how to connect our frontend to mongo compass locally

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Connecting your frontend application (like a React app) to a local MongoDB database managed by MongoDB Compass involves setting up a backend server that communicates with MongoDB. The frontend cannot directly connect to MongoDB due to security reasons; instead, it communicates with the backend, which interacts with the database. Here’s how to do it step by step:

Step 1: Set Up Your Local MongoDB Database
Install MongoDB:

If you haven’t already, download and install MongoDB on your local machine from the official MongoDB website.
Start MongoDB:

Run the MongoDB server using the command line:bash
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```
mongod
```

Ensure that your MongoDB server is running, typically at mongodb://localhost:27017.
Install MongoDB Compass:

Download and install MongoDB Compass to visualize and manage your MongoDB data.
Step 2: Set Up Your Backend Server
Create a Node.js Application:

Create a new directory for your backend and initialize a Node.js app:bash
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```
mkdir mongo-backend
cd mongo-backend
npm init -y
```

Install Required Packages:

Install Express (for the server) and Mongoose (for MongoDB interaction):bash
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```
npm install express mongoose cors
```

Create a Server File:

Create a file named server.js:bash
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```
touch server.js
```

Set Up the Express Server:

In server.js, add the following code:
javascript
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```
const express = require('express');
const mongoose = require('mongoose');
const cors = require('cors');


const app = express();
```

```
app.use(cors());
app.use(express.json());


// Connect to MongoDB
mongoose.connect('mongodb://localhost:27017/myDatabase', {
useNewUrlParser: true,
useUnifiedTopology: true
}).then(() => {
console.log('Connected to MongoDB');
}).catch(err => {
console.error('MongoDB connection error:', err);
});


// Define a simple data model
const UserSchema = new mongoose.Schema({
name: String,
email: String
});


const User = mongoose.model('User', UserSchema);


// Define API route to fetch all users
app.get('/api/users', async (req, res) => {
const users = await User.find();
res.json(users);
});


// Define API route to create a new user
```

```
app.post('/api/users', async (req, res) => {
const { name, email } = req.body;
const newUser = new User({ name, email });
await newUser.save();
res.json(newUser);
});


// Start the server
app.listen(8080, () => {
console.log('Server running on http://localhost:8080');
});
```

Run the Backend Server:

In the terminal, run the backend server:bash
Copy code

```
node server.js
```

Step 3: Set Up Your Frontend Application
Create a React Application:

In a new directory, create a React app:bash
Copy code

```
npx create-react-app mongo-react-frontend
cd mongo-react-frontend
```

Install Axios for HTTP Requests:

Axios is a promise-based HTTP client for making requests from the frontend:bash
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```
npm install axios
```

Create a Component to Interact with the Backend:

In src/App.js, modify the code as follows:
javascript
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```
import React, { useEffect, useState } from 'react';
import axios from 'axios';


function App() {
const [users, setUsers] = useState([]);
const [name, setName] = useState(");
const [email, setEmail] = useState(");


useEffect(() => {
  // Fetch users from the backend API
  axios.get('http://localhost:8080/api/users')
    .then(response => {
      setUsers(response.data);
    })
    .catch(error => {
      console.error('There was an error fetching the users!', error);
    });
}, []);
```

```
// Submit new user to the backend
const handleSubmit = (e) => {
  e.preventDefault();
  axios.post('http://localhost:8080/api/users', { name, email })
    .then(response => {
      setUsers([...users, response.data]);
      setName('');
      setEmail('');
    })
    .catch(error => {
      console.error('There was an error creating the user!', error);
    });
};


return (
  <div>
    <h1>User List</h1>
    <ul>
      {users.map(user => (
        <li key={user._id}>{user.name} - {user.email}</li>
      ))}
    </ul>


    <h2>Add New User</h2>
    <form onSubmit={handleSubmit}>
      <input
        type="text"
        value={name}
        onChange={(e) => setName(e.target.value)}
        placeholder="Name"
      />
      <input
        type="email"
        value={email}
        onChange={(e) => setEmail(e.target.value)}
        placeholder="Email"
      />
      <button type="submit">Submit</button>
    </form>
  </div>
);
}


export default App;
```

Run the React Application:

In the mongo-react-frontend directory, run:bash
Copy code

```
npm start
```

Step 4: Test the Connection
View in MongoDB Compass:

Open MongoDB Compass and connect to your local MongoDB instance using the connection string: mongodb://localhost:27017.
You should see your database (e.g., myDatabase) and the users collection being populated with data.
Test the React App:

Open your browser and go to http://localhost:3000.
You should be able to see the users being fetched from MongoDB, and any new users added via the form should appear both in the app and MongoDB Compass.
Summary
Set up a local MongoDB instance and start it.
Create a backend server using Node.js and Express to handle requests and connect to MongoDB.
Build a React frontend that communicates with the backend to fetch and display data.
This setup allows your frontend to communicate indirectly with MongoDB through the backend, which is a standard practice in web development. If you have any questions or need further assistance, feel free to ask!

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