🚀 15-Day React.js Mastery Plan

This structured plan will help you build a strong foundation in **React.js** with theory, hands-on coding, and real-world projects. 🏗️ 💻

🗓️ Week 1: Fundamentals & Core Concepts

🌀 Day 1: Introduction to React.js

- ✅ What is React? Why use it?
- ✅ Setting up the development environment (**Node.js, npm, Vite, Create React App**)
- ✅ Understanding **JSX** and **Virtual DOM**
- ✅ First React **component**
- ✅ Introduction to **React Developer Tools** for debugging 🛠️
- ✅ Exploring the **React Component Hierarchy**
- 🎯 **Hands-on**: Create a simple **"Hello, World!"** React app

📌 **Resources**:

- ➢ 📖 React Official Docs
- ➢ ⚡ Vite Documentation
- ➢ 🛠️ React Developer Tools

🌀 Day 2: Components & Props

- ✅ Function vs. Class components ⚛️
- ✅ Understanding **props** and how to pass data 📩
- ✅ Props drilling concept 🔁
- ✅ Default props and prop types
- ✅ Destructuring props for cleaner code ✨
- 🎯 **Hands-on**: Create a **"User Profile Card"** component using props

---

🌀 Day 3: State & Event Handling

- ✅ What is **state**? 🎭
- ✅ useState Hook for managing state 🛠️
- ✅ Handling events in React 🎮

- ✅ Updating the state based on previous state values
- ✅ Handling multiple state updates efficiently
- 🎯 **Hands-on**: Build a **Counter App** with **increment and decrement** buttons

---

🌀 Day 4: Conditional Rendering & Lists

- ✅ Conditional rendering using **if-else, ternary operators, &&**
- ✅ Rendering lists using `.map()` 🗒️
- ✅ Handling unique **keys** in lists 🔑
- ✅ Filtering and sorting lists dynamically
- 🎯 **Hands-on**: Create a **"Todo List App"** with dynamic item addition and deletion

---

🌀 Day 5: Forms & Controlled Components

- ✅ Handling **form inputs** in React 📝
- ✅ Controlled vs. Uncontrolled components 🔍
- ✅ Basic **form validation** ✅ ❌
- ✅ Handling multiple inputs using a single state object
- ✅ Using **refs** to access form elements
- 🎯 **Hands-on**: Create a **"Login Form"** with validation and show error messages

---

🌀 Day 6: Basic Hooks - useEffect & useRef

- ✅ What are **hooks**? Why use them? 🎣
- ✅ `useEffect` for **side effects** (API calls, subscriptions) ⚡
- ✅ Using **dependencies array** in `useEffect`
- ✅ `useRef` for accessing **DOM elements** 📌
- ✅ Persisting values between renders using `useRef`
- 🎯 **Hands-on**: Build a **"Typing Speed Test"** app ⌨️

🌀 Day 7: Project - Simple Weather App 🌧️

- ✅ Fetch **weather data** using an API 🌍
- ✅ Display **temperature, humidity, and conditions** 🌡️ 🌤️
- ✅ Use **conditional rendering** for UI updates 📊
- ✅ Display **error handling** for API failures
- ✅ Improve UI using **CSS frameworks like Tailwind or Bootstrap**
- 🎯 **Hands-on**: Complete the Weather App and deploy it

🗓️ Week 2: Advanced React & Real-World Applications

🪩 Day 8: React Router for Navigation

✅ Installing and setting up **React Router** 🚪

✅ Defining **routes & navigation** using `Link` and `useNavigate` 🔗

✅ Dynamic routing 🏔️

✅ Protecting routes with authentication

🎯 **Hands-on**: Build a **multi-page website** with **Home, About, Contact** pages and authentication

---

🪩 Day 9: Context API & State Management

✅ Understanding **prop drilling issue** 😵

✅ Using **Context API** for global state management 🌍

✅ Creating and consuming a **context** 🎭

✅ Using multiple contexts in a project

🎯 **Hands-on**: Build a **"Theme Toggle"** app using Context API 🎨

🪩 Day 10: Redux Toolkit Basics

✅ What is **Redux**? Why use it? 📦

✅ Setting up **Redux Toolkit** ⚙️

✅ Actions, reducers, and store 🏪

✅ Using Redux DevTools for debugging

🎯 **Hands-on**: Build a simple **"Cart Management"** system 🛒

🪩 Day 11: API Integration & Async Data Fetching

✅ Fetching data using **fetch() and Axios** 🌍

✅ Handling **loading and error states** 🚨

✅ Using `useEffect` for **API calls** 🔄

✅ Optimizing API calls using `useMemo`

🎯 **Hands-on**: Fetch and display **movie data** from an API 🎥

🪩 Day 12: Advanced Hooks - useReducer & useMemo

✅ `useReducer` for **complex state management** 🎛️

✅ `useMemo` for **performance optimization** ⚡

✅ Combining multiple hooks for better performance

🎯 **Hands-on**: Build a **"Notes App"** with `useReducer` 📝

🔵 Day 13: Deploying React Apps
- ✅ Building a **production-ready** React app 🏗️
- ✅ Deployment options (**Vercel, Netlify, GitHub Pages**) 🌍
- ✅ Optimizing the build for faster loading
- 🎯 **Hands-on**: Deploy your **previous projects** 🚀

🔵 Day 14: Full Project - Movie Search App 🎬
- ✅ Uses **API integration, routing, state management** 🎛️
- ✅ Features: **search, filter, pagination** 🔍 📁
- ✅ Handling API rate limits and caching
- 🎯 **Hands-on**: Complete the **Movie Search App** 🎥

🔵 Day 15: Best Practices & Optimization
- ✅ **Code structuring** and **component reusability** 🔧
- ✅ **Performance optimization** tips ⚡
- ✅ **Debugging techniques** 🐞
- ✅ Using **lazy loading and code splitting**
- 🎯 **Hands-on**: Refactor and optimize **previous projects** 🏆

🎉 **By the end of this 15-day journey, you'll be able to build and deploy full-fledged React applications confidently!**

🔥 Happy coding! 💻 🚀