NextJS Essentials

- 3 Days
- Lecture and Hands-on Labs

Course Overview

This three-day course builds upon React fundamentals to teach full-stack application development with Next.js 14. Students will master server-side rendering, API development, and deployment strategies while building production-ready applications. The course emphasizes practical experience with App Router, server components, and modern data fetching patterns.

Review this course online at https://www.alta3.com/courses/nxtjs

Who Should Attend

- React Developers
- Full-Stack Engineers
- Frontend Developers seeking backend skills
- Professionals who have completed React Essentials or equivalent experience

What You'll Learn

- Build production-ready Next.js applications using modern architecture patterns
- Implement full-stack features including APIs, databases with Prisma, and real-time functionality with WebSockets
- Secure applications through authentication, protected routes, and environment management
- Deploy and optimize Next.js applications with proper caching strategies, performance monitoring, and SEO considerations

Outline

Day 1: Next.js Foundations

Next.js Architecture

- 🗨 Lecture: Next.js Mental Model and App Router
- 🖥 Lecture + Lab: Project Setup with Modern Next.js Features #### Server Components and Client Components
- 🗨 Lecture: Understanding the Server/Client Component Model
- 🖥 Lecture + Lab: Building Your First Server Component
- 🖥 Lecture + Lab: When and How to Use Client Components #### Routing and Layouts
- 🗨 Lecture: App Router Navigation Patterns
- 🖥 Lecture + Lab: Creating Nested Layouts
- 🖥 Lecture + Lab: Implementing Dynamic Routes
- 🖥 Lecture + Lab: Working with Route Groups and Parameters #### Data Fetching Fundamentals
- 🗨 Lecture: Modern Data Fetching Patterns
- 🖥 Lecture + Lab: Server Component Data Fetching

- 🖥 Lecture + Lab: Static vs Dynamic Data Fetching
- 🖥 Lecture + Lab: Route Handlers for API Endpoints #### Day 2: Advanced Data and Application Architecture #### Advanced Data Fetching
- 🗩 Lecture: Incremental Static Regeneration (ISR)
- 🖥 Lecture + Lab: Implementing ISR with Revalidation
- 🖥 Lecture + Lab: Caching and Mutation Strategies #### Database Integration
- 🗩 Lecture: Database Options and Prisma Setup
- 🖥 Lecture + Lab: Building Models with Prisma
- 🖥 Lecture + Lab: CRUD Operations with Route Handlers #### Authentication with NextAuth.js
- 🗩 Lecture: Authentication Patterns in Next.js
- 🖥 Lecture + Lab: Implementing OAuth with NextAuth.js
- 🖥 Lecture + Lab: Protected Routes and Middleware #### Real-Time Data with WebSockets
- 🗩 Lecture: WebSocket Integration in Next.js
- 🖥 Lecture + Lab: Building a Real-Time Chat Feature #### Day 3: Production and Scale #### Performance Optimization
- 🗩 Lecture: Next.js Performance Patterns
- 🖥 Lecture + Lab: Image and Asset Optimization
- 🖥 Lecture + Lab: Implementing Streaming and Suspense #### Deployment and Infrastructure
- 🗩 Lecture: Deployment Strategies
- 🖥 Lecture + Lab: Deploying to Vercel
- 🖥 Lecture + Lab: Environment Configuration and Monitoring #### Advanced Application Patterns
- 🗩 Lecture: Monorepo Architecture with Turborepo
- 🖥 Lecture + Lab: Setting Up a Monorepo
- 🖥 Lecture + Lab: Sharing Components and Types #### SEO and Analytics
- 🗩 Lecture: SEO Best Practices in Next.js
- 🖥 Lecture + Lab: Implementing Metadata API
- 🖥 Lecture + Lab: Analytics and Performance Monitoring #### Full-Stack Challenges
- 🖥 Lecture + Lab: Challenge Build an Admin Dashboard

Prerequisites

- React Essentials
- Proficient in React