

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

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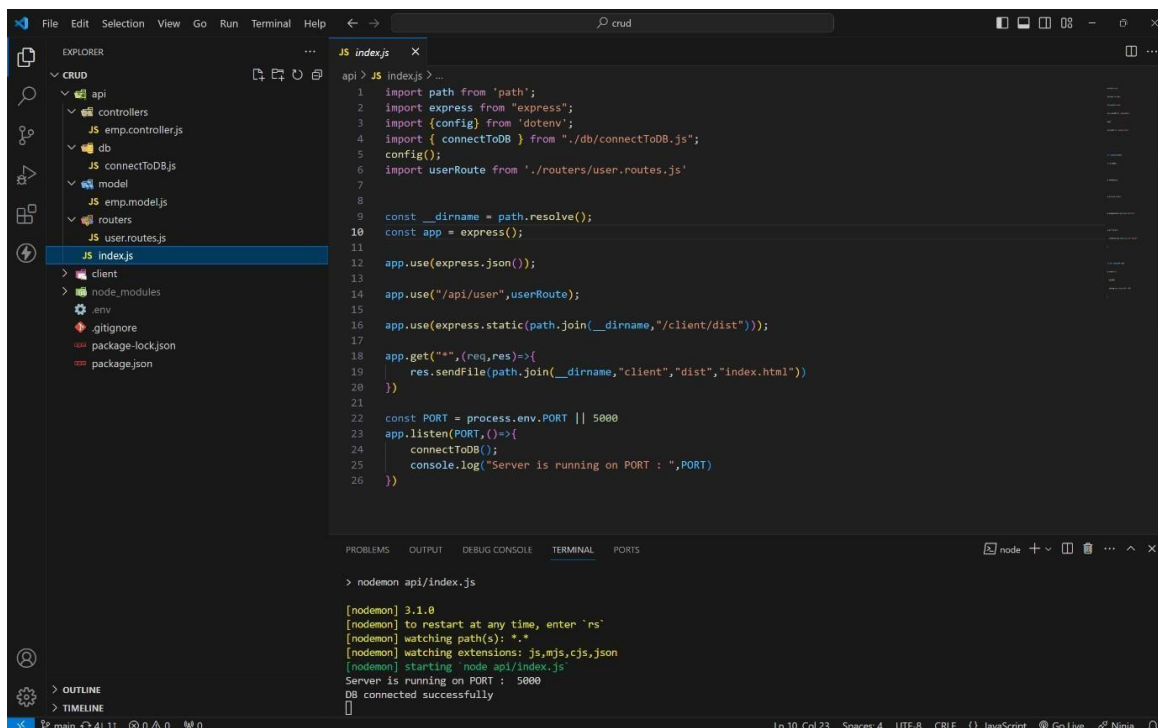
**Phone:- 9618680913**

**ROLL NUMBER:- 20KH1A0466 (ECE)**

**COLLEGE:- SRI VENKATESWARA COLLEGE OF ENGINEERING ,KADAPA**

## source code :

**index.js file :**

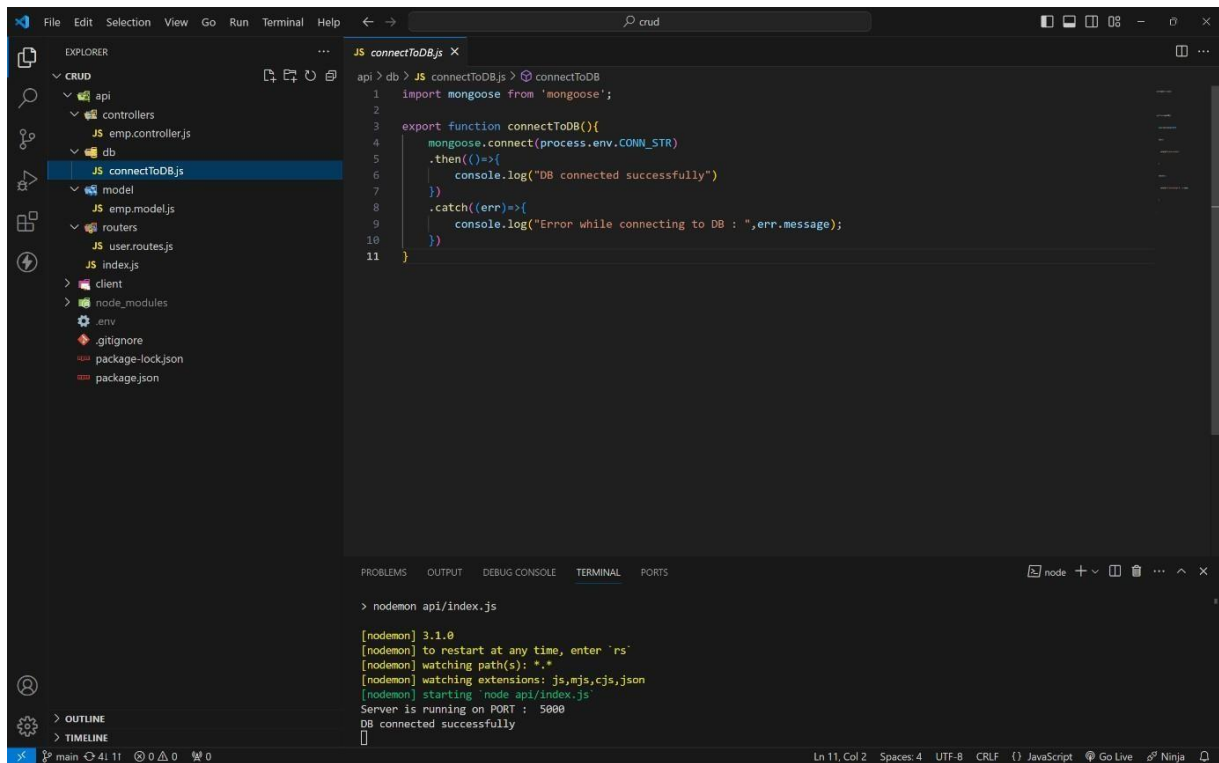


The screenshot shows a Visual Studio Code editor with a project structure on the left and a code editor in the center. The project structure includes folders for 'api', 'client', 'node\_modules', and 'env', along with files like 'package-lock.json' and 'package.json'. The 'api' folder is expanded, showing 'controllers', 'db', 'model', 'routers', and 'index.js'. The 'index.js' file is selected and its content is displayed in the editor. The code defines an Express.js application, connects to a MongoDB database, and sets up routes for user authentication and a client directory. The terminal at the bottom shows the command 'nodemon api/index.js' being executed, and the output indicates 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 './routers/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 :

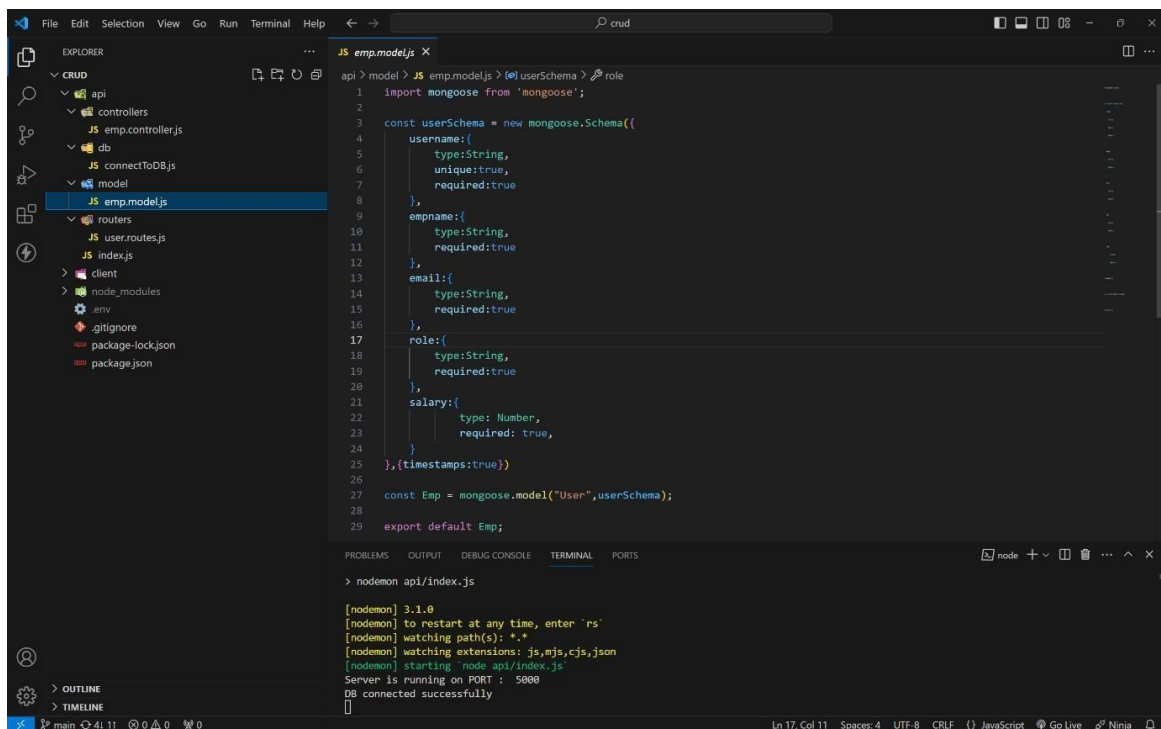


The screenshot shows the VS Code interface with the Explorer panel on the left displaying the project structure. The file `connectToDB.js` is selected under the `db` folder. The main editor displays the code for `connectToDB.js`, which imports `mongoose` and defines a `connectToDB` function. The function attempts to connect to the database using `process.env.CONN_STR` and logs the connection status. The terminal at the bottom shows the command `nodemon api/index.js` being executed, and the output indicates that the database connection was successful.

```
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 }
```

```
> 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 :

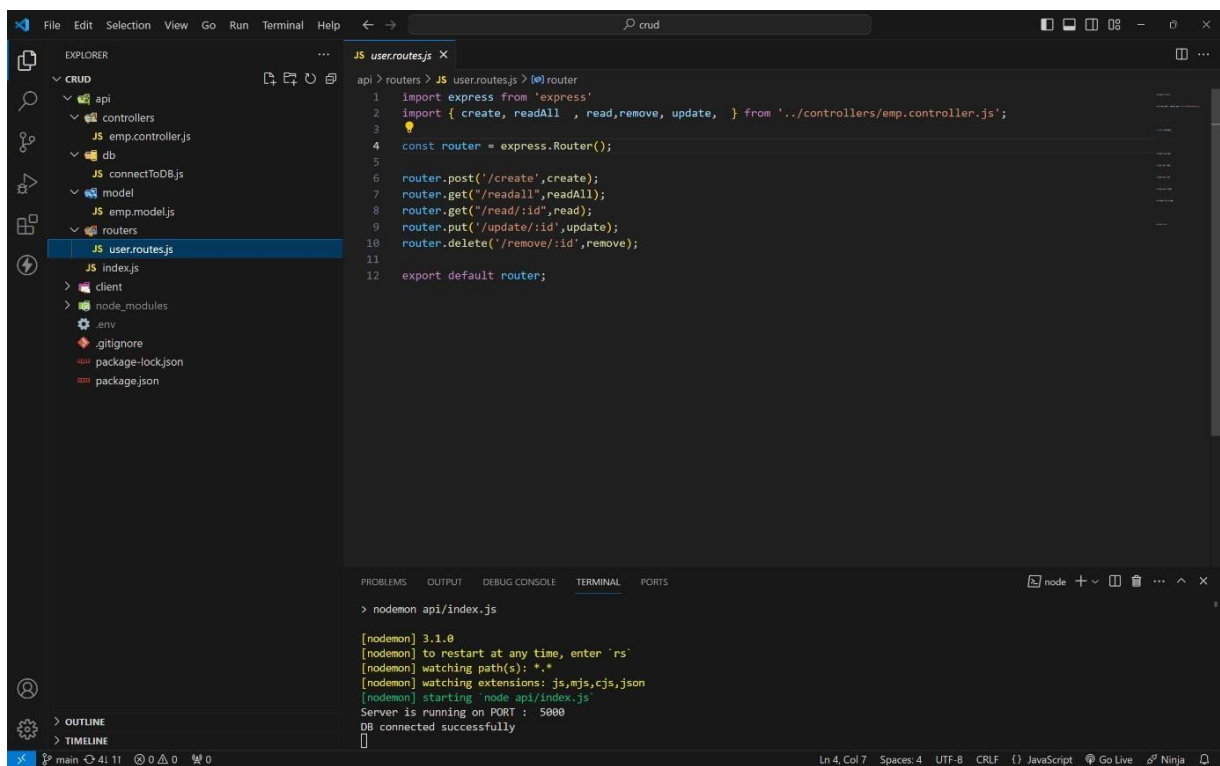


The screenshot shows the VS Code interface with the Explorer panel on the left displaying the project structure. The file `emp.model.js` is selected under the `model` folder. The main editor displays the code for `emp.model.js`, which imports `mongoose` and defines a `userSchema` for the `User` model. The schema includes fields for `username`, `email`, `role`, and `salary`. The terminal at the bottom shows the command `nodemon api/index.js` being executed, and the output indicates that the database connection was successful.

