

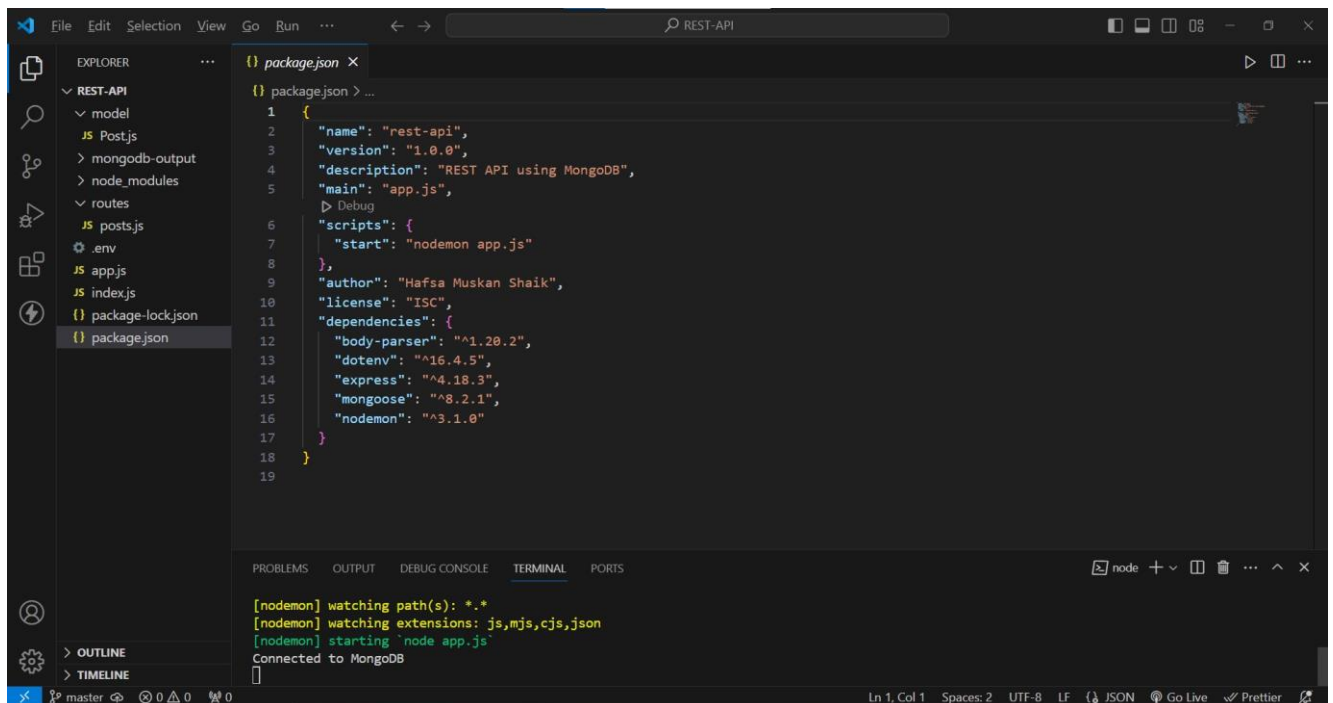
Creating a RESTful API using express.js and creating a database and index in MongoDB.

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Source code:

Package.json file:

In this file change the scripts to start the nodemon server. It is used to automate the process such as saving and restarting the server.

