



Modern Full Stack Roadmap

PHASE 1 — Core Web Foundations (4–6 weeks)

Skills

- HTML structure, semantics, forms
- CSS basics: flexbox, grid, responsive design
- JS essentials: variables, functions, loops, objects, arrays
- DOM: query, events, manipulation
- Fetch API basics

Concepts

- How the web works (HTTP)
- Browser rendering
- Client vs server

Projects (easy → medium)

1. **Startup landing page clone** (build 3 different ones)
2. **Interactive quiz game**
3. **DOM-based Notes app**
4. **Movie search UI using OMDB API**
5. **Browser Expense Tracker**

Outcome

You can build visually solid, interactive UIs without frameworks.

PHASE 2 — JavaScript Mastery + TypeScript Intro (6–8 weeks)

Skills

- Array methods: map, filter, reduce
- Closures, scope, prototypes
- Async: promises, async/await
- Modules (import/export)
- Error handling
- TypeScript basics: types, interfaces, generics

Concepts

- Single threaded nature of JS
- Event loop, call stack
- Immutability
- Type inference

Projects

1. **AI-assisted flashcard generator** (TS)
2. **Browser automation toolkit** (TS)
3. **Crypto price tracker dashboard**
4. **Public API aggregator CLI** (Node.js)

Outcome

You think like a JS engineer, not a copy-paster.



PHASE 3 — React Foundation (6–8 weeks)

Skills

- JSX, components, props, state
- Hooks (useState, useEffect)
- Controlled/uncontrolled forms
- Routing (React Router)
- Performance basics

Concepts

- Component-driven UI
- Composition over inheritance
- State management fundamentals

Projects

1. **Real-time Markdown Editor**
2. **Kanban Board**
3. **AI-based brainstorming board**
4. **Flashcard app with spaced repetition**

Unique: build 2 versions:

- basic JS
- TypeScript + improved patterns

Outcome

You can build medium complexity SPAs comfortably.

PHASE 4 — Next.js & Tailwind (6–10 weeks)

Skills

- File-based routing
- Server vs client components
- Layouts, metadata
- SSR, ISR, SSG
- Tailwind design patterns

Concepts

- Progressive enhancement
- SEO basics
- Performance/CLS

Projects

1. **Blog platform with MDX**
2. **AI-generated website builder**
3. **Product landing generator** (unique)
4. **Travel itinerary generator with AI**

Outcome

You can build modern, fast, beautiful frontends.

PHASE 5 — Auth, Forms, Validation (5–7 weeks)

Skills

- Auth.js or Clerk
- Sessions, cookies
- RBAC basics
- React Hook Form
- Zod

Concepts

- Secure form validation
- Protected routes
- JWTs vs sessions

Projects

1. **User system with roles & permissions**
2. **Multi-step onboarding flow**
3. **Feedback dashboard with form analytics**

Unique MVP:

Reddit-style micro-blog with social login

Outcome

You can build secure user flows like real SaaS products.

PHASE 6 — Databases + ORM (8–12 weeks)

Skills

- PostgreSQL
- Prisma ORM
- Migrations

- Relations
- Indexing basics
- Redis for caching

Concepts

- Normalization
- Query optimization
- ACID properties

Projects

1. **Personal finance tracker (full CRUD)**
2. **AIRBNB-style listing platform**
3. **Task manager with collaborative boards**
4. **Redis-cached leaderboard**

Unique:

AI-powered recipe nutrition analyzer with DB

Outcome

You can model real data and persist it cleanly.



PHASE 7 — Modern Data Flow (4–6 weeks)

Skills

- TanStack Query (client cache)
- Zustand (local global state)
- Optimistic updates
- Refetching strategies

Concepts

- API caching vs global state
- Cache invalidation
- Race conditions

Projects

1. **Realtime collaborative to-do app**
2. **Frontend analytics dashboard**
3. **GitHub stats dashboard**

Outcome

You can build fast, reactive, responsive apps.

PHASE 8 — API Design & Typesafe Backend (6–8 weeks)

Skills

- Next.js API routes OR tRPC
- Input validation with Zod
- Business logic separation
- Error handling

Concepts

- Type-safe contracts
- Service architecture
- Monolith vs microservices

Projects

1. **Productivity dashboard SaaS**

2. URL shortener with analytics

3. Content scheduling system

Unique:

Team OKR manager with role permissions

Outcome

You design professional backend APIs.



PHASE 9 — Payments, Emails, SaaS Plumbing (6–10 weeks)

Skills

- Stripe subscriptions
- Stripe webhooks
- Resend emails
- Cron jobs
- Webhooks handling

Concepts

- SaaS billing models
- Multi-tenant architectures

Projects

- 1. Subscription-based SaaS**
- 2. AI resume generator with paid tiers**
- 3. Team billing + onboarding system**

Unique:

AI content calendar with auto email reminders

Outcome

You build profitable systems, not hobby apps.



PHASE 10 — AI Engineering + RAG (10–14 weeks)

Skills

- OpenAI API
- Embeddings
- pgvector
- RAG pipelines
- SSE streaming

Concepts

- Retrieval augmentation
- Semantic search
- Prompt engineering

Projects

1. **Team knowledge base with embeddings**
2. **AI tutor for custom datasets**
3. **AI chatbot for uploaded files**
4. **Code explanation bot with memory**

Unique MVP:

"Company brain" SaaS that learns docs + slack messages

Outcome

You can build usable, valuable AI products.

PHASE 11 — DevOps, CI/CD, Monitoring (6–10 weeks)

Skills

- Docker
- GitHub Actions
- Vercel deployments
- Env management
- Sentry
- PostHog

Concepts

- CI/CD pipelines
- Observability
- Error tracking
- Growth metrics

Projects

1. **Staging/production pipeline**
2. **User analytics feature**
3. **Feature flags for experiments**

Unique:

Self-hosted analytics for internal metrics

Outcome

You deploy professional, reliable apps.

PHASE 12 — SYSTEM DESIGN (ongoing)

Not theory.

Practical patterns:

- Horizontal vs vertical scaling
- Caching layers
- Load balancing
- Sharding
- Event driven systems

Mini-projects

- Rate limiting service
- File processing worker
- Queue-based notifications

Outcome

You think like an architect.



CAPSTONE PROJECTS (choose 2)

Build **large, real, monetizable apps**:

1. AI-Powered Notion Alternative

- collab docs
- chat
- embeddings
- subscriptions
- analytics

2. Trello-like PM Tool with AI Assistant

- tasks, boards, roles

- OCR of screenshots
- Slack integration
- billing

3. Real-time collaborative whiteboard

- websockets
- OT/CRDT
- multi-user editing

4. SaaS for automating invoices and emails

- OCR
- AI extraction
- PDF generation
- subscriptions

5. AI Learning Platform

- quizzes
- recommendations
- progress tracking
- gamification