

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

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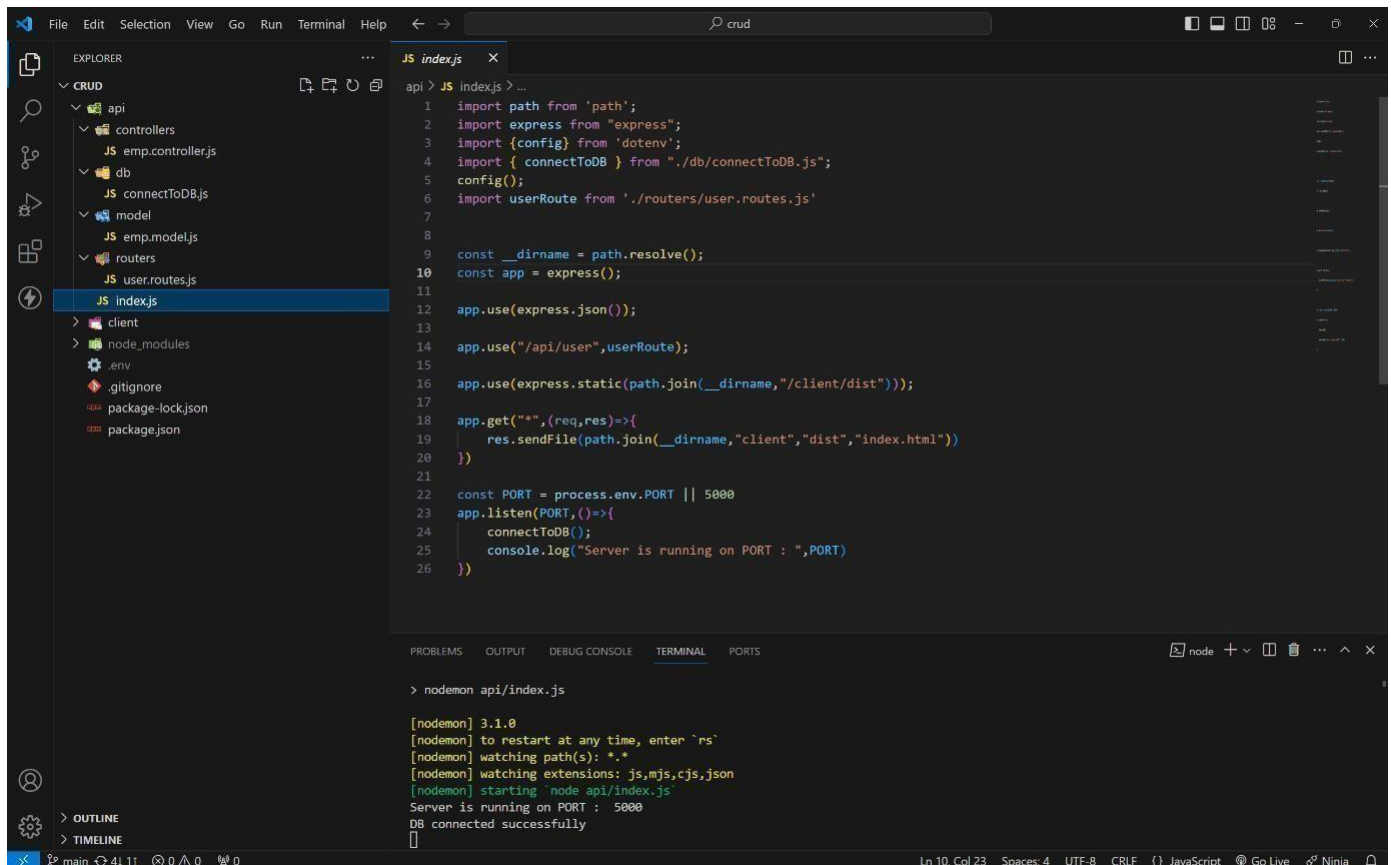
Roll NO : 21HU5A0208

College Name : Chebrolu engineering college

Phone number: 7416542801

Source Code:

index.js file :

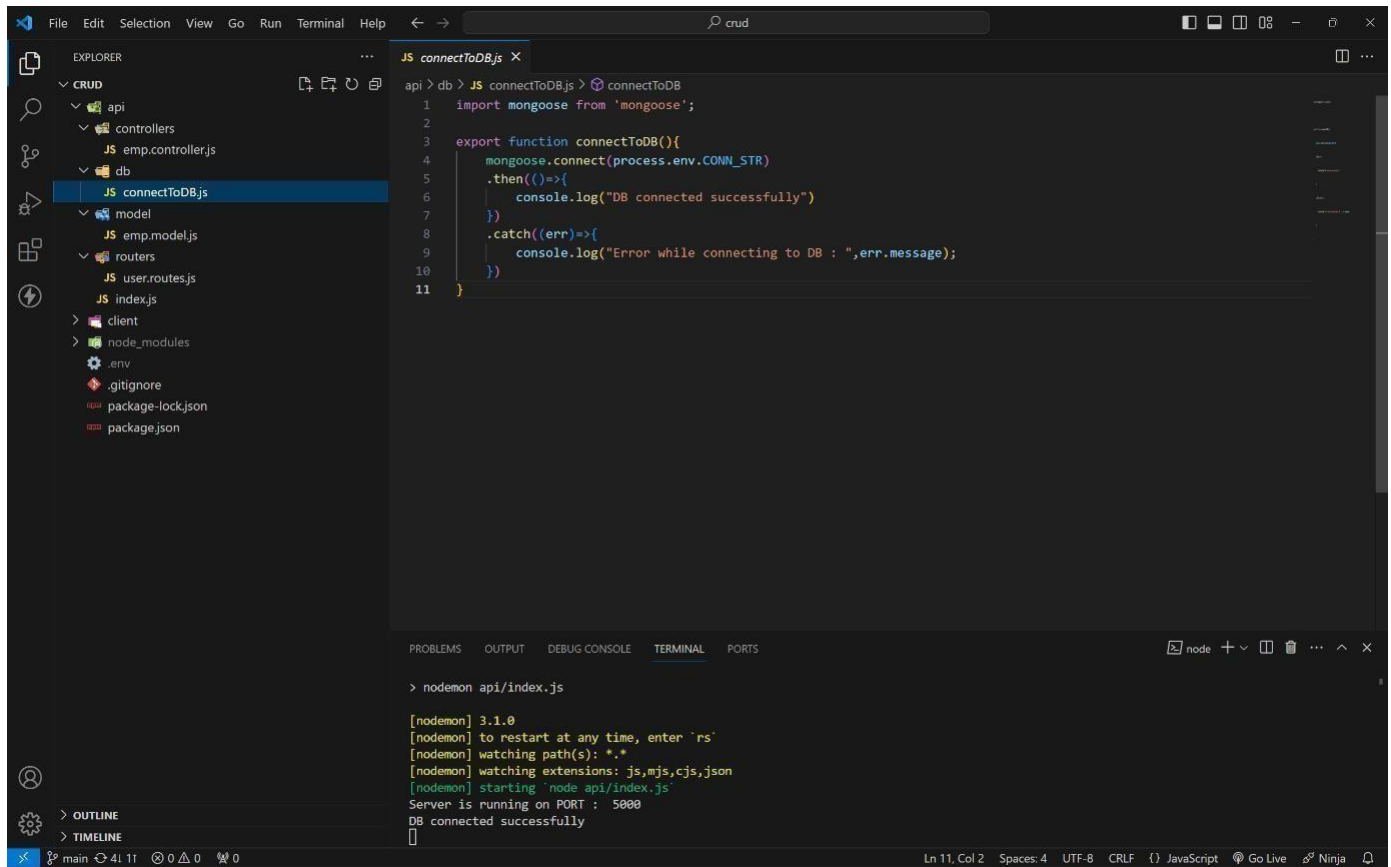


The screenshot displays the Visual Studio Code editor with a project structure on the left and a code editor in the center. The project structure includes folders for 'api', 'client', 'node\_modules', and 'env', along with files like 'package-lock.json' and 'package.json'. The 'api' folder is expanded, showing subfolders 'controllers', 'db', 'model', and 'routers', and files 'emp.controller.js', 'connectToDB.js', 'emp.model.js', 'user.routes.js', and 'index.js'. The 'index.js' file is selected and its code is visible in the editor. The code imports 'path', 'express', 'config', 'connectToDB', and 'userRoute', sets up the application, and listens on port 5000. The terminal at the bottom shows the command 'nodemon api/index.js' and the output of the application, including the message 'Server is running on PORT : 5000' and 'DB connected successfully'.

```
api > JS index.js > ...
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:



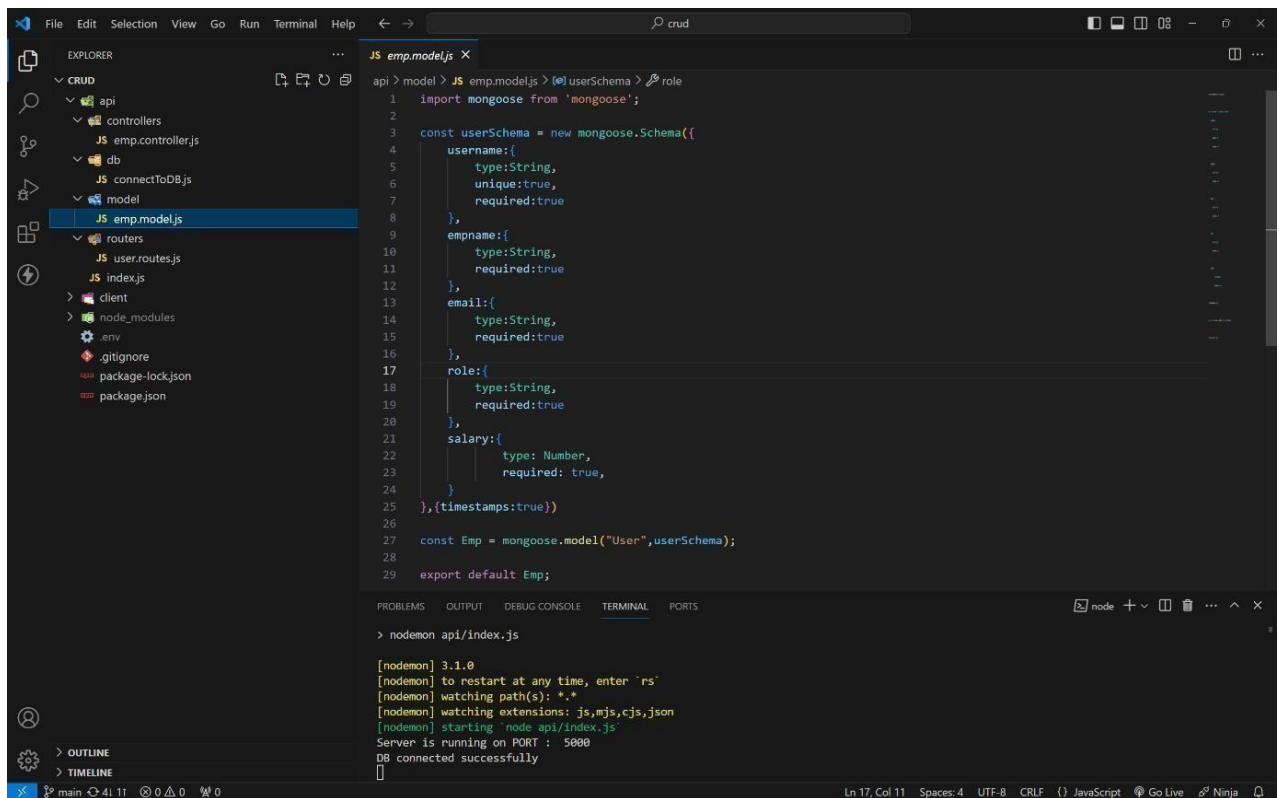
The screenshot shows a VS Code editor with a project structure on the left. The Explorer panel shows a folder named 'crud' containing subfolders 'api', 'client', and 'node\_modules'. The 'api' folder contains 'controllers', 'db', 'model', 'routers', and 'user.routes.js'. The 'db' folder contains 'connectToDB.js'. The 'model' folder contains 'emp.model.js'. The 'routers' folder contains 'user.routes.js'. The 'client' folder contains 'index.js'. The 'node\_modules' folder contains '.env', '.gitignore', 'package-lock.json', and 'package.json'. The main editor shows the file 'connectToDB.js' with the following code:

```
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 '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
```

## MODEL:



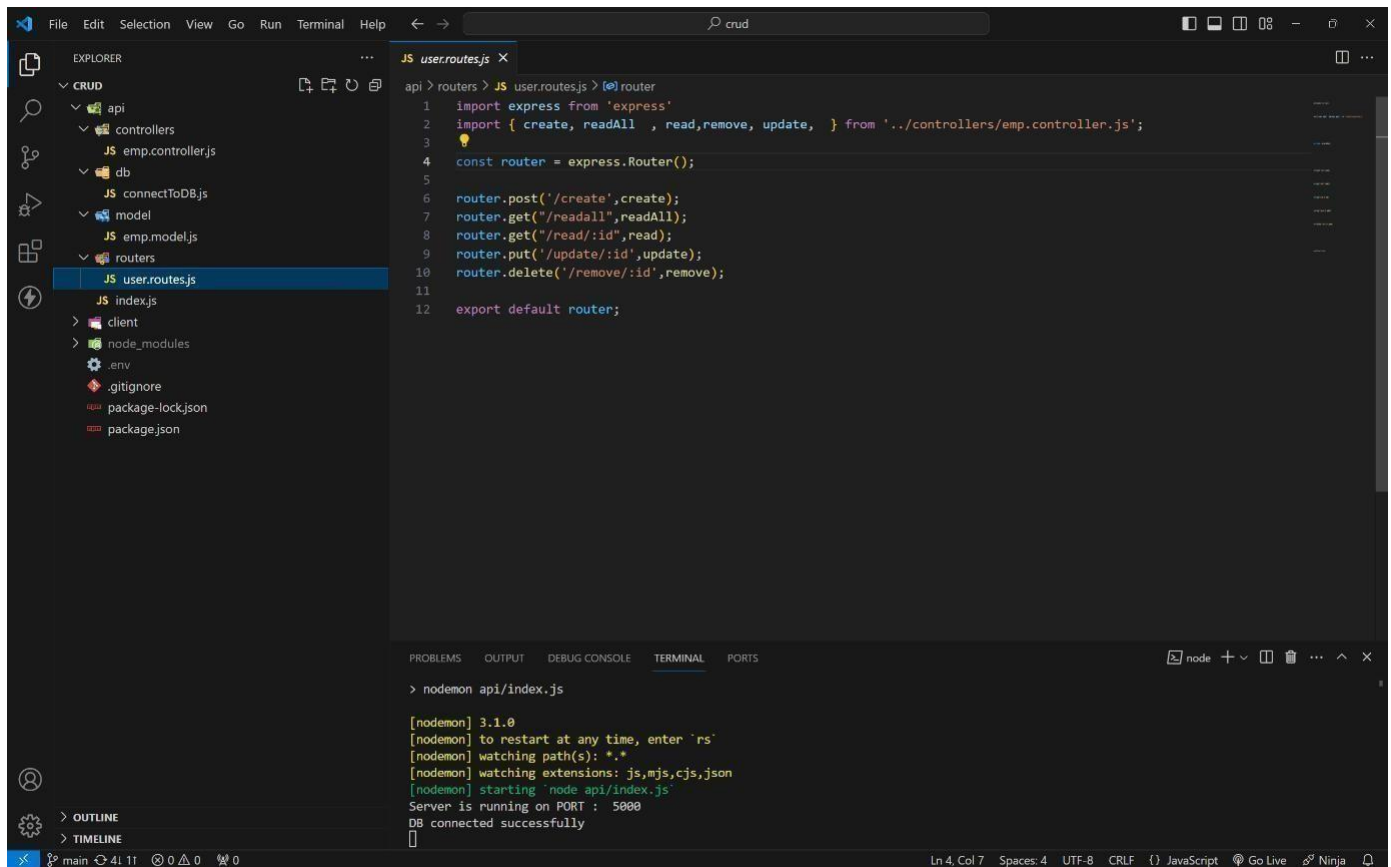
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```
1 import mongoose from 'mongoose';
2
3 const userSchema = new mongoose.Schema({
4   username:{
5     type:String,
6     unique:true,
7     required:true
8   },
9   empname:{
10    type:String,
11    required:true
12  },
13  email:{
14    type:String,
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 '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
```

## ROUTES:



The screenshot shows the VS Code editor with the `user.routes.js` file open. The file contains the following code:

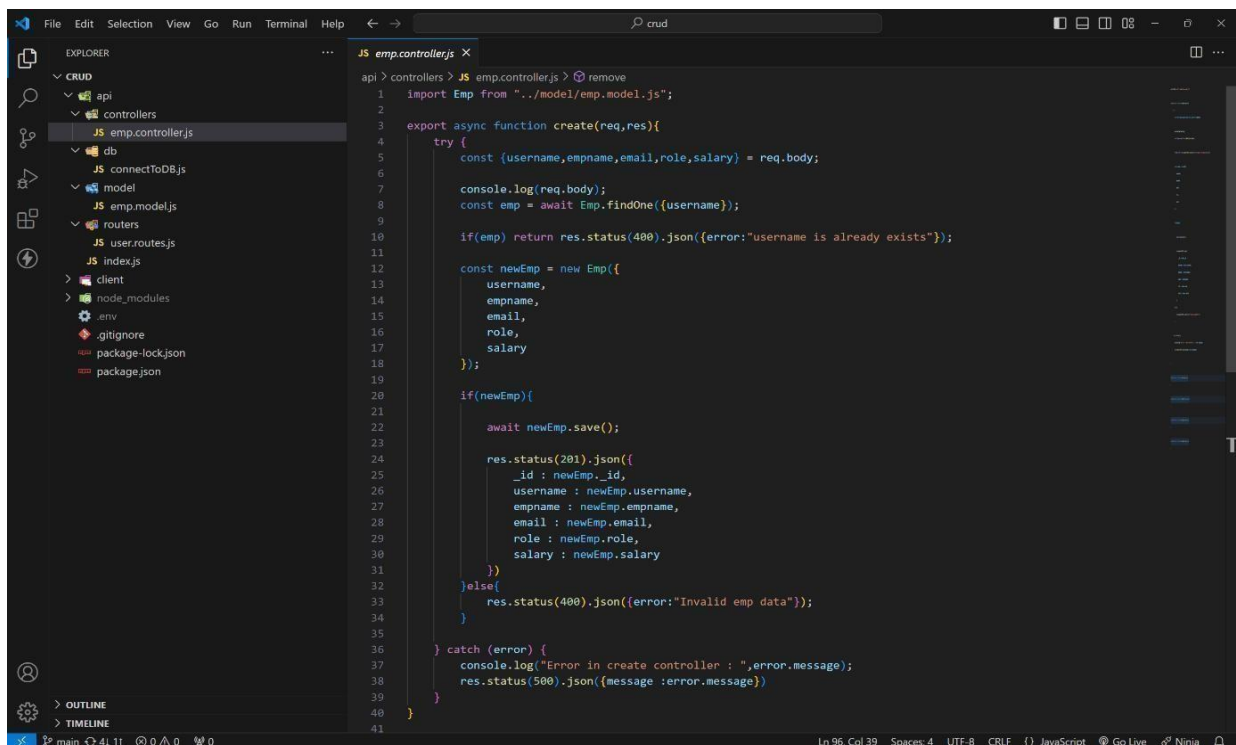
```
api > routers > JS user.routes.js > @ router
1  import express from 'express'
2  import { create, readAll, read, remove, update, } from '../controllers/emp.controller.js';
3
4  const router = express.Router();
5
6  router.post('/create', create);
7  router.get("/readall", readAll);
8  router.get("/read/:id",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

The Explorer panel on the left shows the project structure, with `user.routes.js` selected under the `routes` folder. The Terminal panel at the bottom shows the output of the `nodemon` command:

```
> 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:



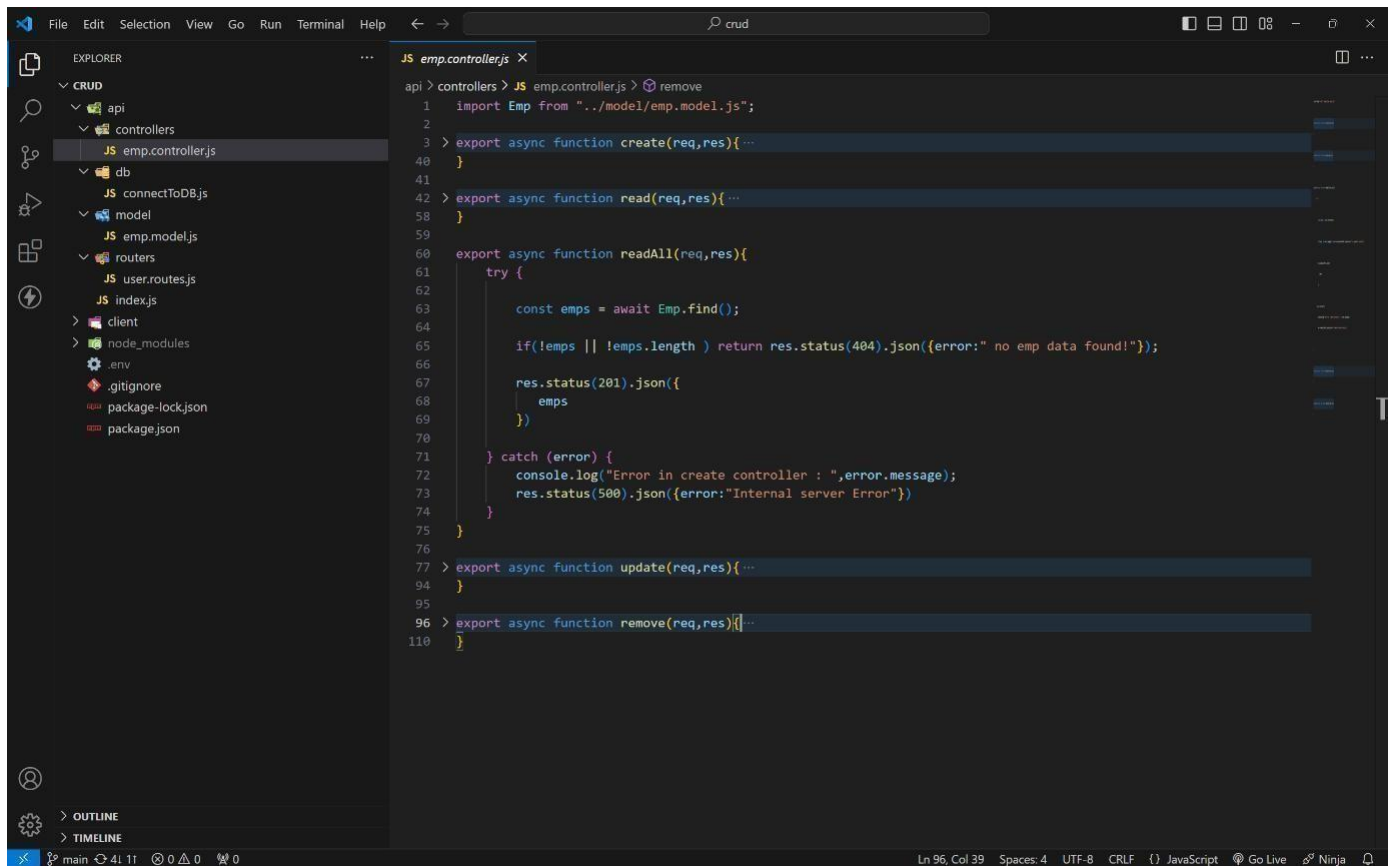
The screenshot shows the VS Code editor with the `emp.controller.js` file open. The file contains the following code:

```
api > controllers > JS emp.controller.js > @ remove
1  import Emp from "../model/emp.model.js";
2
3  export async function create(req,res){
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   catch (error) {
37     console.log("Error in create controller : ",error.message);
38     res.status(500).json({message : error.message});
39   }
40 }
41
```

The Explorer panel on the left shows the project structure, with `emp.controller.js` selected under the `controllers` folder. The Terminal panel at the bottom shows the output of the `nodemon` command:

```
Ln 96, Col 39  Spaces: 4  UTF-8  CRLF  () JavaScript  Go Live  Ninja
```

