

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

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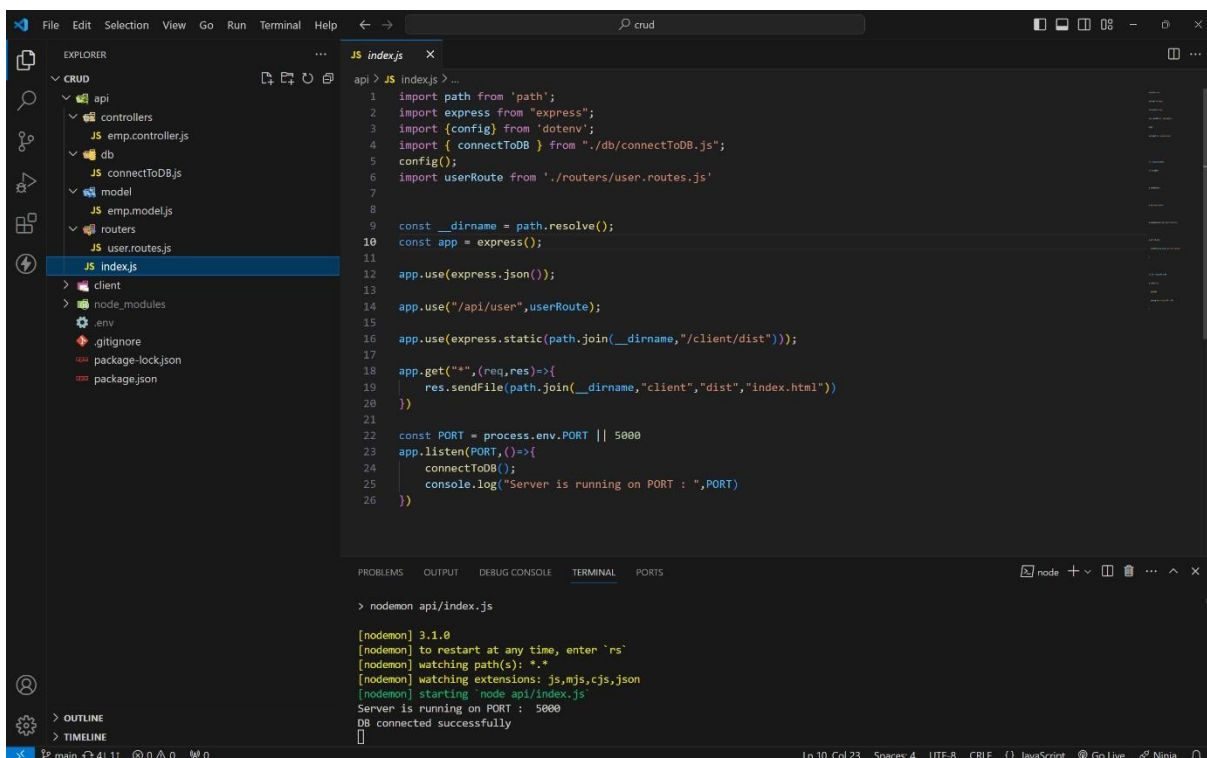
PHONE NO: 6303612803

BRANCH NAME: CSE(AIML)

COLLEGE NAME: KALLAM HARANADHAREDDY INSTITUTE OF  
TECHNOLOGY

**source code :**

**index.js file :**



The screenshot shows a Visual Studio Code editor with a project structure on the left and a code editor in the center. The project structure includes folders for 'api', 'controllers', 'db', 'model', 'emp.model.js', 'routes', and 'user.routes.js'. The 'api' folder is expanded, showing 'index.js' selected. The code in 'index.js' is as follows:

```
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 })
```

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

```
> 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 structure on the left. The file explorer shows a directory named 'api' containing subdirectories 'controllers', 'db', 'model', 'routers', and 'user.routes.js'. The 'db' directory is expanded, showing 'connectToDB.js' selected. The main editor 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 command to run the application and the output of the database connection:

```
> 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 structure. The file explorer shows the 'model' directory expanded, with 'emp.model.js' selected. The main editor displays the code for 'emp.model.js'.

