Restful API using Express.js and Database and Index in MongoDB

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Source Code:

Server.js:

```
const express = require('express')
const mongoose = require('mongoose')
const Product = require('./productModel')
const app = express()
app.use(express.json())
app.use(express.urlencoded({extended: false}))
//routes

app.get('/',(req, res) => {
   res.send('Hello NODE API')
})

app.get('/blog',(req, res) => {
   res.send('My name is Prudvi')
})
app.get('/products',async(req,res) =>{
   try {
      const products = await Product.find({});
      res.status(200).json(products)
   } catch (error) {
      res.status(500).json({message:error.message})
   }
})
app.get('/products/:id',async(req,res) => {
   try {
      const {id}=req.params;
      const product = await Product.findById(id);
      res.status(200).json(product)
   } catch (error) {
      res.status(500).json({message:error.message})
   }
} )
app.post('/products',async(req,res) =>{
   try {
      const product = await Product.create(req.body)
```

```
        res.status(200).json(product);
    } catch (error) {
        console.log(error.message);
        res.status(500).json({message: error.message})
    }
})

//update a product
app.put('/products/:id',async(req,res) => {
    try {
        const{id} = req.params;
        const product = await Product.findByIdAndUpdate(id, req.body);
        if(!product){
            return res.status(404).json({message: 'cannot find any product with ID ${id}'})
        }
        const updatedProduct = await Product.findById(id);
        res.status(200).json(updatedProduct);
    } catch (error) {
        res.status(500).json({message: error.message})
    }
})

//delete a product
app.delete('/products/:id',async(req, res) => {
    try {
        const{id}= req.params;
        const product = await Product.findByIdAndDelete(id);
        if(!product){
            return res.status(404).json({message: 'cannot find any product with ID ${id}'})
        }
        res.status(200).json(product);
    } catch (error) {
        res.status(500).json({message: error.message})
    }
})

mongoose.set("strictQuery",false)
mongoose.
connect('mongodb+srv://admin:Admin-
1234@prudviapi.hnussfn.mongodb.net/NODEAPI?retryWrites=true&w=majority&appName=PrudviAPI')
.then(()=>{
    app.listen(3000,()=> {
    console.log('Node API app is running on port 3000')
})
    console.log('connected to MongoDB')
}).catch((error) =>{
    console.log(error)
})
```

Package.json:

```
const mongoose = require('mongoose')

const productSchema = mongoose.Schema(
    {
        name:{
            type: String,
            required:[true,"Please enter a product name"]
        },
        quantity:{
            type: Number,
            required: true,
            default: 0
        },
        price:{
            type:Number,
            required:true,
        },
        image:{
            type: String,
            required: false
        }
    },
    {
        timestamps:true
    }
)

const Product = mongoose.model('Product',productSchema);

module.exports= Product;
```

MongoDB Connection:

CRUD Operations:

Create Operation:

Read/Read by ID Operation:

```
app.get('/products',async(req,res) =>{
    try {
        const products = await Product.find({});
        res.status(200).json(products)
    } catch (error) {
        res.status(500).json({message:error.message})
    }
})
app.get('/products/:id',async(req,res) => {
    try {
        const {id}=req.params;
        const product = await Product.findById(id);
        res.status(200).json(product)
    } catch (error) {
        res.status(500).json({message:error.message})
    }
```

Update by ID Operation:

```
//update a product
app.put('/products/:id',async(req,res) => {
    try {
        const{id} = req.params;
        const product = await Product.findByIdAndUpdate(id, req.body);
        if(!product){
            return res.status(404).json({message: 'cannot find any product with ID ${id}'})
        }
        const updatedProduct = await Product.findById(id);
        res.status(200).json(updatedProduct);
    } catch (error) {
        res.status(500).json({message: error.message})
    }
})
```

Delete by ID Operation:

```
//delete a product
app.delete('/products/:id',async(req, res) => {
    try {
        const{id}= req.params;
        const product = await Product.findByIdAndDelete(id);
        if(!product){
            return res.status(404).json({message: 'cannot find any product with ID ${id}'})
        }
        res.status(200).json(product);
    } catch (error) {
        res.status(500).json({message: error.message})
    }
})
```