```
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   email:{
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;
```

```
> 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 VS Code editor with the file explorer on the left. The 'api' folder is expanded, showing 'controllers', 'db', 'model', 'routes', and 'index.js'. The 'routes' folder is selected, and 'user.routes.js' is open in the editor. The code in 'user.routes.js' is as follows:

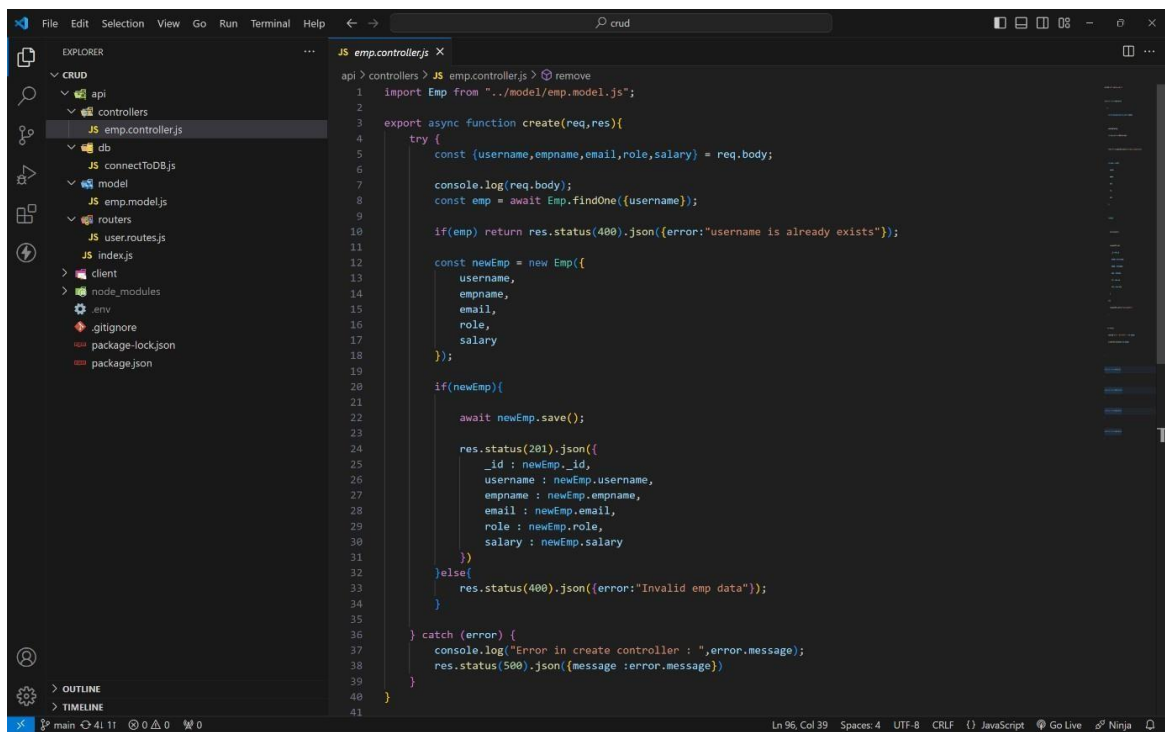
```
1 import express from 'express'
2 import { create, readAll, read, remove, update, } from '../controllers/emp.controller.js';
3
4 const router = express.Router();
5
6 router.post('/create', create);
7 router.get('/readall', readAll);
8 router.get('/read/:id', read);
9 router.put('/update/:id', update);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

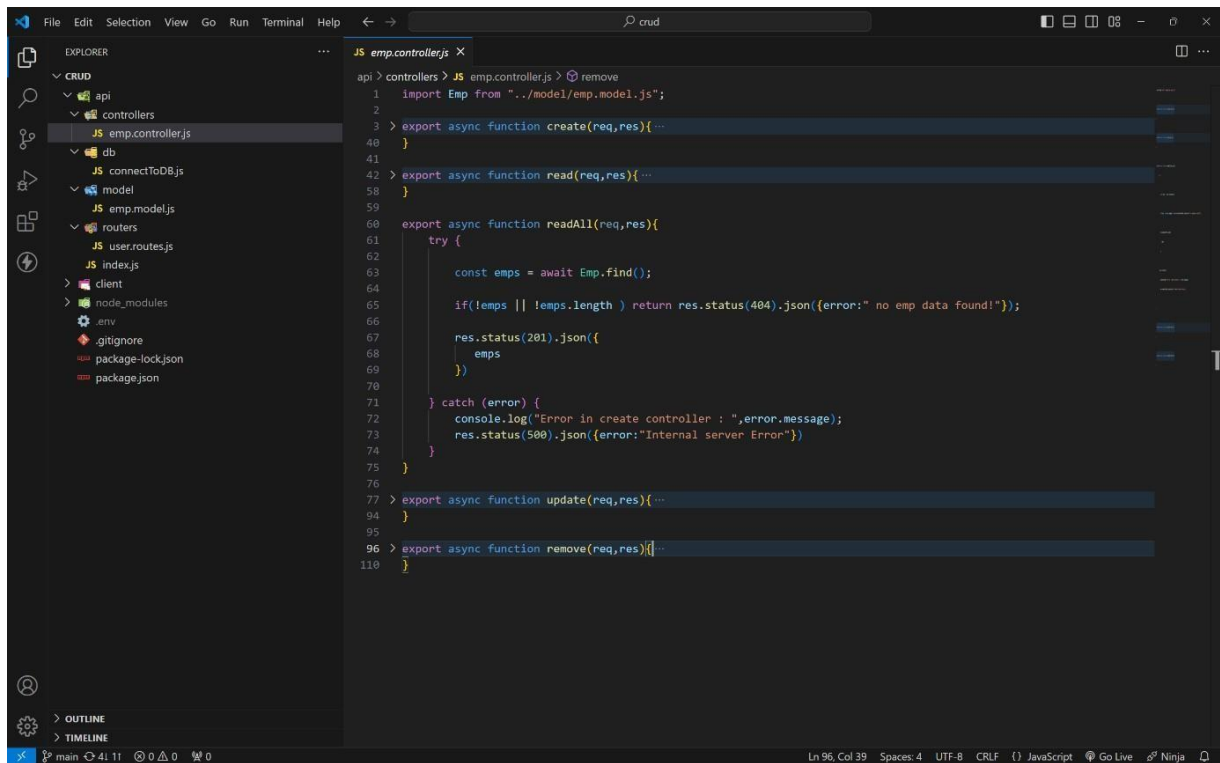
