



Mini Project Report - 12

**Master of Computer Application – General
Semester – III**

Sub: Web Technologies

Topic: Node.js

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Mini Project Report – Login Page using Node.js

Introduction

Web applications play a vital role in modern technology by providing user-friendly interfaces for interaction. A login page is the most common entry point for any application, allowing users to authenticate and gain access. This project demonstrates how to create a simple login page using **React.js**, a JavaScript library for building user interfaces.

Objective

The main objectives of this project are:

- To understand the basics of **React.js** and how to set up a React project.
 - To create a simple login page with **username** and **password** fields.
 - To demonstrate how forms are handled in React.
 - To showcase the use of **Node.js** and **npm** in running React applications.
-

Tools and Technologies Used

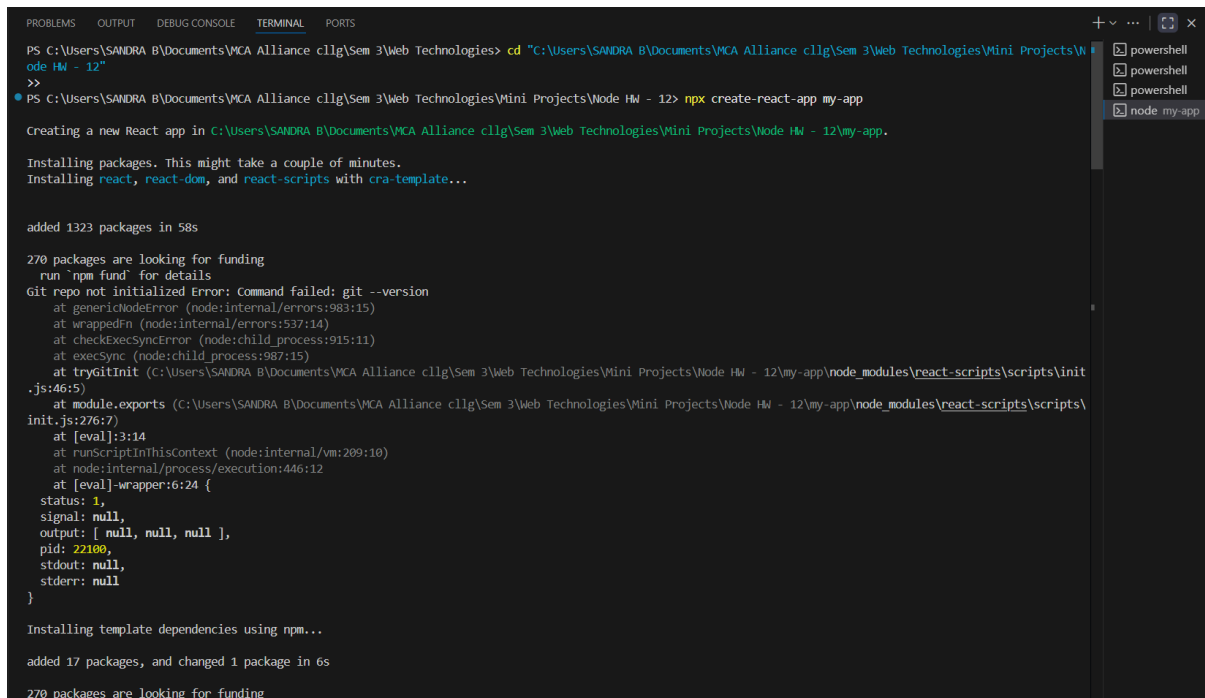
1. **Node.js** – Runtime environment to execute JavaScript outside a browser.
 2. **npm (Node Package Manager)** – To install and manage project dependencies.
 3. **React.js** – JavaScript library for building user interfaces.
 4. **Create React App (CRA)** – A tool to set up React applications quickly.
 5. **Visual Studio Code** – Code editor for development.
 6. **Web Browser (Google Chrome/Edge)** – For testing and viewing the output.
-

Description of Code

1. Project Setup

Commands used to create and run the project:

- `npx create-react-app my-app`
- `cd my-app`
- `npm start`



```
PS C:\Users\SANDRA B\Documents\MCA Alliance cllg\Sem 3\Web Technologies> cd "C:\Users\SANDRA B\Documents\MCA Alliance cllg\Sem 3\Web Technologies\Mini Projects\Node HW - 12"
>>
PS C:\Users\SANDRA B\Documents\MCA Alliance cllg\Sem 3\Web Technologies\Mini Projects\Node HW - 12> npx create-react-app my-app

Creating a new React app in C:\Users\SANDRA B\Documents\MCA Alliance cllg\Sem 3\Web Technologies\Mini Projects\Node HW - 12\my-app.

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

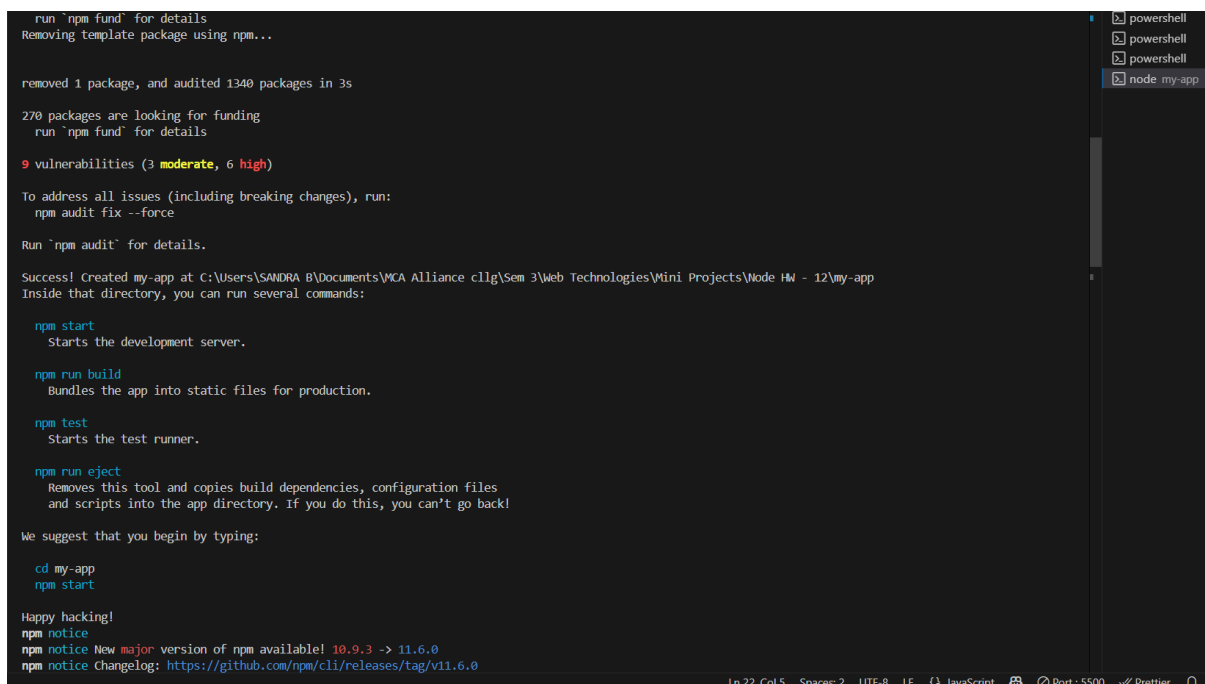
added 1323 packages in 58s

270 packages are looking for funding
  run `npm fund` for details
Git repo not initialized Error: Command failed: git --version
    at genericNodeError (node:internal/errors:983:15)
    at wrappedFn (node:internal/errors:537:14)
    at checkExecSyncError (node:child_process:915:11)
    at execSync (node:child_process:987:15)
    at tryGitInit (C:\Users\SANDRA B\Documents\MCA Alliance cllg\Sem 3\Web Technologies\Mini Projects\Node HW - 12\my-app\node_modules\react-scripts\scripts\init.js:46:5)
    at module.exports (C:\Users\SANDRA B\Documents\MCA Alliance cllg\Sem 3\Web Technologies\Mini Projects\Node HW - 12\my-app\node_modules\react-scripts\scripts\init.js:276:7)
    at [eval]:3:14
    at runScriptInThisContext (node:internal/vm:289:10)
    at node:internal/process/execution:446:12
    at [eval]-wrapper:6:24 {
  status: 1,
  signal: null,
  output: [ null, null, null ],
  pid: 22100,
  stdout: null,
  stderr: null
}

Installing template dependencies using npm...

added 17 packages, and changed 1 package in 6s

270 packages are looking for funding
```



```
run `npm fund` for details
Removing template package using npm...

removed 1 package, and audited 1340 packages in 3s

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

9 vulnerabilities (3 moderate, 6 high)

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

Run `npm audit` for details.

Success! Created my-app at C:\Users\SANDRA B\Documents\MCA Alliance cllg\Sem 3\Web Technologies\Mini Projects\Node HW - 12\my-app
Inside that directory, you can run several commands:

  npm start
    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 my-app
  npm start

Happy hacking!
npm notice New major version of npm available! 10.9.3 -> 11.6.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.6.0
```

- npx create-react-app my-app → Creates a new React project.
- cd my-app → Navigates into the project folder.
- npm start → Runs the development server and opens the app in the browser.

