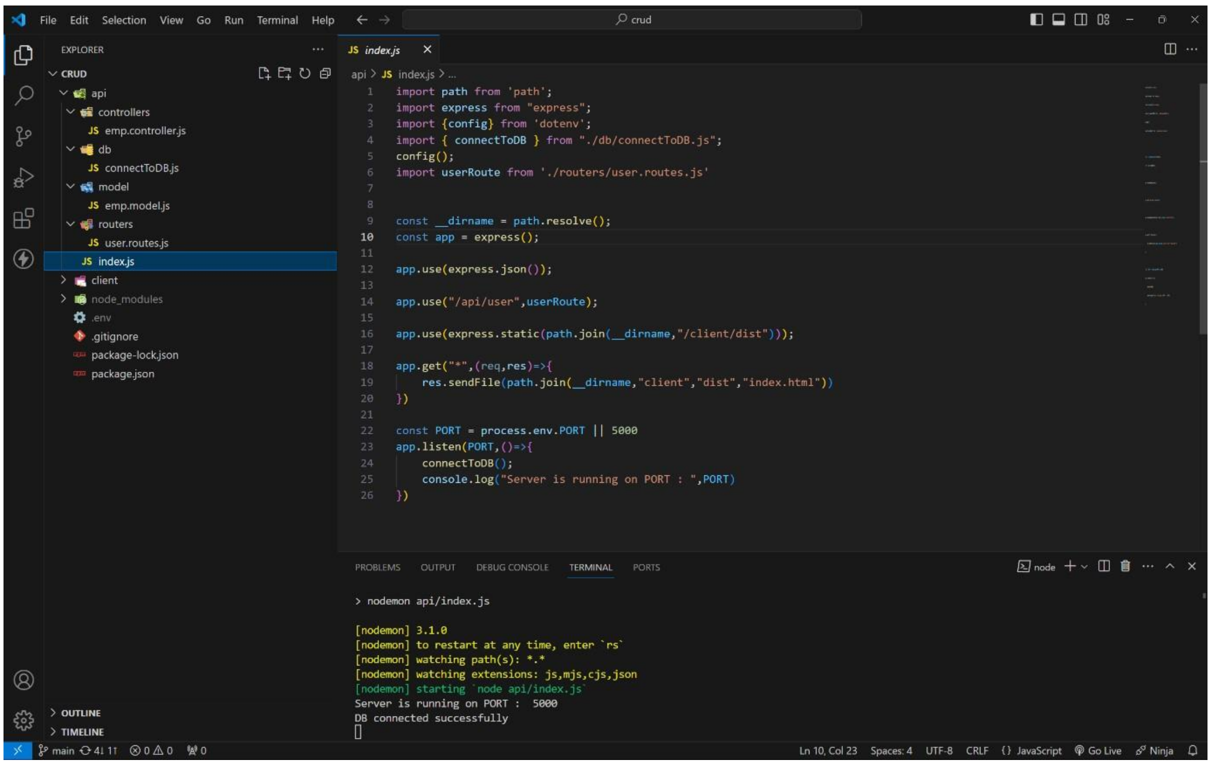
Creating a RESTful API using express.js and creating a database and index in MongoDB

Source Code:

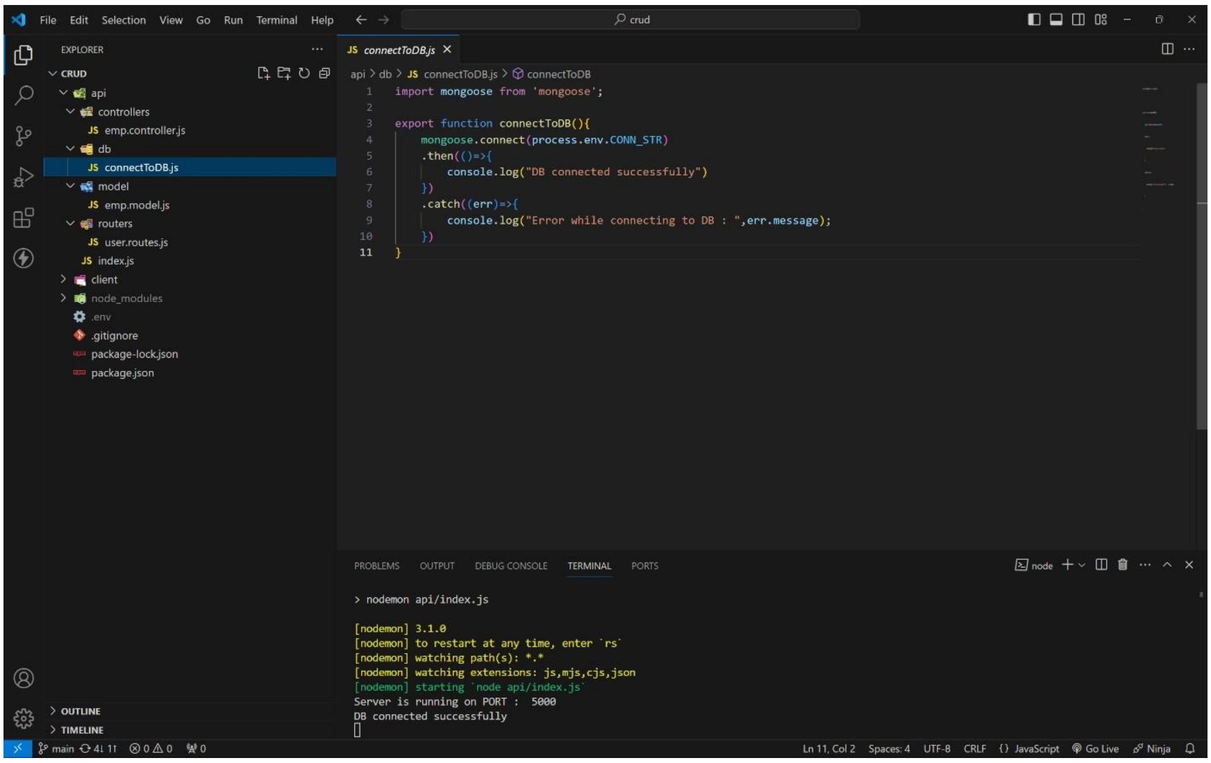
Index.js



```javascript
import path from 'path';
import express from "express";
import {config} from 'dotenv';
import { connectToDB } from "./db/connectToDB.js";
config();
import userRoute from './routers/user.routes.js'


const __dirname = path.resolve();
const app = express();

app.use(express.json());

app.use("/api/user",userRoute);

app.use(express.static(path.join(__dirname,"/client/dist")));

app.get("*",(req,res)=>{
    res.sendFile(path.join(__dirname,"client","dist","index.html"))
})

const PORT = process.env.PORT || 5000
app.listen(PORT,()=>{
    connectToDB();
    console.log("Server is running on PORT : ",PORT)
})
```

```
> 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:



```javascript
import mongoose from 'mongoose';

export function connectToDB(){
    mongoose.connect(process.env.CONN_STR)
    .then(()=>{
        console.log("DB connected successfully")
    })
    .catch((err)=>{
        console.log("Error while connecting to DB : ",err.message);
    })
}
```

```
> nodemon api/index.js

[nodemon] 3.1.0
[nodemon] to restart at any time, enter `rs`
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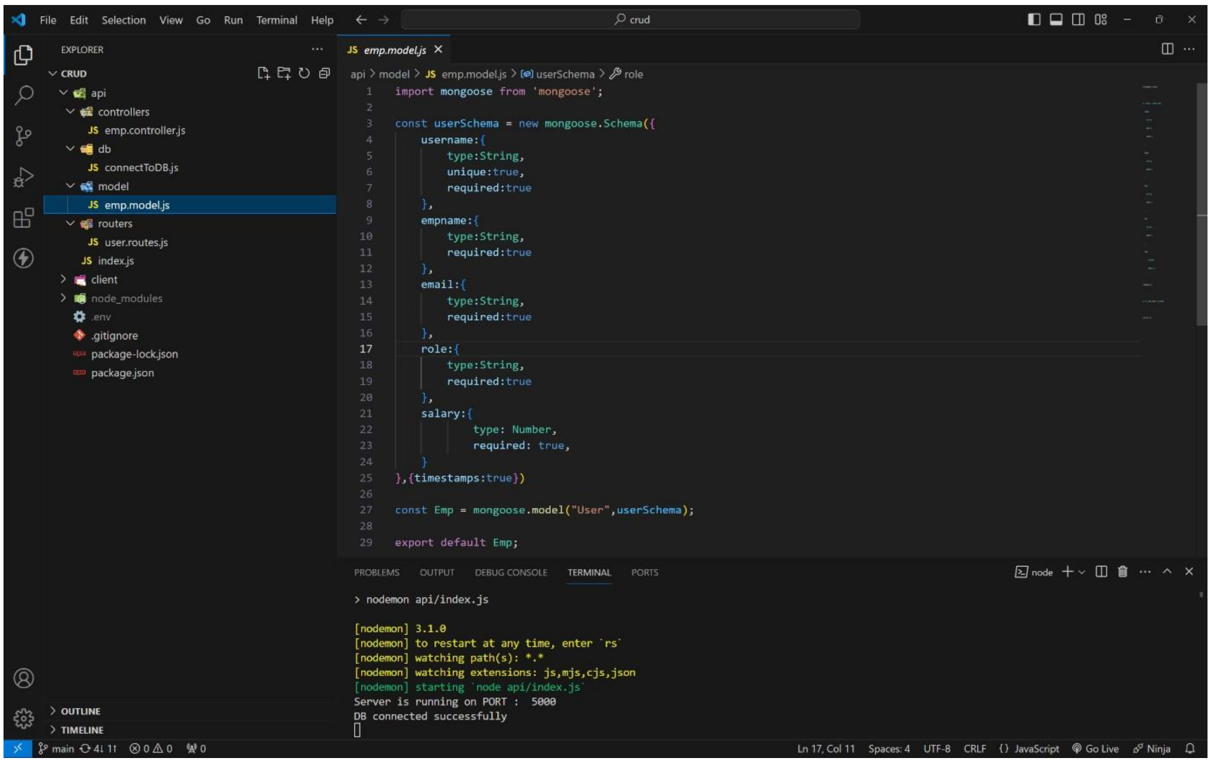
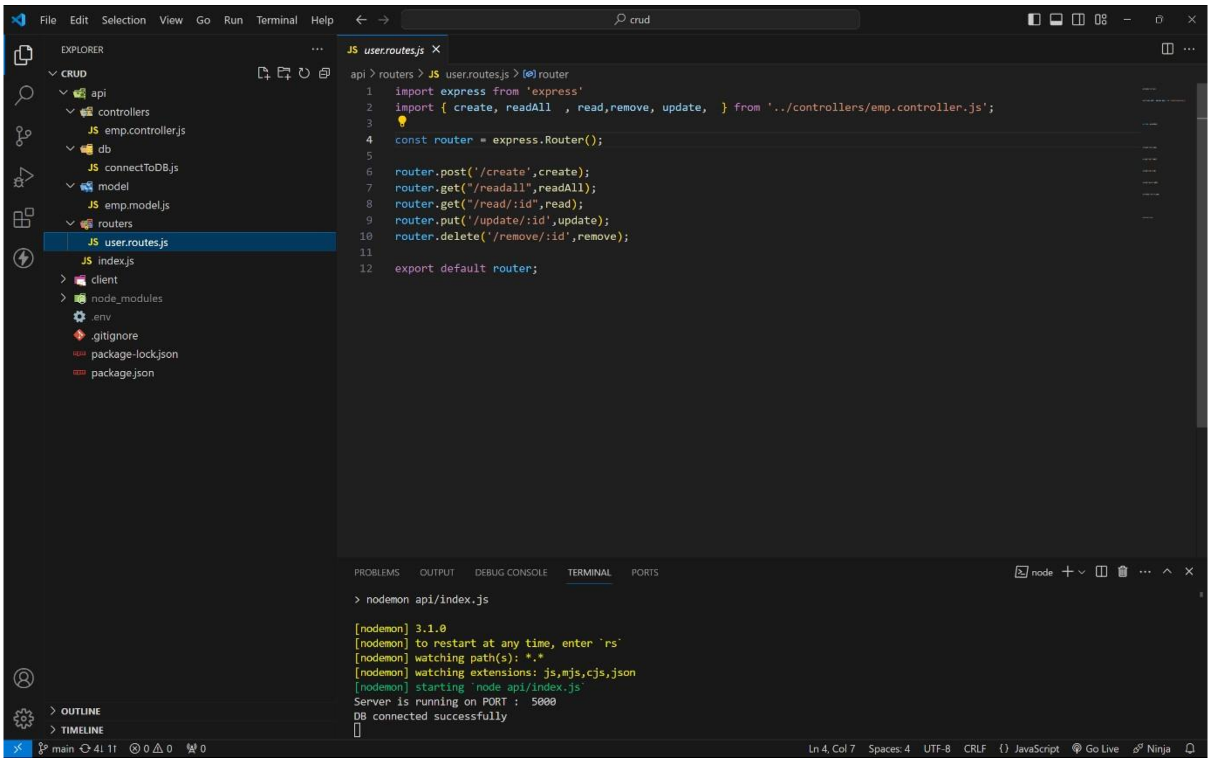
Model:



```javascript
import mongoose from 'mongoose';

const userSchema = new mongoose.Schema({
    username:{
        type:String,
        unique:true,
        required:true
    },
    empname:{
        type:String,
        required:true
    },
    email:{
        type:String,
        required:true
    },
    role:{
        type:String,
        required:true
    },
    salary:{
            type: Number,
            required: true,
    }
},{timestamps:true})

const Emp = mongoose.model("User",userSchema);

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:



```
import express from 'express'
import { create, readAll  , read,remove, update,  } from '../controllers/emp.controller.js';

const router = express.Router();

router.post('/create',create);
router.get("/readall",readAll);
router.get("/read/:id",read);
router.put('/update/:id',update);
router.delete('/remove/:id',remove);