### CREATE :



The screenshot shows the VS Code editor with the file explorer on the left. The 'api' folder is expanded, showing 'controllers', 'db', 'model', 'routes', and 'index.js'. The 'controllers' folder is selected, and 'emp.controller.js' is open in the editor. The code in 'emp.controller.js' is as follows:

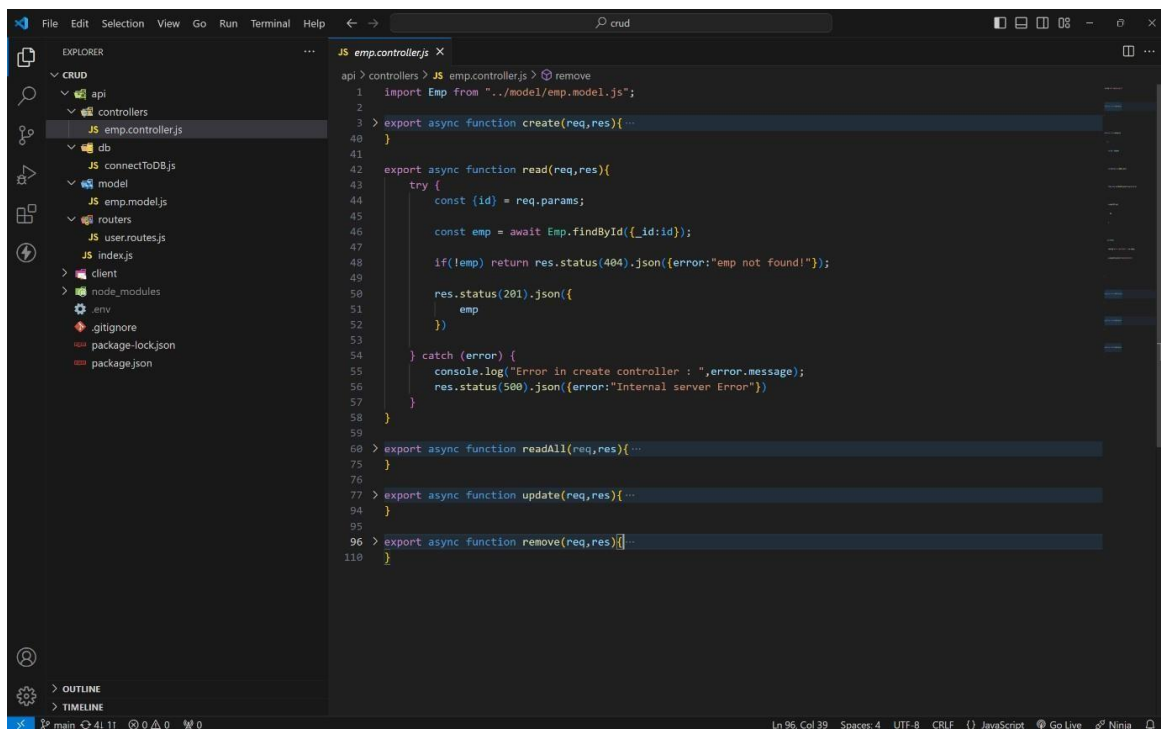
```
1 import Emp from "../model/emp.model.js";
2
3 export async function create(req,res){
4   try {
5     const {username,empname,email,role,salary} = req.body;
6
7     console.log(req.body);
8     const emp = await Emp.findOne({username});
9
10    if(emp) return res.status(400).json({error:"username 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 }
```

## READALL:



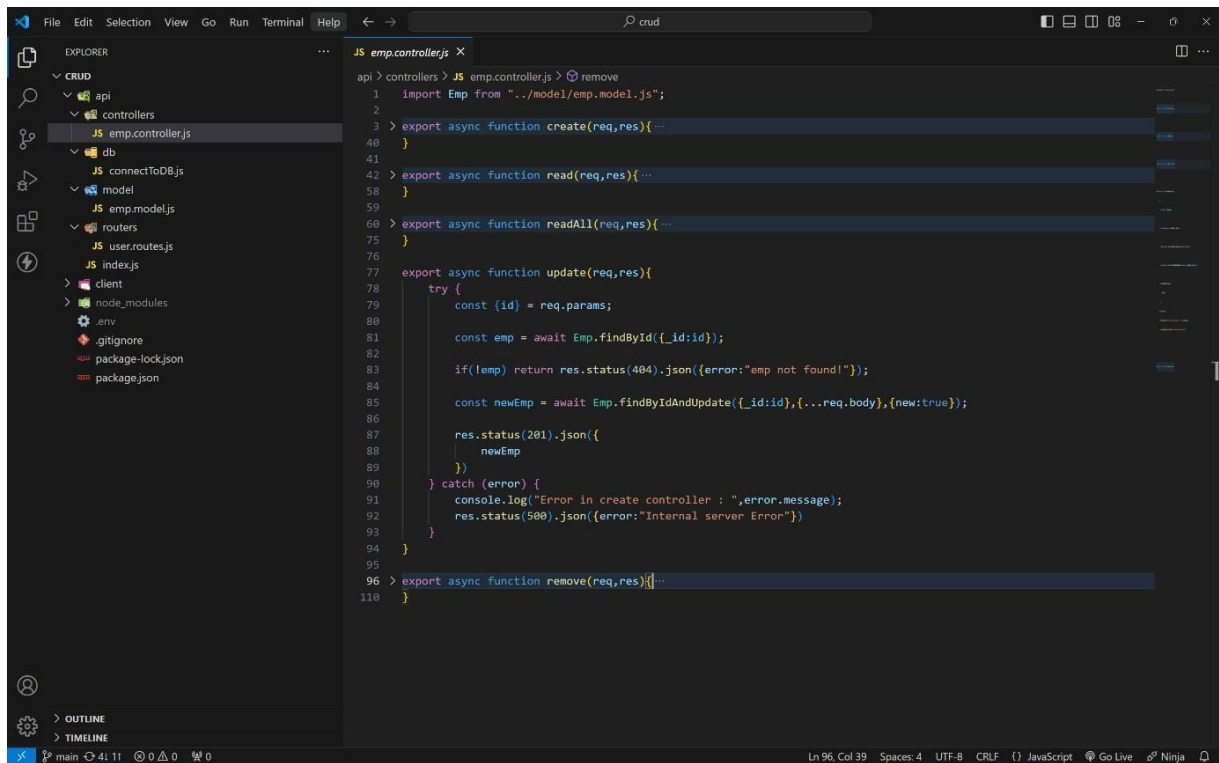
```
api > controllers > JS emp.controller.js > remove
1  import Emp from "../model/emp.model.js";
2
3  > export async function create(req,res){ ...
40 }
41
42 > export async function read(req,res){ ...
58 }
59
60 export async function readAll(req,res){
61   try {
62     const emps = await Emp.find();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