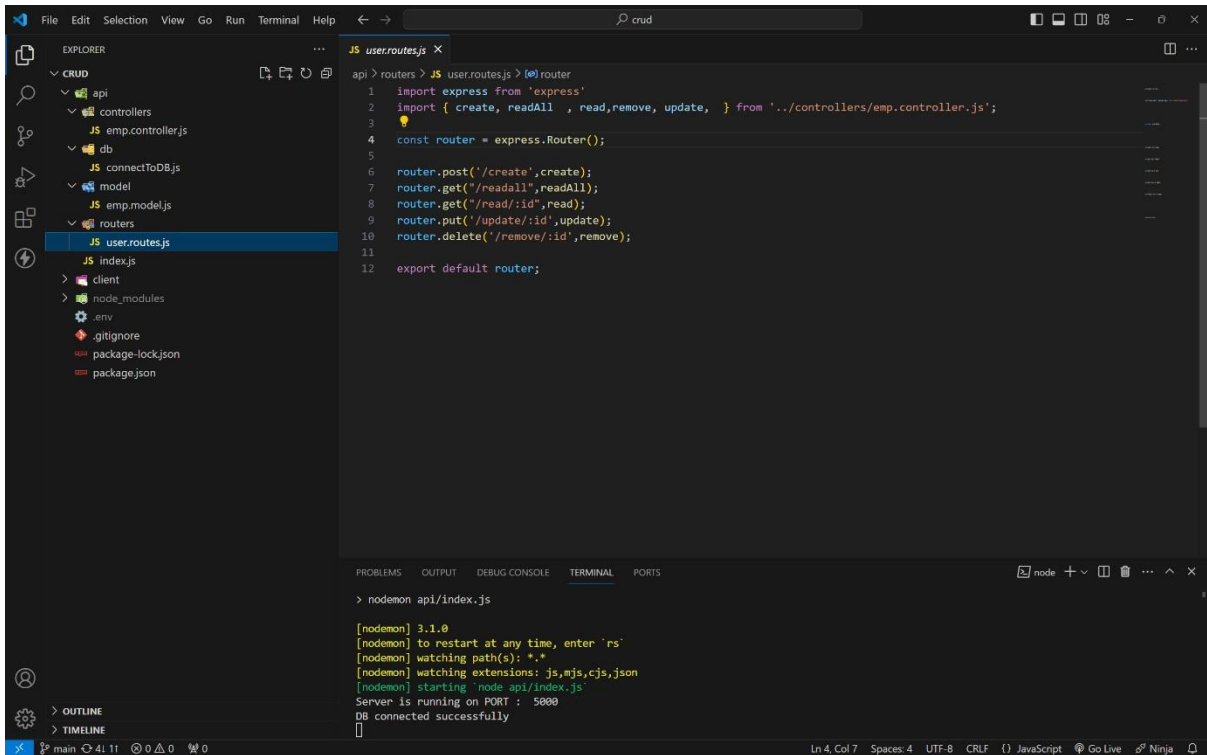
```
api > model > JS emp.model.js > @userSchema > role
1 import mongoose from 'mongoose';
2
3 const userSchema = new mongoose.Schema({
4   username:{
5     type:String,
6     unique:true,
7     required:true
8   },
9   empname:{
10    type:String,
11    required:true
12  },
13  email:{
14    type:String,
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 command to run the application and the output of the database connection:

```
> 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:



The screenshot shows the Visual Studio 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 'client'. The 'routers' folder is expanded, and 'user.routes.js' is selected. The main editor displays the content of 'user.routes.js', which imports 'express' and defines a router with routes for create, readAll, read, update, and delete. The terminal at the bottom shows the command 'nodemon api/index.js' being executed, and the output indicates that the server is running on port 5000 and connected successfully.

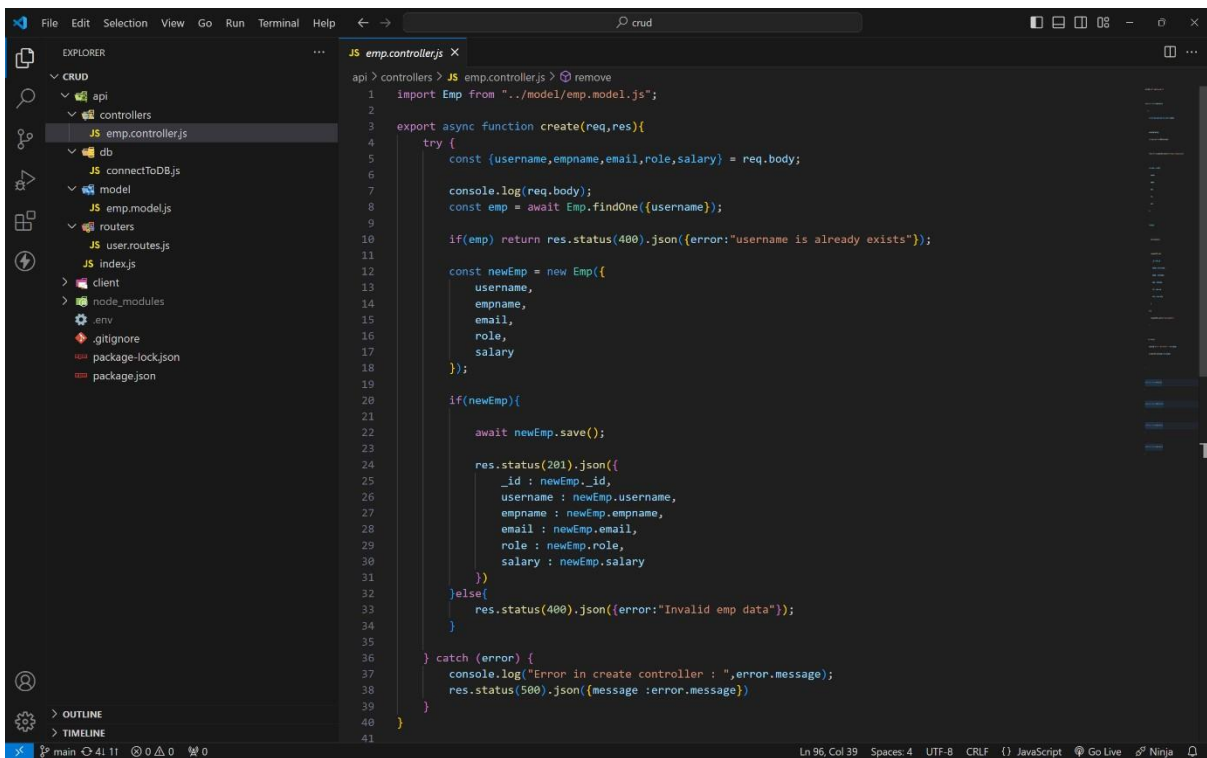
```
api > routers > JS user.routes.js > @ router
1 import express from 'express'
2 import { create, readAll, read, remove, update, } from '../controllers/emp.controller.js';
3
4 const router = express.Router();
5
6 router.post('/create', create);
7 router.get("/readall", readAll);
8 router.get("/read/:id",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