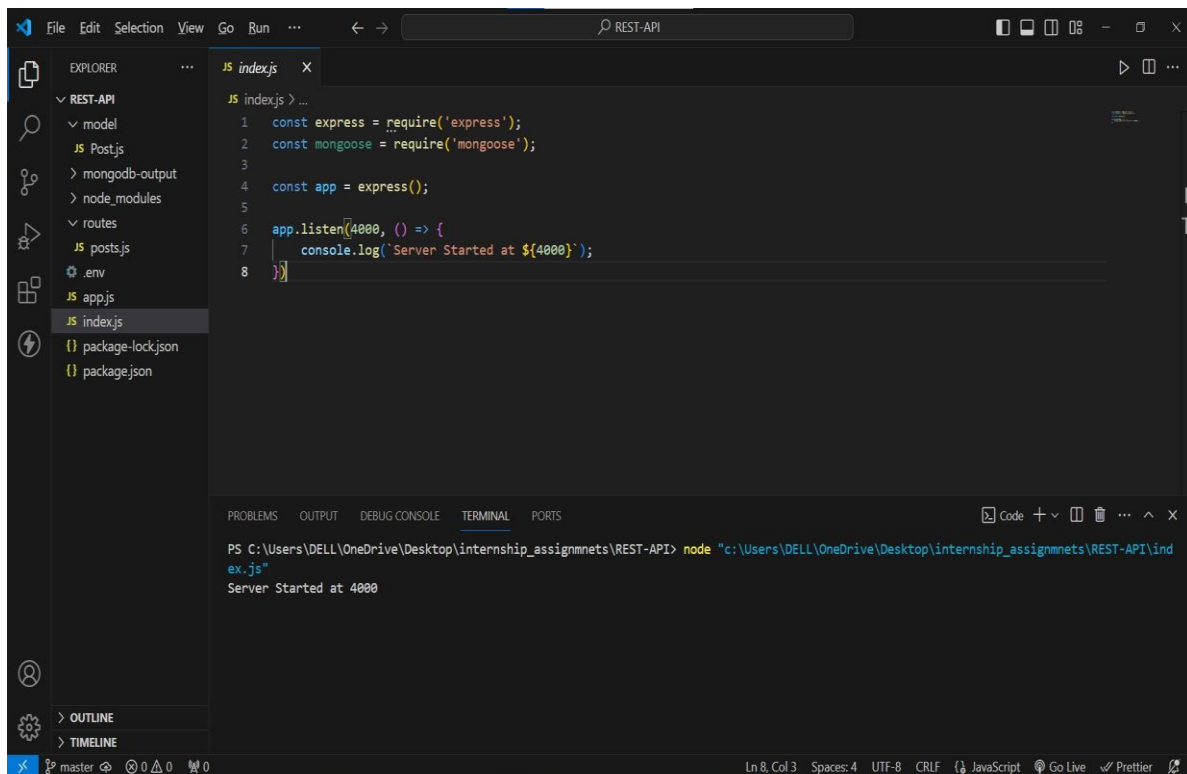


The screenshot shows a Visual Studio Code editor with a project named 'REST-API'. The Explorer sidebar on the left shows the file structure, with 'package.json' selected. The main editor displays the content of 'package.json', which is a JSON object with the following fields: 'name' (rest-api), 'version' (1.0.0), 'description' (REST API using MongoDB), 'main' (app.js), 'scripts' (start: nodemon app.js), 'author' (Hafsa Muskan Shaik), 'license' (ISC), and 'dependencies' (body-parser, dotenv, express, mongoose, nodemon). The terminal at the bottom shows the output of running 'npm start', which includes messages from nodemon about watching files and starting the application, and a message from MongoDB indicating a successful connection.

```
{
  "name": "rest-api",
  "version": "1.0.0",
  "description": "REST API using MongoDB",
  "main": "app.js",
  "scripts": {
    "start": "nodemon app.js"
  },
  "author": "Hafsa Muskan Shaik",
  "license": "ISC",
  "dependencies": {
    "body-parser": "^1.20.2",
    "dotenv": "^16.4.5",
    "express": "^4.18.3",
    "mongoose": "^8.2.1",
    "nodemon": "^3.1.0"
  }
}
```

```
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting 'node app.js'
Connected to MongoDB
```

index.js:

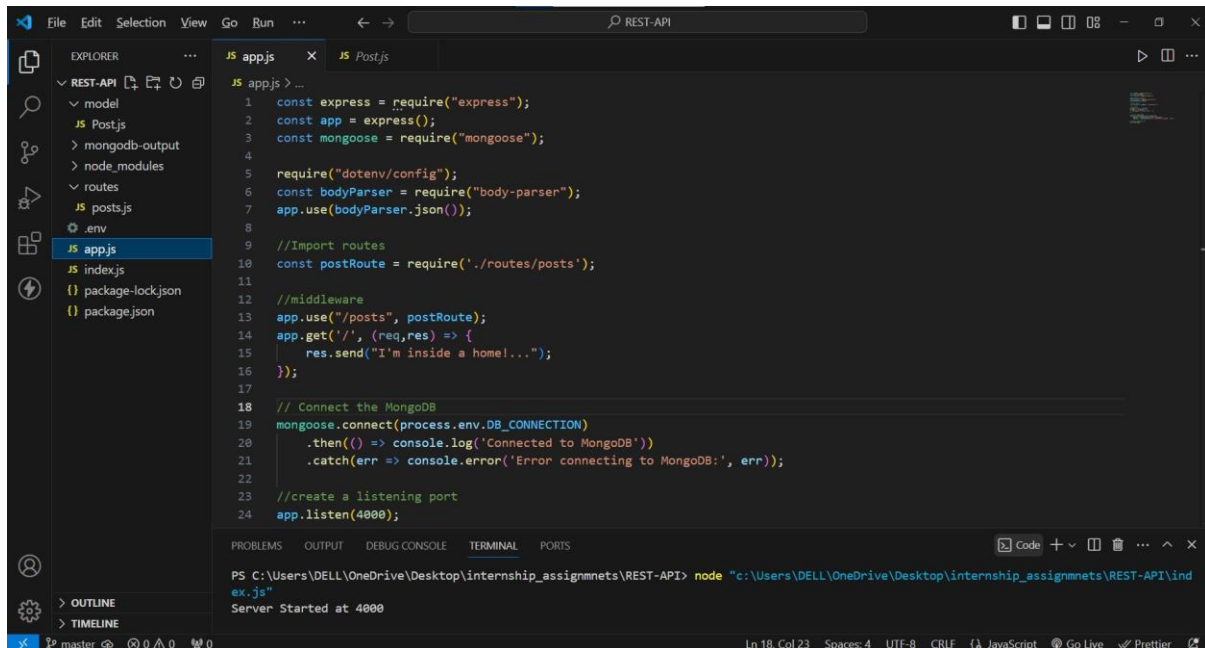


The screenshot shows the Visual Studio Code editor with the file explorer on the left. The file explorer shows a project structure with folders like REST-API, model, routes, and files like index.js, app.js, package-lock.json, and package.json. The main editor window displays the content of index.js, which is a simple Express.js server setup. The terminal at the bottom shows the command to run the server and the output indicating the server has started at port 4000.

```
JS index.js > ...
1  const express = require('express');
2  const mongoose = require('mongoose');
3
4  const app = express();
5
6  app.listen(4000, () => {
7    console.log('Server Started at ${4000}');
8  })
```

```
PS C:\Users\DELL\OneDrive\Desktop\internship_assignmnets\REST-API> node "c:\Users\DELL\OneDrive\Desktop\internship_assignmnets\REST-API\index.js"
Server Started at 4000
```

app.js:



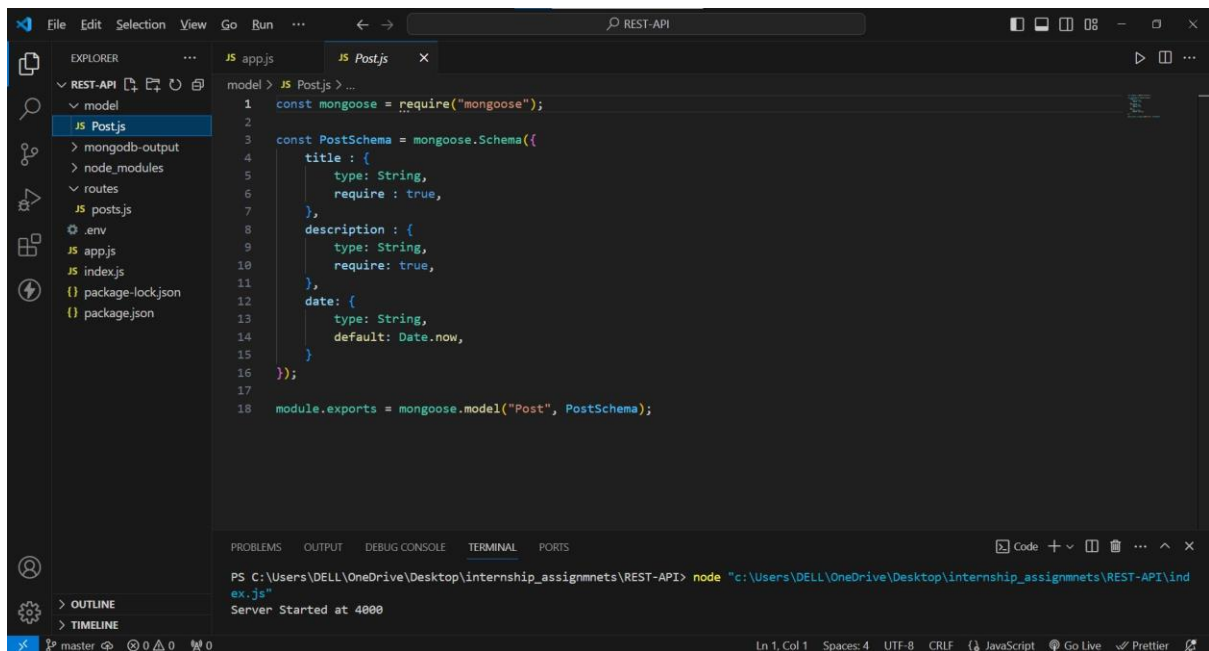
The screenshot shows the Visual Studio Code editor with the file explorer on the left. The file explorer shows a project structure with folders like REST-API, model, routes, and files like index.js, app.js, package-lock.json, and package.json. The main editor window displays the content of app.js, which is a more complex Express.js server setup. The terminal at the bottom shows the command to run the server and the output indicating the server has started at port 4000.

```
JS app.js > ...
1  const express = require("express");
2  const app = express();
3  const mongoose = require("mongoose");
4
5  require("dotenv/config");
6  const bodyParser = require("body-parser");
7  app.use(bodyParser.json());
8
9  //Import routes
10 const postRoute = require('./routes/posts');
11
12 //middleware
13 app.use("/posts", postRoute);
14 app.get('/', (req,res) => {
15   res.send("I'm inside a home...");
16 });
17
18 // Connect the MongoDB
19 mongoose.connect(process.env.DB_CONNECTION)
20   .then(() => console.log('Connected to MongoDB'))
21   .catch(err => console.error('Error connecting to MongoDB:', err));
22
23 //create a listening port
24 app.listen(4000);
```

```
PS C:\Users\DELL\OneDrive\Desktop\internship_assignmnets\REST-API> node "c:\Users\DELL\OneDrive\Desktop\internship_assignmnets\REST-API\index.js"
Server Started at 4000
```

Model:

post.js file:



The screenshot shows the VS Code editor with the REST-API project open. The Explorer sidebar on the left shows the file structure: REST-API, model, mongoddb-output, node_modules, routes, JS posts.js, .env, JS app.js, JS index.js, package-lock.json, and package.json. The main editor window displays the content of JS Postjs, which defines a Mongoose schema for a Post model. The schema includes fields for title, description, and date. The terminal at the bottom shows the command to run the application and the message 'Server Started at 4000'.