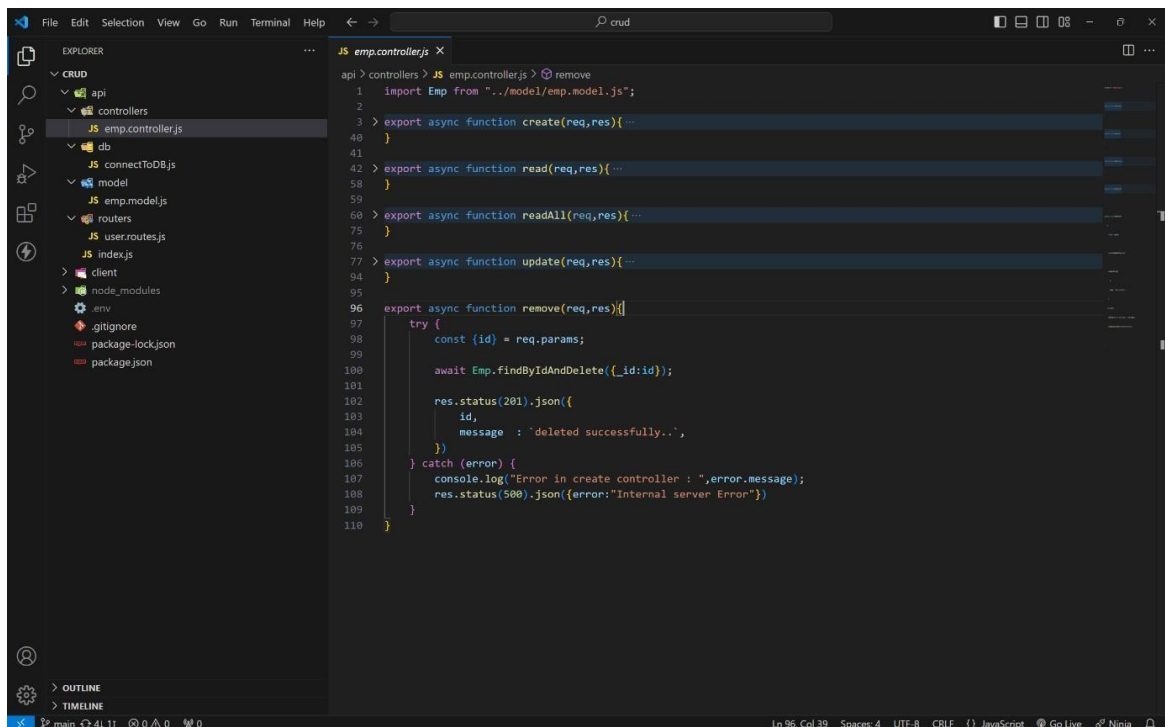
## UPDATE :