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`
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DB connected successfully
```
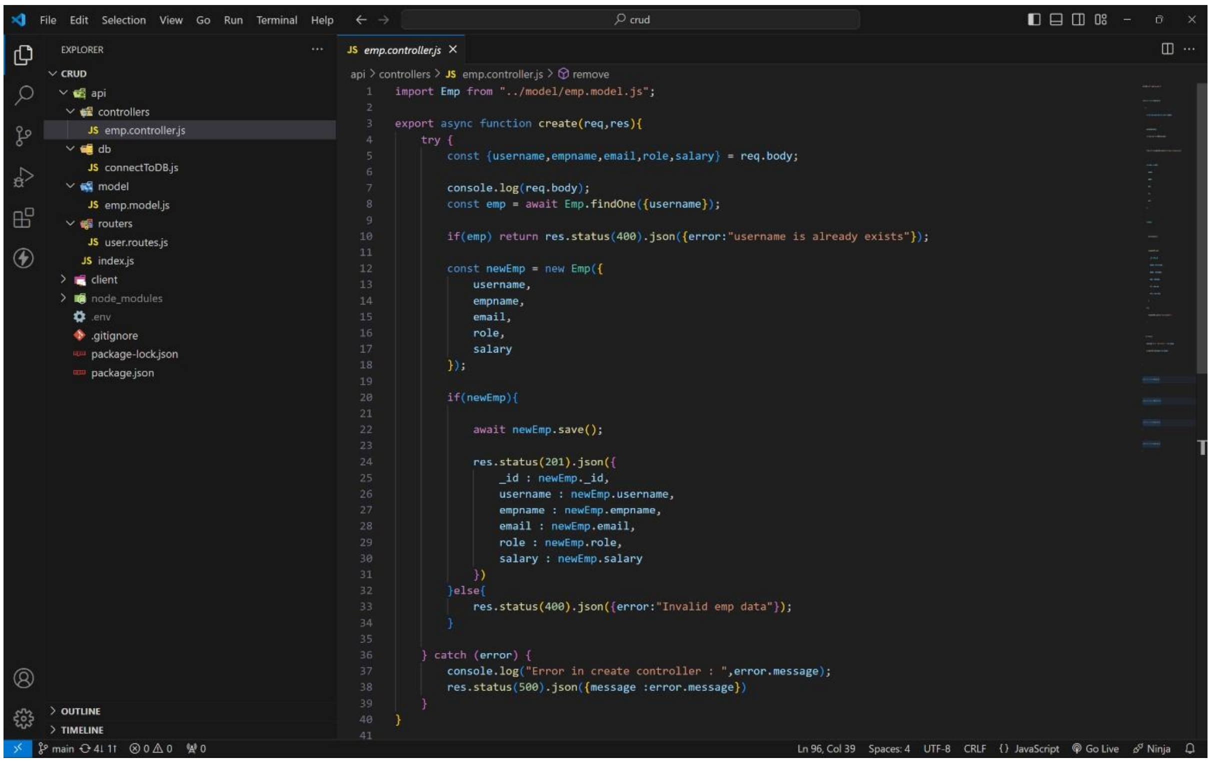
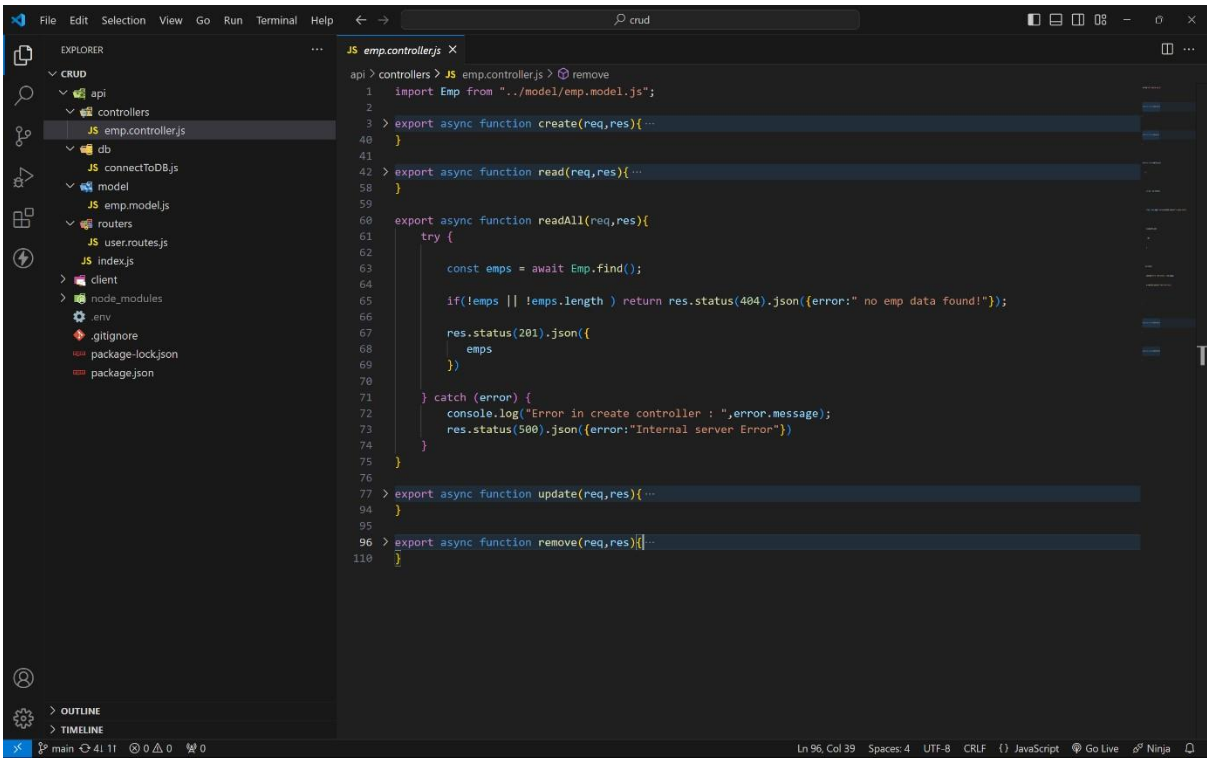

Controllers:

CREATE:



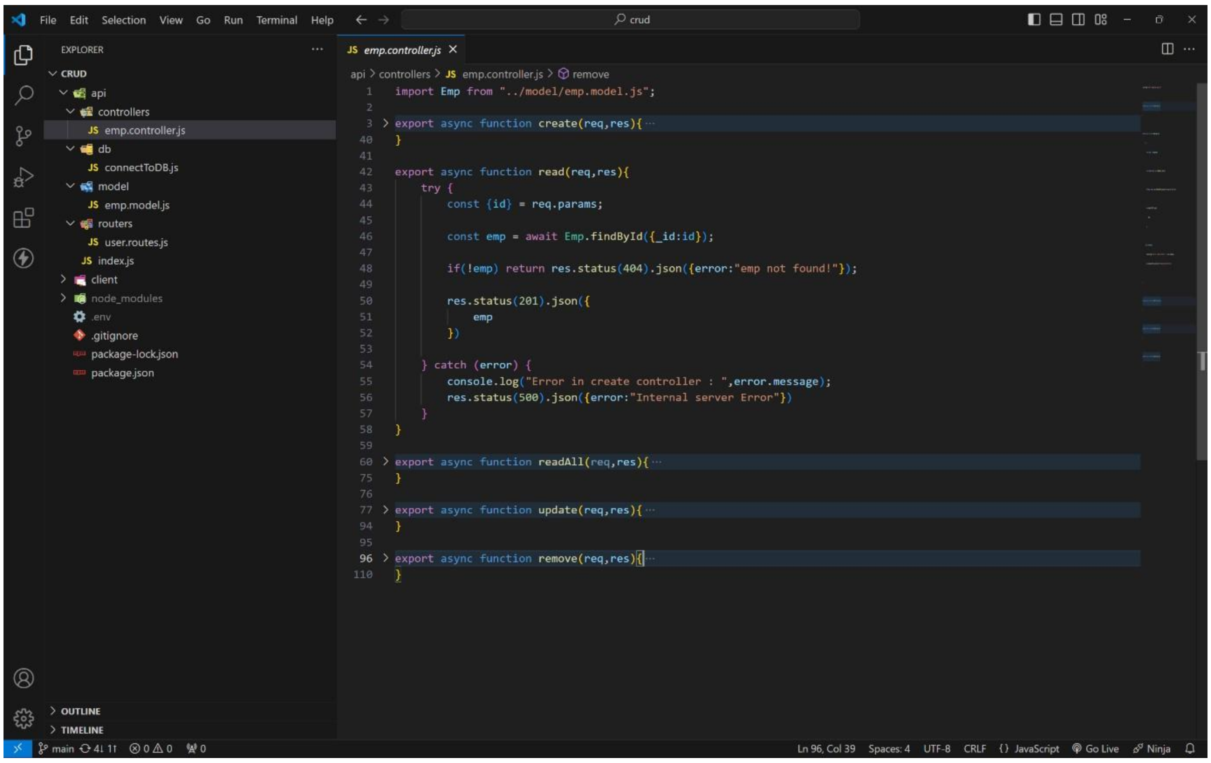
```
import Emp from "../model/emp.model.js";