```
> 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
```

## CONTROLLERS :

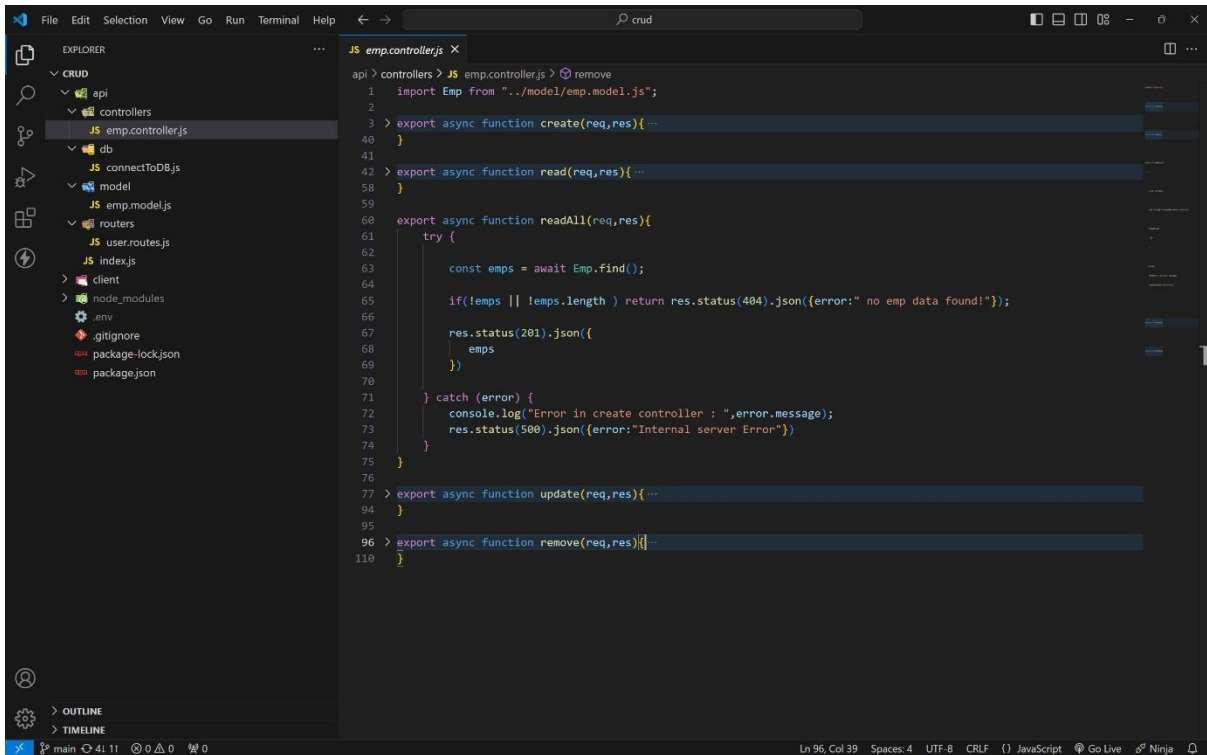
### CREATE :



The screenshot shows the Visual Studio 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 'client'. The 'controllers' folder is expanded, and 'emp.controller.js' is selected. The main editor displays the content of 'emp.controller.js', which imports 'Emp' from the model and defines a 'create' function. The function checks if a user with the same username already exists. If it does, it returns a 400 status with an error message. If not, it creates a new employee and returns a 201 status with the employee details. The terminal at the bottom shows the command 'nodemon api/index.js' being executed, and the output indicates that the server is running on port 5000 and connected successfully.

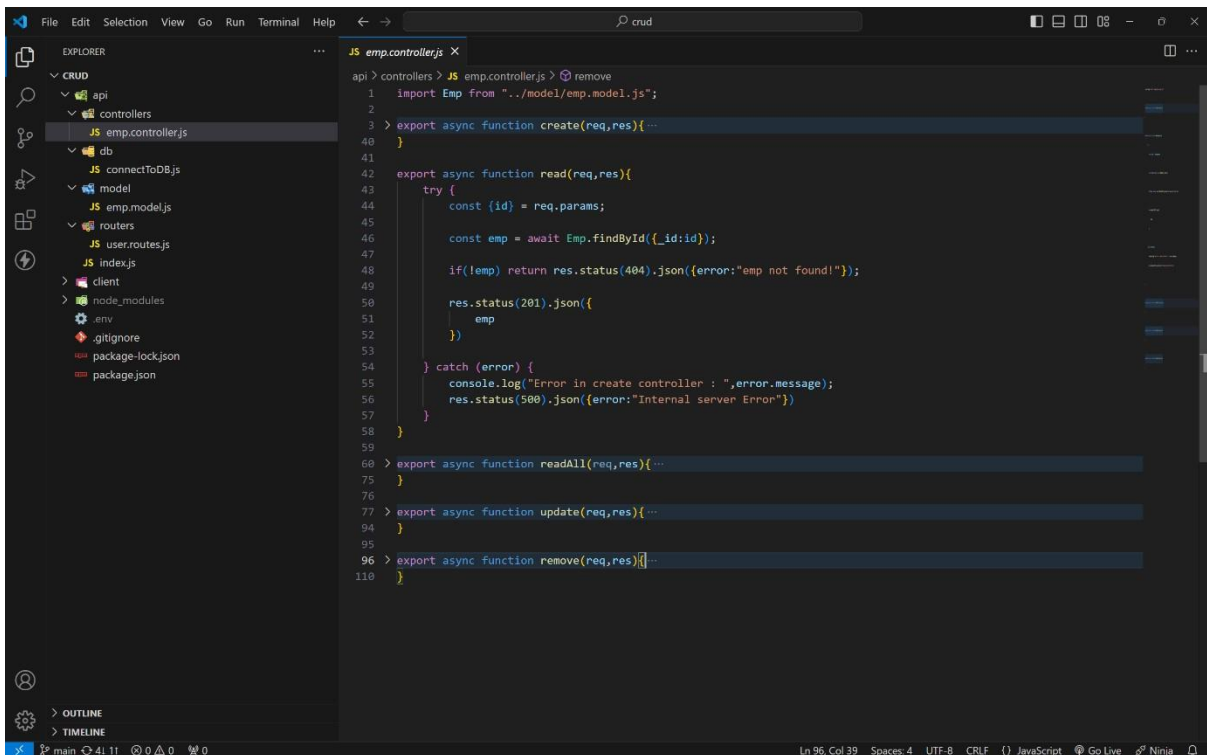
```
api > controllers > JS emp.controller.js > @ remove
1 import Emp from '../model/emp.model.js';
2
3 export async function create(req,res){
4   try {
5     const {username,empname,email,role,salary} = req.body;
6
7     console.log(req.body);