The screenshot shows the VS Code editor with the file explorer on the left. The file explorer shows a project structure with folders like crud, api, controllers, db, model, routers, and client. The file emp.controller.js is selected. The main editor shows the code for the update function. 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){...
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 :

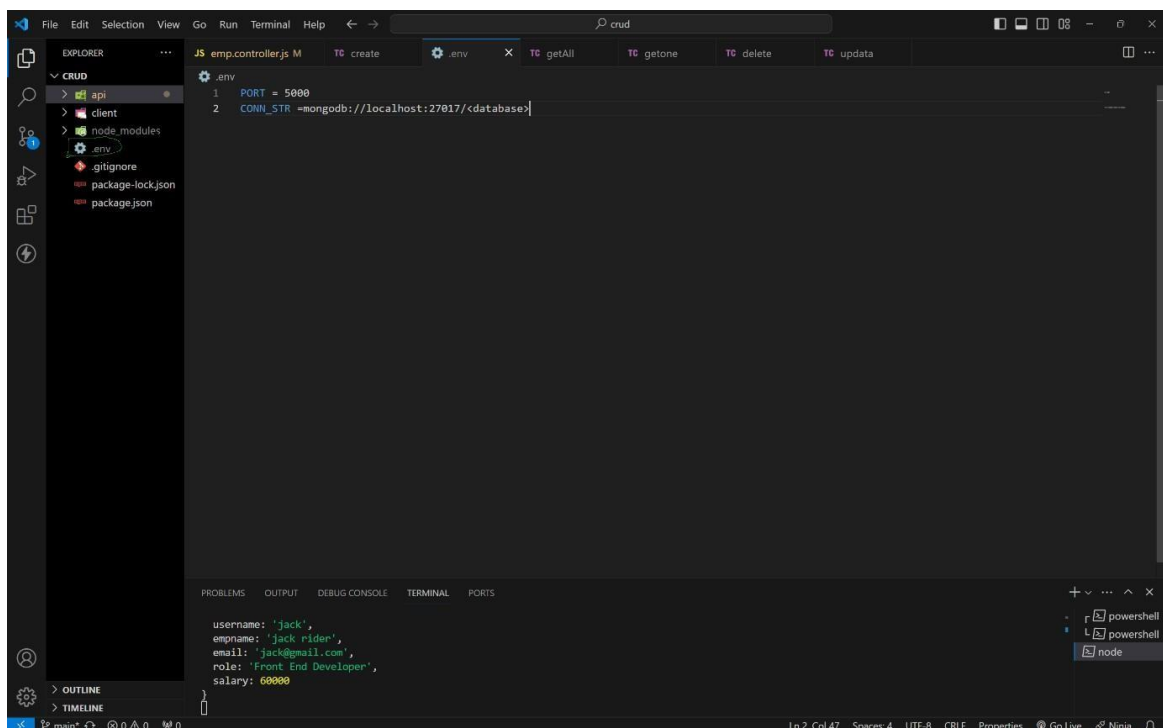


The screenshot shows the VS Code editor with the file explorer on the left. The file explorer shows a project structure with folders like crud, api, controllers, db, model, routers, and client. The file emp.controller.js is selected. The main editor shows the code for the delete function. The code is 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){...
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.  
<https://github.com/sandeeponteru/20KH1A0466-ONTERUSANDEEP#20kh1a0466-onterusandeep>  
Now move to crud folder (cd crud in terminal)
- 5 . Ignore client folder.
- 6 . Here crud is root folder.
- 7 . 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

