

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

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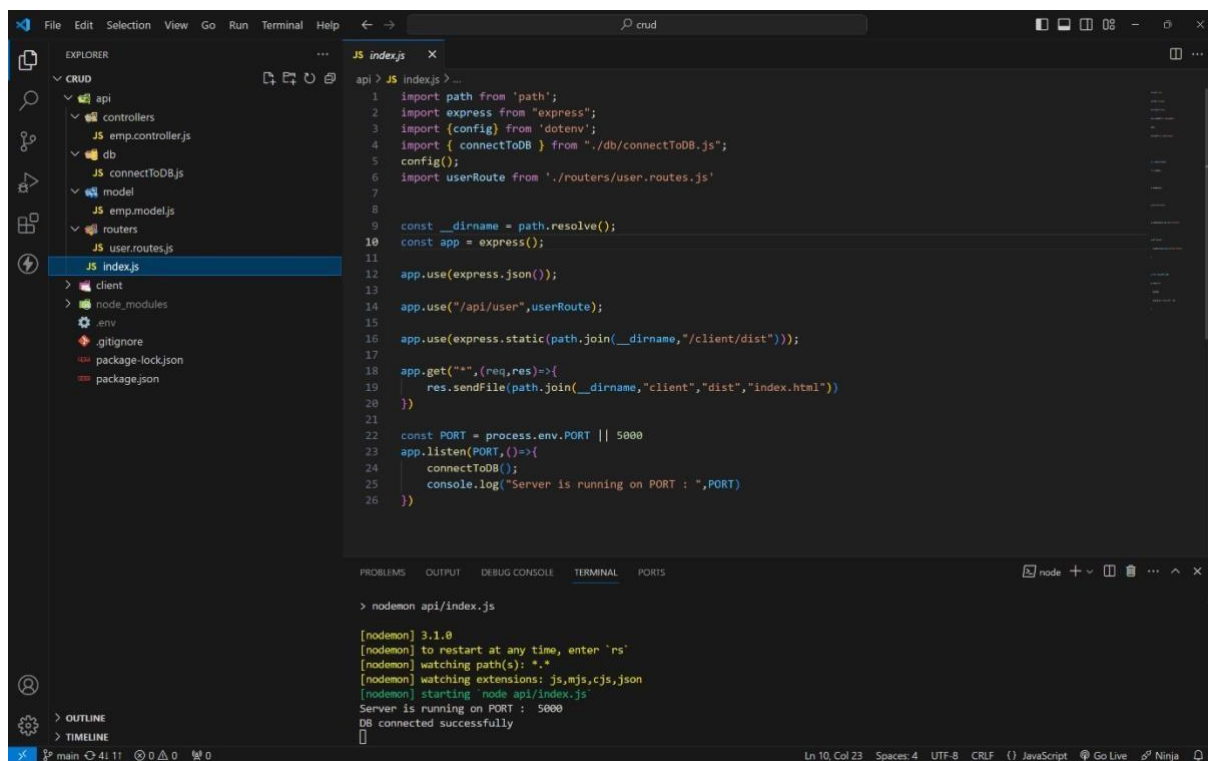
**ROLL NO:**20NN1A0526.

**UNIVERSITY:** Jawaharlal Nehru Technological University

**COLLEGE:** Vignan's Nirula Institute of Technology and Science for Women

**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 a 'crud' folder with subfolders 'controllers', 'db', 'model', and 'routers'. The 'index.js' file is selected in the 'crud' folder. 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 './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 })
```

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

```
> nodemon api/index.js
[nodemon] 2.1.0
[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 :**

```
File Edit Selection View Go Run Terminal Help
crud

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

JS connectToDB.js
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 }