8     const emp = await Emp.findOne({username});
9
10    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    }else{
32      res.status(400).json({error:"Invalid emp data"});
33    }
34  } catch (error) {
35    console.log("Error in create controller : ",error.message);
36    res.status(500).json({message : error.message});
37  }
38 }
39
40
41
```

### READALL:



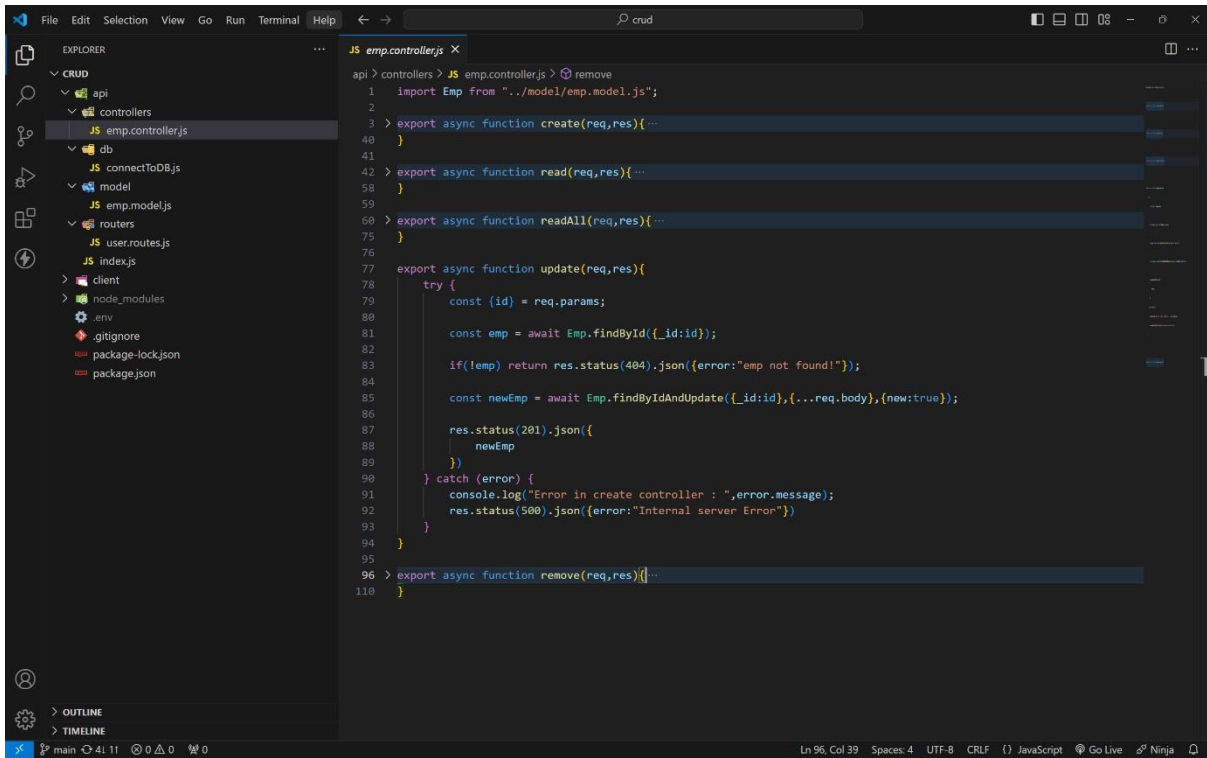
```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){...
40 }
41
42 > export async function read(req,res){...
58 }
59
60 export async function readAll(req,res){
61   try {
62     const emps = await Emp.find();
63
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 }
76
77 > export async function update(req,res){...
94 }
95
96 > export async function remove(req,res){...
110 }
```

**READONE :**



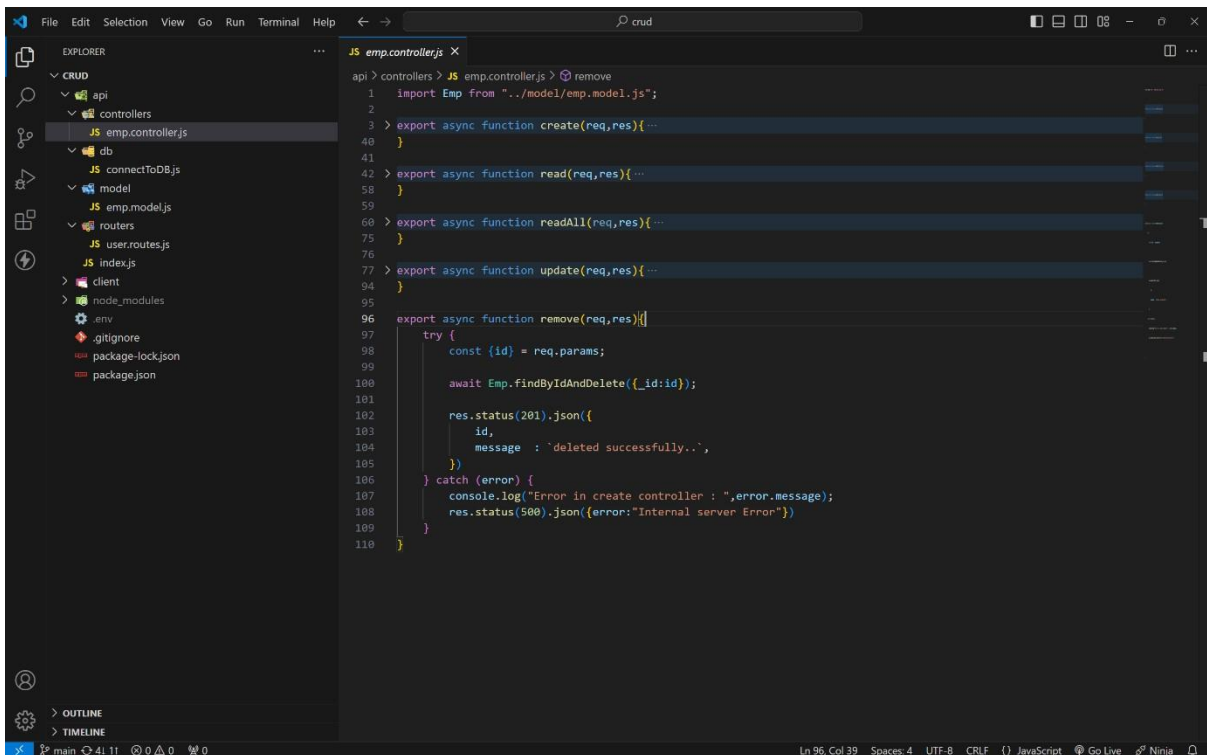
```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){...
40 }
41
42 export async function read(req,res){
43   try {
44     const {id} = req.params;
45
46     const emp = await Emp.findById({_id:id});
47
48     if(!emp) 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 :**

