

Getting Started with React - Student Guide

This guide will walk you through creating your first React application from scratch. Follow these steps carefully to build a well-structured React app.

Prerequisites

- Node.js installed (version 14 or higher)
- npm (Node Package Manager) or yarn
- A code editor (VS Code recommended)

Step 1: Create a New React Application

```
# Create a new React app
npx create-react-app my-first-react-app

# Navigate to the project directory
cd my-first-react-app
```

Step 2: Clean Up Project Structure

1. Inside the `src` folder, delete these unnecessary files:

- App.test.js
- logo.svg
- reportWebVitals.js
- setupTests.js

2. Modify `index.js` to remove unused imports:

```
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>
);
```

Step 3: Add Bootstrap

1. Add Bootstrap CSS by adding this line in the `<head>` section of `public/index.html`:

```
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet">
```

Step 4: Create Component Structure

1. Create a new folder structure:

```
src/
├── components/
│   ├── Header.js
│   ├── Footer.js
│   └── Greeting.js
```

2. Create Header component (Header.js):

```
import React from 'react';

function Header() {
  return (
    <header className="bg-dark text-white py-3">
      <div className="container">
        <h1 className="h3 mb-0">My First React App</h1>
        <nav className="mt-2">
          <ul className="nav">
            <li className="nav-item">
              <a className="nav-link text-white" href="#home">Home</a>
            </li>
            <li className="nav-item">
              <a className="nav-link text-white" href="#about">About</a>
            </li>
          </ul>
        </nav>
      </div>
    </header>
  );
}

export default Header;
```

3. Create Footer component (Footer.js):

```
import React from 'react';

function Footer() {
  return (
```

```
    <footer className="bg-dark text-white py-3 mt-auto">
      <div className="container text-center">
        <p className="mb-0">&copy; 2024 My First React App. All rights reserved.
      </p>
    </div>
  </footer>
);
}

export default Footer;
```

4. Create Greeting component (Greeting.js):

```
import React from 'react';

function Greeting() {
  return (
    <div className="container my-5">
      <div className="card">
        <div className="card-body">
          <h2 className="card-title">Welcome to React!</h2>
          <p className="card-text">
            Hello from Bangalore! This is your first React component.
          </p>
          <button className="btn btn-primary">
            Learn More
          </button>
        </div>
      </div>
    </div>
  );
}

export default Greeting;
```

Step 5: Modify App Component

Replace the contents of `App.js` with:

```
import React from 'react';
import Header from './components/Header';
import Footer from './components/Footer';
import Greeting from './components/Greeting';
import './App.css';

function App() {
  return (
    <div className="d-flex flex-column min-vh-100">
      <Header />
```

```
    <main className="flex-grow-1">
      <Greeting />
    </main>
    <Footer />
  </div>
);
}

export default App;
```

Step 6: Update App.css

Replace the contents of `App.css` with:

```
/* Custom styles */
.min-vh-100 {
  min-height: 100vh;
}

.flex-grow-1 {
  flex-grow: 1;
}
```

Step 7: Start the Development Server

```
npm start
```

Your application will be available at <http://localhost:3000>

Understanding the Structure

- `Header.js`: Navigation and top section of the app
- `Greeting.js`: Main content component
- `Footer.js`: Bottom section of the app
- `App.js`: Root component that combines all other components
- Bootstrap classes are used for styling (e.g., `container`, `bg-dark`, `card`)

Practice Exercises

1. Modify the Greeting component:

- Add more content
- Change the button style
- Add an image

2. Enhance the Header:

- Add more navigation items
- Include a search bar
- Add a logo

3. Customize the Footer:

- Add social media links
- Include multiple columns
- Add a newsletter signup form

Common Issues and Solutions

1. **Component not rendering:**

- Check import/export statements
- Verify component names match
- Check for JavaScript errors in console

2. **Bootstrap styles not working:**

- Verify Bootstrap CDN link in index.html
- Check for typos in class names
- Make sure classes are using correct Bootstrap syntax

3. **Layout problems:**

- Use Bootstrap's grid system properly
- Check flex utilities
- Verify container usage

Next Steps

1. Learn about React state management
2. Explore React Router for navigation
3. Implement form handling
4. Add API integration
5. Learn about component lifecycle

Additional Resources

- [React Documentation](#)
- [Bootstrap Documentation](#)
- [Create React App Documentation](#)

Happy coding! 🚀