export async function create(req,res){
    try {
        const {username,empname,email,role,salary} = req.body;

        console.log(req.body);
        const emp = await Emp.findOne({username});

        if(emp) return res.status(400).json({error:"username is already exists"});

        const newEmp = new Emp({
            username,
            empname,
            email,
            role,
            salary
        });

        if(newEmp){

            await newEmp.save();

            res.status(201).json({
                _id : newEmp._id,
                username : newEmp.username,
                empname : newEmp.empname,
                email : newEmp.email,
                role : newEmp.role,
                salary : newEmp.salary
            })
        }else{
            res.status(400).json({error:"Invalid emp data"});
        }

    } catch (error) {
        console.log("Error in create controller : ",error.message);
        res.status(500).json({message :error.message})
    }
}
```

READALL:



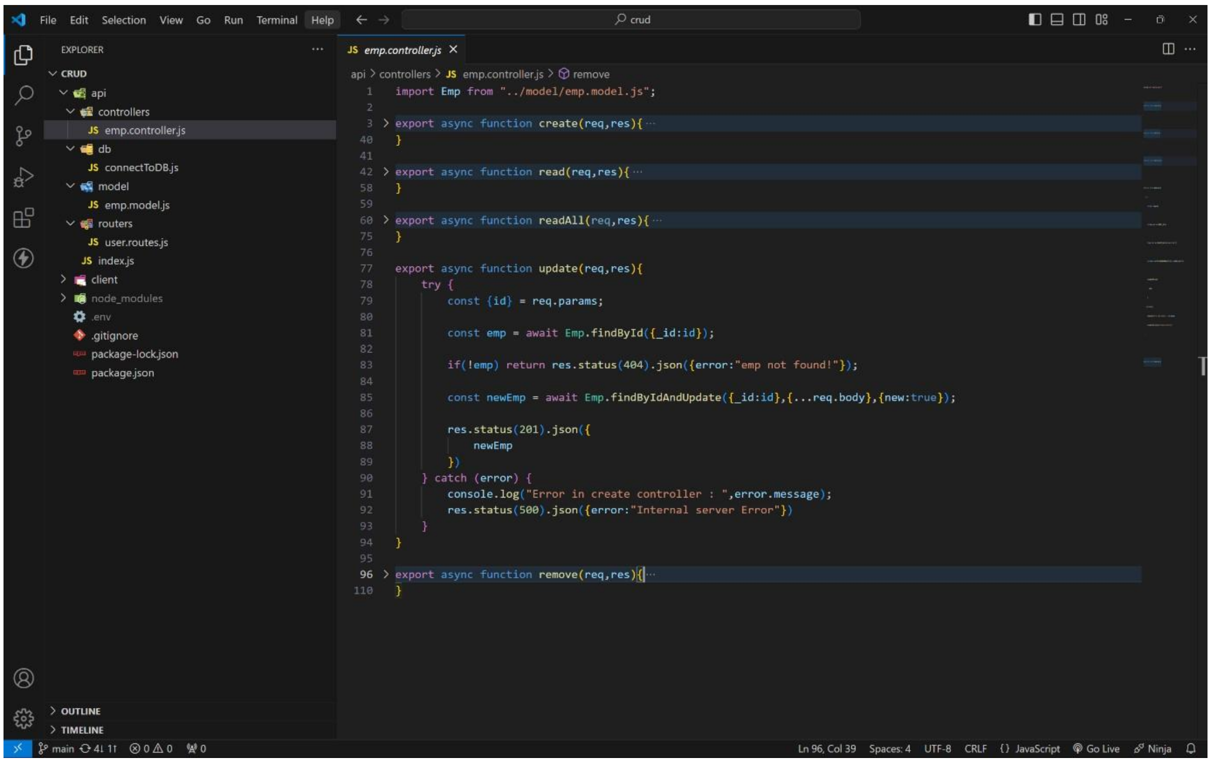
```
import Emp from "../model/emp.model.js";

export async function create(req,res){ ···
}

export async function read(req,res){ ···
}

export async function readAll(req,res){
    try {

        const emps = await Emp.find();

        if(!emps || !emps.length ) return res.status(404).json({error:" no emp data found!"});

        res.status(201).json({
            emps
        })

    } catch (error) {
        console.log("Error in create controller : ",error.message);
        res.status(500).json({error:"Internal server Error"})
    }
}

export async function update(req,res){ ···
}

export async function remove(req,res){ ···
}
```

READONE:



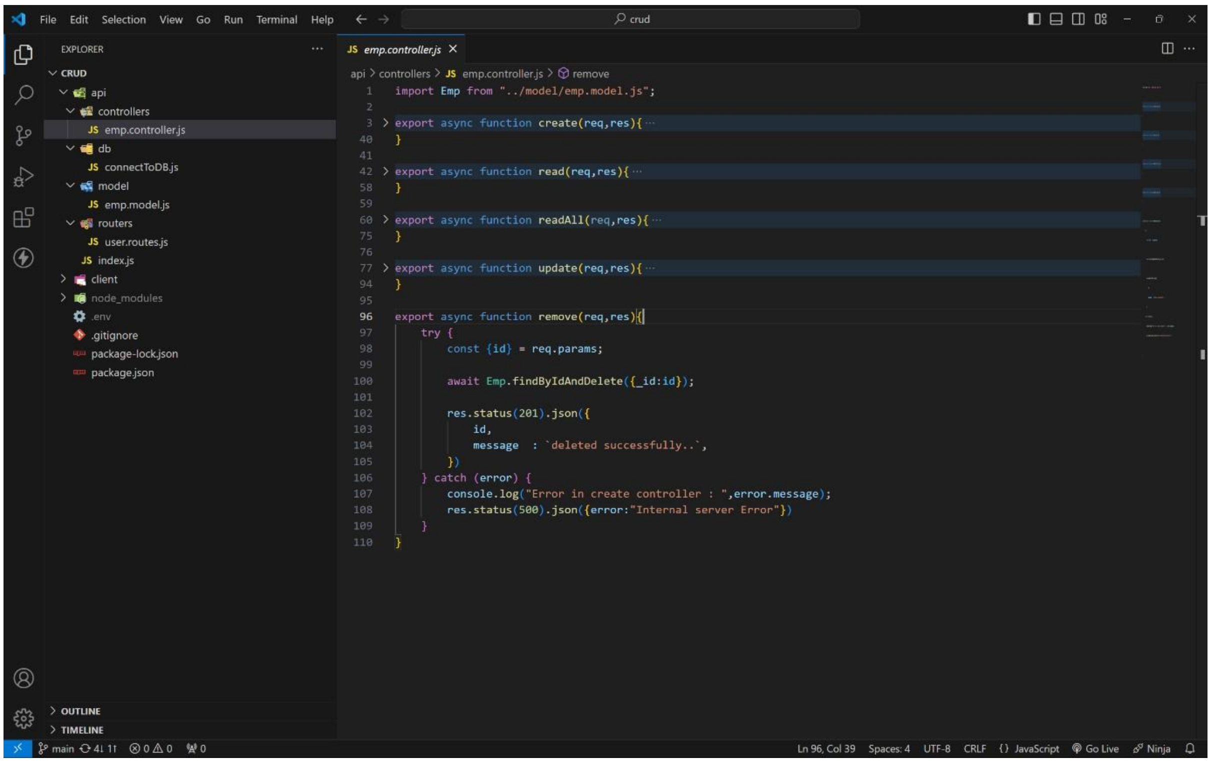
```
import Emp from "../model/emp.model.js";

export async function create(req,res){ ···
}

export async function read(req,res){
    try {
        const {id} = req.params;

        const emp = await Emp.findById({_id:id});

        if(!emp) return res.status(404).json({error:"emp not found!"});

        res.status(201).json({
            emp
        })

    } catch (error) {
        console.log("Error in create controller : ",error.message);
        res.status(500).json({error:"Internal server Error"})
    }
}

export async function readAll(req,res){ ···
}

export async function update(req,res){ ···
}

export async function remove(req,res){ ···
}
```

UPDATE:



```javascript
import Emp from "../model/emp.model.js";

export async function create(req,res){···
}

export async function read(req,res){···
}

export async function readAll(req,res){···
}

export async function update(req,res){
    try {
        const {id} = req.params;

        const emp = await Emp.findById({_id:id});

        if(!emp) return res.status(404).json({error:"emp not found!"});

        const newEmp = await Emp.findByIdAndUpdate({_id:id},{...req.body},{new:true});

        res.status(201).json({
            newEmp
        })
    } catch (error) {
        console.log("Error in create controller : ",error.message);
        res.status(500).json({error:"Internal server Error"})
    }
}

export async function remove(req,res){···
}
```

DELETE:



```javascript
import Emp from "../model/emp.model.js";

export async function create(req,res){···
}

export async function read(req,res){···
}

export async function readAll(req,res){···
}

export async function update(req,res){···
}

export async function remove(req,res){
    try {
        const {id} = req.params;

        await Emp.findByIdAndDelete({_id:id});

        res.status(201).json({
            id,
            message  : `deleted successfully..`,
        })
    } catch (error) {
        console.log("Error in create controller : ",error.message);
        res.status(500).json({error:"Internal server Error"})
    }
}
```

HOW TO RUN 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.

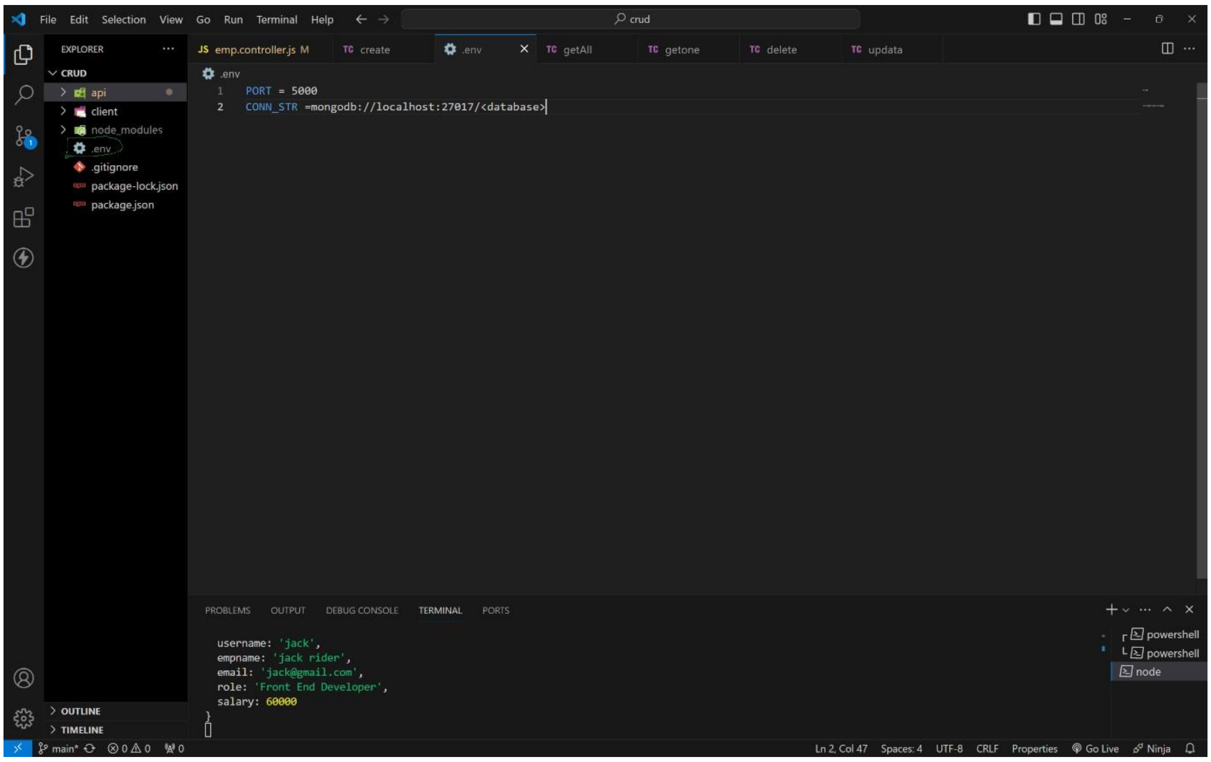
7 . Here crud is root folder.

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



