

Mastering Next.js: A 3-Week Full-Stack Developer Journey

Tech Stack

Next.js 14 + Prisma ORM + PostgreSQL + TailwindCSS + Shadcn UI

Week 1: Next.js Core & Environment Setup

Class 1 (2 Hours): App Router + Setup

- What is Next.js 14? SSR vs CSR vs SSG, App Router fundamentals
- Folder Structure: /app, layout.tsx, page.tsx, error.tsx, loading.tsx
- Routing Types: Static, dynamic ([slug]), catch-all ([...slug]), route groups
- App Setup: npx create-next-app@latest, TypeScript, ESLint, Prettier
- Styling: Install & configure TailwindCSS
- UI Kit: Install and setup Shadcn UI for beautiful components
- Homework: Build basic pages: Home, About, Contact; Implement shared layout

Class 2 (2 Hours): Components, Hooks, Metadata

- Client vs Server Components: use client directive, usage strategy
- React Hooks: useState, useEffect, useContext
- SEO in Next.js: Using generateMetadata for title, description
- Layout Nesting: Route-level layouts (e.g., /dashboard/layout.tsx)
- Practice: Create static pages with dynamic metadata and layouts
- Homework: Add dark/light toggle; Build responsive UI with Shadcn

Week 2: Prisma + PostgreSQL Basics

Class 3 (2 Hours): DB Setup + Prisma Basics

- PostgreSQL Setup: Supabase / Railway / Docker
- Prisma Setup: npx prisma init, configuring DATABASE_URL

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- Schema Modeling: User, Post, Comment
- Migrations: prisma migrate dev, prisma studio
- Prisma Client Queries: create, findMany, update, delete
- Homework: Add a Comment model with relation to Post; Seed data and test in Prisma Studio

Class 4 (2 Hours): API Routes + Forms

- API Routes in App Router: /app/api/posts/route.ts
- Request Handling: POST, GET, reading body from Request
- Form Handling: Controlled inputs, useState
- Zod Validation: Frontend + backend validation
- Integration Flow: Form -> API -> DB
- Homework: Create a new blog form with Zod validation; Store posts in DB and list them on /posts

Week 3: Intermediate Full-Stack Logic

Class 5 (2 Hours): Relations, Pagination, Search

- Prisma Relations: 1:m (Post-Comment), m:m (Post-Tag)
- Advanced Queries: include, select, orderBy, where
- Pagination: take, skip, button UI for next/prev
- Search: title contains 'react'
- Homework: Add tag filter to blog; Implement pagination on /posts

Class 6 (2 Hours): Auth + RBAC + Middleware

- NextAuth.js Setup: Google or credentials provider
- Sessions: useSession, getSession
- Middleware: middleware.ts with matcher

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- RBAC: Add role to User model, ADMIN vs USER
- Optional: Use useContext to share user info globally
- Homework: Protect /admin route; Show conditional UI based on user role