**8 . 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)**

**9 . 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

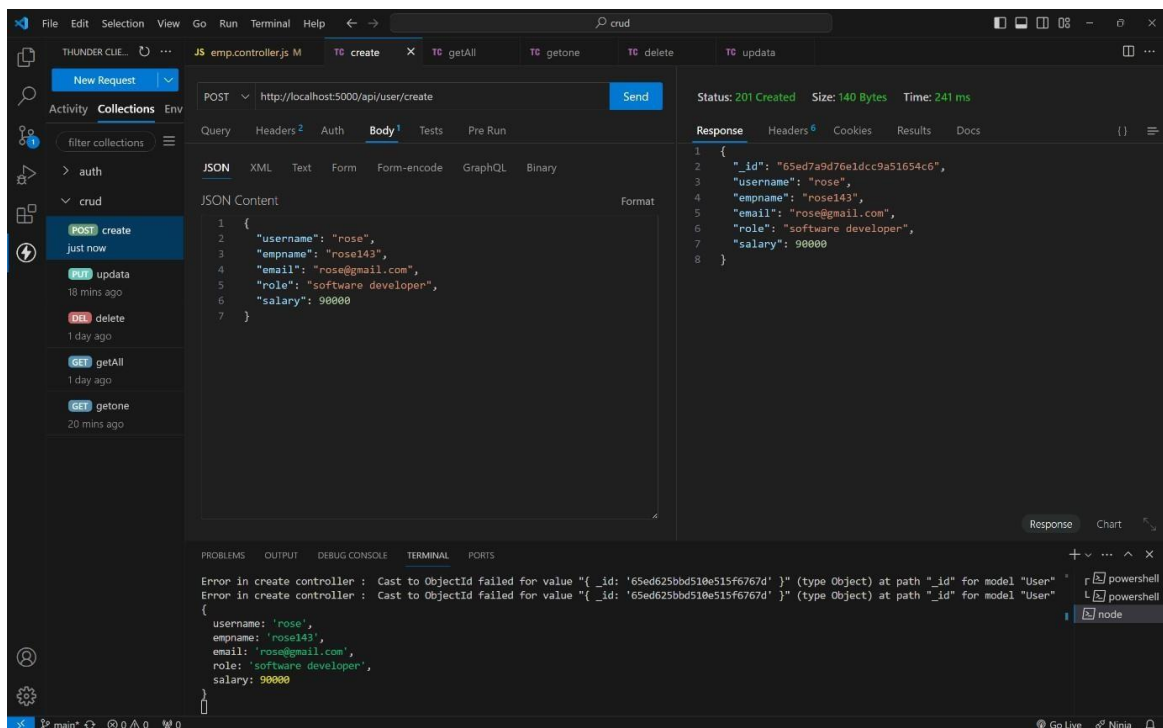
url as

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

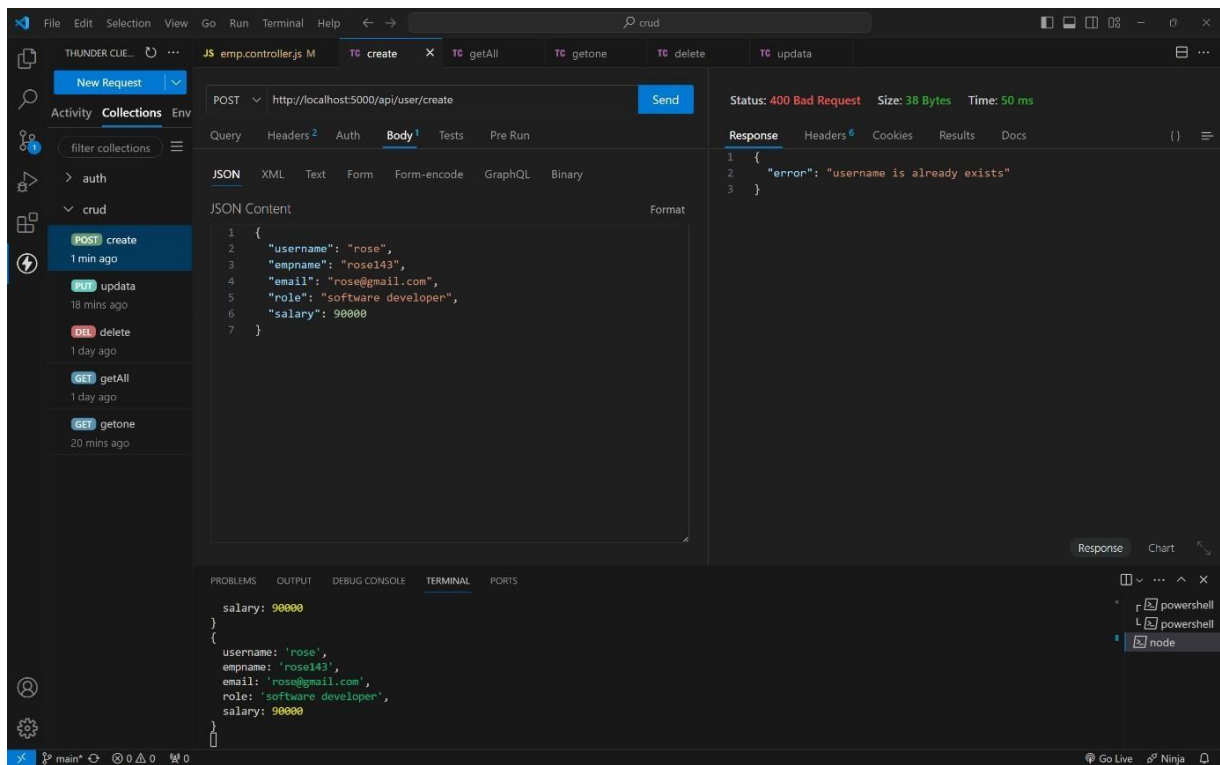
2 . After sending you will deleted successfully as response.

## OUTPUT :

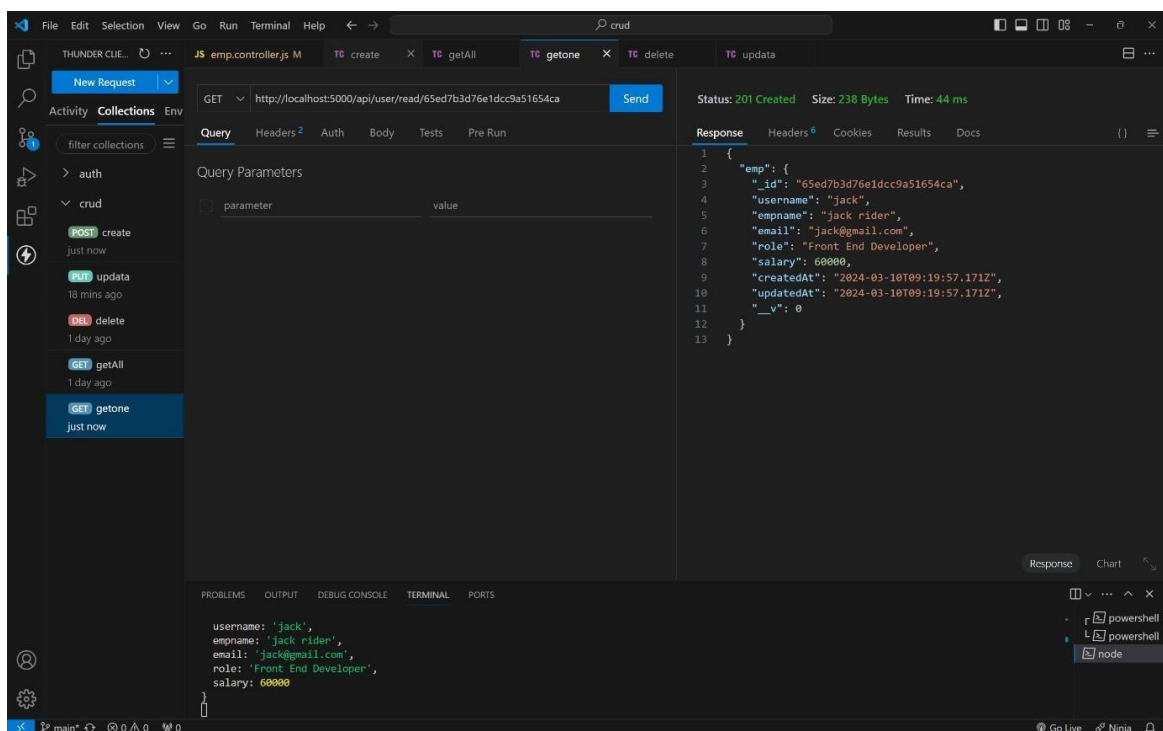
## CREATE A NEW USER :



## CREATING USER WITH EXISTING USERNAEM :



## READONE :



## READ ALL :

Thunder Client interface showing a GET request to `http://localhost:5000/api/user/readall`. The response status is 201 Created, Size: 468 Bytes, Time: 130 ms. The response body is a JSON array of two employee objects.

```
1 {
2   "emps": [
3     {
4       "id": "65ed7a9d76e1dcc9a51654c6",
5       "username": "rose",
6       "empname": "rose143",
7       "email": "rose@gmail.com",
8       "role": "software developer",
9       "salary": 90000,
10      "createdAt": "2024-03-10T09:17:17.904Z",
11      "updatedAt": "2024-03-10T09:17:17.904Z",
12      "_v": 0
13    },
14    {
15      "id": "65ed7b3d76e1dcc9a51654ca",
16      "username": "jack",
17      "empname": "jack rider",
18      "email": "jack@gmail.com",
19      "role": "Front End Developer",
20      "salary": 60000,
21      "createdAt": "2024-03-10T09:19:57.171Z",
22      "updatedAt": "2024-03-10T09:19:57.171Z",
23      "_v": 0
24    }
25  ]
26 }
```

The terminal output shows the response body:

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

## UPDATE :

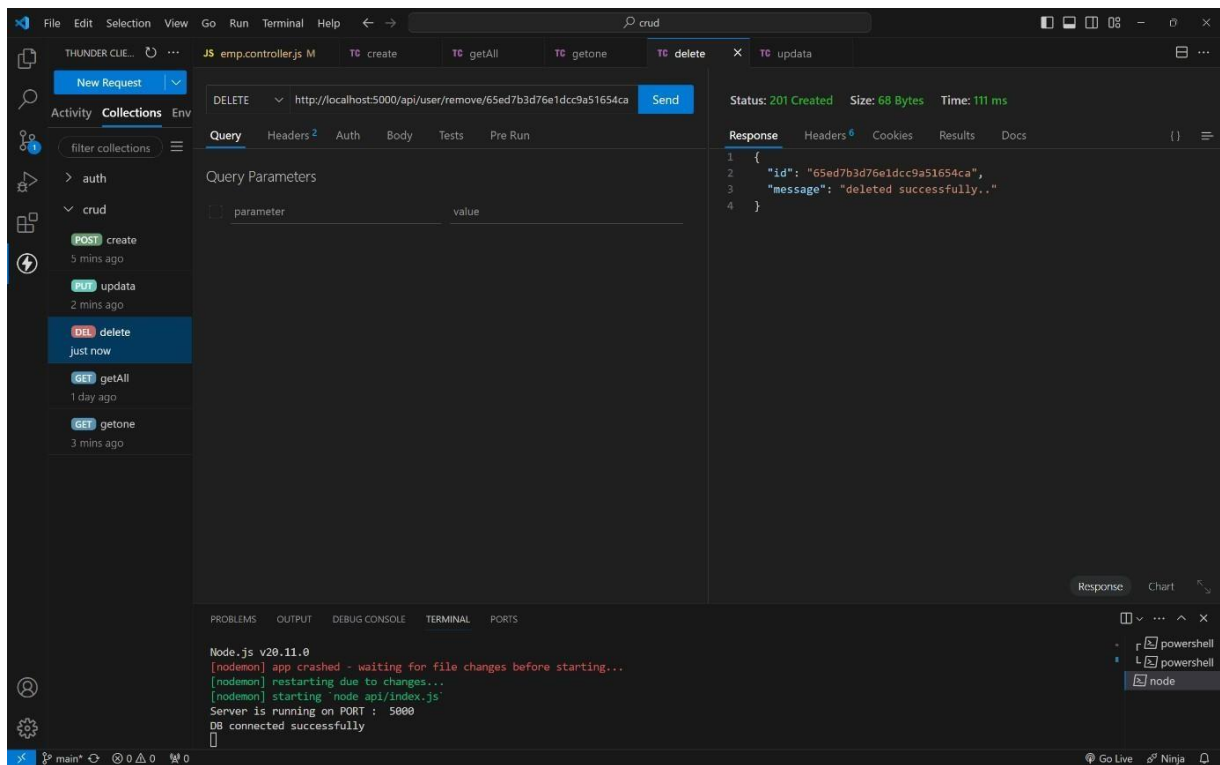
Thunder Client interface showing a PUT request to `http://localhost:5000/api/user/update/65ed7b3d76e1dcc9a51654ca`. The response status is 201 Created, Size: 246 Bytes, Time: 213 ms. The response body is a JSON object representing the updated employee.

```
1 {
2   "newEmp": {
3     "id": "65ed7b3d76e1dcc9a51654ca",
4     "username": "jack",
5     "empname": "jack rider",
6     "email": "jack123@gmail.com",
7     "role": "MERN STACK Developer",
8     "salary": 100000,
9     "createdAt": "2024-03-10T09:19:57.171Z",
10    "updatedAt": "2024-03-10T09:22:55.106Z",
11    "_v": 0
12  }
13 }
```

The terminal output shows the response body and an error message:

```
empname: 'jack rider',
email: 'jack@gmail.com',
role: 'Front End Developer',
salary: 60000
}
Error in create controller : Cast to ObjectId failed for value "( _id: '65ed625bbd510e515f6767d' )" (type Object) at path "_id" for model "User"
```

## DELETE :



## SOURCE CODE :

<https://github.com/sandeeponteru/20KH1A0466-ONTERUSANDEEP#20kh1a0466-onterusandeeponteru>