```
PORT = 5000
CONN_STR =mongodb://localhost:27017/<database>
```

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

--- trouble in above process ? : simply paste

this code in .env file .

PORT = 5000

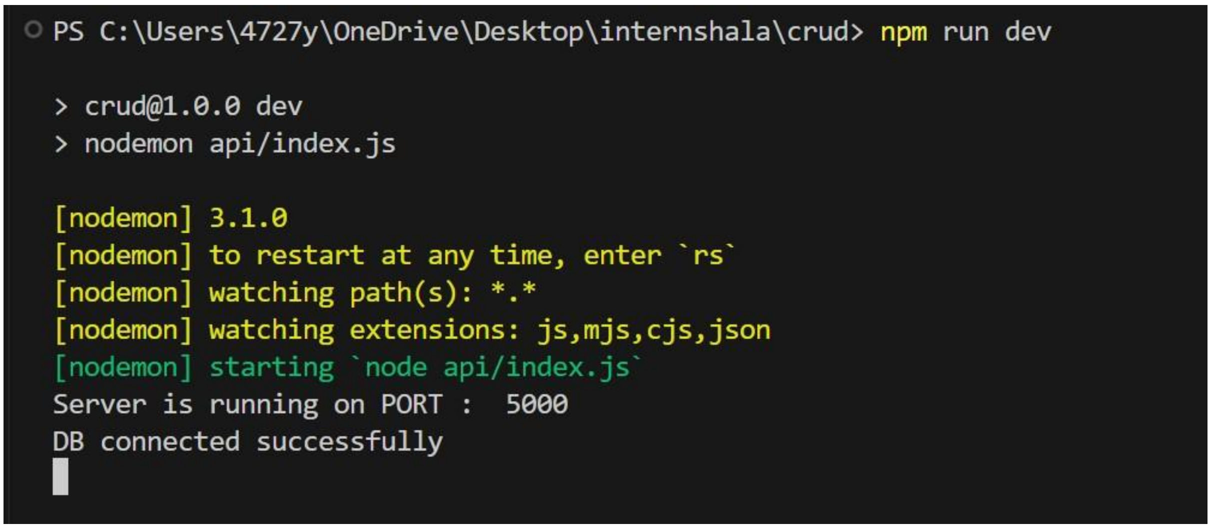
CONN_STR=mongodb+srv://4727yesuraju:rough@cluster0.wbclvtg.mongodb.net
/?retryWrites=true&w=majority&appName=Cluster0

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

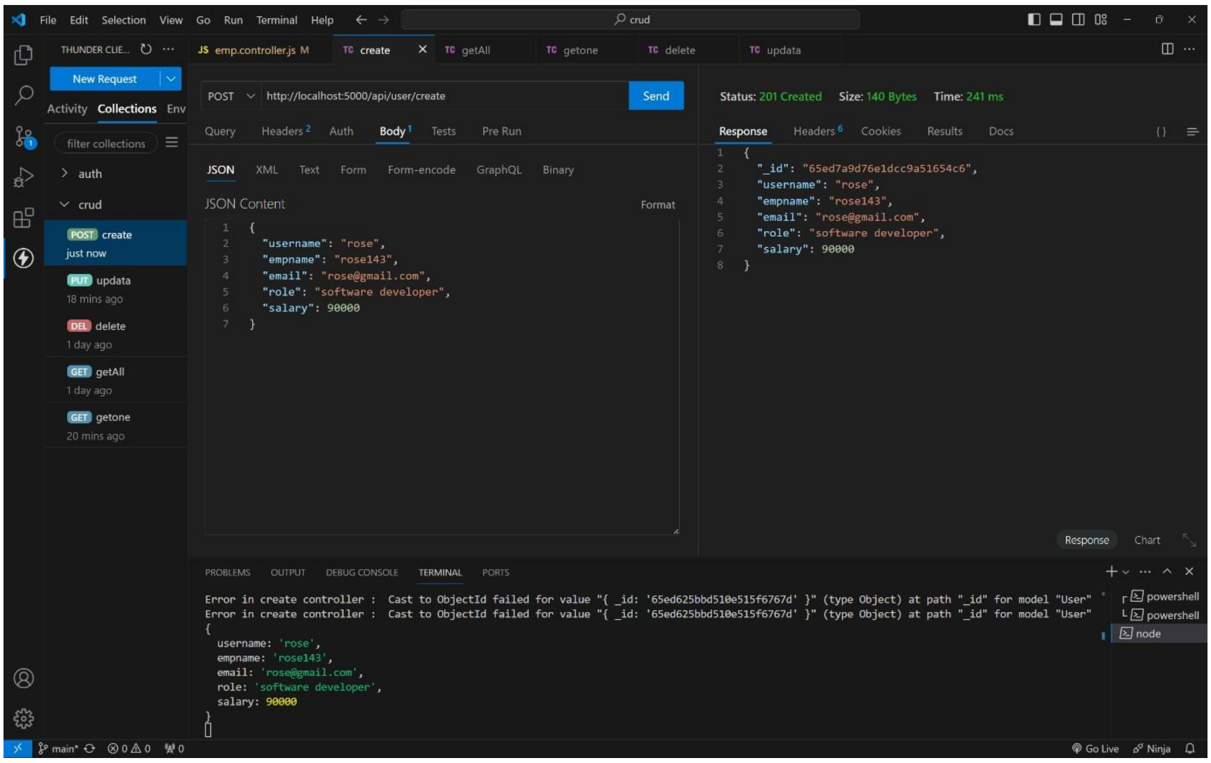
delete

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

2 . After sending you will deleted successfully as response.

OUTPUT :

CREATE A NEW USER :



POST http://localhost:5000/api/user/create

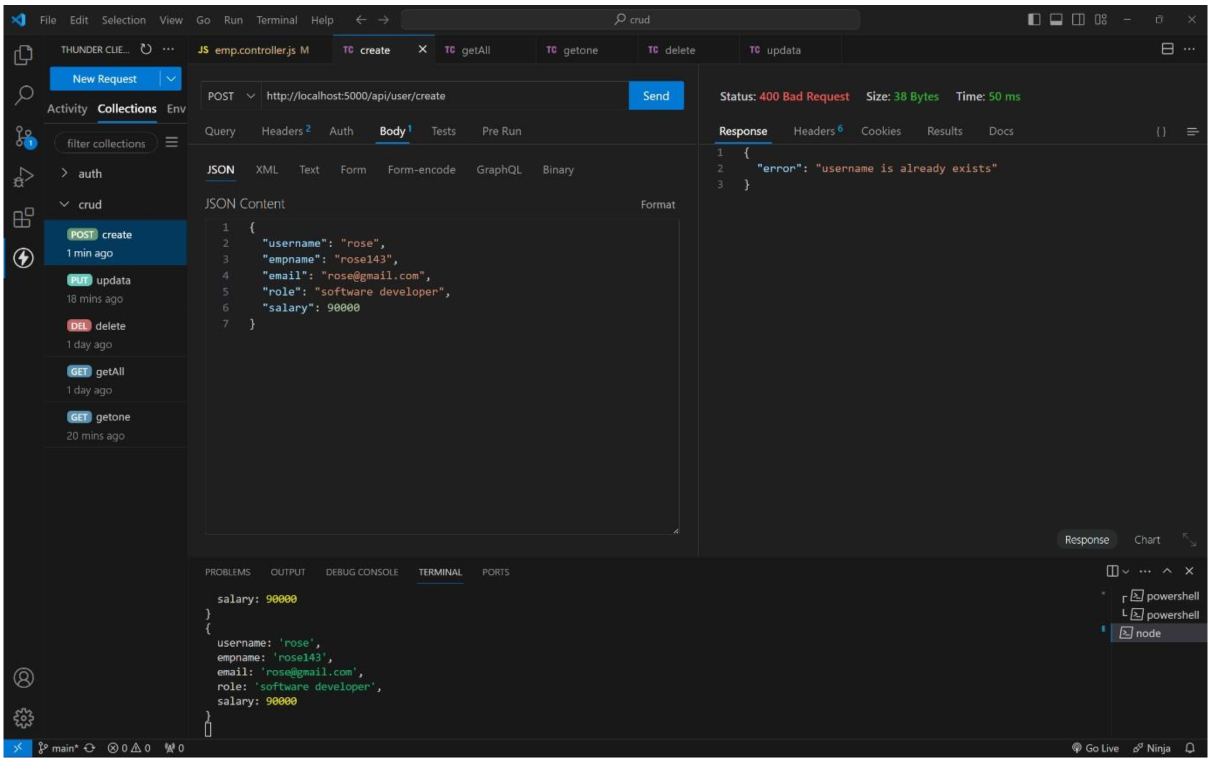
```
{
  "username": "rose",
  "empname": "rose143",
  "email": "rose@gmail.com",
  "role": "software developer",
  "salary": 90000
}
```

Status: 201 Created Size: 140 Bytes Time: 241 ms

```
{
  "_id": "65ed7a9d76e1dcc9a51654c6",
  "username": "rose",
  "empname": "rose143",
  "email": "rose@gmail.com",
  "role": "software developer",
  "salary": 90000
}
```

```
Error in create controller :  Cast to ObjectId failed for value "{ _id: '65ed625bbd510e515f6767d' }" (type Object) at path "_id" for model "User"
Error in create controller :  Cast to ObjectId failed for value "{ _id: '65ed625bbd510e515f6767d' }" (type Object) at path "_id" for model "User"
{
  username: 'rose',
  empname: 'rose143',
  email: 'rose@gmail.com',
  role: 'software developer',
  salary: 90000
}
```

CREATING USER WITH EXISTING USERNAME:



POST http://localhost:5000/api/user/create

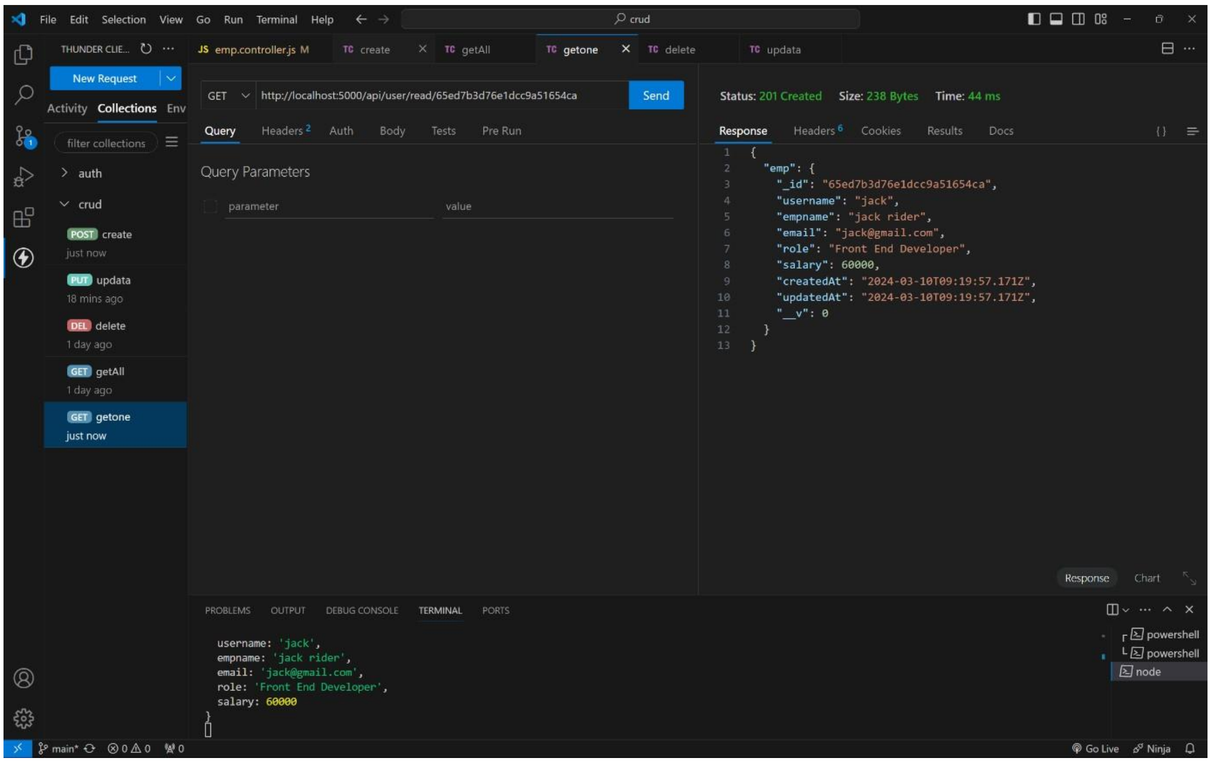
```
{
  "username": "rose",
  "empname": "rose143",
  "email": "rose@gmail.com",
  "role": "software developer",
  "salary": 90000
}
```

Status: 400 Bad Request Size: 38 Bytes Time: 50 ms

```
{
  "error": "username is already exists"
}
```

```
  salary: 90000
}
{
  username: 'rose',
  empname: 'rose143',
  email: 'rose@gmail.com',
  role: 'software developer',
  salary: 90000
}
```

READONE :



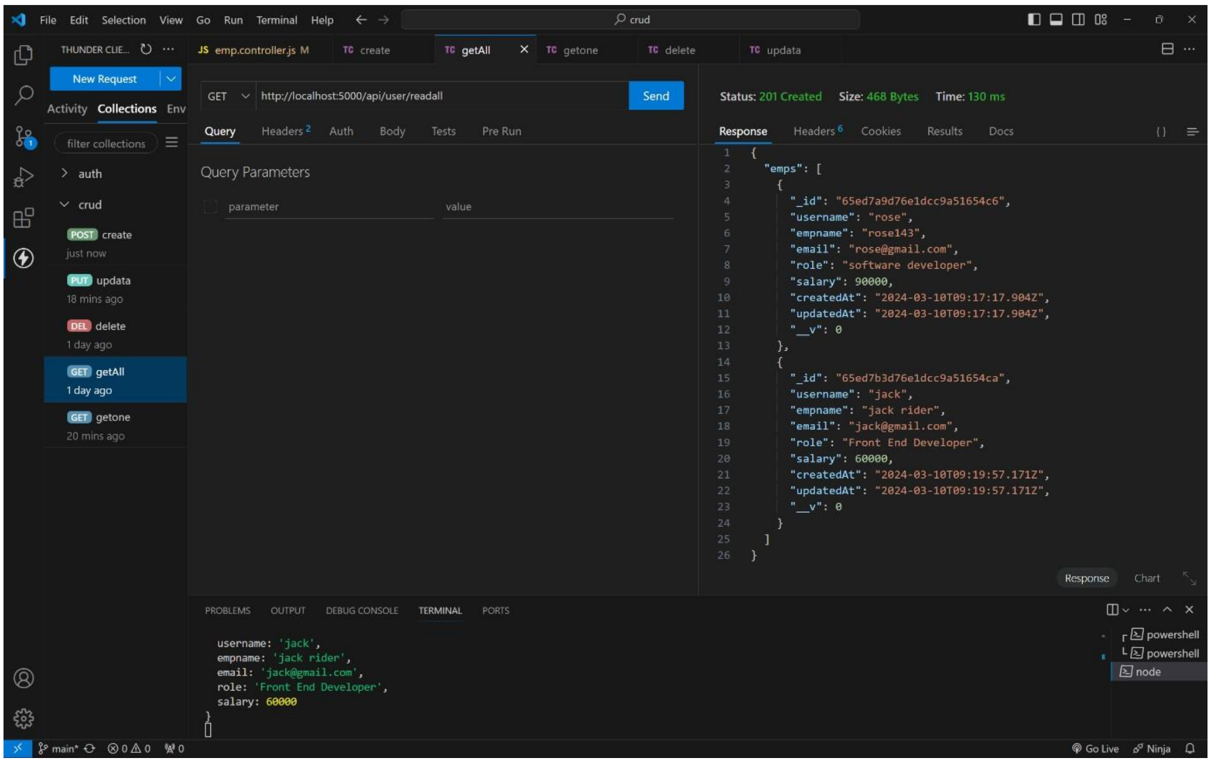
GET http://localhost:5000/api/user/read/65ed7b3d76e1dcc9a51654ca

Status: 201 Created Size: 238 Bytes Time: 44 ms

```
{
  "emp": {
    "_id": "65ed7b3d76e1dcc9a51654ca",
    "username": "jack",
    "empname": "jack rider",
    "email": "jack@gmail.com",
    "role": "Front End Developer",
    "salary": 60000,
    "createdAt": "2024-03-10T09:19:57.171Z",
    "updatedAt": "2024-03-10T09:19:57.171Z",
    "__v": 0
  }
}
```

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

READ ALL :



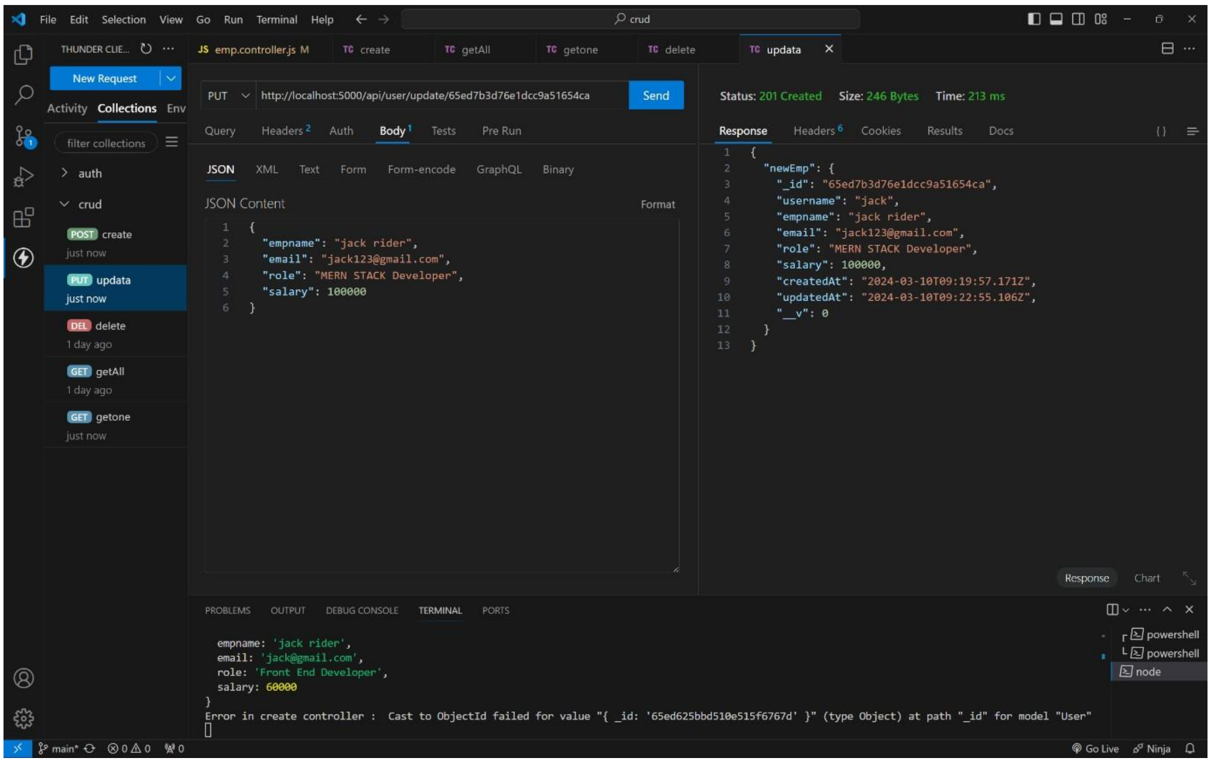
GET http://localhost:5000/api/user/readall

Status: 201 Created Size: 468 Bytes Time: 130 ms

```
{
  "emps": [
    {
      "_id": "65ed7a9d76e1dcc9a51654c6",
      "username": "rose",
      "empname": "rose143",
      "email": "rose@gmail.com",
      "role": "software developer",
      "salary": 90000,
      "createdAt": "2024-03-10T09:17:17.904Z",
      "updatedAt": "2024-03-10T09:17:17.904Z",
      "__v": 0
    },
    {
      "_id": "65ed7b3d76e1dcc9a51654ca",
      "username": "jack",
      "empname": "jack rider",
      "email": "jack@gmail.com",
      "role": "Front End Developer",
      "salary": 60000,
      "createdAt": "2024-03-10T09:19:57.171Z",
      "updatedAt": "2024-03-10T09:19:57.171Z",
      "__v": 0
    }
  ]
}
```

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

UPDATE :



PUT http://localhost:5000/api/user/update/65ed7b3d76e1dcc9a51654ca

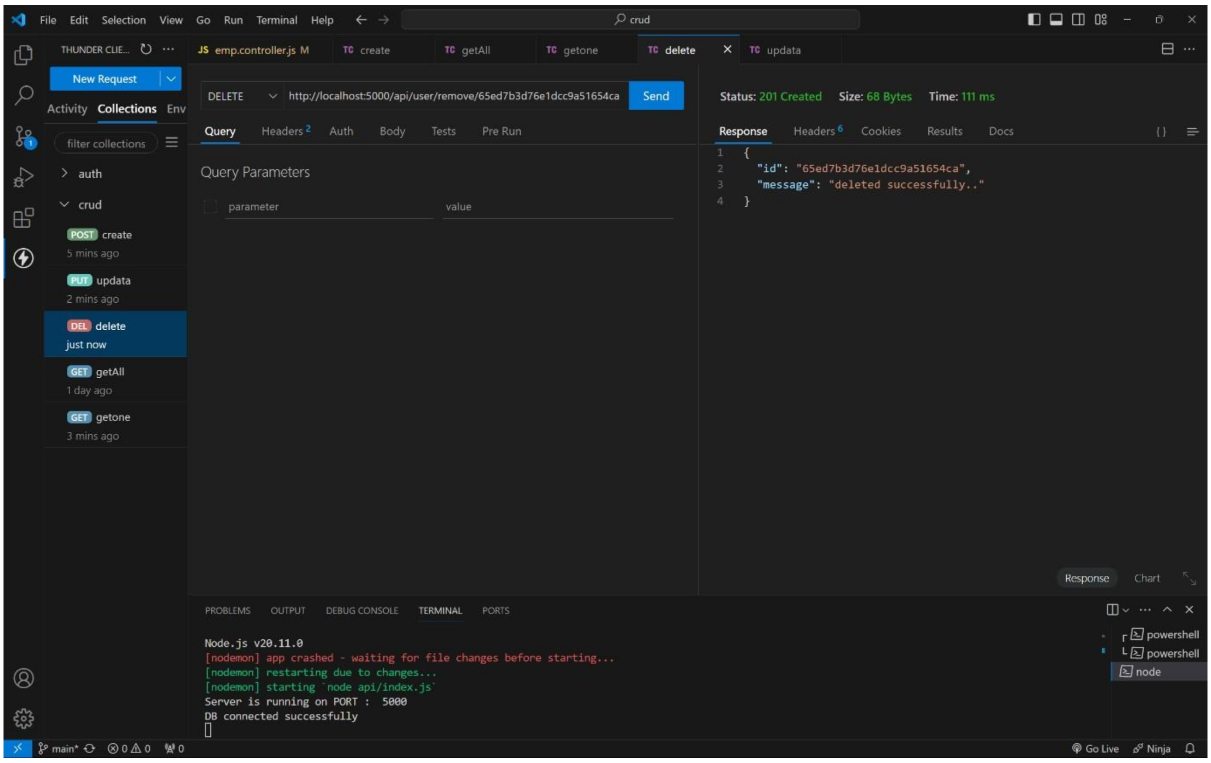
Status: 201 Created Size: 246 Bytes Time: 213 ms

```
{
  "empname": "jack rider",
  "email": "jack123@gmail.com",
  "role": "MERN STACK Developer",
  "salary": 100000
}
```

```
{
  "newEmp": {
    "_id": "65ed7b3d76e1dcc9a51654ca",
    "username": "jack",
    "empname": "jack rider",
    "email": "jack123@gmail.com",
    "role": "MERN STACK Developer",
    "salary": 100000,
    "createdAt": "2024-03-10T09:19:57.171Z",
    "updatedAt": "2024-03-10T09:22:55.106Z",
    "__v": 0
  }
}
```

```
  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 :



DELETE http://localhost:5000/api/user/remove/65ed7b3d76e1dcc9a51654ca

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

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

```
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
```