Get data from MongoDB through NodeJS in ReactJS using Axios

Maisha Maliha · Follow
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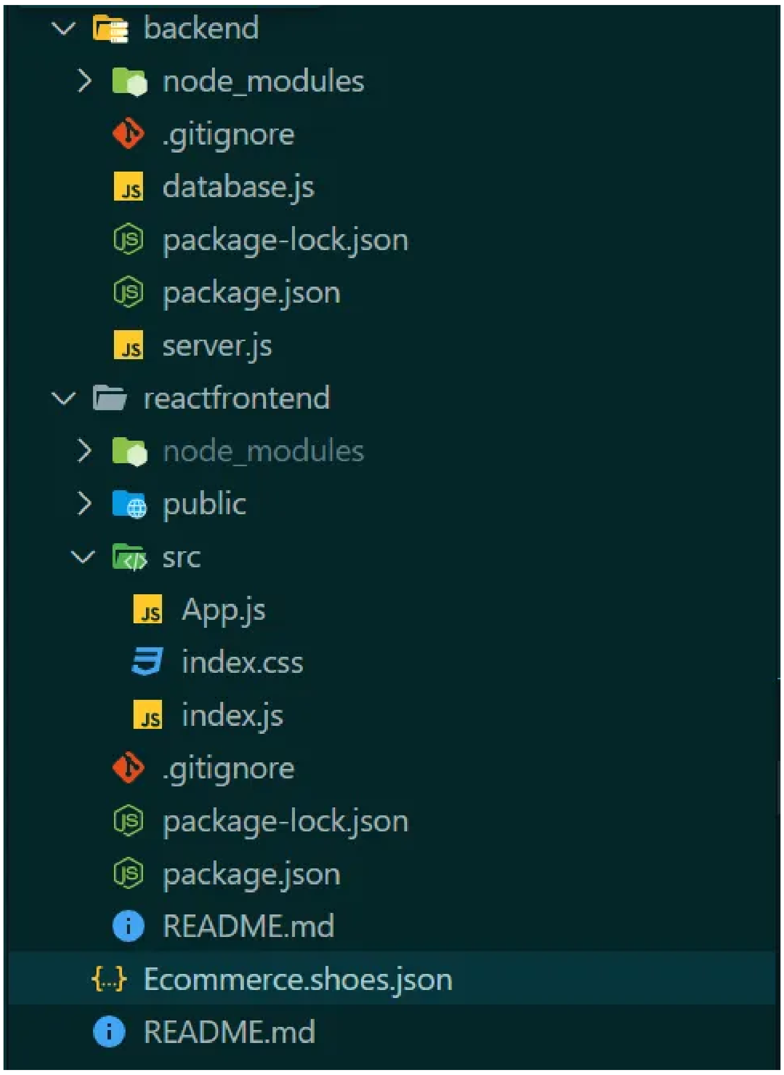
In this post, the goal is to get data or an array of objects from MongoDB (Not Mongoose) through NodeJS (not Express) and then let ReactJS get those data from NodeJS using Axios.

ReactJS gets data from the server through an API call. In our NodeJS server, we will send data or JSON data whenever we get a request from our front-end, that is, ReactJS.

Here are our files and folder structure:



```
backend
  node_modules
  .gitignore
  database.js
  package-lock.json
  package.json
  server.js
reactfrontend
  node_modules
  public
  src
    App.js
    index.css
    index.js
  .gitignore
  package-lock.json
  package.json
  README.md
Ecommerce.shoes.json
README.md
```

I have separate folders for all the backend and the frontend files. Our root folder will have two folders named “backend” and “reactfrontend”. Name them whatever you want.

Database setup

First, we will work in our backend. Let's set up our MongoDB database. In my MongoDB database, I created a *database* named “**Ecommerce**”; inside that database, I made a *Collection* named “**shoes**”. And in that collection, I have the following data:

```
[{
  "_id": {
    "$oid": "64b97610a5b563aadd83b266"
  },
```

```
    "black",
    "white"
  ],
  "size": [
    32,
    34,
    36,
    40
  ],
  "shop_id": 2
},
{
  "_id": {
    "$oid": "64b9773da5b563aadd83b267"
  },
  "id": 2,
  "shop_id": 1,
  "name": "maily 201",
  "colors": [
    "black",
    "white"
  ],
  "size": [
    32,
    36,
    40
  ]
},
{
  "_id": {
    "$oid": "64b97764a5b563aadd83b268"
  },
  "id": 3,
  "shop_id": 2,
  "name": "k201",
  "colors": [
    "black",
    "white"
  ],
  "size": [
    32,
    36,
    40
  ]
},
{
  "_id": {
    "$oid": "64b97790a5b563aadd83b269"
  },
  "id": 4,
  "shop_id": 1,
  "name": "M452 shulai",
  "colors": [
    "black",
    "white"
  ],
  "size": [
    32,
    36,
    40
  ]
},
{
  "_id": {
    "$oid": "64b977a0a5b563aadd83b26a"
  },
  "id": 5,
  "shop_id": 1,
  "name": "Ma52 shulai",
  "colors": [
    "black",
    "white",
    "green"
  ],
  "size": [
    36,
    40
  ]
},
{
  "_id": {
    "$oid": "64b97849a5b563aadd83b26b"
  },
  "id": 6,
  "shop_id": 2,
  "name": "Pikachula",
  "colors": [
    "black",
    "pink",
    "green"
  ],
  "size": [
    32,
    34,
    36
  ]
},
{
  "_id": {
    "$oid": "64ba1b534660ca90972ad6a6"
  },
  "id": 7,
  "shop_id": 1,
  "name": "kaluka",
  "colors": [
    "white",
    "black"
  ],
  "size": [
    40,
    44
    ]
}]
```

So your database should be ready.

