Chapter 3: Choosing Your Stack

> *"The best tools are the ones you'll actually use. The best stack is the one you can ship with."*

The Decision Paradox

There are hundreds of programming languages, frameworks, databases, and hosting platforms. Developers spend weeks researching "the best stack." This is decision paralysis disguised as due diligence.

Here's what actually matters: picking something that works and starting to build.

This chapter gives you three clear paths. Pick the one that matches your project type, follow it, and start building. You can always change later (and that's fine).

The Three Paths

Path 1: Simple Website or Landing Page

Choose this if: No user accounts, no database, just content **Examples:** Portfolio, marketing site, documentation, blog

Path 2: Web App with User Accounts

Choose this if: Users sign up, save data, interact with features **Examples:** SaaS tools, community platforms, booking systems

Path 3: Data-Heavy Python App

Choose this if: Processing data, analysis, ML, scientific computing **Examples:** Data dashboards, analysis tools, automation scripts

90% of people reading this guide need Path 2. If you're not sure, that's your path.

Quick Decision Flowchart

```
graph TD
    A[What are you building?] --> B{Need user<br/>accounts?}
    B -->|No| C[Simple Website<br/>Path 1]
    B -->|Yes| D{What tech do<br/>you know?}
    D -->|None/Web| E[Next.js + Supabase<br/>Path 2 ⭐]
    D -->|Python| F{Data-heavy or<br/>ML work?}
    F -->|Yes| G[Flask + PostgreSQL<br/>Path 3]
    F -->|No| E

    C --> H[Deploy to Netlify]
    E --> I[Deploy to Vercel]
    G --> J[Deploy to Railway]

    style E fill:#90EE90
    style A fill:#FFE4B5
    style H fill:#87CEEB
```

```
    style I fill:#87CEEB
    style J fill:#87CEEB
```

💡 **Most people should choose Path 2** (Next.js + Supabase) - it's the most versatile and AI-friendly.

Path 1: Simple Website / Landing Page

The Stack

- **Front-end:** React + Tailwind CSS
- **Hosting:** Netlify or Vercel (free)
- **Domain:** Namecheap ($12/year)

What This Gets You

- Lightning-fast static website
- Perfect for SEO
- Free hosting with generous limits
- Easy to update and maintain
- No backend complexity

When to Choose This

- Building a portfolio or personal site
- Creating a landing page for your product
- Publishing documentation or guides
- Setting up a blog (with tools like MDX)
- Anything where content is the same for everyone

What You Can't Do (Yet)

- User accounts or login
- Saving user-generated content
- Processing payments
- Personalized experiences
- Any kind of database

Tools You'll Use

AI Assistant: Claude or ChatGPT **Code Editor:** Cursor **Version Control:** GitHub **Hosting:** Netlify (recommended for beginners)

Time to First Deploy

With AI: 2-4 hours to have something live

Cost Breakdown

- Hosting: $0 (Netlify or Vercel free tier)
- Domain: $10-15/year (varies by extension)
- Tools: $0 (all free) **Total: ~$12/year**

Example Prompts

"Create a personal portfolio site with an about section, project showcase, and contact form" "Build a landing page for my newsletter with email signup and feature highlights" "Make a documentation site with a sidebar navigation and search"

Path 2: Web App with User Accounts ⭐ RECOMMENDED

The Stack

- **Framework:** Next.js (React-based)
- **Database:** Supabase (PostgreSQL)
- **Authentication:** Supabase Auth
- **Styling:** Tailwind CSS + shadcn/ui
- **Hosting:** Vercel (Next.js is from Vercel)

What This Gets You

- User signup and login (email or Google/GitHub)
- Database to store anything you want
- Real-time features (live updates without refresh)
- File storage for images/documents
- Production-ready from day one
- Scales automatically as you grow

When to Choose This

- Building a SaaS product
- Creating a community platform
- Making internal tools for your team
- Anything with user accounts and data
- Most web applications

This is the path we'll use in Chapter 4's tutorial.

What You Can Do

✅ User accounts (email + password) ✅ Social login (Google, GitHub, etc.) ✅ Save and retrieve data ✅ File uploads (images, PDFs, etc.) ✅ Real-time features (chat, notifications) ✅ Payments (add Stripe) ✅ Email (add Resend or SendGrid) ✅ Everything you need for a real product

Tools You'll Use

AI Assistant: Claude or ChatGPT **Code Editor:** Cursor **Framework:** Next.js (latest stable version with App Router) **Database:** Supabase (free tier: 500MB, up to 2 active projects) **Auth:** Supabase Auth (included) **UI Components:** shadcn/ui (copy/paste components) **Hosting:** Vercel (free tier: 100GB bandwidth/month) **Version Control:** GitHub

Time to First Deploy

With AI: 4-8 hours for a working app with login and database

Cost Breakdown (Starting Out)

- Next.js: $0 (free framework)
- Supabase: $0 (free tier: 500MB database, 2 active projects)

- Vercel: $0 (free tier: 100GB bandwidth, unlimited projects)
- Domain: $10-15/year (varies by extension, e.g., .com) **Total: ~$12/year**

Cost Breakdown (With Growth)

- Supabase Pro: $25/month (8GB database, auto-scaling, daily backups)
- Vercel: $0 (hobby tier is generous; Pro at $20/month if needed)
- Domain: $10-15/year **Total: ~$300-350/year** (only when you exceed free tier limits)

Why This Stack

Next.js: Modern, well-documented, huge community, AI knows it extremely well

Supabase: Handles database, auth, file storage, real-time in one place. You don't need to configure multiple services.

Vercel: Made by the Next.js team, deployment is literally one command. Auto-scales, global CDN, zero config.

Tailwind: Utility-first CSS that AI can write perfectly. No wrestling with CSS files.

shadcn/ui: Beautiful pre-built components you can copy/paste and customize. No package installation, just copy the code.

Example Prompts

"Create a Next.js app with Supabase where users can sign up, create bookmarks, and see their saved list" "Add Google authentication so users can sign in with their Google account" "Let users upload a profile picture that gets stored in Supabase storage" "Create a dashboard showing user statistics from the database"

Path 3: Data-Heavy Python App

The Stack

- **Back-end:** Flask (Python)
- **Database:** PostgreSQL on Railway
- **Hosting:** Railway or Oracle Cloud
- **Front-end:** Keep it simple (templates) or separate React app

What This Gets You

- Full Python ecosystem for data processing
- Use pandas, NumPy, scikit-learn, etc.
- Custom API endpoints
- More control over backend logic
- Cost-effective at scale

When to Choose This

- Processing large datasets
- Building data analysis tools
- Creating ML/AI features
- Automating workflows with Python
- Backend APIs for mobile apps
- Team already knows Python well

What You Can Do

✅ Complex data processing ✅ Integration with Python libraries ✅ Custom business logic ✅ API for mobile or separate frontend ✅ Background jobs and scheduled tasks ✅ Data analysis and visualization

Tools You'll Use

AI Assistant: Claude or ChatGPT **Code Editor:** Cursor **Language:** Python (latest stable version, 3.11+) **Framework:** Flask (lightweight) or FastAPI (modern) **Database:** PostgreSQL **Hosting:** Railway (easiest) or Oracle Cloud (free tier) **Version Control:** GitHub

Time to First Deploy

With AI: 6-10 hours for a working API

Cost Breakdown (Starting Out)

- Railway: $5 free trial credit (30 days), then usage-based
- Railway ongoing: ~$5-10/month (includes database + hosting)
- Oracle Cloud: $0 (free tier available, good for learning)
- Domain: $10-15/year **Total: ~$60-135/year** (depending on hosting choice)

Why This Stack

Python: You probably already know it or want to learn it. Huge ecosystem for data work.

Flask: Simple, minimal, gets out of your way. Easy for AI to generate.

PostgreSQL: Industry standard, reliable, works everywhere.

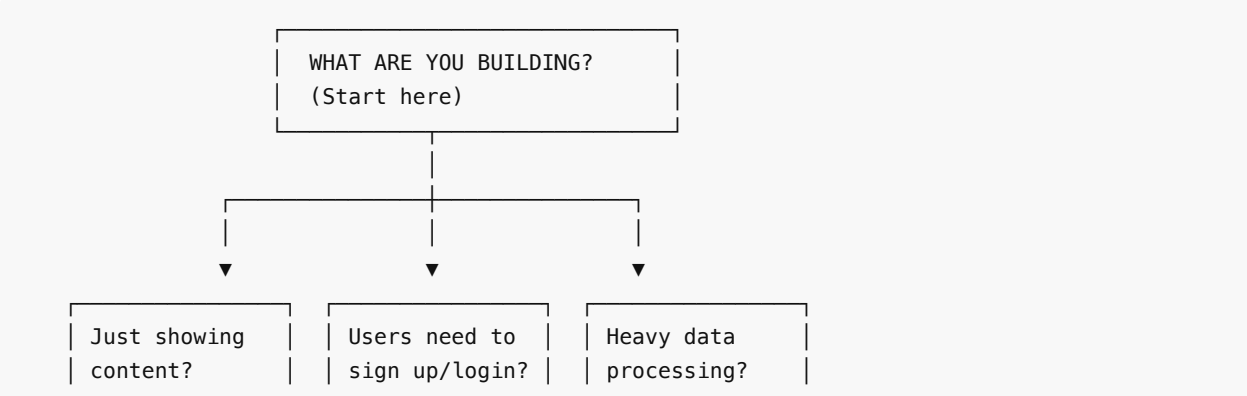
Railway: Dead simple deployment for Python apps. No DevOps knowledge required.