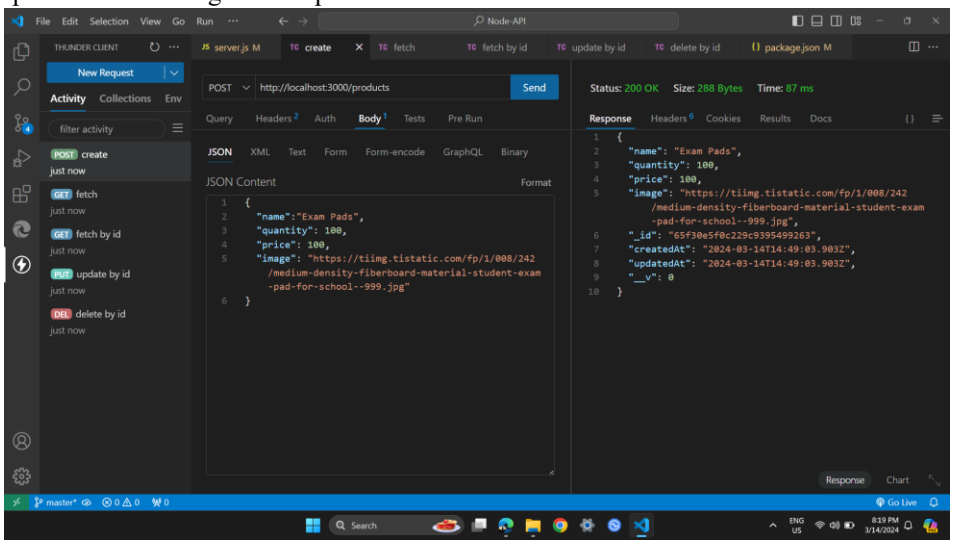
Method of Running:

1. Create package.json using the code "**npm init -y**" in the terminal.
2. Add empty git using the code "**git init**", "**git add .**", "**git commit -m "project"** ".
3. Install the required dependencies in terminal respectively as
    a. Express.js – "**npm i express**"
    b. Nodemon – "**npm i nodemon -D**"
    c. Mongoose – "**npm i mongoose**"
4. Run the API using "**node server.js**" in the terminal.

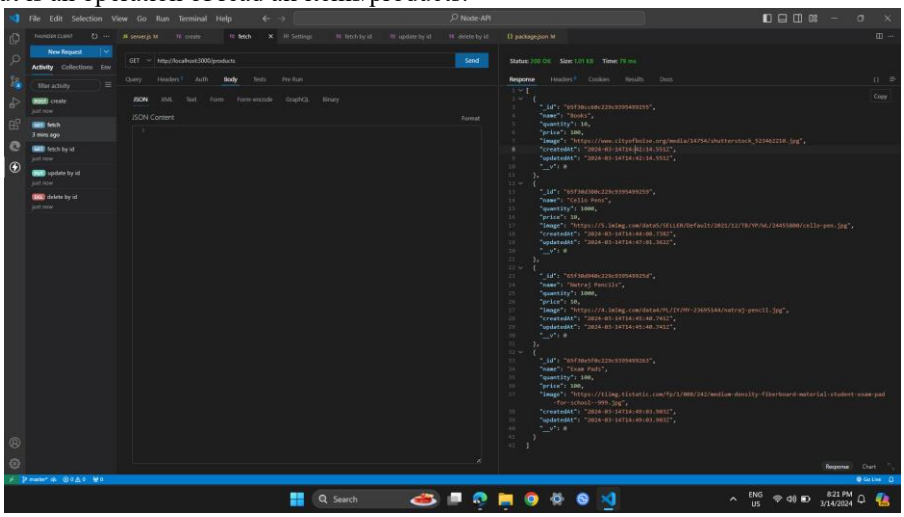
Outputs:

CRUD Operations:

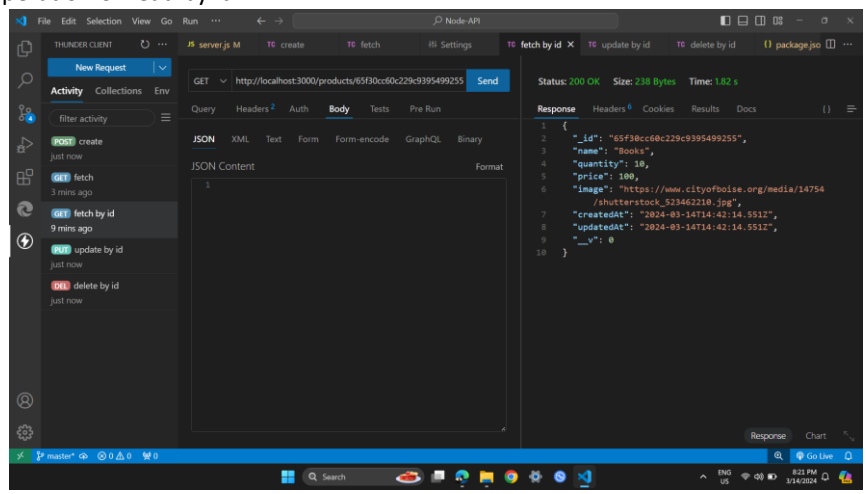
1. **Create Operation:**
   The below is operation of creating an item/product in the database:



2. **Read/Read by ID Operation:**
   The below output is an operation of read all items/products:

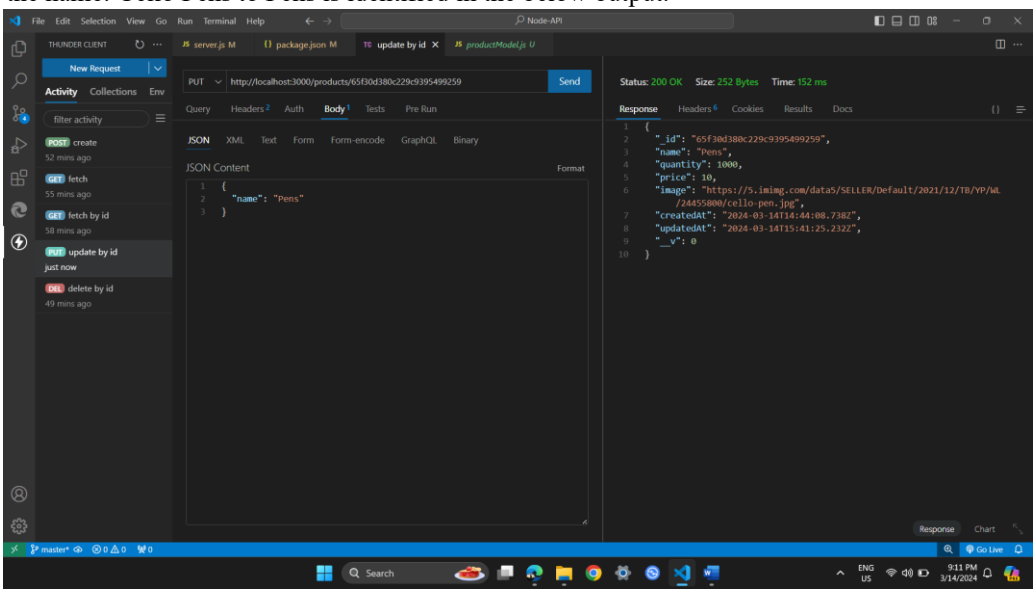


The below is an operation of read by id:



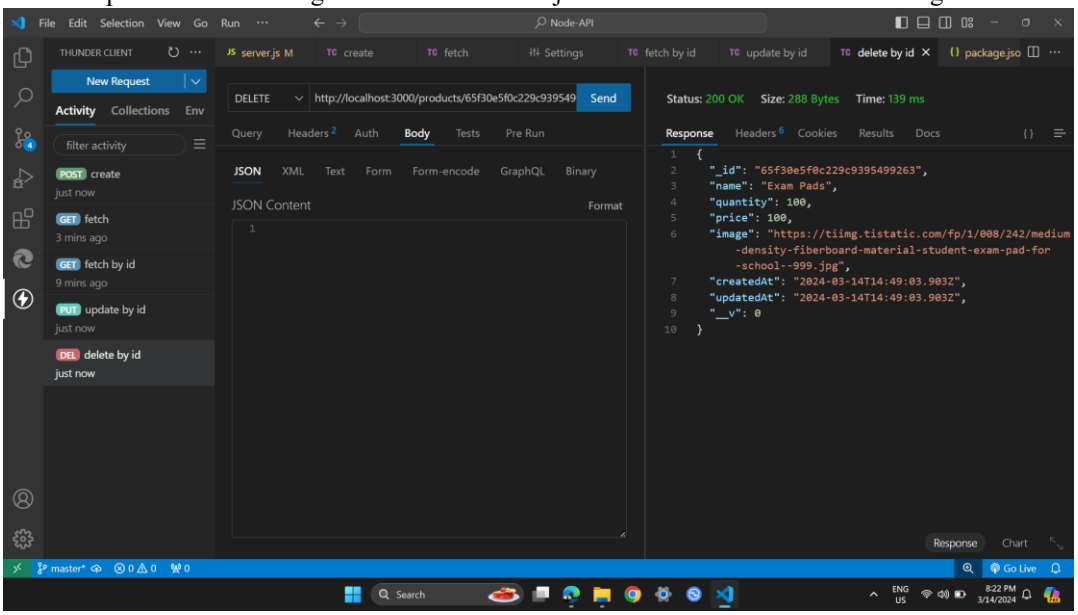
3. **Update by ID Operation:**

Changing the name: Cello Pens to Pens is identified in the below output.



4. **Delete by ID Operation:**

The below is an operation for deleting an item where the object is first identified before deleting:



And below is the operation that depicts the successful deletion of the item: