

Project: Develop a simple web application that integrates a frontend (using React) with a backend (using Node.js/Express). Document the setup process, code snippets, and screenshots of the working application.

Prerequisites

- Node.js installed
- npm (Node Package Manager) installed
- Basic understanding of JavaScript, React, and Express

Step 1: Setting Up the Backend with Node.js/Express

Initialize the project:

```
mkdir my-app  
cd my-app  
mkdir backend  
cd backend  
npm init -y
```

Install Express:

```
npm install express
```

Create a basic Express server: Create a file `index.js` in the backend directory and add the following code:

```
const express = require('express');
const app = express();
const port = 5000;

app.get('/api', (req, res) => {
  res.json({ message: 'Hello from the backend!' });
});

app.listen(port, () => {
  console.log(`Server is running on http://localhost:${port}`);
});
```

Run the server:

```
node index.js
```

Step 2: Setting Up the Frontend with React

Initialize the React project: Open a new terminal window and run:

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

Install Axios for HTTP requests:

```
npm install axios
```

Modify the App.js file: Replace the content of src/App.js with:

```
import React, { useEffect, useState } from 'react';
import axios from 'axios';
import './App.css';

function App() {
  const [message, setMessage] = useState('');

  useEffect(() => {
    axios.get('/api')
      .then(response => {
        setMessage(response.data.message);
      })
      .catch(error => {
        console.error('There was an error fetching the message!',
error);
      });
  }, []);

  return (
    <div className="App">
      <header className="App-header">
        <p>{message}</p>
      </header>
    </div>
  );
}

export default App;
```

Set up a proxy to the backend: In frontend/package.json, add the following line:

```
"proxy": "http://localhost:5000"
```

Run the React application:

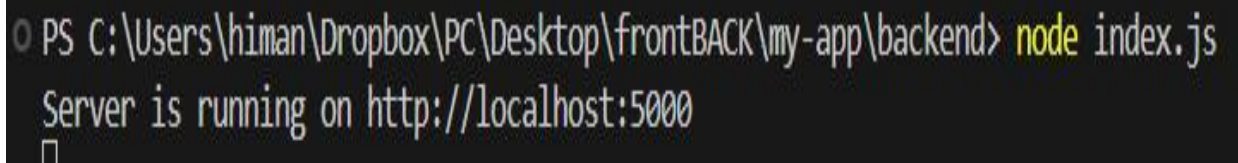
```
npm start
```

Step 3: Integrate and Test the Application

- **Ensure both the backend and frontend servers are running:**
 - Backend: `node index.js`
 - Frontend: `npm start` in the frontend directory
- **Visit the frontend application:** Open your browser and navigate to `http://localhost:3000`.
- • **Verify the Integration:** You should see the message "Hello from the backend!" displayed on the React app.

Screenshots of working application:

Backend:

A screenshot of a Windows command prompt window. The prompt shows the current directory as 'C:\Users\himan\Dropbox\PC\Desktop\frontBACK\my-app\backend'. The user has entered the command 'node index.js'. The output of the command is 'Server is running on http://localhost:5000'.

```
PS C:\Users\himan\Dropbox\PC\Desktop\frontBACK\my-app\backend> node index.js
Server is running on http://localhost:5000
```

Front end:

