

# How to Create a Full Stack React App with the MERN Stack Tutorial

This Intermediate React Tutorial teaches software developers how to build full-stack applications in React, seamlessly integrating with the MERN stack for optimal efficiency and stability. Learn to develop React apps with backend integration, ensuring smooth connections with databases, servers, and web frameworks. Perfect for onboarding new developers or as a React reference resource.

[CBT Nuggets course material](#) →

## WEEK 1

### Build a Note-Sharing App: Create a Simple React Front-End 151 min.

Introduction	2
Map Out the App	11
Create Pages and Set Up Routes	12
Build the Notes Page and List	10
Build the Note Detail Page	16

### Build a Note-Sharing App: Front-end Data Management

Overview	1
Introduction	1
Store Note Data Inside A Context Provider	12
Add A Create Note Modal	11
Creating New Notes in Context	9
Deleting Notes in Context	9
Updating Notes in Context	5

### Build a Note-Sharing App: Add Styling

Overview	1
Introduction	1
Add Styling to the App	22
Create A Reusable "X" Component	16
Create A Navigation Bar	5
Render Markdown in React	3

### Build a Note-Sharing App: Create a Back-end with Node and Express

Overview	1
----------	---

## WEEK 2

152 min.

Introduction	1
Full-Stack Project Setup	15
Create a "Read" Endpoint And Load Data From the Client-Side	14
Add a "Create" Endpoint And Make Requests From the Client-Side	7
Add "Update" And "Delete" Endpoints	10

### Build A Note-Sharing App: Add a Database

Overview	1
Introduction	1
Add MongoDB to the Back-end	6
Convert Endpoints to Use MongoDB	9
Split Express Servers Into Multiple Files	9
Make MongoDB Available in Different Files	10
Rewrite Routes To Increase Performance	11

### Build A Note-Sharing App: Add User Authentication to the Front-end

Overview	1
Introduction	1
Create Login and Create Account Forms	19
Add Login and Create Account Pages	11
Styling the Login and Create Account Pages	6
Add Firebase Auth to the Front-end	10

### Build A Note-Sharing App: Add User Authentication to the Back-end

Overview	1
----------	---

Introduction	1
Install and Set Up Firebase Admin	5

## WEEK 3

151 min.

How Should We Organize Our Database?	19
Convert Endpoints for Ownership	10
Data Ownership in Create and Delete Endpoints	14

### Build A Note-Sharing App: Front-end Refactoring

Overview	1
Introduction	1
Subscribe to Auth State Changes	12
Protect Routes with Arbitrary Criteria	10
Create a useUser Hook	6
Include Users' Tokens in Requests	18

### Build A Note-Sharing App: Protect Users' Data

Overview	1
Introduction	1
Protect Users' Data from Unwanted Access	7
Prevent Users From Deleting Other Users' Data	9
Prevent Unauthorized Data Modification	7
Add Protection to the Create Note Endpoint	4
Use Middleware to Reduce Repetition	14
Add More Middleware	12

### Build A Note-Sharing App: User Account Management

Overview	1
----------	---

Introduction 1

## WEEK 4

162 min.

Data Segregation Demonstration 8

User Account Creation 18

Handle Login and Create Account Errors 18

### Build A Note-Sharing App: Add Note-Sharing to the Front-end

Overview 1

Introduction 1

Create a Page for Editing Sharing Settings 16

Create a Shared Emails List 13

Basic Front-end Sharing Logic 16

### Build A Note-Sharing App: Email Verification Basics

Overview 1

Introduction 1

Email Verification Basics 7

Create a "Please Verify Email" Page 7

Refactor the Create Account Flow 12

Send Emails From A Node Server 19

### Build A Note-Sharing App: Advanced Email Verification

Overview 1

Introduction 1

Create an Email Verification Landing Page 19

## WEEK 5

152 min.

Create an Email Verification Server Route 8

Protect Server Routes from Unverified Users 14

Prevent Unverified Users from Logging In 13

### Build A Note-Sharing App: Link Sharing

Overview 1

Introduction 1

Create an Enable/Disable Section 11

Create an Endpoint for Enabling Link Sharing 13

Create an Endpoint for Disabling Link Sharing 5

Load Link-Shared Notes from the Server 16

### Build A Note-Sharing App: Real-Time Communication

Overview 1

Introduction 1

Web-Socket Basics 8

Add Web-Sockets to Express 6

Add Web-Sockets to React 8

Send Data Through a Web-Socket 7

Convert "Load" Requests to Web-Sockets 15

### Build A Note-Sharing App: Web-Socket Protection

Overview 1

Introduction 1

Create "User Can Edit Note" Middleware 10

Convert Express Middleware to Socket.io 9

## WEEK 6

152 min.

Middleware for Individual Events	8
Handle Socket Errors on the Front-end	8
Create a Custom Hook for Web-Sockets	13

### Build A Note-Sharing App: Web-Socket Organization Strategies

Overview	1
Introduction	1
Organize Web-Socket Logic Effectively	9
Define Event Handlers in Separate Files	15
Define Initial Connection Logic	6
Add Socket Middleware	17

### Build A Note-Sharing App: Web-Sockets In-Depth

Overview	1
Introduction	1
Keep Client Data In Sync	7
Prevent Infinite Socket Loops	6
Add Roles to Web-Socket Data	14
Use Web-Socket Rooms	9
Web-Socket Data Protection	9

### Build A Note-Sharing App: Combine Web-Sockets and Endpoints

Overview	1
Introduction	1
Multiple Web-Socket Connection Types	15
Handle New Web-Socket Connections	7

## WEEK 7

26 min.

Loading Data Via Web-Sockets	9
Update Client-Side Data Immediately	16