Backend setup

Let's start our work in the "backend" folder. We are to get data from the database through NodeJS. So, we create a file named **"database.js"**. Here is the code inside that file.

```
// ******* backend/database.js *******

const { MongoClient } = require("mongodb");
const uri = "mongodb://0.0.0.0:27017";

const client = new MongoClient(uri);
client.connect();

async function shoes() {
    try {
        const dataset = await client.db('Ecommerce').collection('shoes').find().toArray();
        return JSON.stringify(dataset);
    }
    catch {
        console.log("db closed");
        await client.close();
    }
}
module.exports = {shoes};
```

We got all the data from the **"shoes"** collection and converted it into an array. And then we

Now I will show you why we used *JSON.stringify(dataset)* and not *dataset.toString()*

```
// you will get an array of objetcs
console.log(dataset);
// you will get a string version of that array of objs
console.log(JSON.strigify(dataset));
// but if you did this
console.log(dataset.toString();
// this will give this output:
// [object Object],[object Object],[object Object],[object Object],[object Object],[object Object],[o
```

Let's get this data in the NodeJS server. We create a file named **"server.js"**.

```
// ******* backend/server.js *******

const http = require('http');
const database = require('./database');

http.createServer(async (req,res)=> {
    // THIS IS FOR CORS ERRORS
    res.setHeader('Access-Control-Allow-Origin', '*'); /* @dev First, read about security */
    res.setHeader('Access-Control-Allow-Methods', 'OPTIONS, GET');
    res.setHeader('Access-Control-Max-Age', 2592000); // 30 days
    if(req.url == '/api/shoes'){
        try {
            res.writeHead(200, {'Content-Type':'application/json'});
            const dataset = await database.shoes(); // here we get the string json
            res.write(dataset); // whoever requests will get the string json as response
        }
        finally {
            res.end(); // must end response. DONT FOGET
        }
    }
}).listen(4000);
// the server will listen to all request in port 400 because
// reactjs is run on port 3000. react will request for data from port
// 3000 to our nodejs in port 4000
```

Our code for the backend is done.

Frontend Setup

As you saw in the folder structure, our react project is another folder. So simply go to your root folder and then install ReactJS using

```
npx create-react-app reactfrontend
```

Install **'Axios'** too.

```
npm install axios
```

now delete all the unnecessary files according to the picture of the files and folder structure. Here is the App component in **'App.js'** file:

```
// ******* reactfrontend/src/App.js *****

import React, { useEffect } from "react";
import Axios from 'axios';

export default function App() {
    // will update list as database updates on refreshing the site
    const [list, setList] = React.useState([]);

    // will be run once
    useEffect(()=> {
        // here we get the data by requesting data from this link
        // to our nodejs server
        Axios.get('http://localhost:4000/api/shoes')
        .then((res)=> setList(res.data));
    }, []);

    // creating list of shoes
    let val = list.map((item)=>{
        return <li key={item.id}>{item.name}</li>
    });

    return (
        <div>
            <h1>hello world</h1>
            <p>i live in this world</p>
            <ol>
                {val}
            </ol>
        </div>
    )
}
```

Here is the **'index.js'** file:

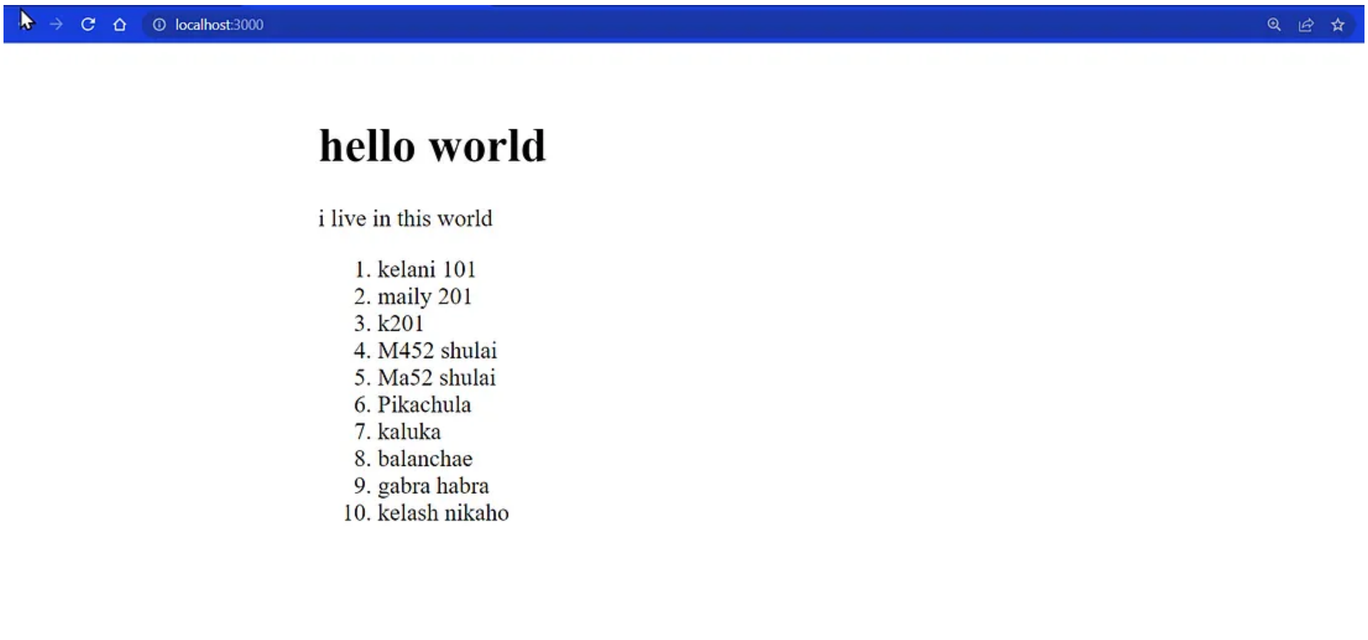
```
// ******* reactfrontend/src/index.js *******

import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App from './App';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>
);
```

Now to run this whole application, go to your 'backend' directory in the terminal and run: ***node server.js***

After running the server go to your 'reactfrontend' folder directory in the terminal type: ***npx start***

Now on your browser type: localhost:3000

You should be able to see your database data in a list like mine.



hello world

i live in this world

```
 1. kelani 101
 2. maily 201
 3. k201
 4. M452 shulai
 5. Ma52 shulai
 6. Pikachula
 7. kaluka
 8. balanchae
 9. gabra habra
10. kelash nikaho
```

Hope this helped get the idea. Do follow me on medium to get more of react and Nodejs.

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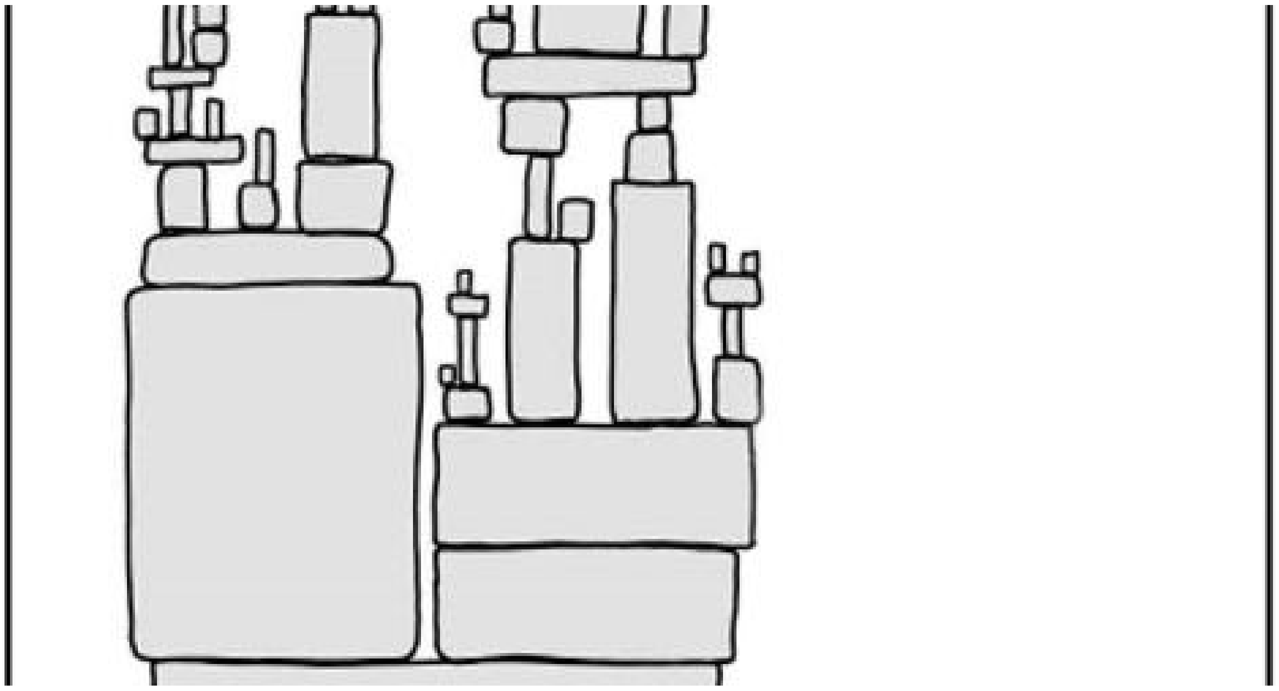

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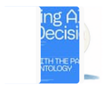

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