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
node

> 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 :

```
File Edit Selection View Go Run Terminal Help
crud

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

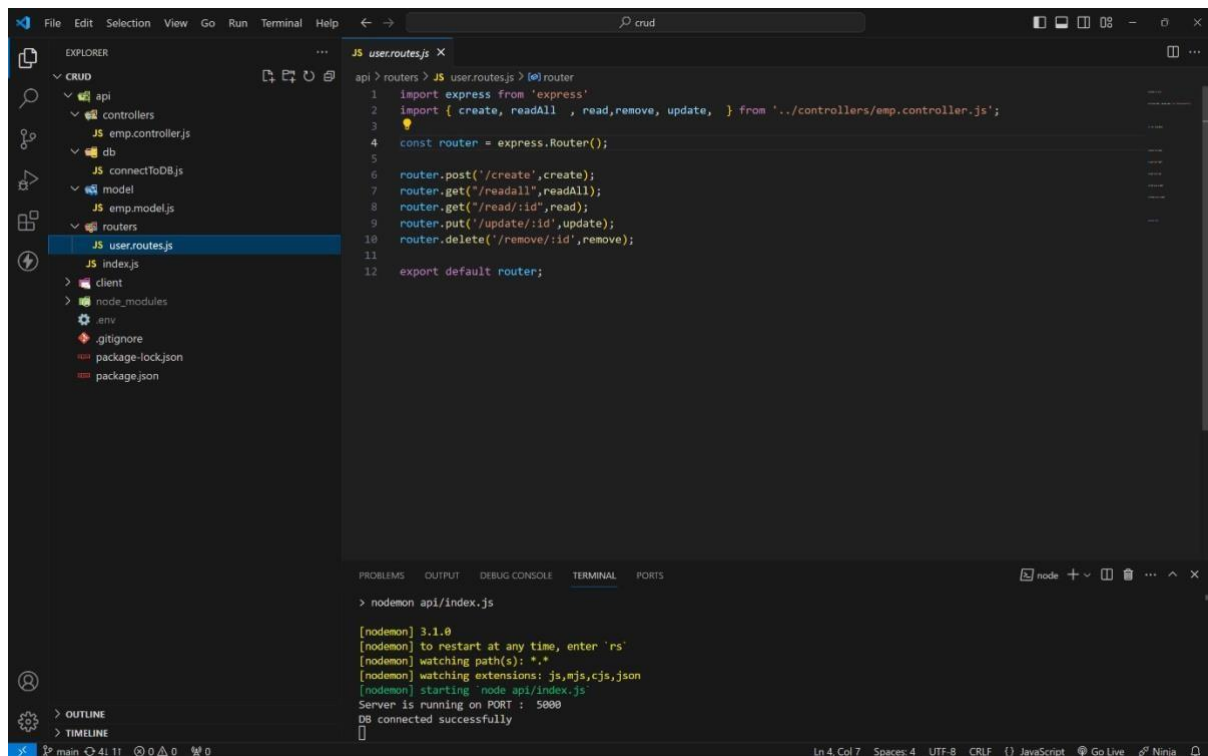
JS emp.model.js
1 import mongoose from 'mongoose';
2
3 const userSchema = new mongoose.Schema({
4   username:{
5     type:String,
6     unique:true,
7     required:true
8   },
9   empname:{
10    type:String,
11    required:true
12  },
13  email:{
14    type:String,
15    required:true
16  },
17  role:{
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;
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
node

> 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, showing 'user.routes.js' selected. The main editor displays the content of 'user.routes.js', which imports 'express' and defines routes for creating, reading, updating, and deleting users. 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.

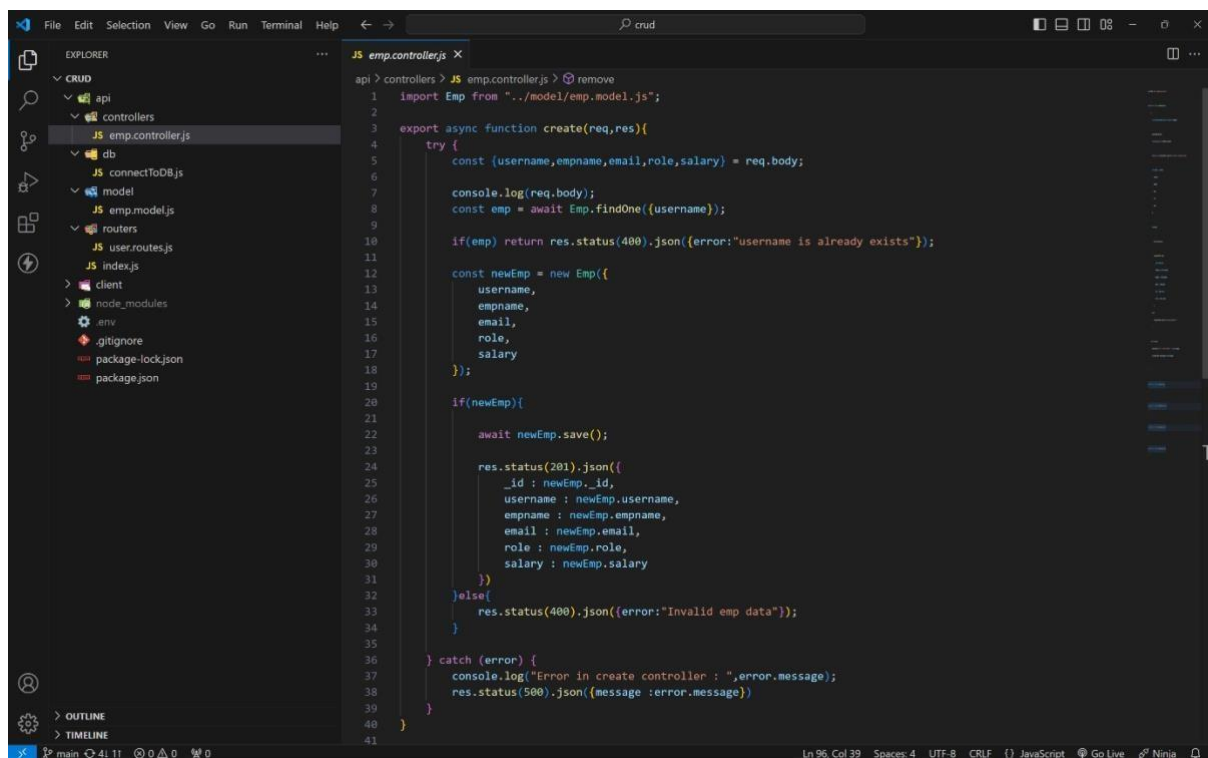
```
api > routers > JS user.routes.js > @ router
1 import express from 'express'
2 import { create, readAll, read, remove, update, } from '../controllers/emp.controller.js';
3
4 const router = express.Router();
5
6 router.post('/create', create);
7 router.get("/readall", readAll);
8 router.get("/read/:id",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

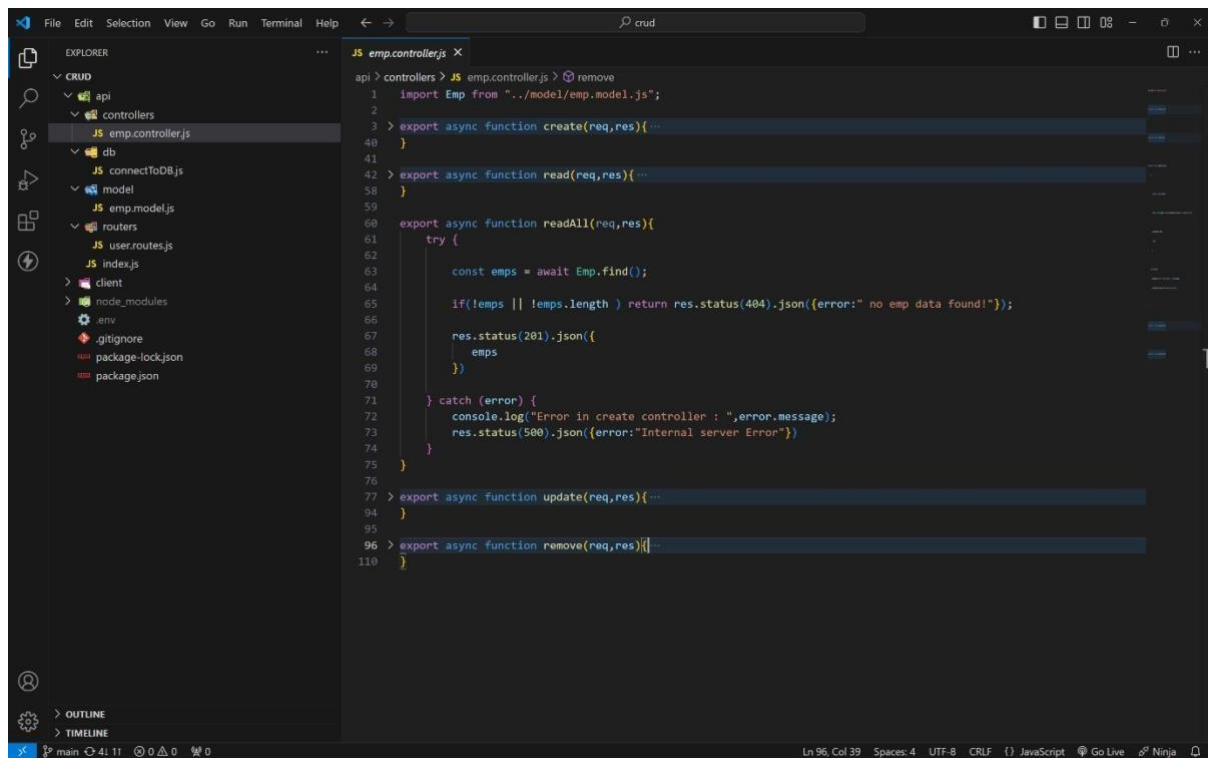
### CREATE :



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, showing 'emp.controller.js' selected. The main editor displays the content of 'emp.controller.js', which imports 'Emp' from the model and defines a 'create' function. The 'create' 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 user and returns a 201 status with the user 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.

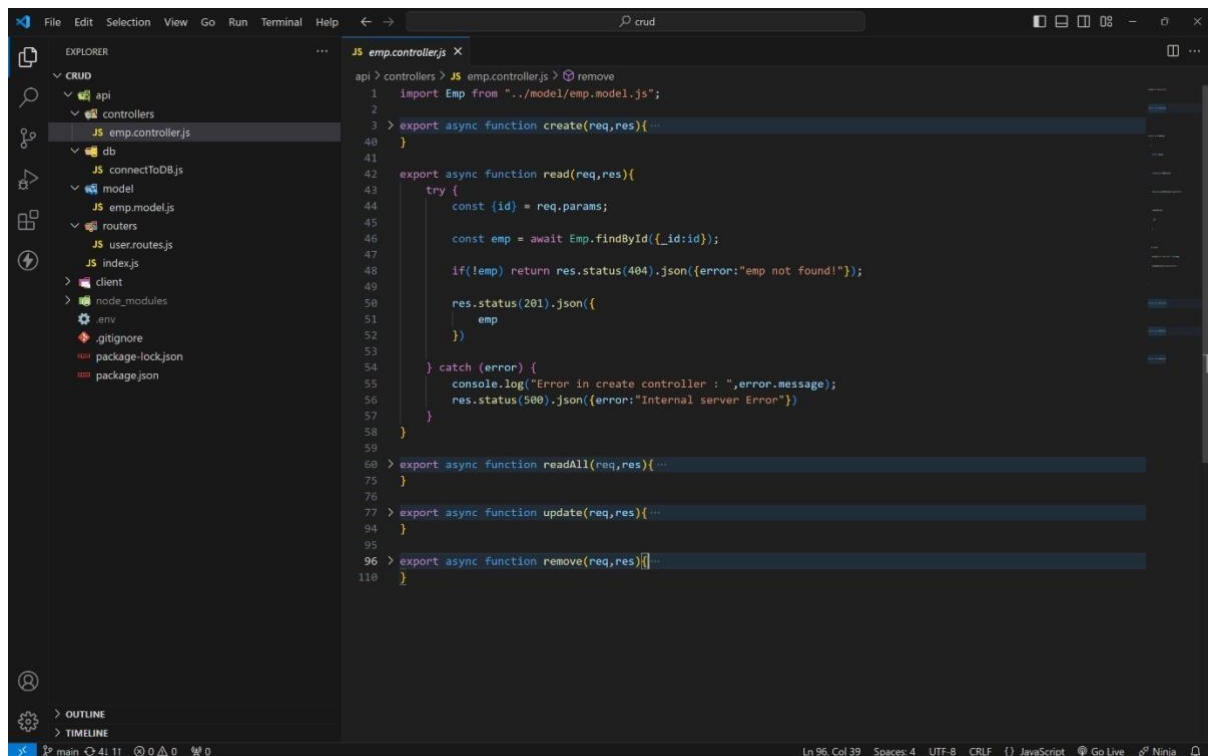
```
api > controllers > JS emp.controller.js > @ remove
1 import Emp from '../model/emp.model.js';
2
3 export async function create(req,res){
4   try {
5     const {username,empname,email,role,salary} = req.body;
6
7     console.log(req.body);
8     const emp = await Emp.findOne({username});
9
10    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  } catch (error) {
36    console.log("Error in create controller : ",error.message);
37    res.status(500).json({message : error.message})
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){...
48  }
41
42 > export async function read(req,res){...
58  }
59
60 export async function readAll(req,res){
61   try {
62
63     const emps = await Emp.find();
64
65     if(!emps || !emps.length) return res.status(404).json({error:" no emp data found!"});
66
67     res.status(201).json({
68       emps
69     })
70
71   } catch (error) {
72     console.log("Error in create controller : ",error.message);
73     res.status(500).json({error:"Internal server Error"})
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){...
48  }
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. The file explorer shows a project structure with folders like 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 }
```

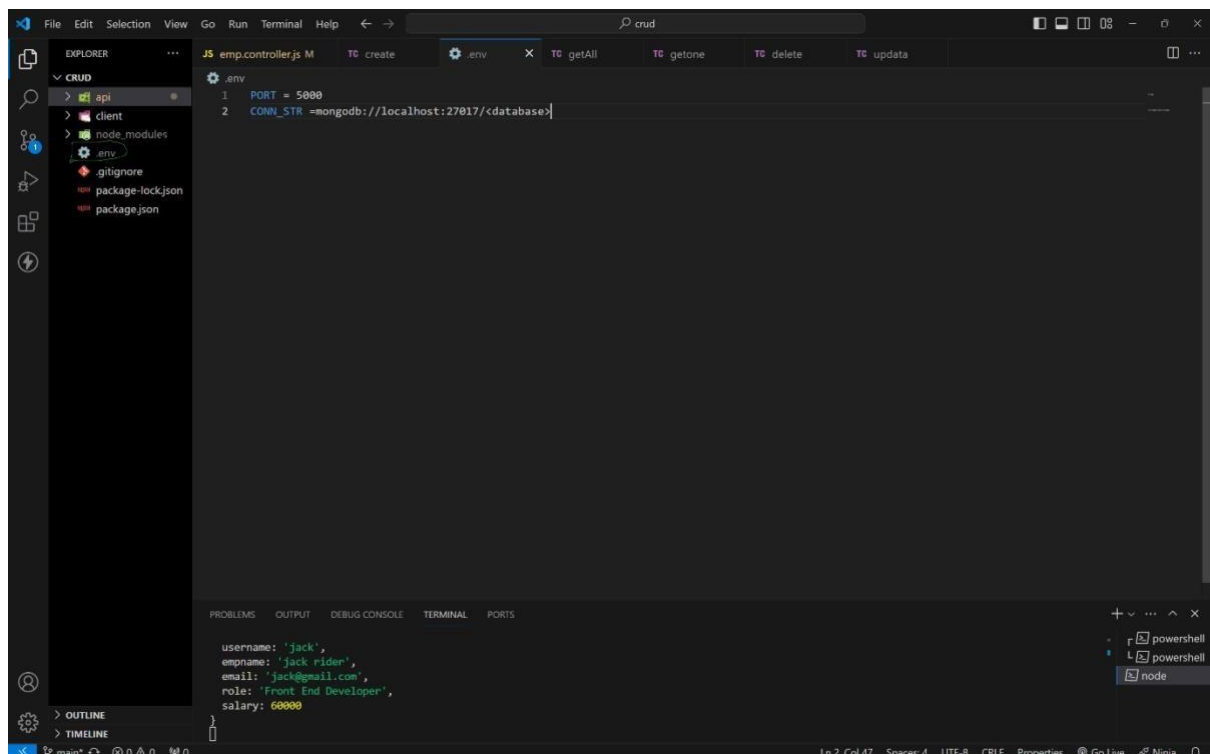
## DELETE :

The screenshot shows the VS Code editor with the file explorer on the left. The file explorer shows a project structure with folders like 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.     git clone <https://github.com/yslikhitha2/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 :**

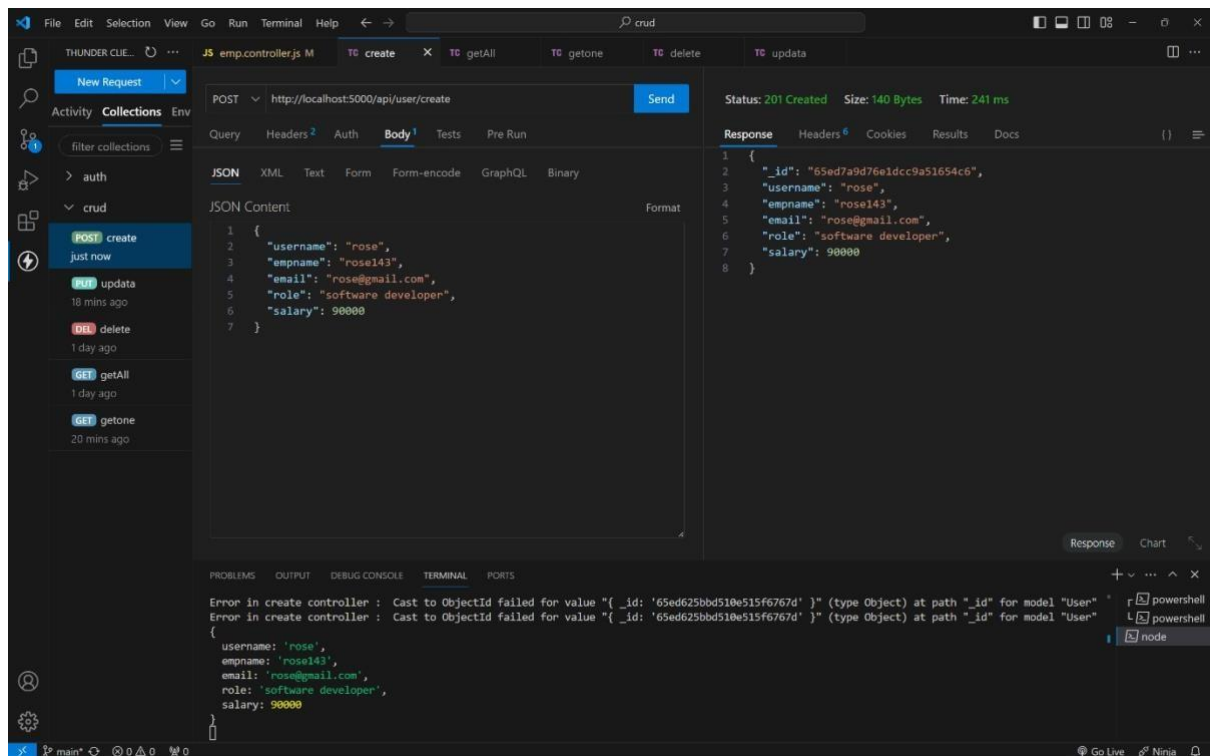
**1 . This route is used to delete specific user by passing that user id as a param. method as delete**

**url as  
`http://localhost:5000/api/user/delete/65ed7b3d76e1dcc9a51654ca`**

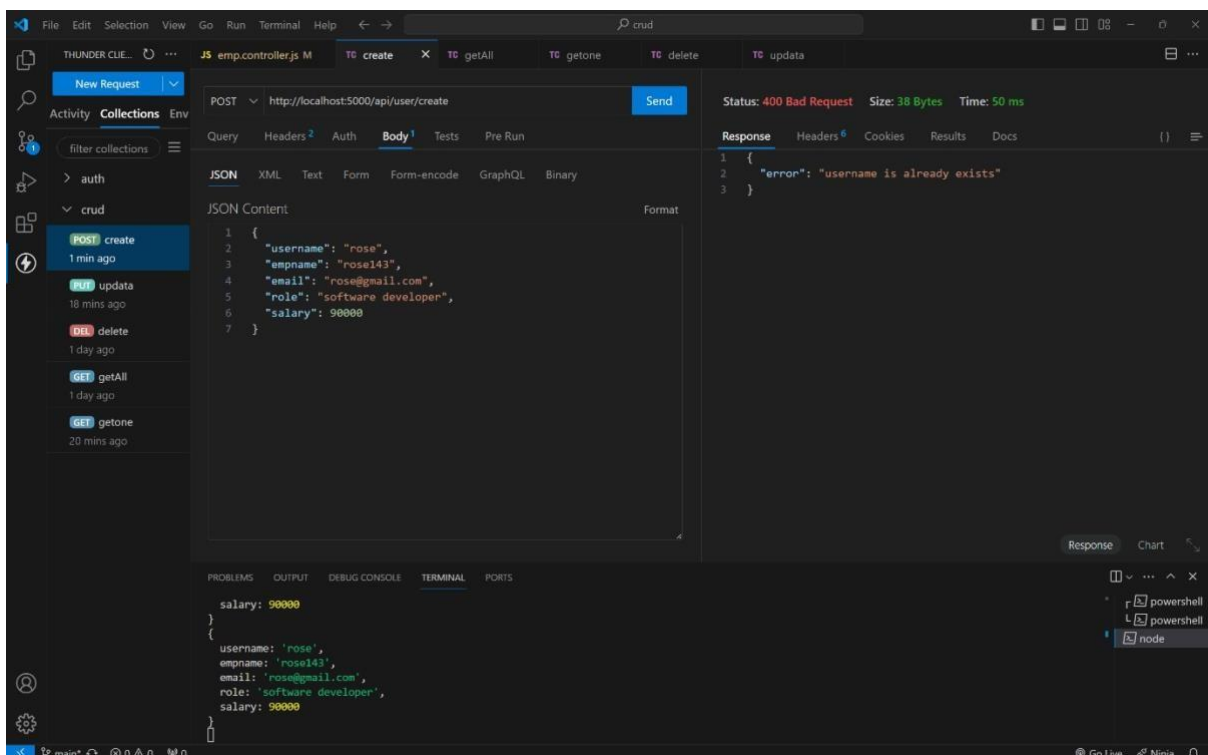
**2 . After sending you will deleted successfully as response.