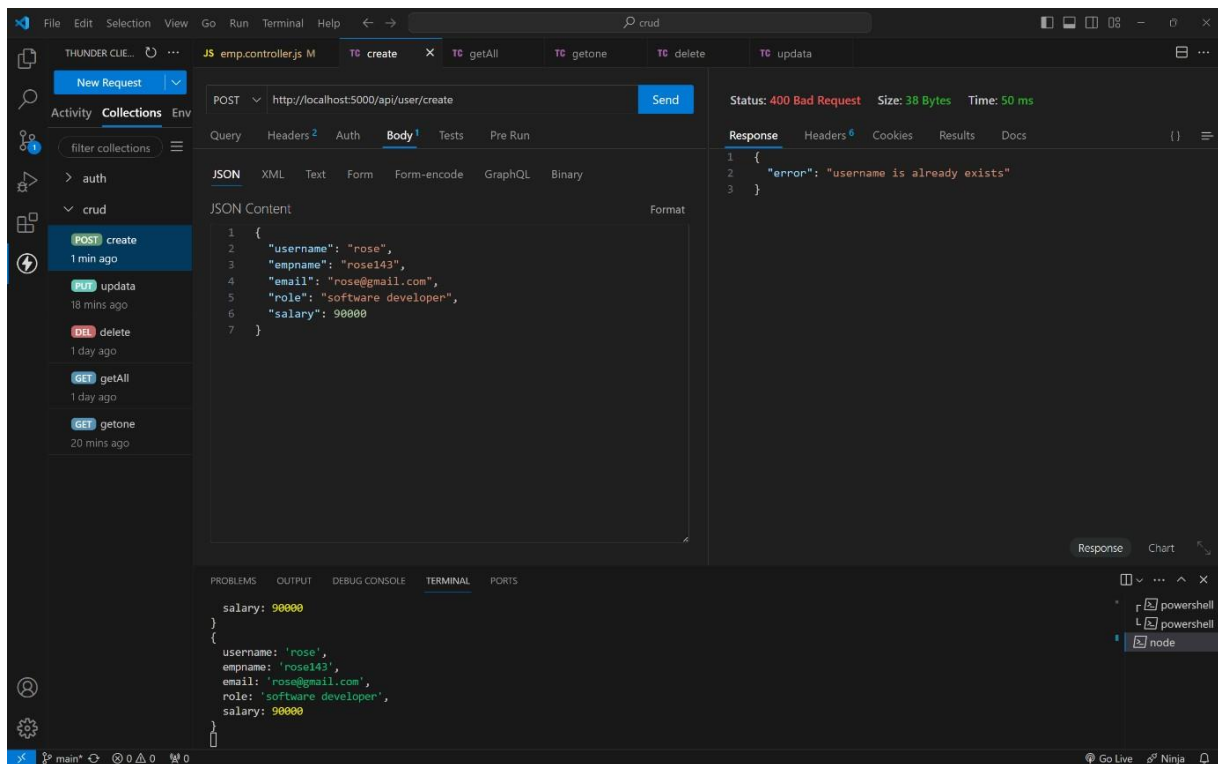
2 . After sending you will deleted successfully as response.

OUTPUT :

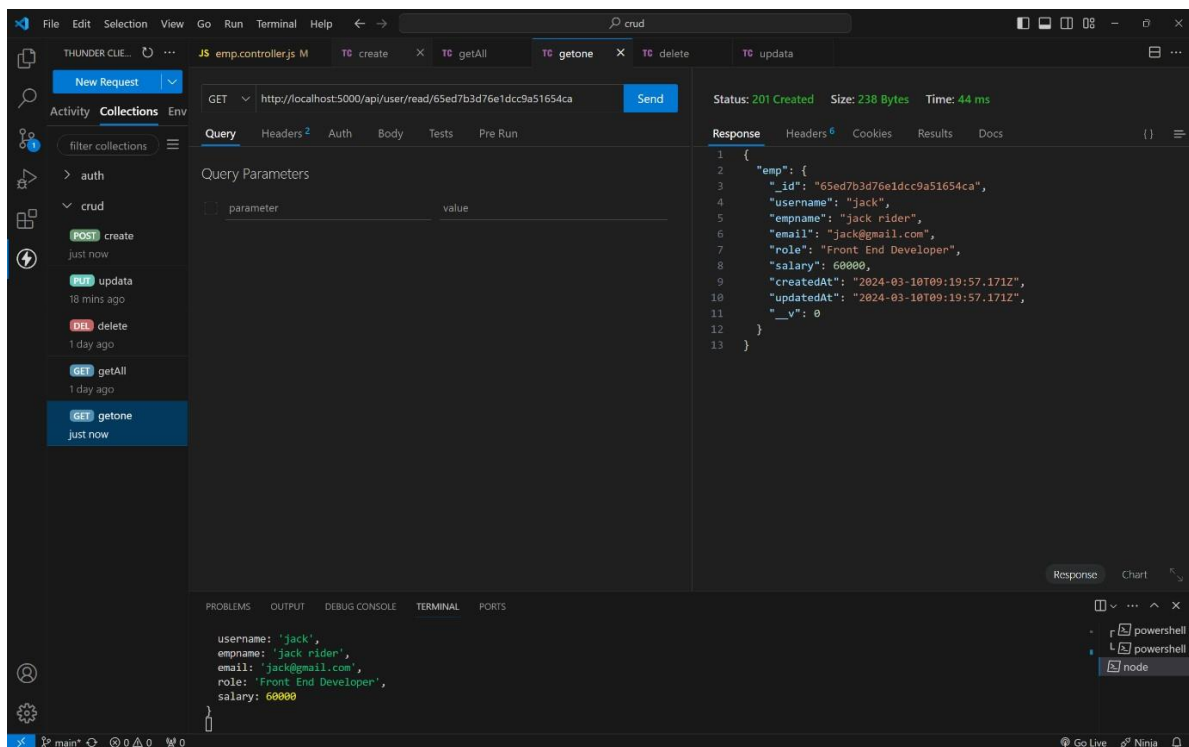
CREATE A NEW USER :



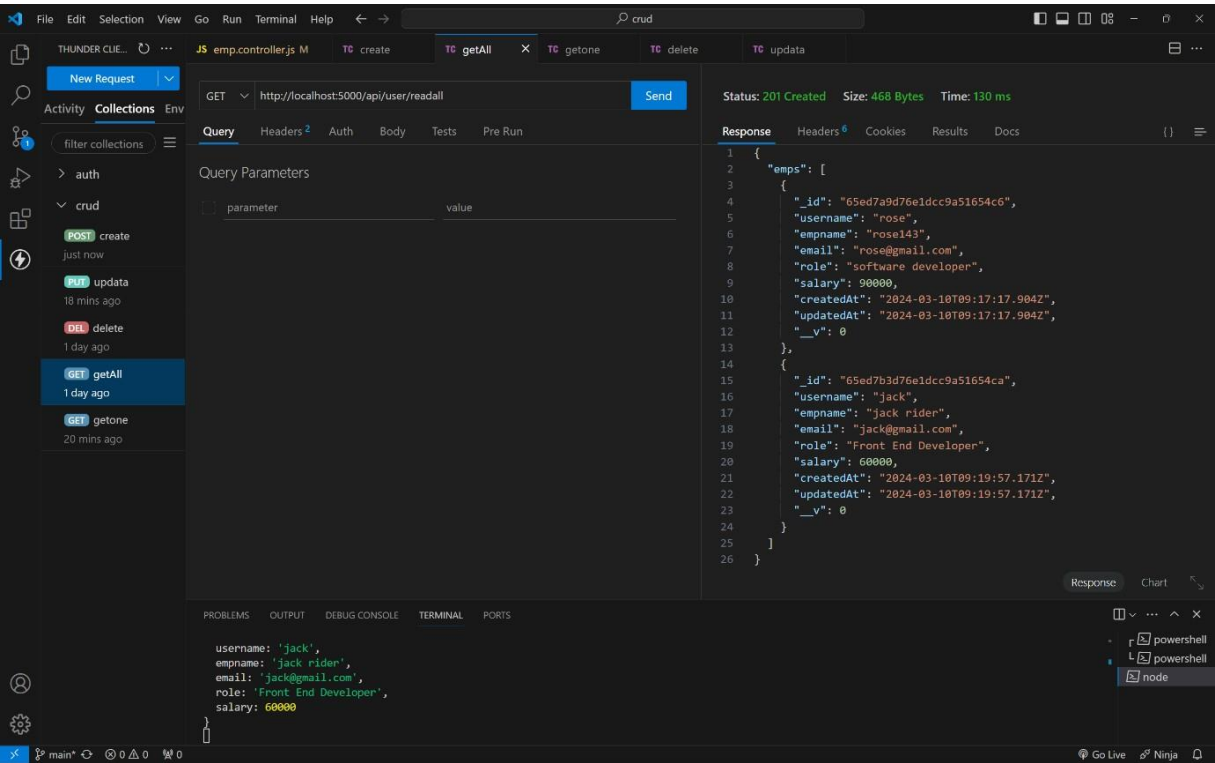
CREATING USER WITH EXISTING USERNAM :