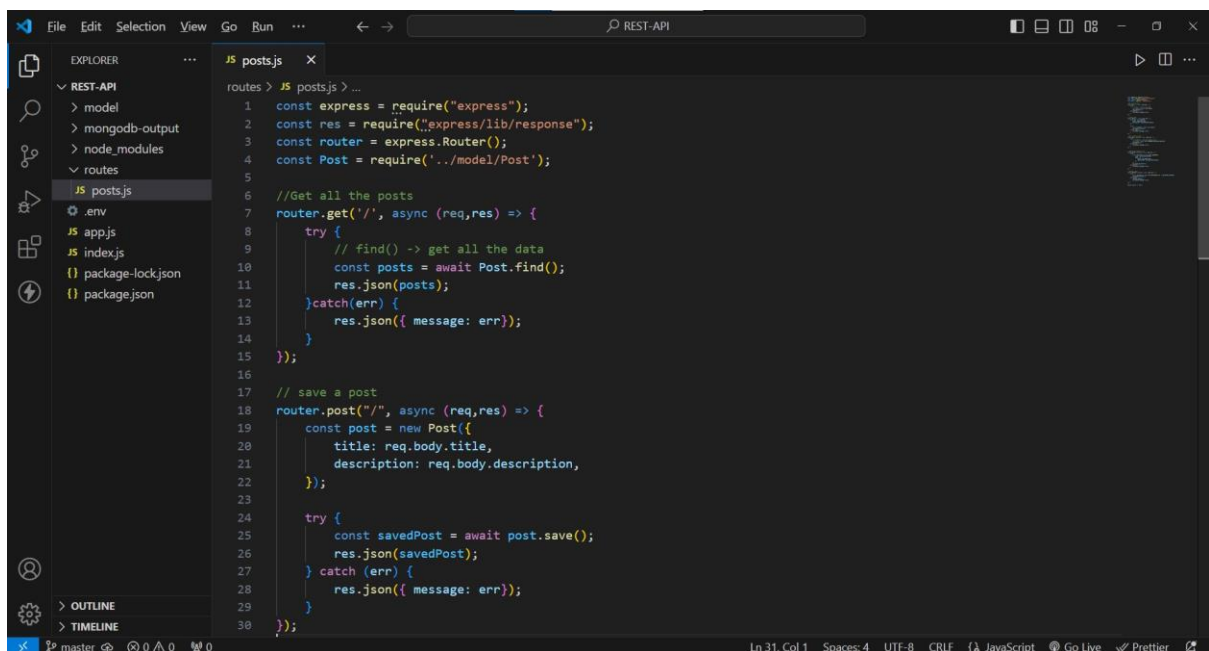
```
1 const mongoose = require("mongoose");
2
3 const PostSchema = mongoose.Schema({
4   title : {
5     type: String,
6     require : true,
7   },
8   description : {
9     type: String,
10    require: true,
11  },
12  date: {
13    type: String,
14    default: Date.now,
15  }
16 });
17
18 module.exports = mongoose.model("Post", PostSchema);
```

PS C:\Users\DELL\OneDrive\Desktop\internship_assignmets\REST-API> node "c:\Users\DELL\OneDrive\Desktop\internship_assignmets\REST-API\index.js"

Server Started at 4000

Routes:

posts.js file:



The screenshot shows the VS Code editor with the REST-API project open. The Explorer sidebar on the left shows the file structure: REST-API, model, mongoddb-output, node_modules, routes, JS posts.js, .env, JS app.js, JS index.js, package-lock.json, and package.json. The main editor window displays the content of JS posts.js, which defines the routes for the Post model. The routes include a GET endpoint for retrieving all posts and a POST endpoint for creating a new post. The terminal at the bottom shows the command to run the application and the message 'Server Started at 4000'.

```
1 const express = require("express");
2 const res = require("express/lib/response");
3 const router = express.Router();
4 const Post = require("../model/Post");
5
6 //Get all the posts
7 router.get('/', async (req,res) => {
8   try {
9     // find() -> get all the data
10    const posts = await Post.find();
11    res.json(posts);
12  } catch (err) {
13    res.json({ message: err });
14  }
15 });
16
17 // save a post
18 router.post('/', async (req,res) => {
19   const post = new Post({
20     title: req.body.title,
21     description: req.body.description,
22   });
23
24   try {
25     const savedPost = await post.save();
26     res.json(savedPost);
27   } catch (err) {
28     res.json({ message: err });
29   }
30 });
```