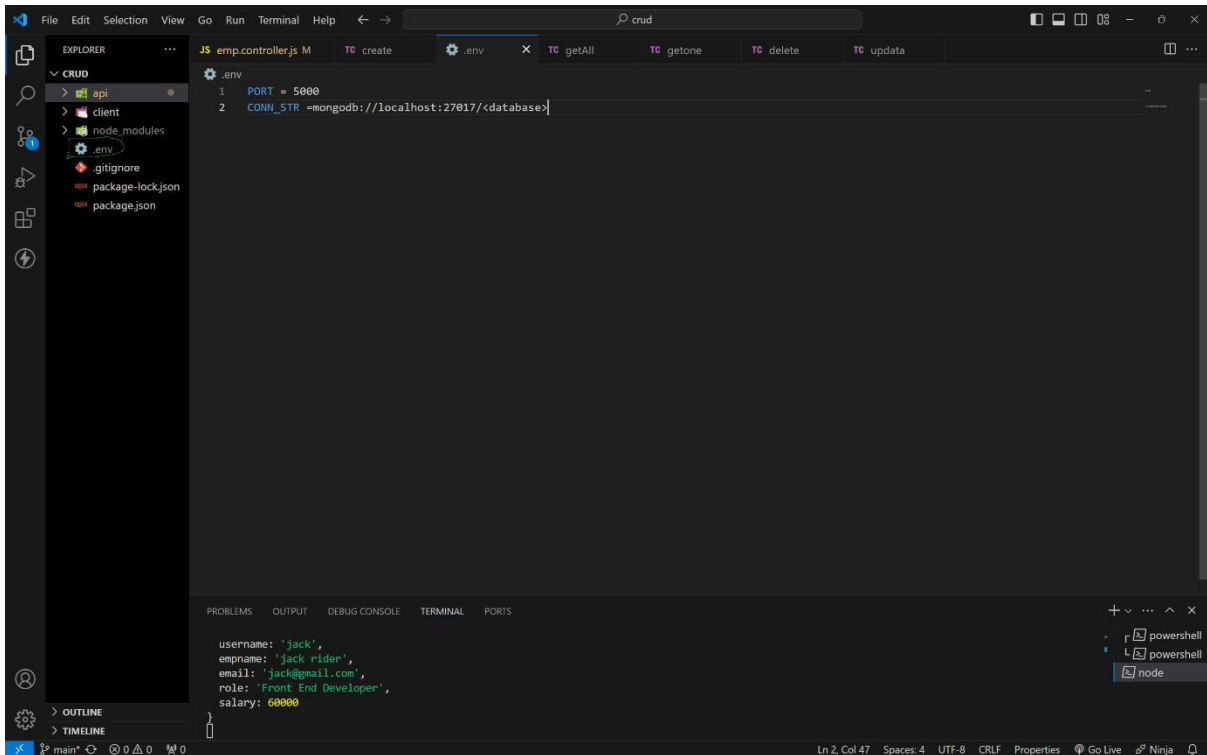


```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){...
40 }
41
42 > export async function read(req,res){...
58 }
59
60 > export async function readAll(req,res){...
75 }
76
77 > export async function update(req,res){
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 :



