Lesson 04 Demo 01

Demonstrating Basic Routing in a React Application

Objective: To demonstrate seamless navigation and rendering between pages or components in a React application using React Router

Tools required: Visual Studio Code and Node.js

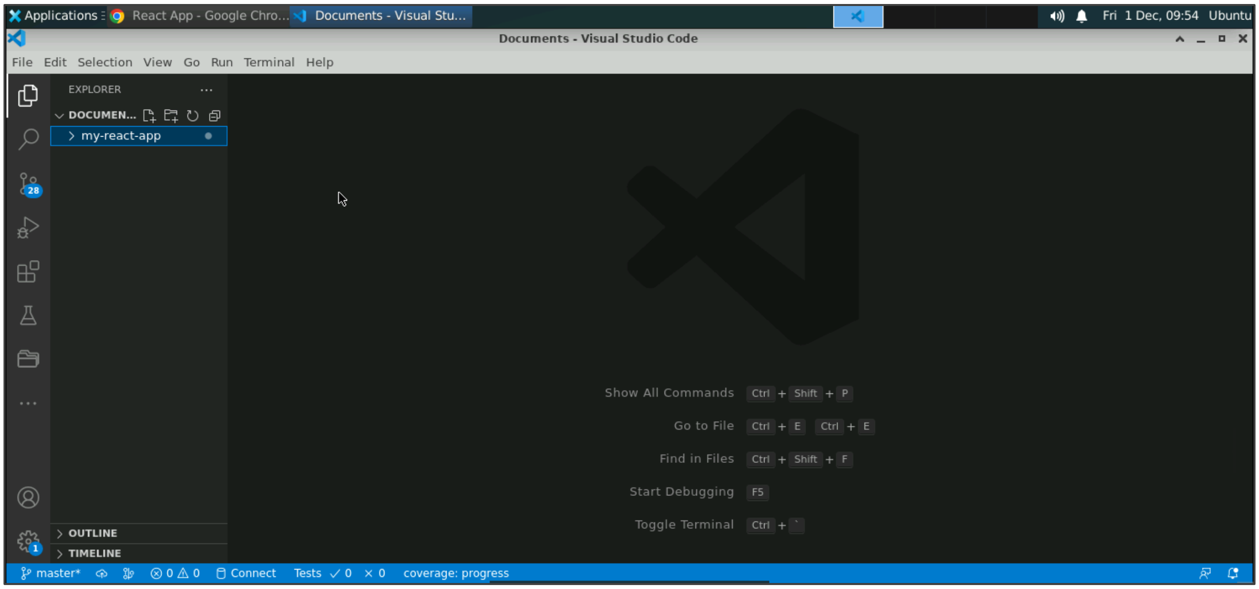
Prerequisites: A basic understanding of React Router

Steps to be followed:

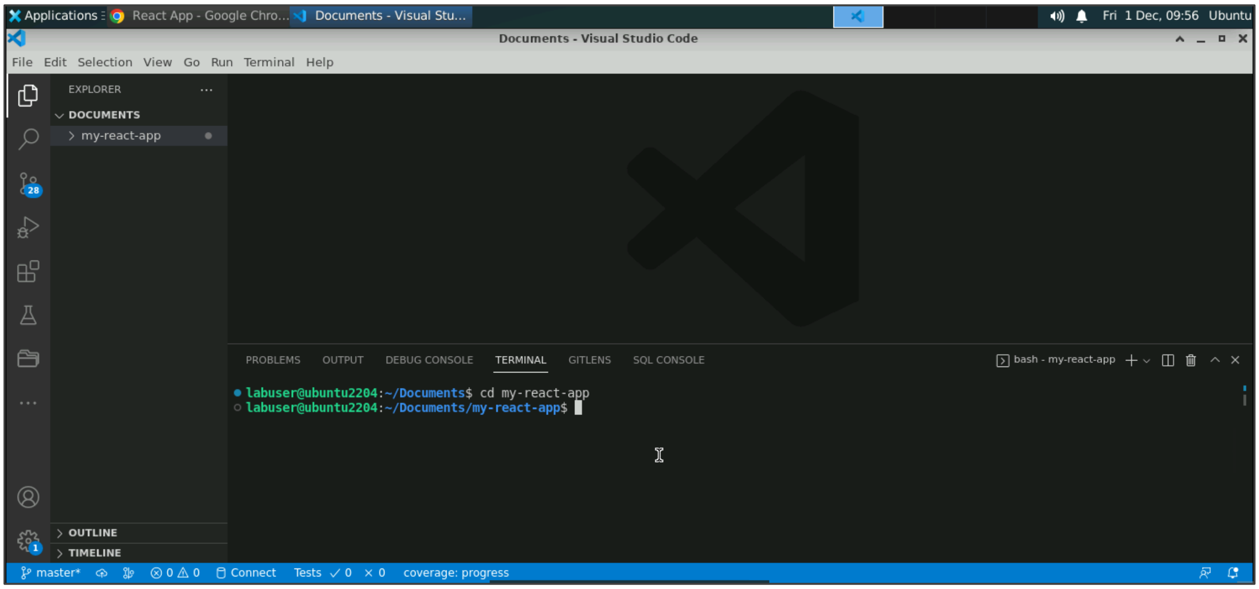
1. Set up the project
2. Install React Router
3. Create simple routes
4. Run the application

Step 1: Set up the project

1.1 Open **Visual Studio Code** and create a new folder named **my-react-app**


Applications
React App - Google Chro...
Documents - Visual Stu...
Fri 1 Dec, 09:54 Ubuntu
Documents - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
DOCUMEN...
my-react-app
Show All Commands Ctrl + Shift + P
Go to File Ctrl + E Ctrl + E
Find in Files Ctrl + Shift + F
Start Debugging F5
Toggle Terminal Ctrl + `
OUTLINE
TIMELINE
master* 0 0 Connect Tests ✓ 0 × 0 coverage: progress

1.2 Open the terminal and navigate to the **my-react-app** folder using the following command:
cd my-react-app


Applications
React App - Google Chro...
Documents - Visual Stu...
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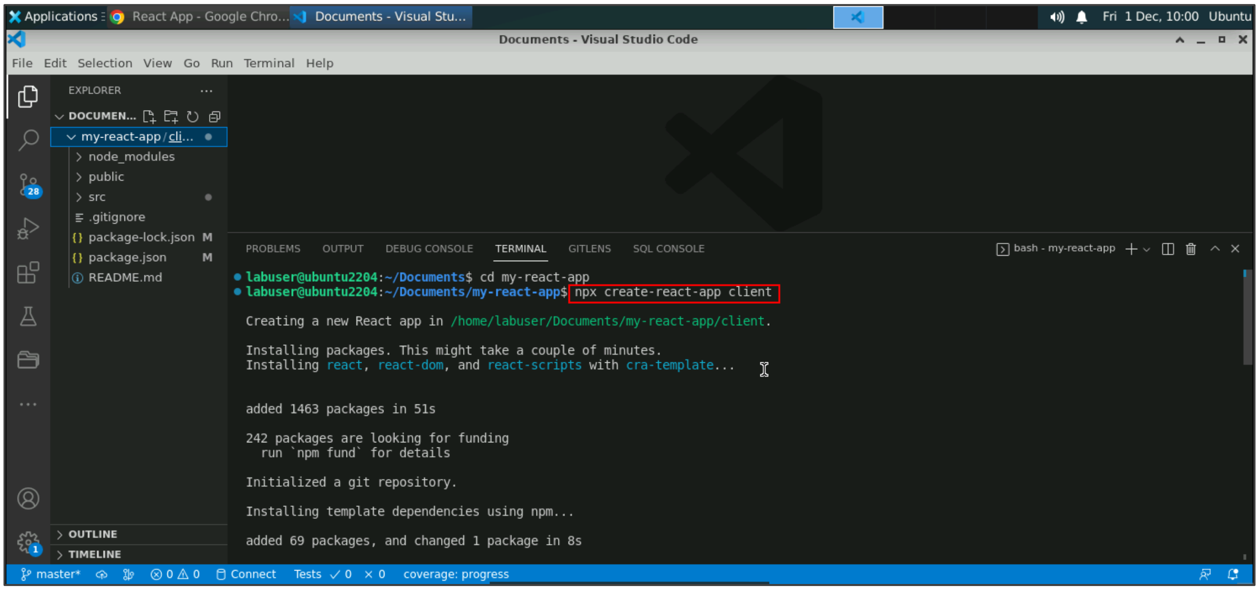
Ubuntu
Documents - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
DOCUMENTS
my-react-app
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL GITLENS SQL CONSOLE
bash - my-react-app
master* ⊗ 0 ⚠ 0 Connect Tests ✓ 0 × 0 coverage: progress

```
labuser@ubuntu2204:~/Documents$ cd my-react-app
labuser@ubuntu2204:~/Documents/my-react-app$
```

1.3 Initialize a new React app using the following command:
npx create-react-app client


Applications
React App - Google Chro...
Documents - Visual Stu...
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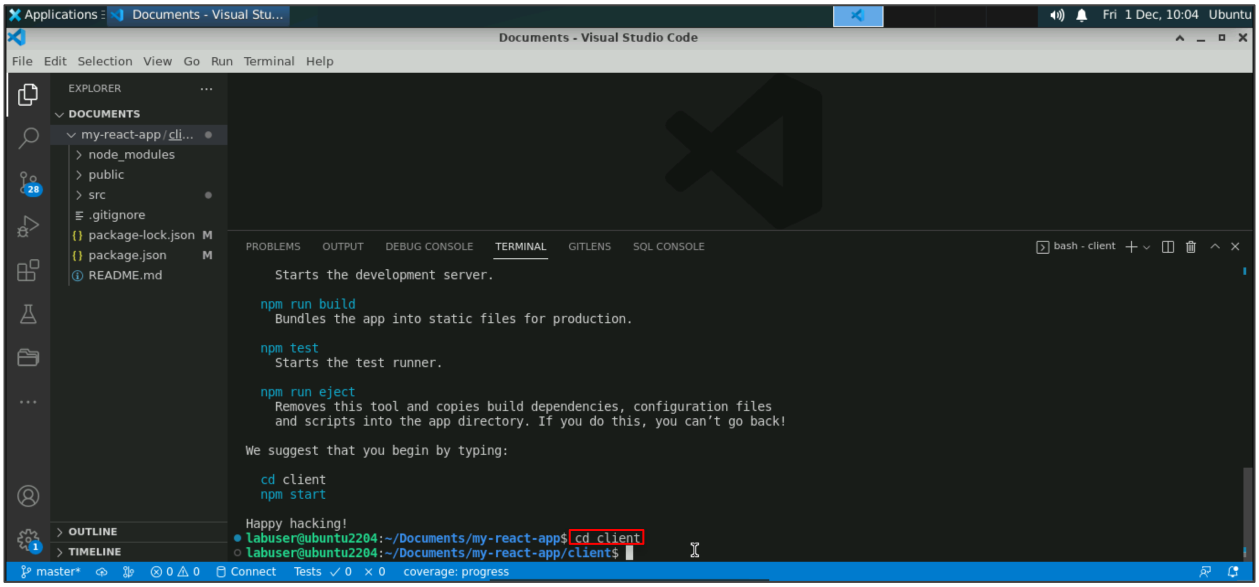
Ubuntu
Documents - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
DOCUMEN...
my-react-app / cli...
node_modules
public
src
.gitignore
package-lock.json M
package.json M
README.md
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL GITLENS SQL CONSOLE
bash - my-react-app
master* ⊗ 0 ⚠ 0 Connect Tests ✓ 0 × 0 coverage: progress

```
labuser@ubuntu2204:~/Documents$ cd my-react-app
labuser@ubuntu2204:~/Documents/my-react-app$ npx create-react-app client

Creating a new React app in /home/labuser/Documents/my-react-app/client.

Installing packages. This might take a couple of minutes.
Installing react, react-dom, and react-scripts with cra-template...


added 1463 packages in 51s

242 packages are looking for funding
  run `npm fund` for details

Initialized a git repository.

Installing template dependencies using npm...

added 69 packages, and changed 1 package in 8s
```

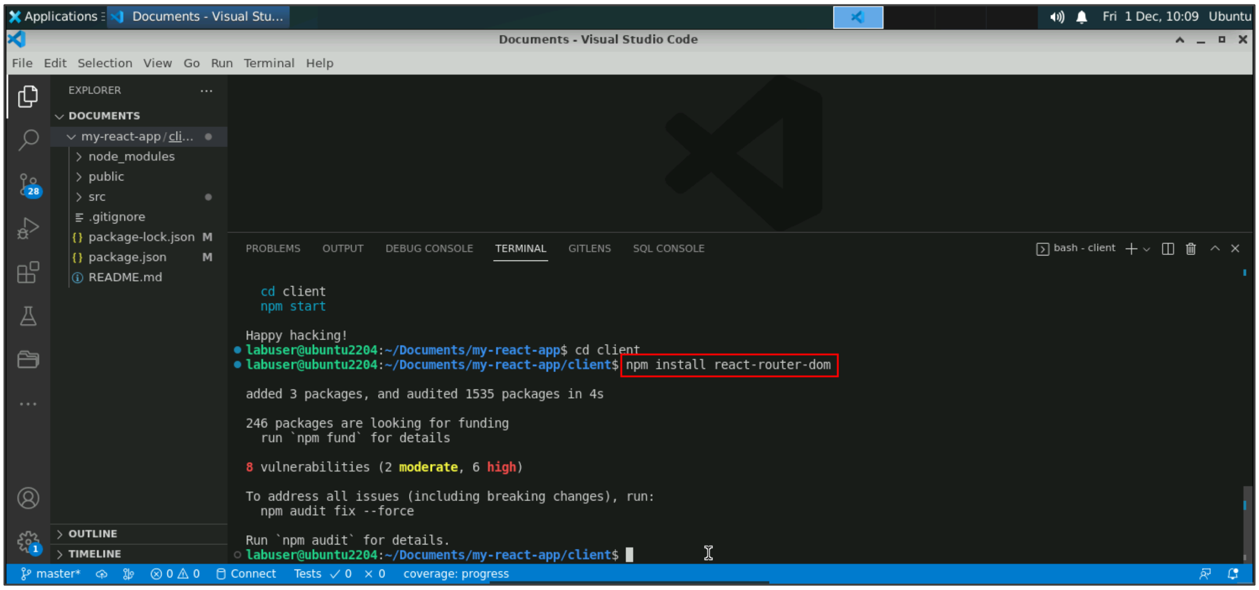
1.4 Navigate to the **client** folder using the following command:
cd client


Applications
Documents - Visual Stu...
Fri 1 Dec, 10:04 Ubuntu
Documents - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
DOCUMENTS
my-react-app / cli...
node_modules
public
src
.gitignore
package-lock.json M
package.json M
README.md
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL GITLENS SQL CONSOLE
bash - client
master* ⊗ 0 ⚠ 0 Connect Tests ✓ 0 × 0 coverage: progress

```
    Starts the development server.

  npm run build
    Bundles the app into static files for production.

  npm test
    Starts the test runner.

  npm run eject
    Removes this tool and copies build dependencies, configuration files
    and scripts into the app directory. If you do this, you can’t go back!

We suggest that you begin by typing:

  cd client
  npm start

Happy hacking!
labuser@ubuntu2204:~/Documents/my-react-app$ cd client
labuser@ubuntu2204:~/Documents/my-react-app/client$ 
```

Step 2: Install React Router

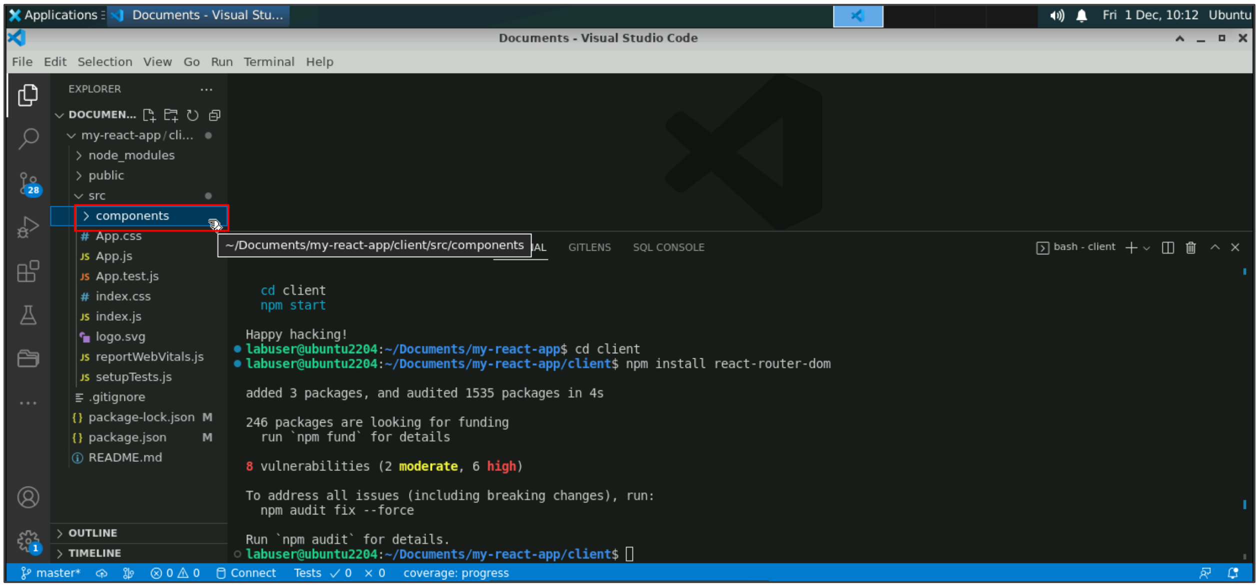
2.1 Install React Router using the following command:
npm install react-router-dom


Applications
Documents - Visual Stu...
Fri 1 Dec, 10:09 Ubuntu
Documents - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
DOCUMENTS
my-react-app / cli...
node_modules
public
src
.gitignore
package-lock.json M
package.json M
README.md
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL GITLENS SQL CONSOLE
bash - client
master* ⊗ 0 ⚠ 0 Connect Tests ✓ 0 × 0 coverage: progress

```
  cd client
  npm start

Happy hacking!
labuser@ubuntu2204:~/Documents/my-react-app$ cd client
labuser@ubuntu2204:~/Documents/my-react-app/client$ npm install react-router-dom

added 3 packages, and audited 1535 packages in 4s

246 packages are looking for funding
  run `npm fund` for details

8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
labuser@ubuntu2204:~/Documents/my-react-app/client$ 
```

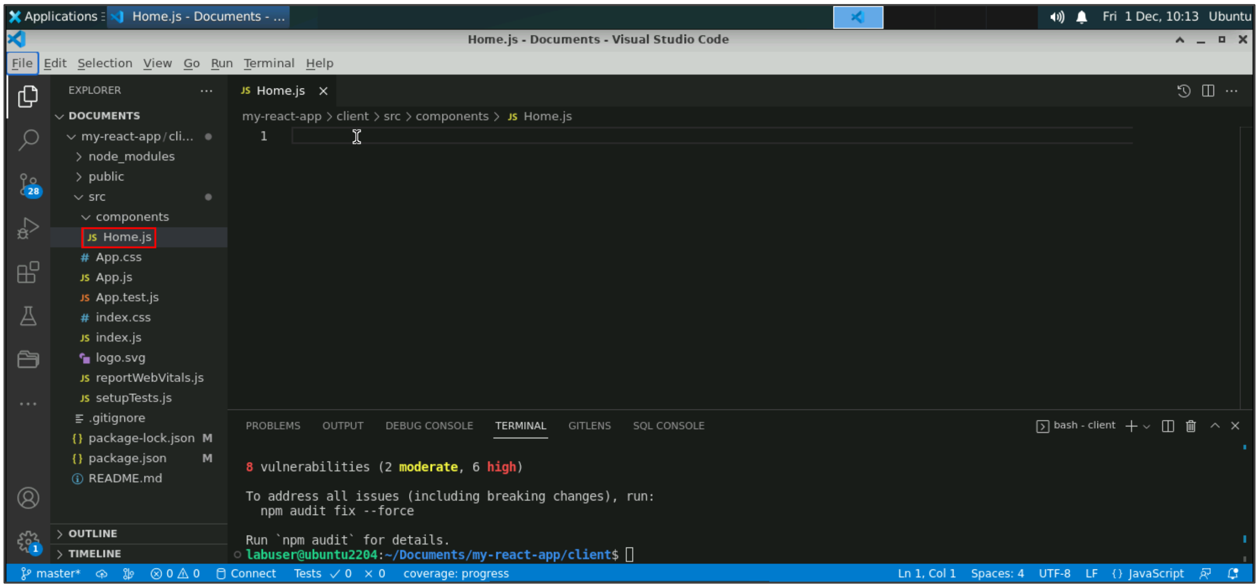
Step 3: Create simple routes

3.1 In the **client/src** folder, create a new folder named **components**



```
  cd client
  npm start

Happy hacking!
labuser@ubuntu2204:~/Documents/my-react-app$ cd client
labuser@ubuntu2204:~/Documents/my-react-app/client$ npm install react-router-dom

added 3 packages, and audited 1535 packages in 4s

246 packages are looking for funding
  run `npm fund` for details

8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
labuser@ubuntu2204:~/Documents/my-react-app/client$
```

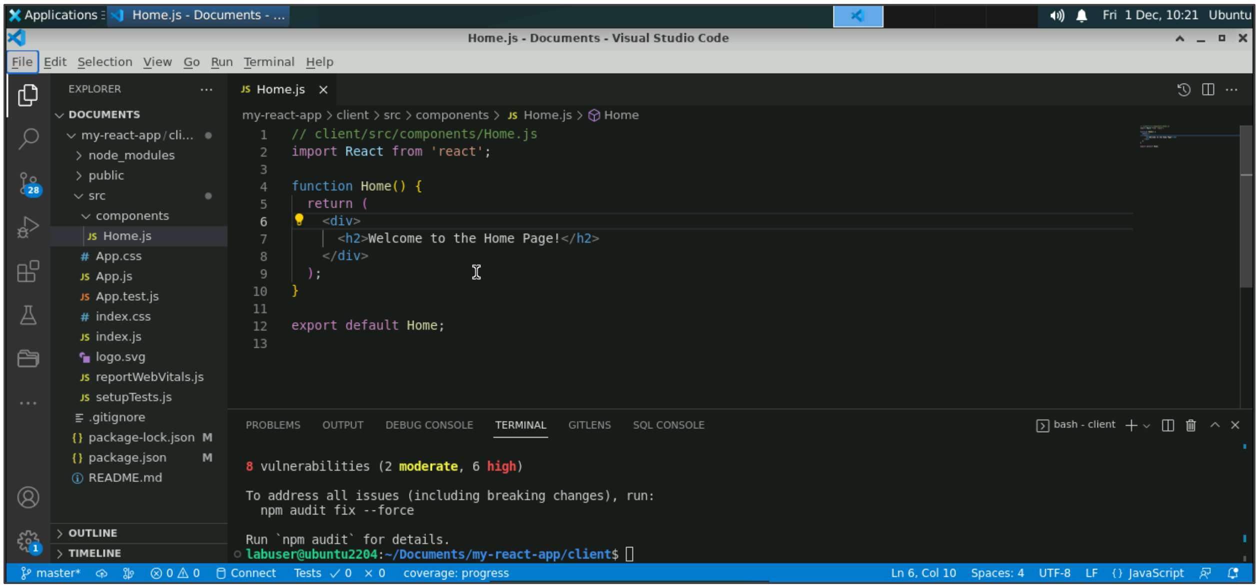
3.2 Inside the **components** folder, create a new JavaScript file named **Home.js**



```
8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
labuser@ubuntu2204:~/Documents/my-react-app/client$
```

3.3 Add the following code to the **Home.js** file:

```
// client/src/components/Home.js
import React from 'react';

function Home() {
  return (
    <div>
      <h2>Welcome to the Home Page!</h2>
    </div>
  );
}

export default Home;
```



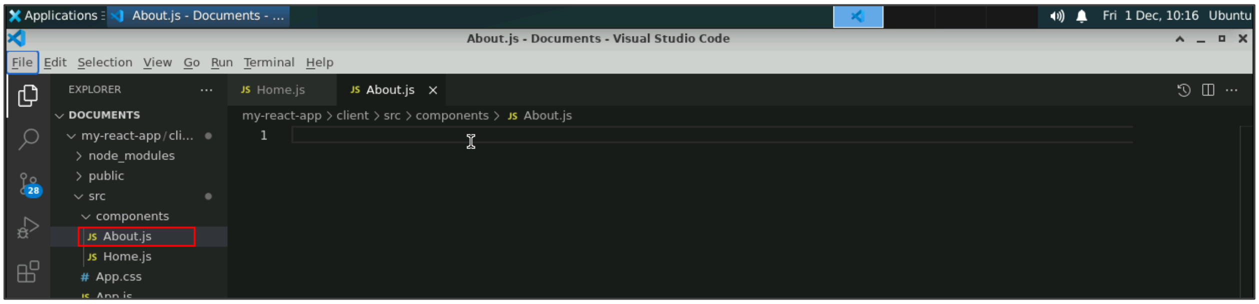
Applications
Home.js - Documents - ...
Fri 1 Dec, 10:21 Ubuntu
Home.js - Documents - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
DOCUMENTS
my-react-app / cli...
node_modules
public
src
components
Home.js
App.css
App.js
App.test.js
index.css
index.js
logo.svg
reportWebVitals.js
setupTests.js
.gitignore
package-lock.json M
package.json M
README.md
OUTLINE
TIMELINE
my-react-app > client > src > components > Home.js > Home
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL GITLENS SQL CONSOLE
bash - client
master* ⊗ 0 ⚠ 0 Connect Tests ✓ 0 × 0 coverage: progress
Ln 6, Col 10 Spaces: 4 UTF-8 LF {} JavaScript

```
// client/src/components/Home.js
import React from 'react';

function Home() {
  return (
    <div>
      <h2>Welcome to the Home Page!</h2>
    </div>
  );
}

export default Home;
```

```
8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
labuser@ubuntu2204:~/Documents/my-react-app/client$
```

Note: Save the file

3.4 Inside the **components** folder, create a new JavaScript file named **About.js**

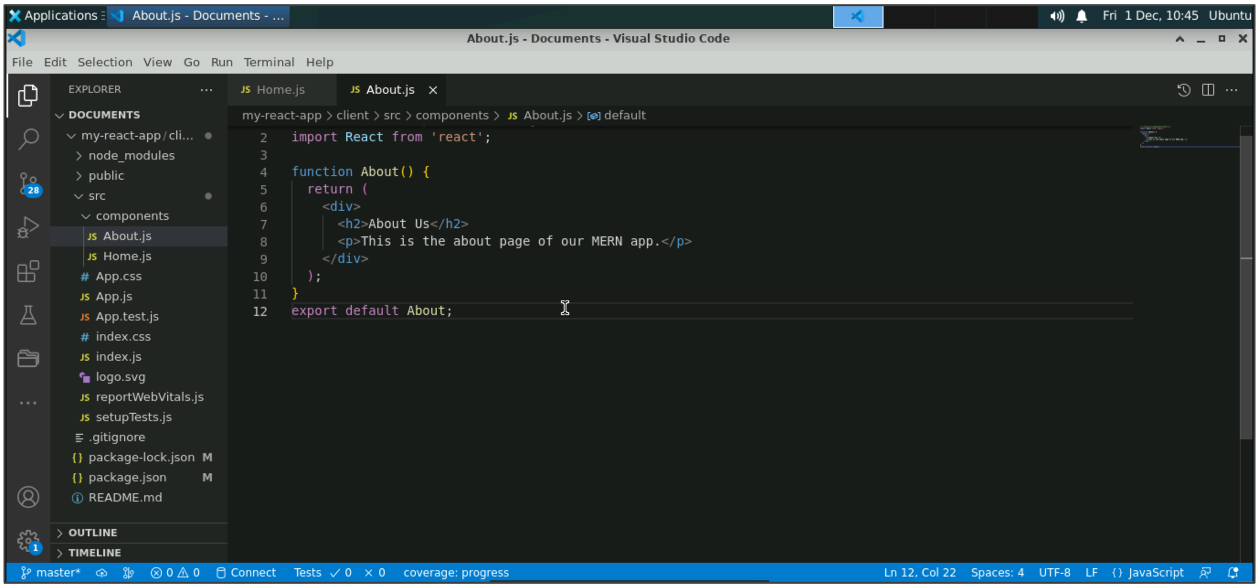

Applications
About.js - Documents - ...
Fri 1 Dec, 10:16 Ubuntu
About.js - Documents - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
DOCUMENTS
my-react-app / cli...
node_modules
public
src
components
About.js
Home.js
App.css
App.js
Home.js
About.js
my-react-app > client > src > components > About.js

3.5 Add the following code to the **About.js** file:

// client/src/components/About.js
import React from 'react';

function About() {
return (
<div>
<h2>About Us</h2>
<p>This is the about page of our MERN app.</p>
</div>
);
}

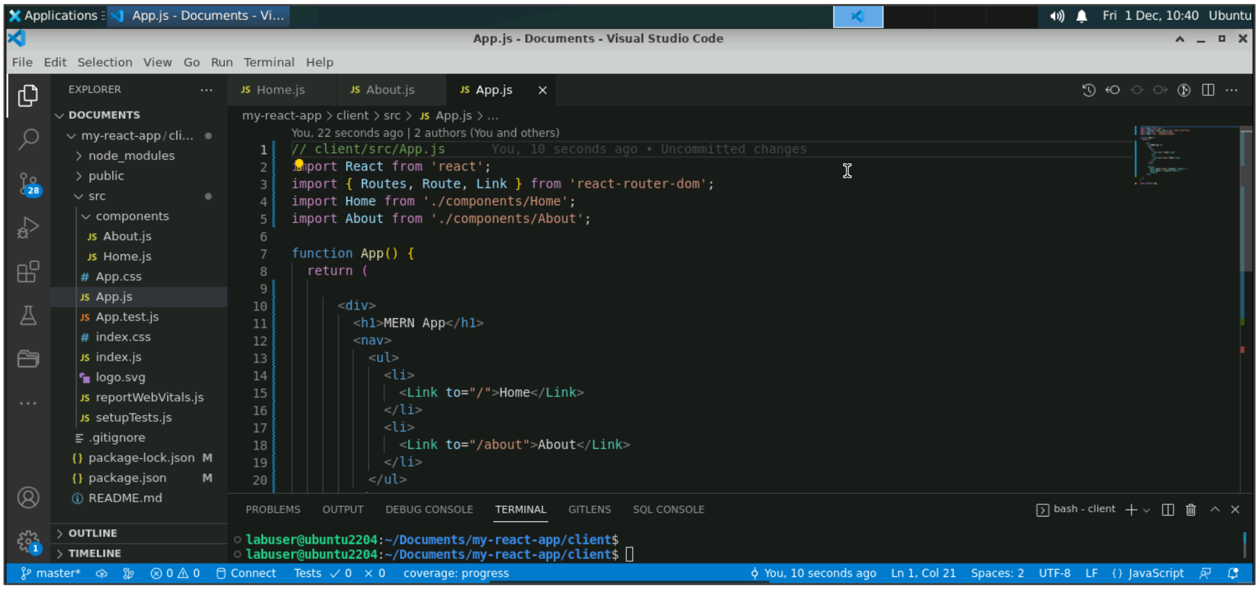
export default About;



```
import React from 'react';

function About() {
  return (
    <div>
      <h2>About Us</h2>
      <p>This is the about page of our MERN app.</p>
    </div>
  );
}
export default About;
```

3.6 Replace the existing code in the **App.js** file with the following code:

```
// client/src/App.js
import React from 'react';
import { Routes, Route, Link } from 'react-router-dom';
import Home from './components/Home';
import About from './components/About';

function App() {
  return (

      <div>
        <h1>MERN App</h1>
        <nav>
          <ul>
            <li>
              <Link to="/">Home</Link>
            </li>
            <li>
              <Link to="/about">About</Link>
            </li>
          </ul>
        </nav>

        <Routes>
          <Route path="/about" element= {<About/>} />
          <Route path="/" element={<Home/>} />
          </Routes>
      </div>

  );
}

export default App;
```

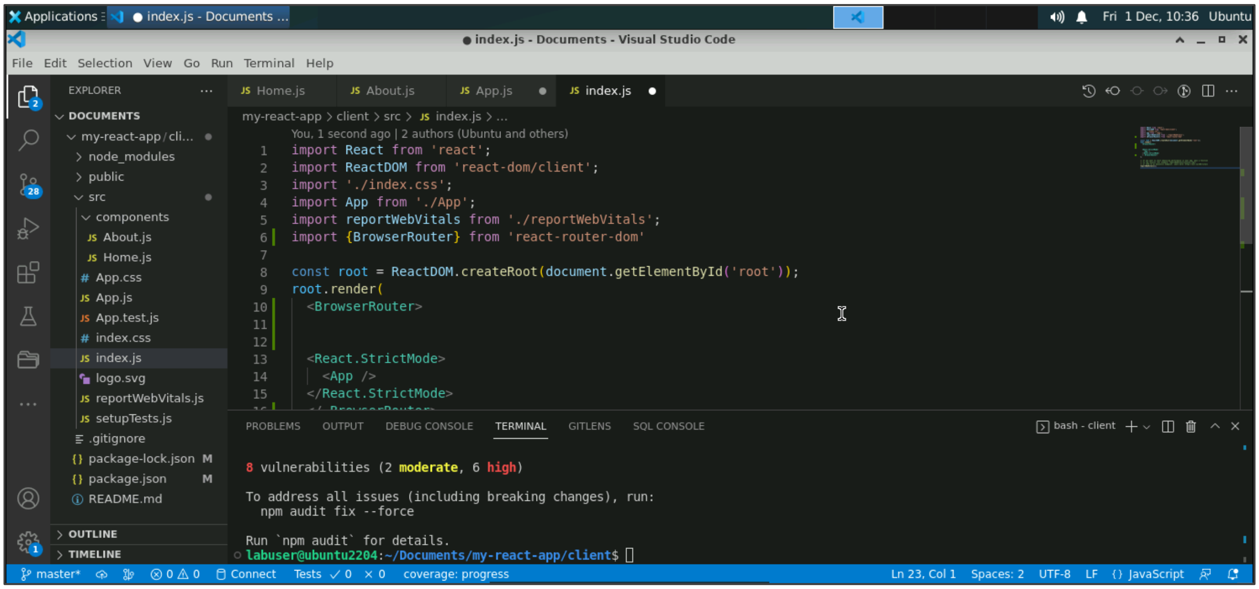


```
// client/src/App.js       You, 10 seconds ago • Uncommitted changes
import React from 'react';
import { Routes, Route, Link } from 'react-router-dom';
import Home from './components/Home';
import About from './components/About';

function App() {
  return (

      <div>
        <h1>MERN App</h1>
        <nav>
          <ul>
            <li>
              <Link to="/">Home</Link>
            </li>
            <li>
              <Link to="/about">About</Link>
            </li>
          </ul>
```

```
labuser@ubuntu2204:~/Documents/my-react-app/client$
labuser@ubuntu2204:~/Documents/my-react-app/client$
```

3.7 Replace the existing code in the **index.js** file with the following code:

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App from './App';
import reportWebVitals from './reportWebVitals';
import {BrowserRouter} from 'react-router-dom'

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <BrowserRouter>


  <React.StrictMode>
    <App />
  </React.StrictMode>
  </ BrowserRouter>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```



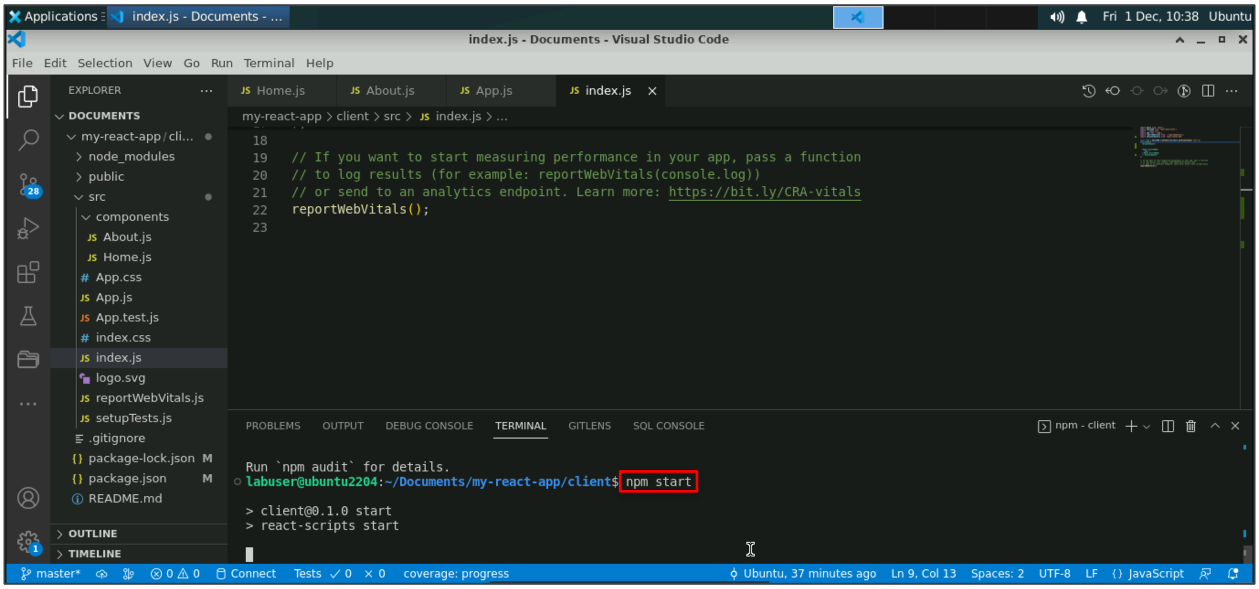
```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App from './App';
import reportWebVitals from './reportWebVitals';
import {BrowserRouter} from 'react-router-dom'

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <BrowserRouter>


  <React.StrictMode>
    <App />
  </React.StrictMode>
  </BrowserRouter>
```

```
8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
labuser@ubuntu2204:~/Documents/my-react-app/client$ 
```

Note: Save all the files

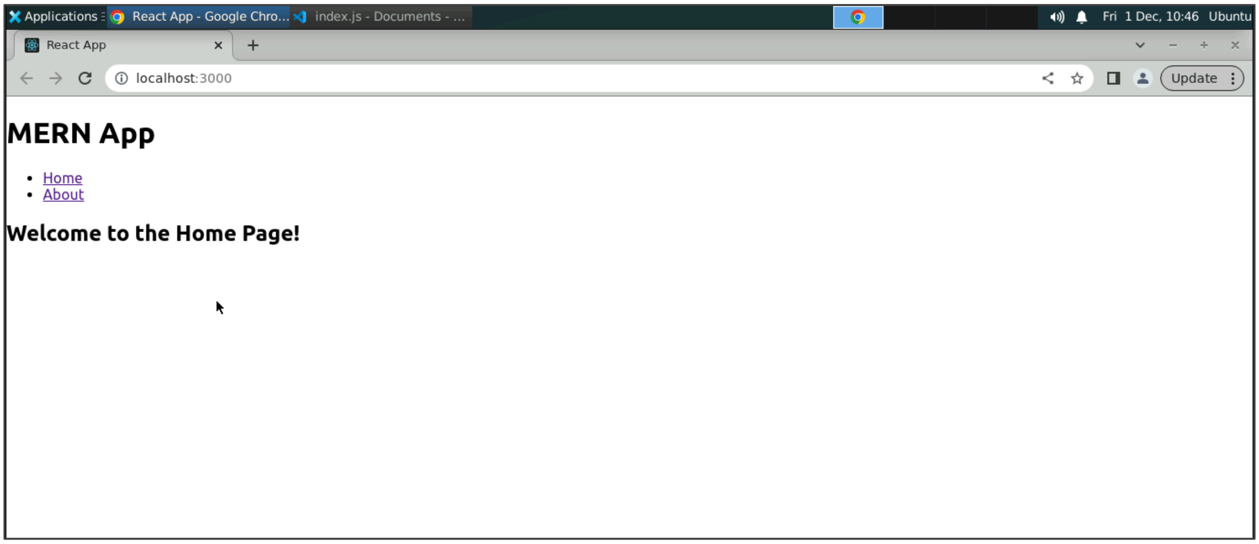
Step 4: Run the application

4.1 Navigate to the **index.js,** and start the react development server using the following command:
npm start



```
// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

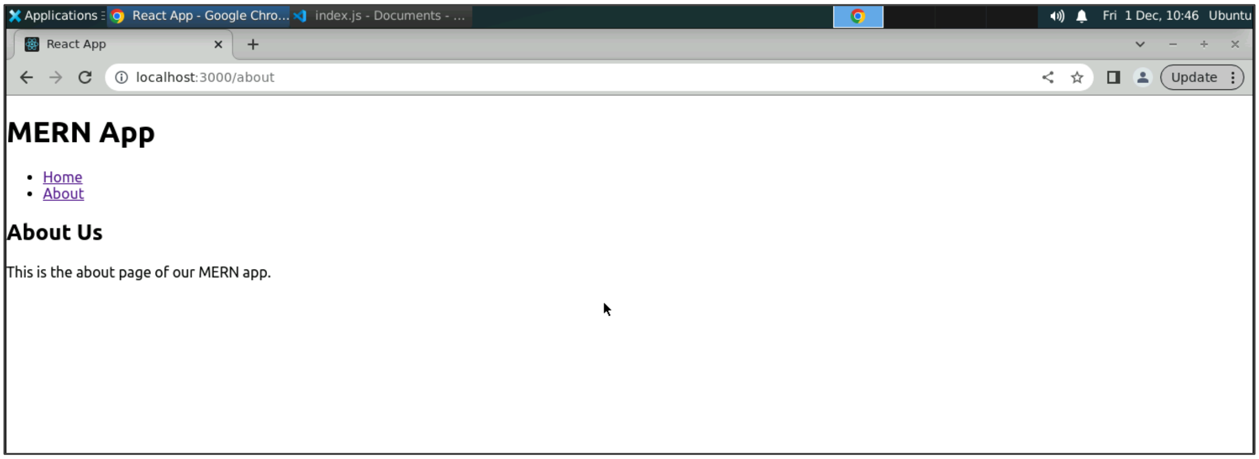
```
Run `npm audit` for details.
labuser@ubuntu2204:~/Documents/my-react-app/client$ npm start

> client@0.1.0 start
> react-scripts start
```



MERN App

- Home
- About

Welcome to the Home Page!



MERN App

- Home
- About

About Us

This is the about page of our MERN app.

By following these steps, you have successfully implemented basic routing in your MERN application using React Router, enabling smooth navigation and rendering between different pages or components.