Steps to run locally:

1. Create a folder as any name.
2. Open that folder in any IDE (vs code).
3. Create a root folder: Here Restful-API is root folder.

4. In root folder create .env file and create a DB_CONNECITON variable and assign a value to it.
 - DB_CONNECITON = your mongodb_connection_string
 - Example:
DB_CONNECTION="mongodb+srv://admin:[admin@cluster0.xez5xvg.mongodb.net](https://admin@cluster0.xez5xvg.mongodb.net/?retryWrites=true&w=majority&appName=Cluster0)?retryWrites=true&w=majority&appName=Cluster0"
5. Open the terminal (ctrl + ~) in code editor.
6. Type the following commands to install dependencies and to run the server.
 - npm init: to initialize the project
 - npm i: to install all the dependencies.
 - npm start: to run server

Note: Here I used nodemon to automate the process such as saving and restarting the server.
7. If you get the message without any errors in terminal then your server was running successfully.

Route and its functionality:

For this use any API client like Postman or Thunder Client.

Here I used Postman client API.

Step 1: Create Route:

1. This route is used to create a post in database with the following fields.
title & description.
2. In postman create a collection and add new requests and select methods based on operation.
 - **get:** to get all the data: <http://localhost:4000/posts/>
 - **post:** to insert the data: <http://localhost:4000/posts>

3. Use post method to pass the following json data in a body as your required value.

```
{  
    "title": "First post",  
    "description": "my first post"  
}
```

4. After inserting the values click on send button and then use get method to get the data which is posted.
5. The data which is posted can automatically loaded into the MongoDB.
Note: In this project I used cloud mongoDB (MongoDB Atlas).

Step 2: Perform CRUD Operations:

READONE:

1. This route is used to read specific post by passing the specific post id as a param.

use GET:URL: <http://localhost:4000/posts/65ee0c657944e3ca6e3e1305>

2. After sending you will get the specific post details as response.

READALL:

1. Read all route is used to get all the post data existing in the mongodb database.

use GET(): URL: <http://localhost:4000/posts/>

2. After sending you will get all the post details as response.

UPDATE:

1. This route is used to update the post by passing the specific post id as a param.

use PUT:

URL: <http://localhost:4000/posts/65ee0c657944e3ca6e3e1305>

2. After sending you will get updated post details as response.

DELETE:

1. This route is used to delete specific post by passing the post id as a param.

use DELETE:

URL: <http://localhost:4000/posts/65ee0c657944e3ca6e3e1305>

2. After sending the specific post will be deleted from the database.

Output:

The screenshot shows the MongoDB Atlas web interface. On the left, there's a sidebar with navigation options like Overview, Deployment, Database, Services, Security, and Advanced. The main panel is titled 'test.posts' and shows a list of documents. The first document is highlighted, showing its details:

```
{
  "_id": ObjectId('65ee0c657944e3ca6e3e1305'),
  "title": "First post",
  "description": "my first post",
  "date": "1710899557472",
  "__v": 0
}
```

Below this, there are two more documents listed, each with a play button icon to its left:

```
{
  "_id": ObjectId('65eec88960e98101b9da6bf7'),
  "title": "Fourth post",
  "description": "my fourth post",
  "date": "1710147721082",
  "__v": 0
}
```

```
{
  "_id": ObjectId('65eec89760e98101b9da6bf9'),
  "title": "Fifth post",
  "description": "my fifth post",
  "date": "1710147735894",
  "__v": 0
}
```