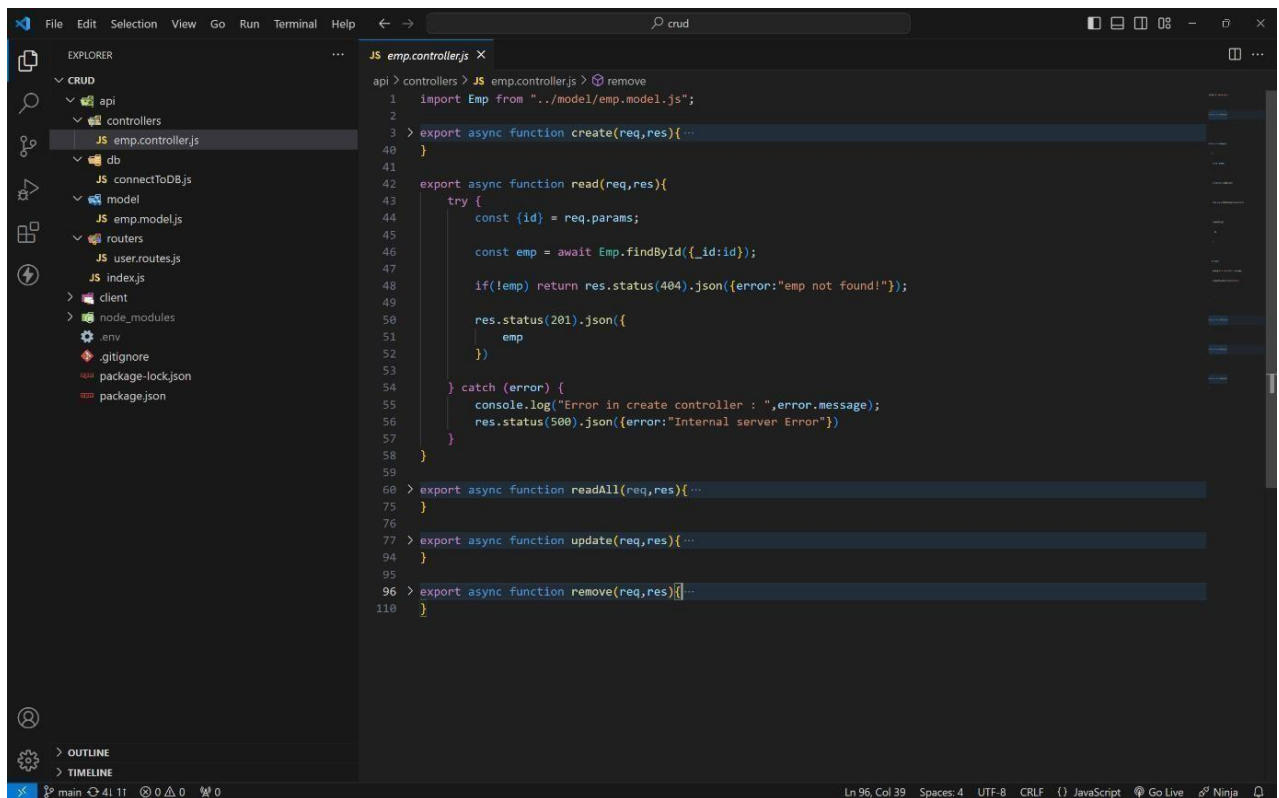
## READALL:



The screenshot shows a VS Code editor with the file explorer on the left and the code editor on the right. The file explorer shows a project structure with a 'crud' folder containing 'api', 'controllers', 'db', 'model', 'routers', and 'index.js'. The 'emp.controller.js' file is selected in the 'controllers' folder. The code editor shows 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   } 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 }
```

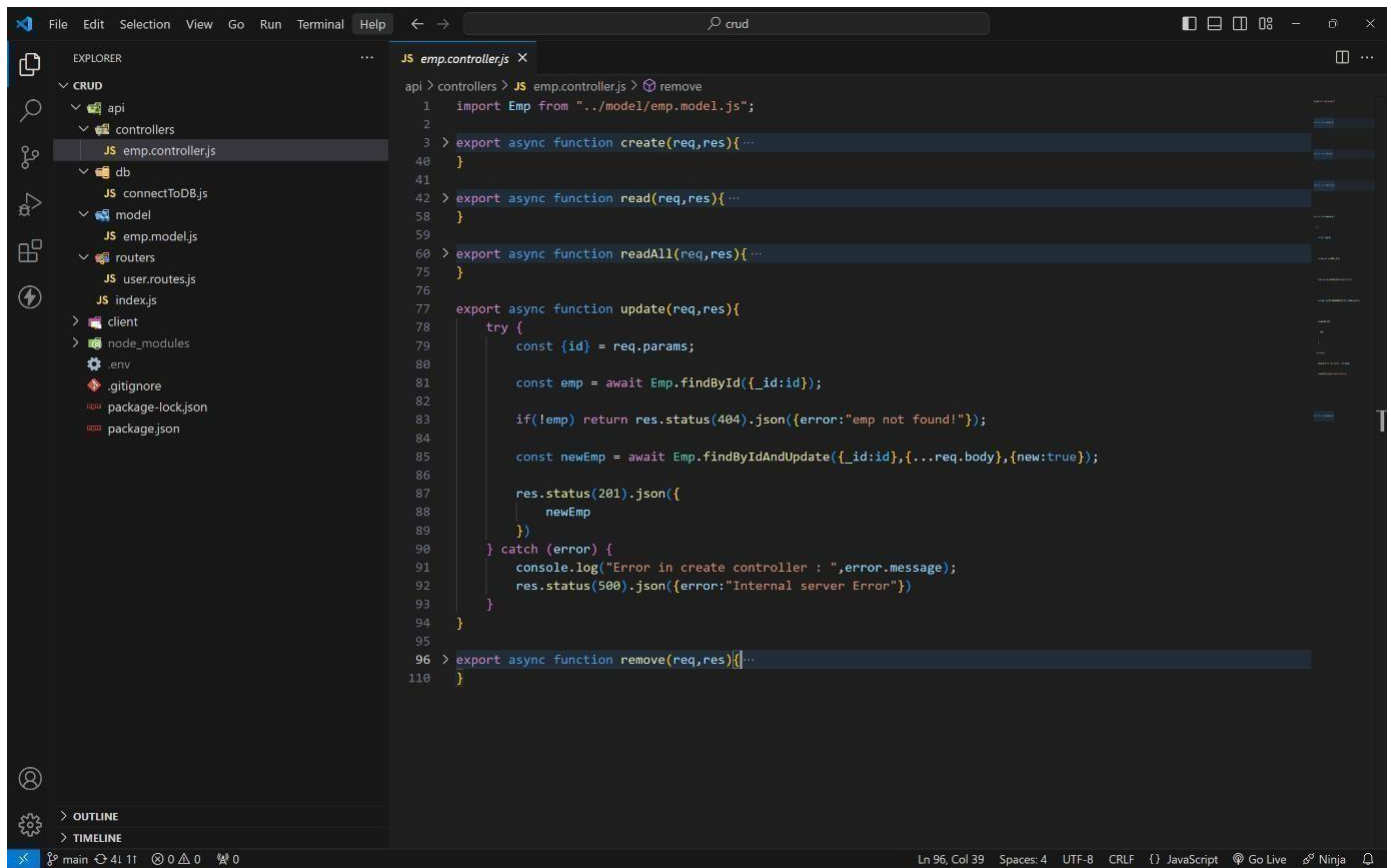
## READONE:



The screenshot shows a VS Code editor with the file explorer on the left and the code editor on the right. The file explorer shows a project structure with a 'crud' folder containing 'api', 'controllers', 'db', 'model', 'routers', and 'index.js'. The 'emp.controller.js' file is selected in the 'controllers' folder. The code editor shows 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   } catch (error) {
54     console.log("Error in create controller : ",error.message);
55     res.status(500).json({error:"Internal server Error"})
56   }
57 }
58
59 > 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 }
```

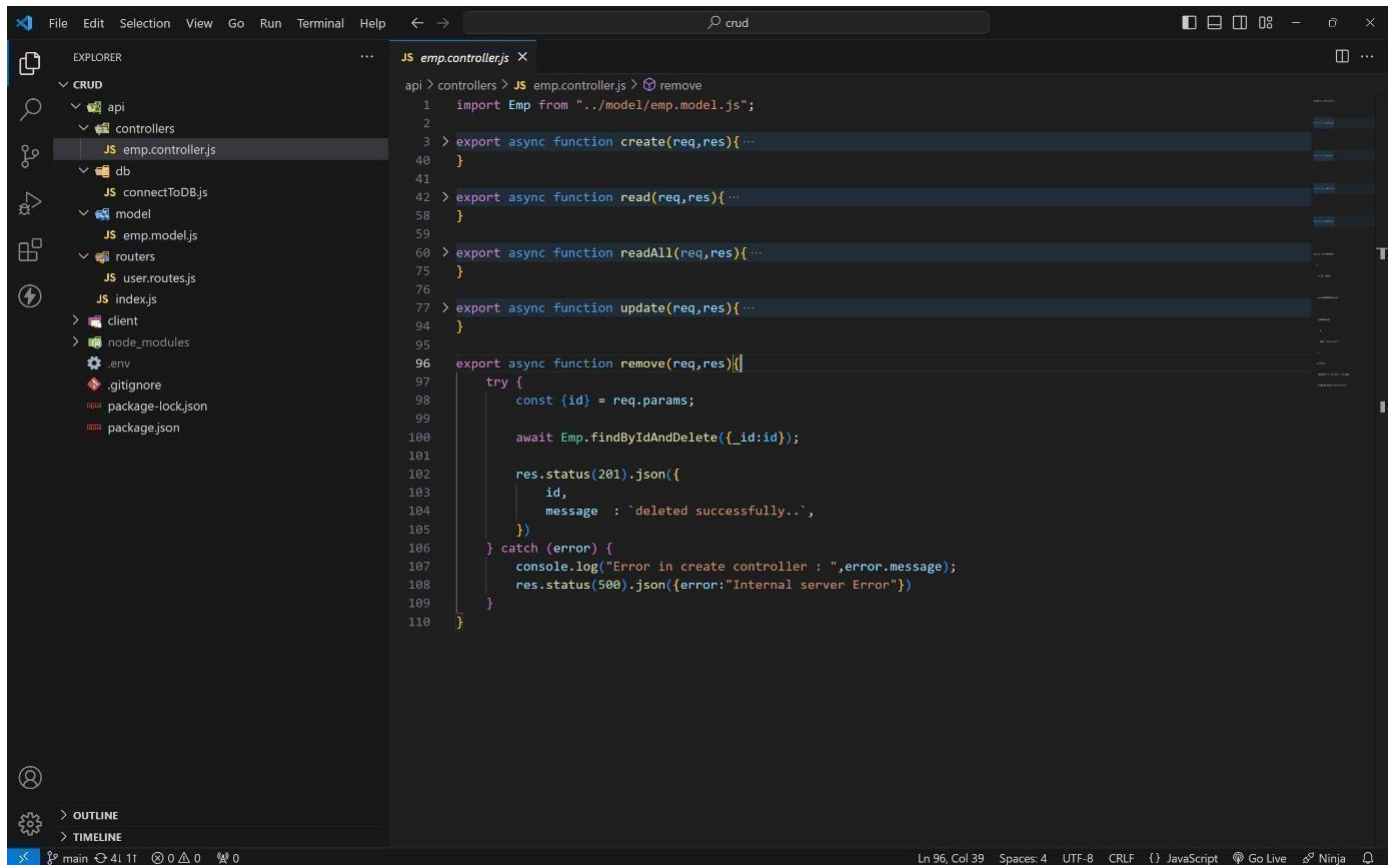
## UPDATE:



The screenshot shows a VS Code editor window with the file explorer on the left and the code editor on the right. The file explorer shows a project structure with a 'crud' folder containing 'api', 'controllers', 'db', 'connectToDB.js', 'model', 'emp.model.js', 'routers', 'user.routes.js', 'index.js', 'client', 'node\_modules', '.env', '.gitignore', 'package-lock.json', and 'package.json'. The 'emp.controller.js' file is selected in the 'controllers' folder. The code editor shows the following JavaScript 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 }
```

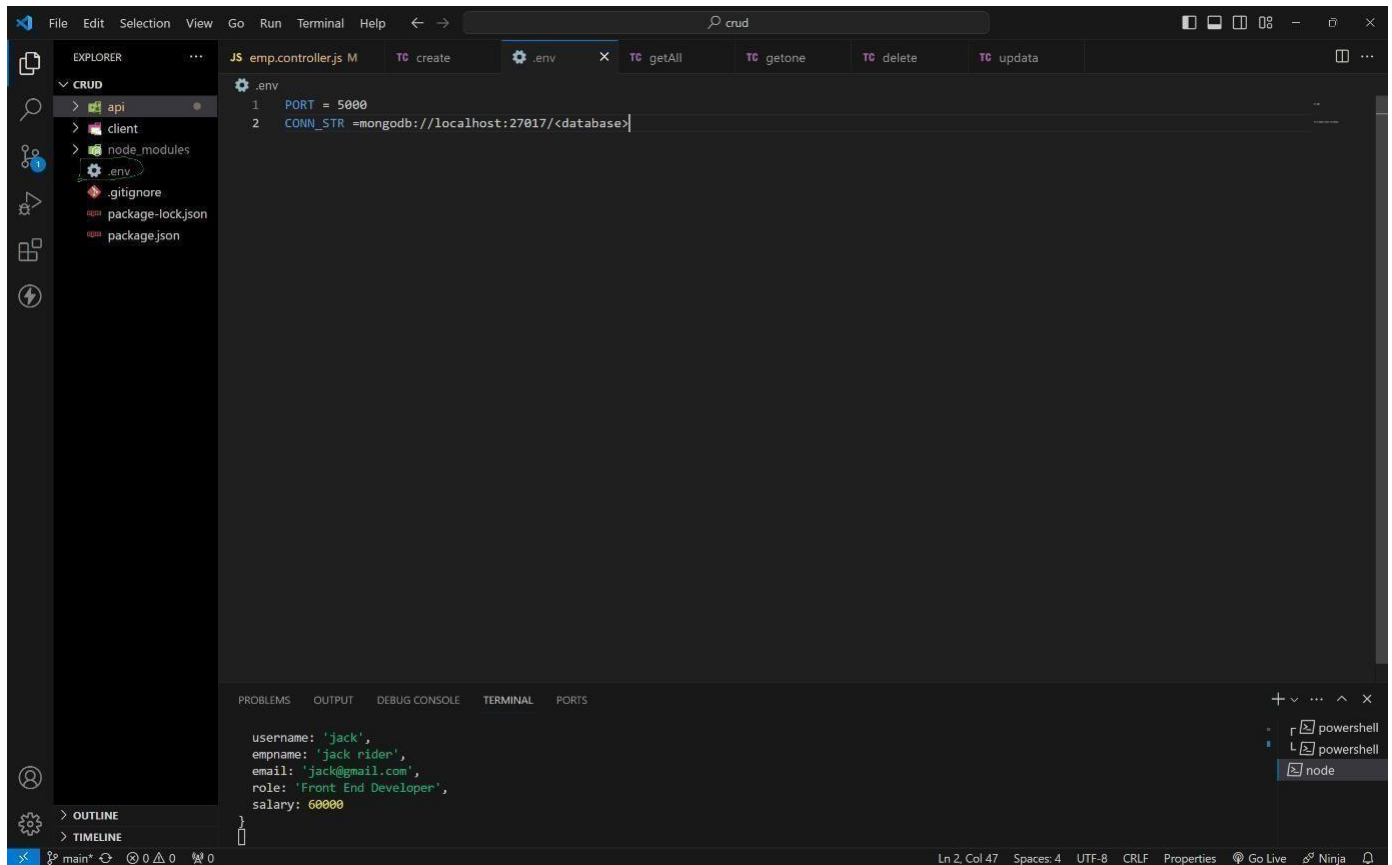
## DELETE:



## 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

/?retry Writes=true&w=majority&appName=Cluster0

**9 . After in terminal (in crud folder as root folder) type this command to 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 :

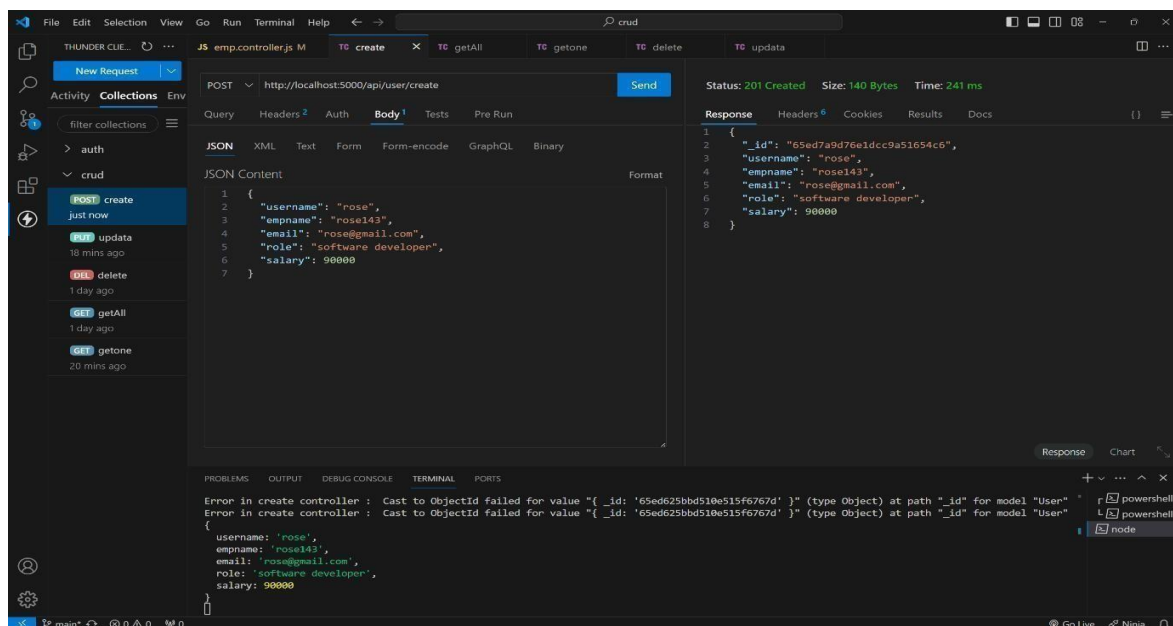
1 . This route is used to delete specific user by passing that user id as a param. method as delete url as

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

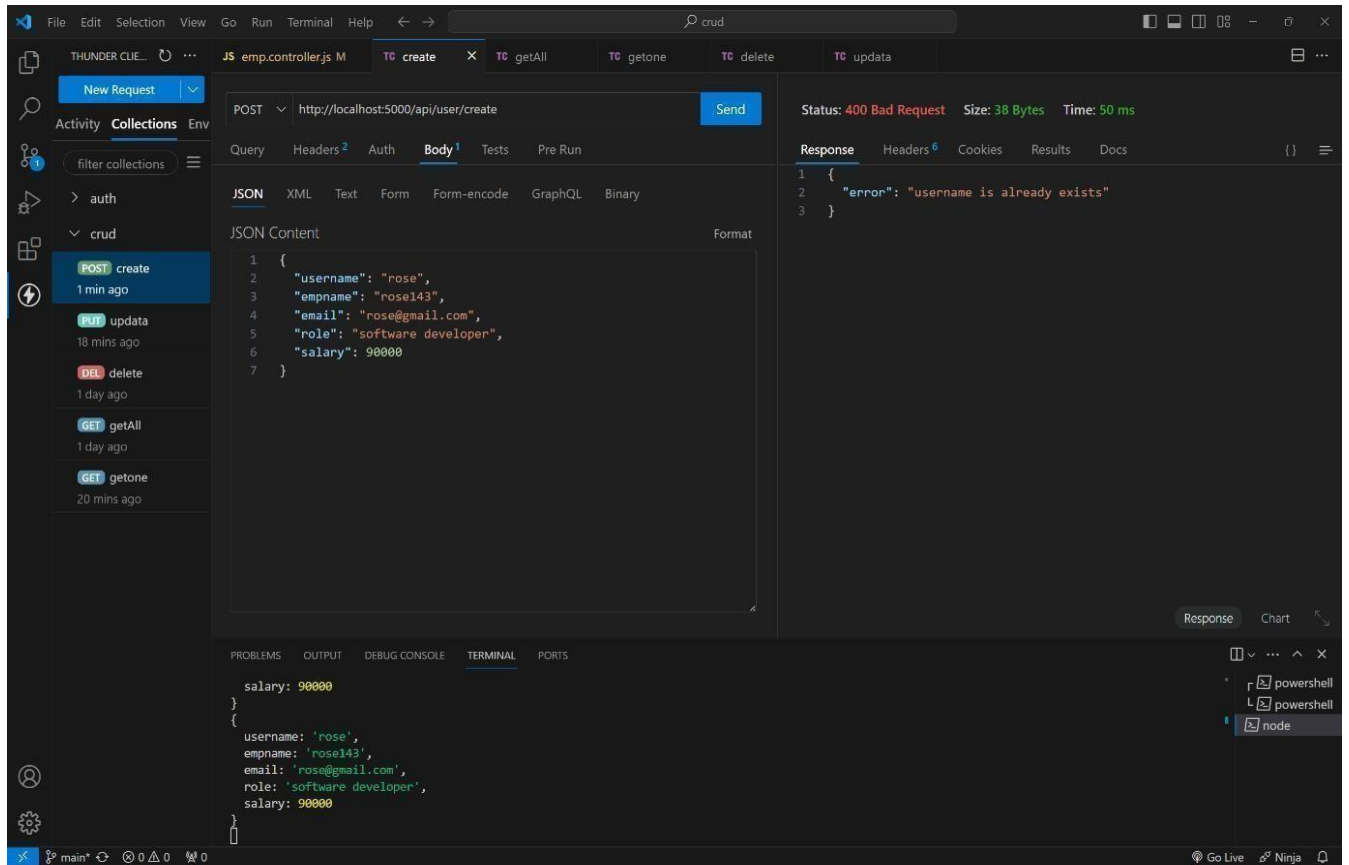
2 . After sending you will deleted successfully as response.

## OUTPUT :

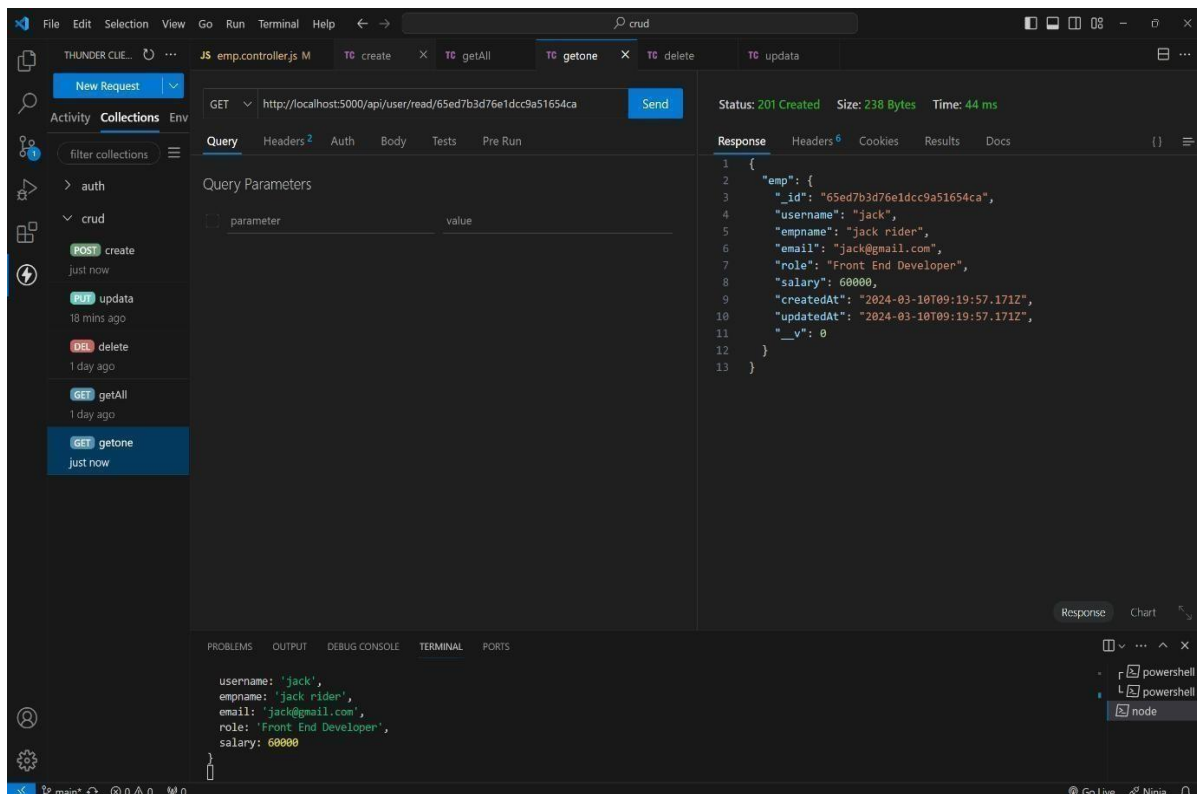
## CREATE A NEW USER :



## CREATING USER WITH EXISTING USERNAEM :



## READONE :



## READ ALL :

Thunder Client interface showing a GET request to `http://localhost:5000/api/user/readall`. The response is a JSON array of two employee objects.

**Query:** `http://localhost:5000/api/user/readall`

**Response:**

```
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 }
```

**Terminal:**

```
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 is a JSON object for the updated employee.

**Query:** `http://localhost:5000/api/user/update/65ed7b3d76e1dcc9a51654ca`

**Body:**

```
1 {
2   "empname": "jack rider",
3   "email": "jack123@gmail.com",
4   "role": "MERN STACK Developer",
5   "salary": 100000
6 }
```

**Response:**

```
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 }
```

**Terminal:**

```
empname: 'jack rider',
email: 'jack@gmail.com',
role: 'Front End Developer',
salary: 60000
}
Error in create controller : Cast to ObjectId failed for value "{ _id: '65ed625bbd510e515f676d' }" (type Object) at path "_id" for model "User"
```

## DELETE :

The screenshot displays the Thunder Client interface with a DELETE request configured and executed. The request is sent to `http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca`. The response is a 201 Created status with a JSON body indicating successful deletion.

**Request Details:**

- Method: DELETE
- URL: `http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca`
- Query Parameters: None

**Response Details:**

- Status: 201 Created
- Size: 68 Bytes
- Time: 111 ms
- Body: 

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

**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
```