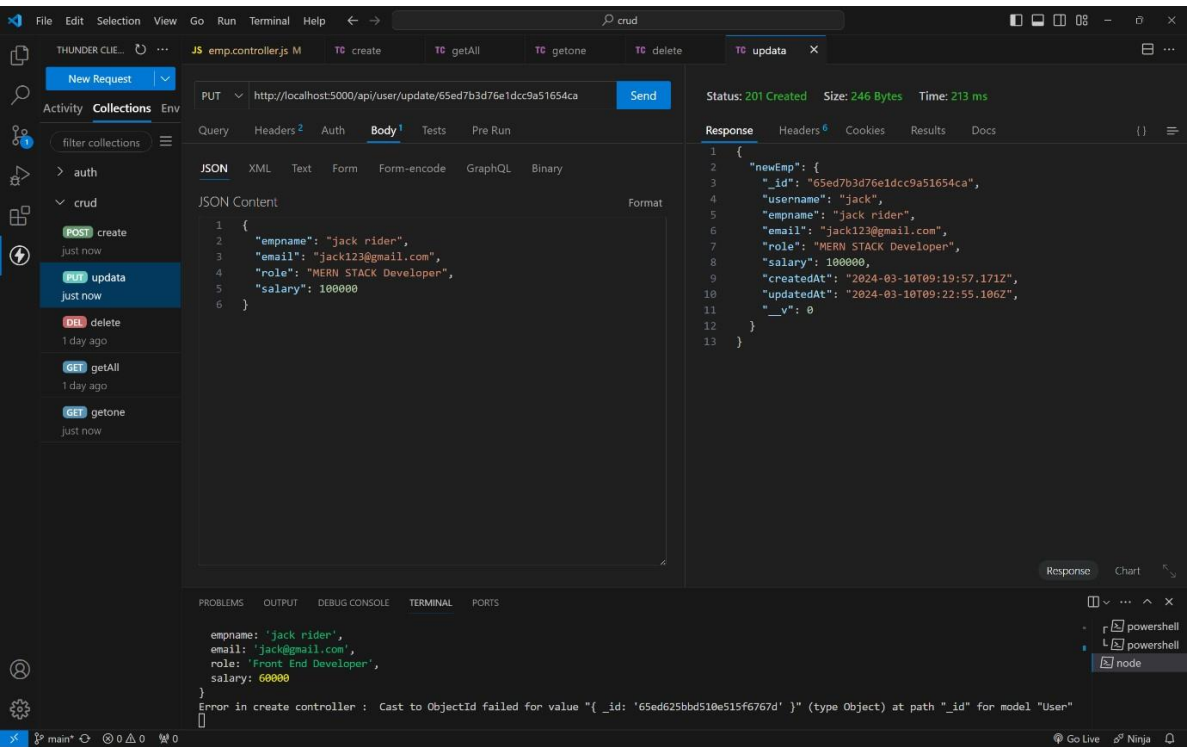
READONE :



READ ALL :



UPDATE :



DELETE :

The screenshot displays the Thunder Client interface with a collection named 'crud' open. The 'delete' request is selected, showing a DELETE method to the URL 'http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca'. The response status is 201 Created, with a size of 68 Bytes and a time of 111 ms. The response body is a JSON object: { "id": "65ed7b3d76e1dcc9a51654ca", "message": "deleted successfully.." }. The bottom panel shows the terminal output of a Node.js application running on port 5000, which has successfully connected to a database and is ready to handle requests.

Thunder Client interface showing a DELETE request and its response.

Request Details:

- Method: DELETE
- URL: `http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca`
- Status: 201 Created
- Size: 68 Bytes
- Time: 111 ms

Response Body:

```
1 {
2   "id": "65ed7b3d76e1dcc9a51654ca",
3   "message": "deleted successfully.."
4 }
```

Terminal 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
```