2. React Code (App.js)

```
function App() {  
  return (  
    <div style={{ textAlign: "center", marginTop: "100px" }}>  
      <h1>Alliance University</h1>  
      <form>  
        <div style={{ margin: "10px" }}>  
          <label>User Name: </label>  
          <input type="text" placeholder="Enter username" />  
        </div>  
        <div style={{ margin: "10px" }}>  
          <label>Password: </label>  
          <input type="password" placeholder="Enter password" />  
        </div>  
        <button type="submit" style={{ marginTop: "10px" }}>  
          Login  
        </button>  
      </form>  
    </div>  
  );  
}
```

```
export default App;
```

Working of the Project

1. When the project is started using `npm start`, React runs a development server at `http://localhost:3000`.
 2. The **App component** renders a login page with a form.
 3. The form contains two input fields:
 - Username (text input)
 - Password (password input)
 4. On clicking the **Login button**, the form is submitted. (In this simple version, no backend validation is added).
-

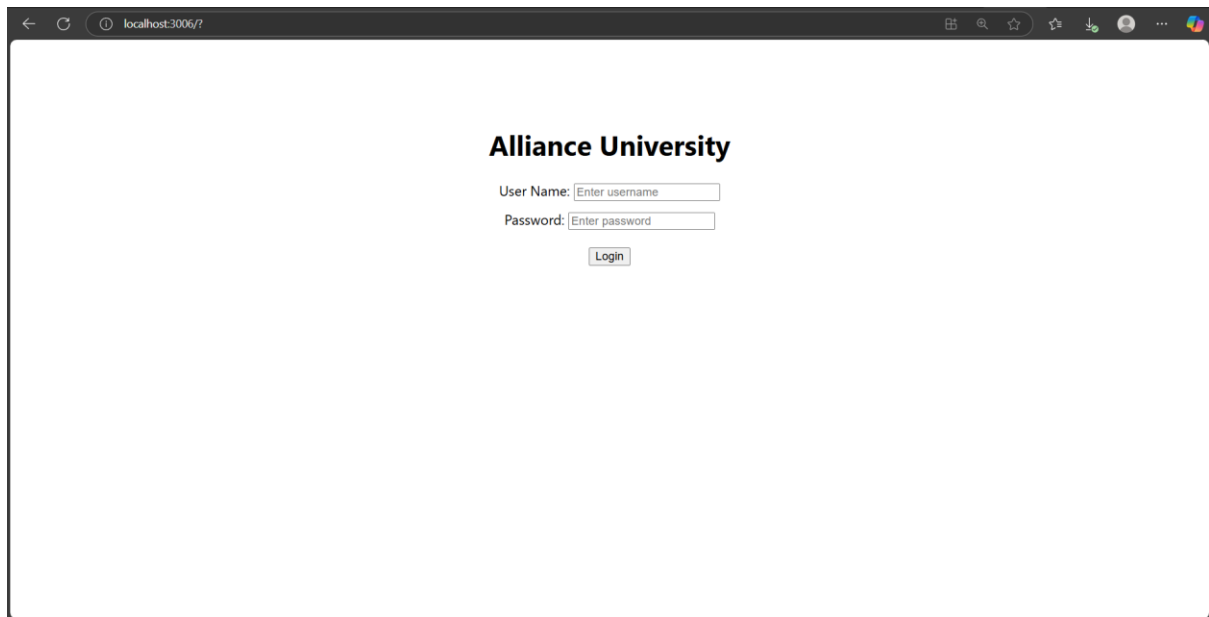
Features

- Simple and user-friendly login page.
 - Uses **React components** for modularity.
 - Easy to run with just three commands (`npx`, `cd`, `npm start`).
 - Can be extended to include authentication.
-

Output

The output is a **login page** displayed in the browser.

- A heading "**Alliance University**" is shown.
- A form with **username** and **password** fields.
- A **Login button** for submission.



The screenshot shows a web browser window with the address bar displaying 'localhost:3006/'. The page content is centered and features the title 'Alliance University' in a bold, black font. Below the title is a login form consisting of two input fields: 'User Name' with a placeholder 'Enter username' and 'Password' with a placeholder 'Enter password'. A 'Login' button is positioned below the password field.

Advantages

- Lightweight and easy to understand.
- Provides a foundation for creating more complex React projects.
- Demonstrates the use of **Node.js** and **npm** in frontend development.
- Can be extended to connect with a backend (Node.js/Express, MongoDB, etc.).

Future Scope

- Implement actual **authentication** with backend APIs.
- Add **form validation** (checking empty fields, incorrect input, etc.).
- Apply **CSS/Bootstrap/Tailwind** for better styling.
- Include options like **Forgot Password** and **Sign Up**.
- Make it mobile responsive.

Conclusion

This project successfully demonstrates how to create a simple login page using **React.js**. It covers the setup of a React environment with Node.js, basic component creation, and rendering of a form. The project can be enhanced with backend integration and additional features, making it a foundation for real-world applications.