**

#### **OUTPUT :**

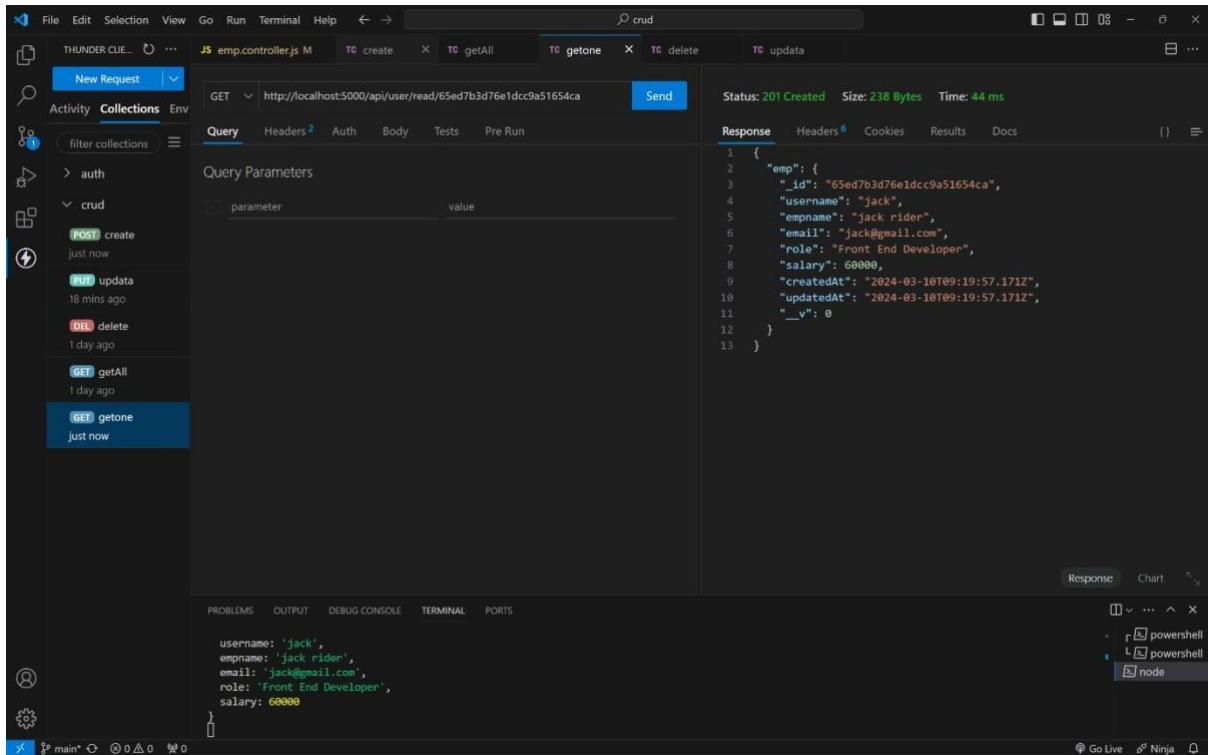
#### **CREATE A NEW USER :**



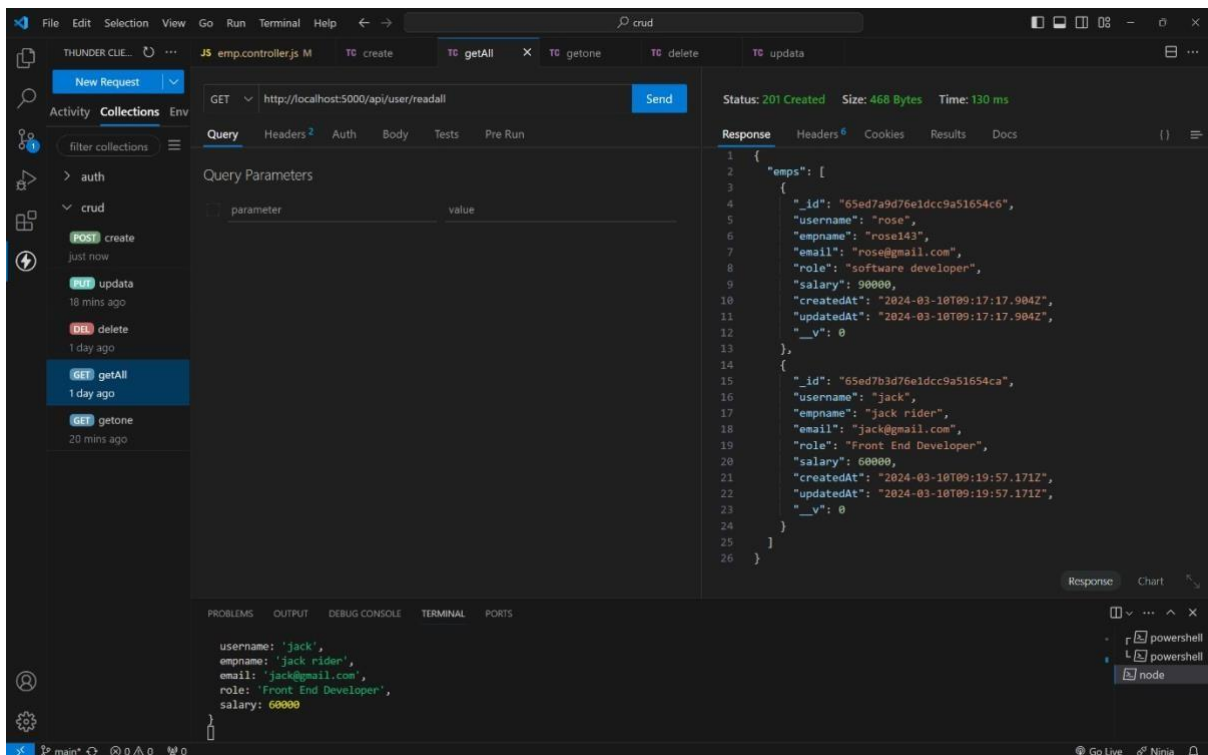
## CREATING USER WITH EXISTING USERNAEM :



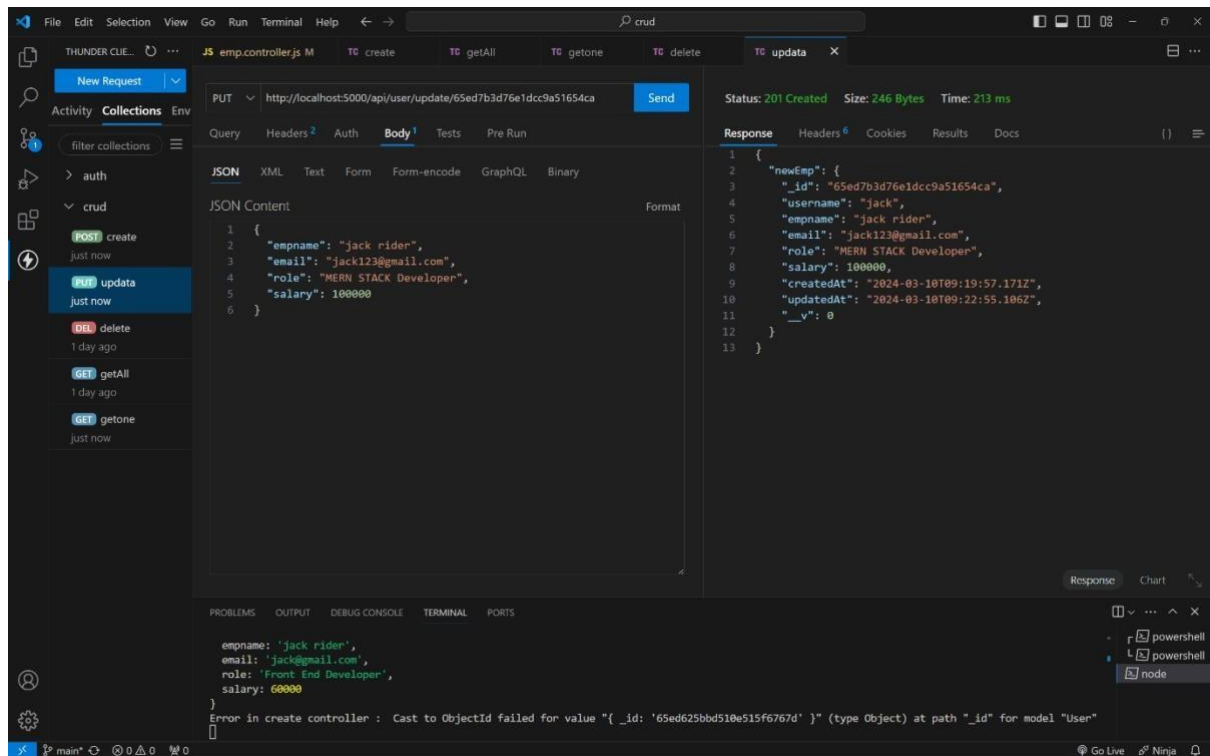
## READONE :



READ ALL :



## UPDATE :



## DELETE :