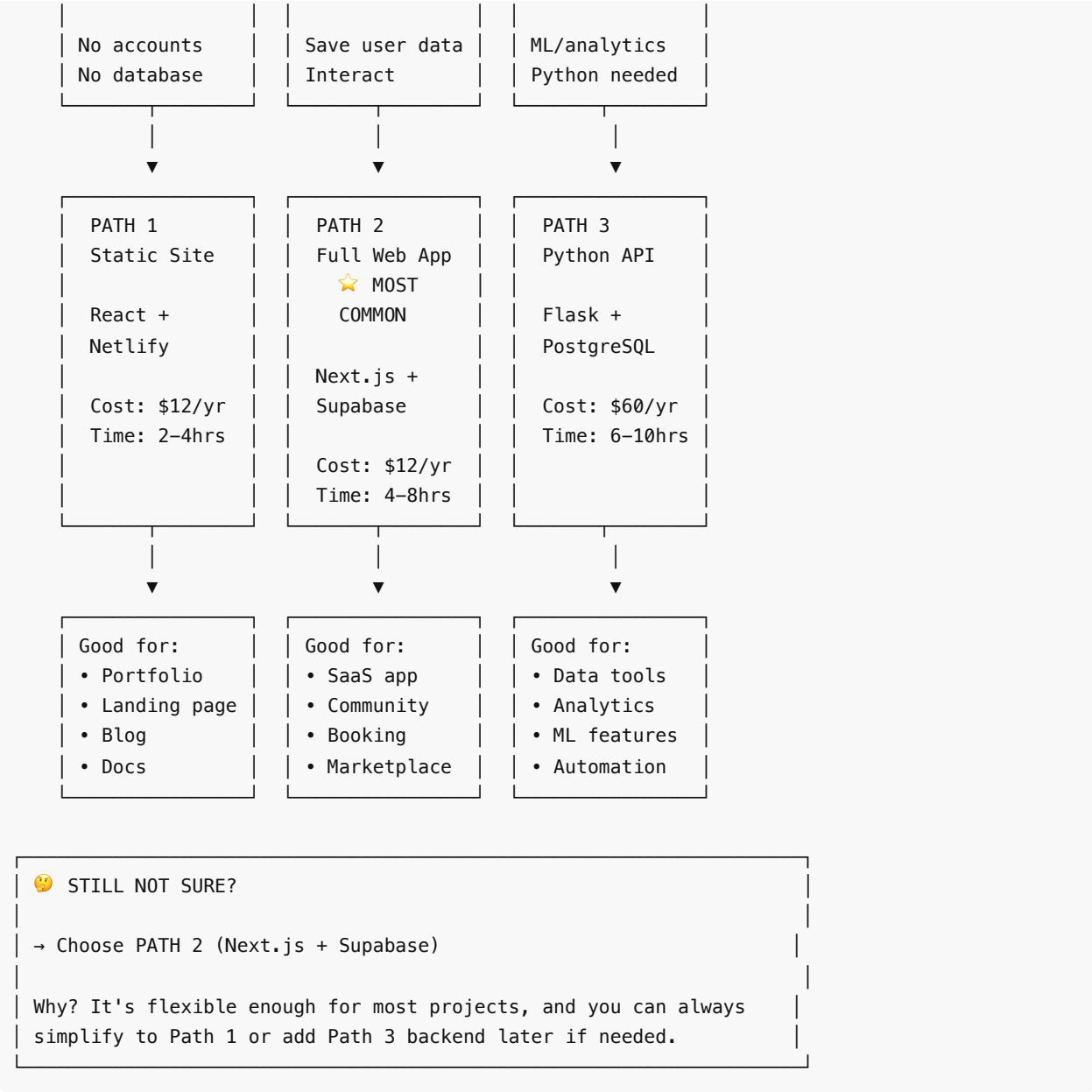
Example Prompts

"Create a Flask API that accepts CSV uploads, processes them with pandas, and returns summary statistics" "Build an endpoint that runs a scheduled job every day at midnight to process data" "Make a dashboard that queries the database and shows analytics charts" "Create API endpoints for a mobile app to fetch and update user data"

Decision Tree (Visual Guide)

Start here: What are you building?





This makes the decision quick and visual. You should be able to identify your path in under 30 seconds.

Just content (no user interaction)?

→ **Path 1: Static Site** (React + Netlify)

- Portfolio
- Marketing page
- Blog
- Documentation

Web app with users?

→ **Path 2: Next.js + Supabase** ⭐

- SaaS product
- Community platform
- Booking system
- Content management
- Most web applications

Heavy data processing?

→ **Path 3: Flask + PostgreSQL**

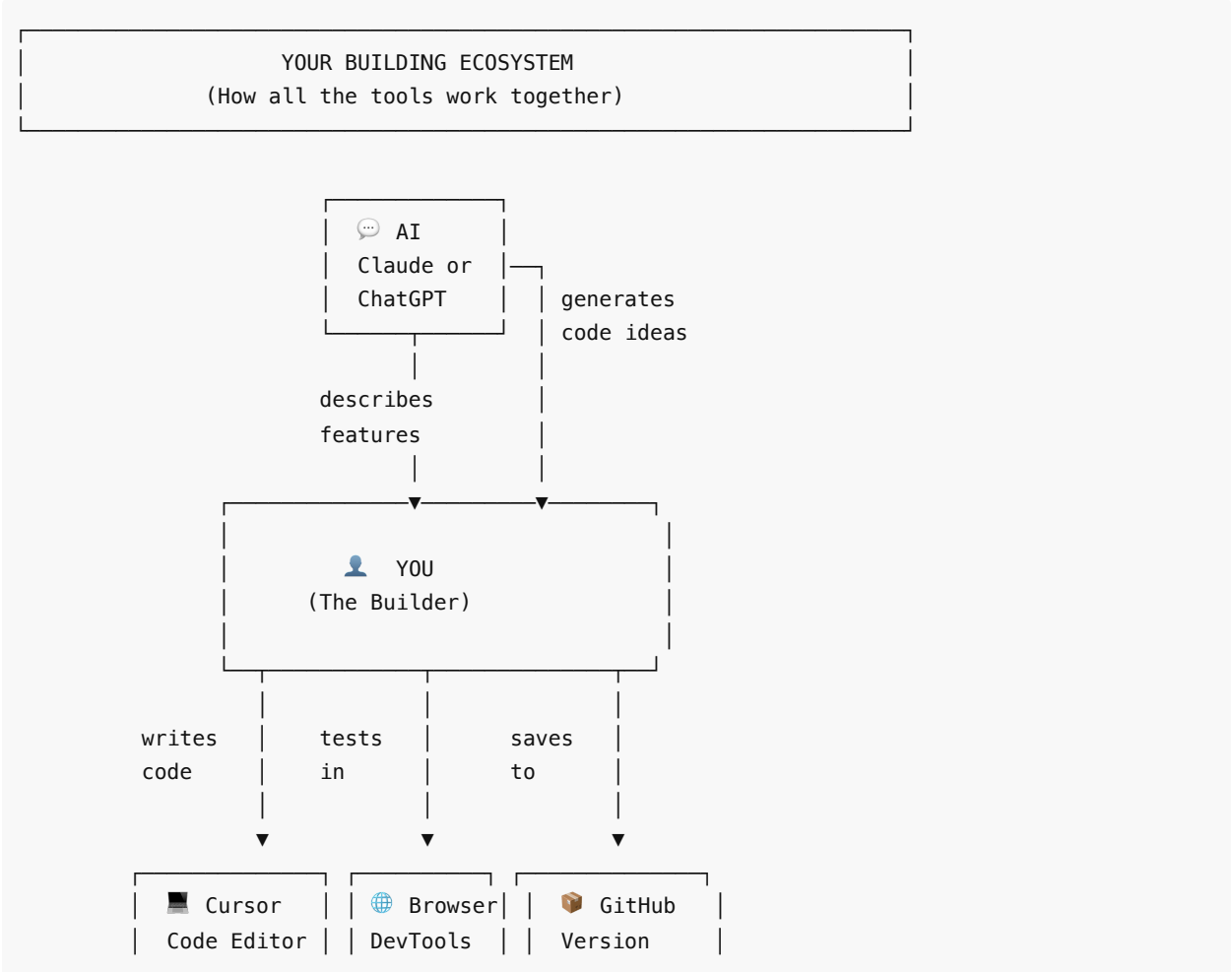
- Data analysis
- ML features
- Automation
- Custom APIs

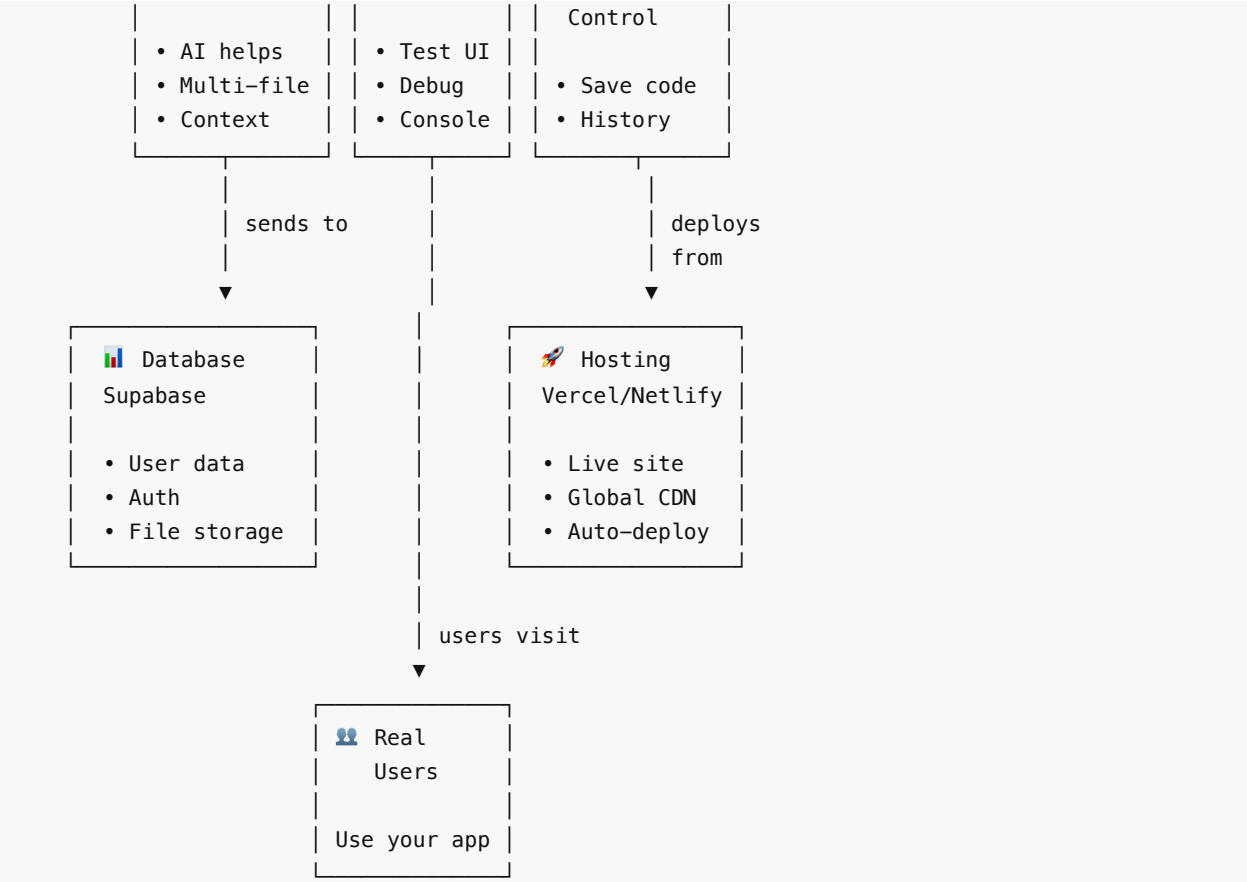
Still unsure? Choose Path 2. It's the most flexible and you can always add Python backend later if needed.

The Tools You'll Actually Use

Regardless of which path you choose, these tools are essential. Here's how they all work together:

Visual: Your Building Ecosystem






```
┌──────────────────────────────────────────────────────────────────┐
│  THE COMPLETE WORKFLOW:                                          │
│                                                                  │
│  1. You describe feature to AI (Claude/ChatGPT)                  │
│  2. AI suggests code, you implement in Cursor                    │
│  3. You test in Browser DevTools                                 │
│  4. You save to GitHub                                           │
│  5. GitHub auto-deploys to Vercel/Netlify                        │
│  6. Your database (Supabase) stores user data                    │
│  7. Real users access your live app                              │
│                                                                  │
│  You manage this entire flow, but you're NOT coding from scratch.  │
└──────────────────────────────────────────────────────────────────┘
```

Each tool has ONE job. You orchestrate them, not master them.

1. AI Assistant (Required)

Claude (Anthropic) or **ChatGPT (OpenAI)**

Pick one. I recommend Claude because:

- Better at understanding context
- More helpful with debugging

- Stronger at code generation
- (You're already reading this in Claude!)

Pricing (verified December 2025):

- Claude Pro: $20/month (or $18/month billed annually at $216/year)
- ChatGPT Plus: $20/month (monthly billing only)
- Free tiers available for both (limited usage)

Starting tip: Use free tiers first to learn, then upgrade when you hit limits. Worth upgrading? Absolutely. The paid tier is your co-developer with 5x more capacity.

2. Code Editor (Required)

Cursor (AI-powered code editor)

Why Cursor specifically:

- Built-in AI that understands your entire codebase
- Can make changes across multiple files
- Accepts natural language commands

Pricing (verified December 2025):

- Free tier: ~2,000 completions + 50 premium requests/month, plus 2-week Pro trial
- Pro: $20/month (includes $20 of API usage credits)
- Most users stay on free tier for learning

Starting tip: Start with the free tier + 2-week trial. Upgrade to Pro when you're building daily. Alternative: VS Code with GitHub Copilot (but Cursor is better for beginners)

3. Version Control (Required)

GitHub

This is how you:

- Save your code safely
- Deploy to hosting platforms
- Share with others
- Track changes over time

Cost: Free Learn: Just the basics (git add, commit, push)

4. Browser Dev Tools (Built-in)

Chrome DevTools or **Firefox Developer Tools**

This is how you:

- See what went wrong
- Test your app
- Inspect elements
- Check network requests

Cost: Free (built into browser) Learn: Just how to open it (F12 or Cmd+Option+I)

What About Other Tools You've Heard Of?