```
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 }
```



○ 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

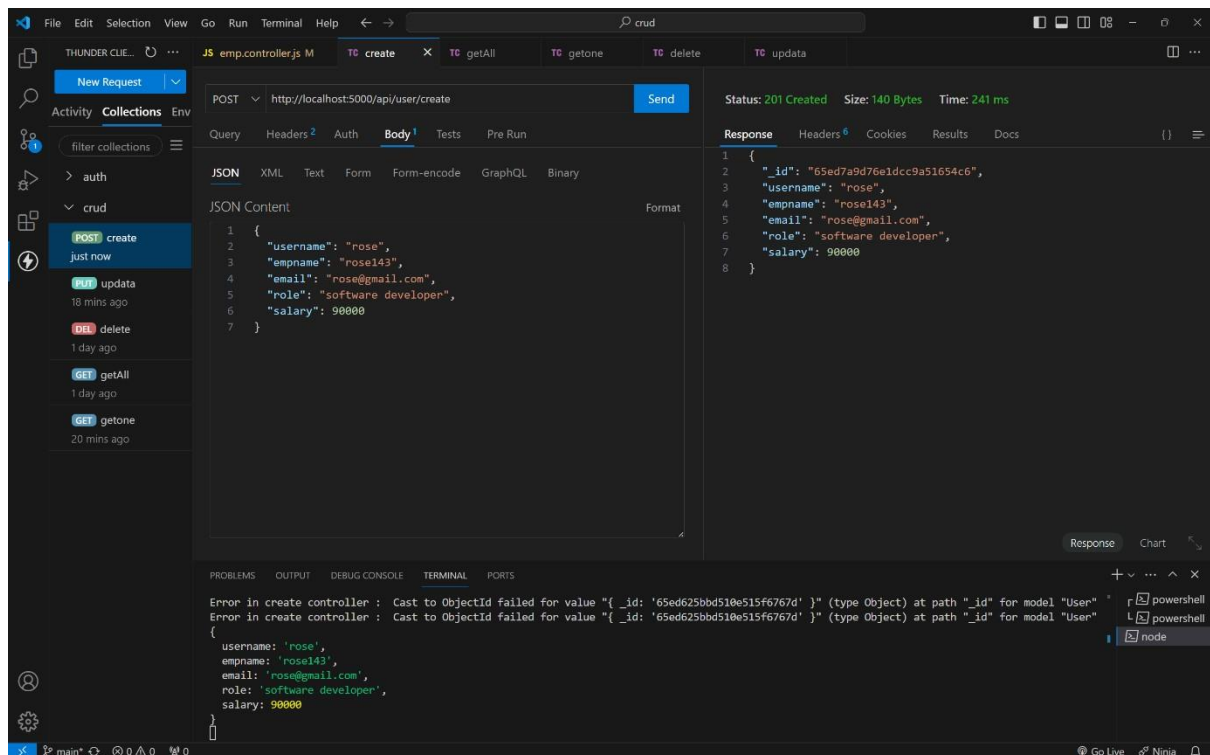
url as

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

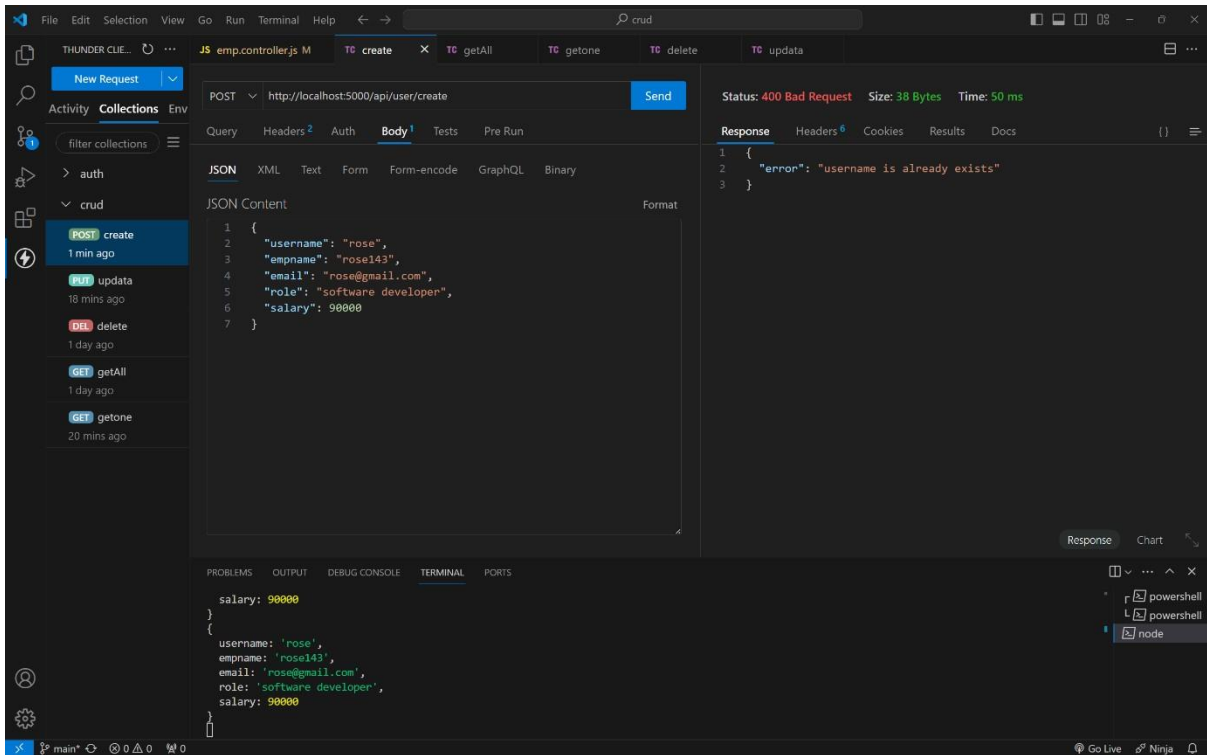
2 . After sending you will deleted successfully as response.

OUTPUT :

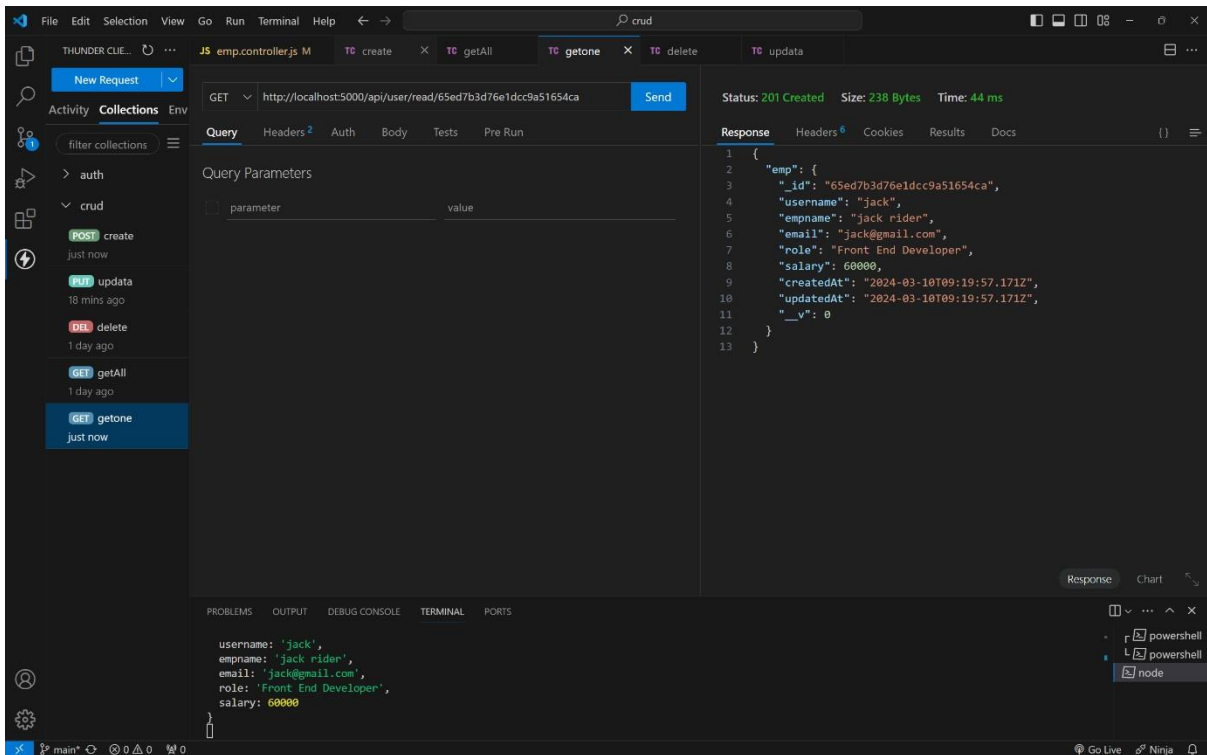
CREATE A NEW USER :



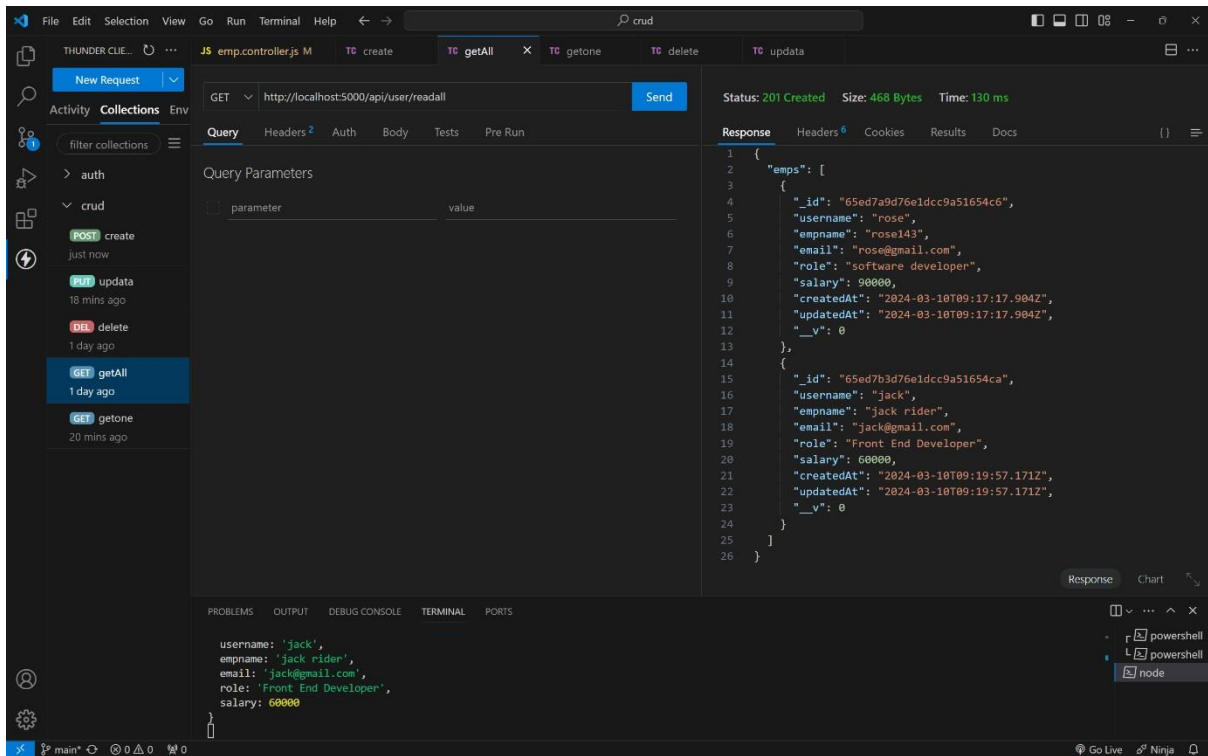
CREATING USER WITH EXISTING USERNAEM :



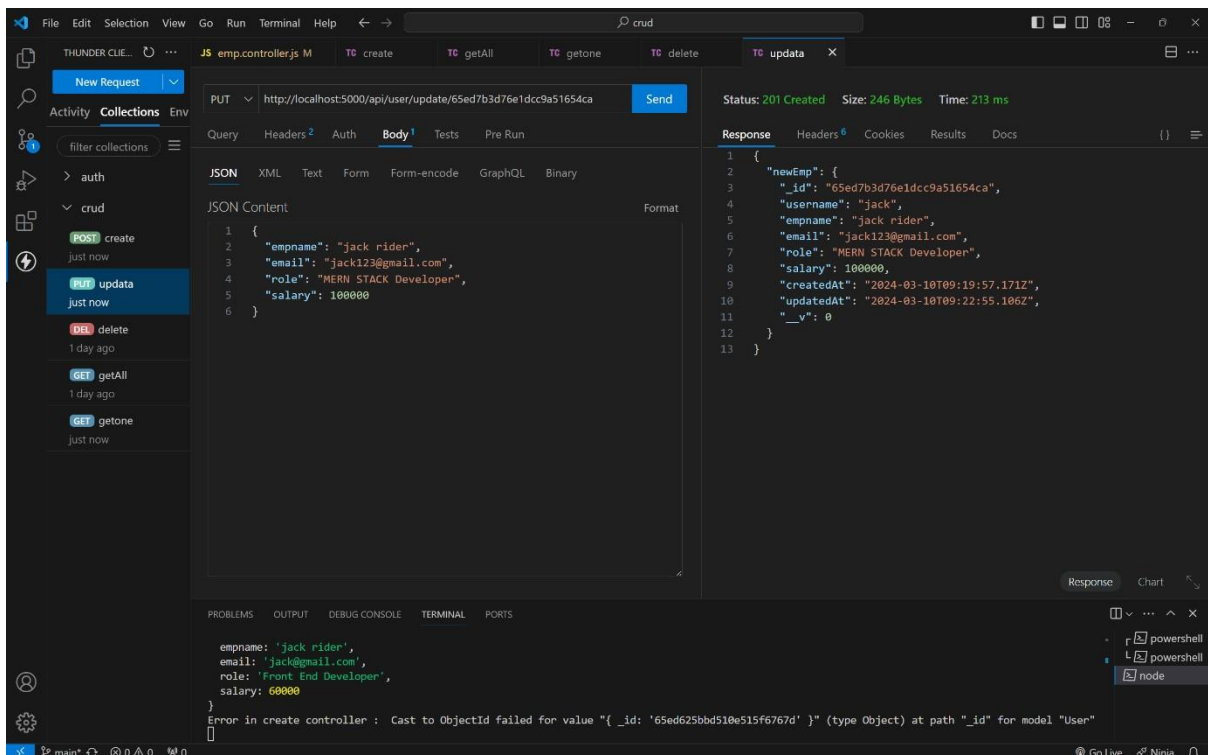
READONE :



## READ ALL :



## UPDATE :



## DELETE :

The screenshot displays the Thunder Client interface with a collection named 'crud'. The 'delete' request is selected, showing a DELETE method to the URL 'http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca'. The response is a 201 Created status with a JSON body: { "id": "65ed7b3d76e1dcc9a51654ca", "message": "deleted successfully.." }. The terminal at the bottom shows the application running on port 5000.

**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
```