"Should I use TypeScript?"

For beginners: No. JavaScript is fine. AI can write either. **When to add it:** Once you're comfortable, TypeScript adds safety. But start with JavaScript.

"What about Docker?"

For beginners: You don't need it. Modern hosting handles this. **When you need it:** For complex deployments or team collaboration. Not day one.

"Should I learn Git before starting?"

Minimum needed: `git add .`, `git commit -m "message"`, `git push` **That's it.** AI can help with the rest when you need it.

"What about testing?"

For beginners: Ship first, test later. **When to add it:** After you have users and need to maintain quality. Not before you ship.

"MongoDB vs PostgreSQL?"

For beginners: PostgreSQL (what Supabase uses). **Why:** More predictable, better tooling, easier to understand relationships.

Common Questions

"What if I pick the wrong stack?"

You won't. These are all good choices. And if you really need to change later, AI can help you migrate. But usually you don't need to.

Reality check: Most successful startups launched with whatever they knew and migrated years later (if ever).

"Can I mix and match?"

Yes! Common patterns:

- Next.js frontend + Flask backend (Path 2 + 3)
- Static site now, add backend later (Path 1 → Path 2)
- Start simple, add complexity as needed

But for your first project: **pick one path and stick with it until you ship.**

"What about mobile apps?"

For beginners: Build a web app first (Path 2). Make it responsive. Most "apps" are really just websites.

When you need native: Use React Native with the same Next.js backend. But not on day one.

"What's the 'best' stack?"

The one you ship with. Seriously. The best stack is:

- The one you understand
- The one AI can help you with
- The one that lets you move fast
- The one you actually finish

Perfect choice paralysis beats imperfect shipped product every time. Choose and move.

Complete Pricing Breakdown (Verified December 2025)

Understanding real costs helps you plan. Here's everything broken down clearly:

Tool Costs (One-time per person, regardless of project)

AI Assistant:

- Claude Pro: $20/month or $18/month annually ($216/year)
- ChatGPT Plus: $20/month
- Free tier: Available for both (limited usage, good for learning)

Code Editor:

- Cursor Free: $0 (~2,000 completions + 50 premium requests/month)
- Cursor Pro: $20/month
- 2-week free Pro trial included

Version Control:

- GitHub: $0 (free for individuals and open source)

Infrastructure Costs (Per project, scales with usage)

Path 1: Static Site

- Hosting (Netlify/Vercel): $0 (free tier covers most use cases)
- Domain: $10-15/year
- **Total: ~$12/year**

Path 2: Web App with Database (Most Common)

Starting out (0-100 users):

- Supabase: $0 (free tier: 500MB database, 2 active projects)
- Vercel: $0 (free tier: 100GB bandwidth, unlimited projects)
- Domain: $10-15/year
- **Total: ~$12/year**

With growth (100-10,000+ users):

- Supabase Pro: $25/month (8GB database, auto-scaling, daily backups)
- Vercel: $0 (hobby tier sufficient) or $20/month (Pro if needed)
- Domain: $10-15/year
- **Total: ~$300-550/year**

Path 3: Python Data App

- Railway: $5 trial credit (30 days), then ~$5-10/month
- Oracle Cloud: $0 (free tier alternative)
- Domain: $10-15/year
- **Total: ~$60-135/year** (Railway) or ~$12/year (Oracle free tier)

Add-On Services (When You Need Them)

Email (Transactional):

- Resend: $0 (free tier: 3,000 emails/month), Pro at $20/month (50,000 emails)
- SendGrid: Similar pricing structure

Payments:

- Stripe: 2.9% + $0.30 per transaction (no monthly fee)
- $15 chargeback fee

File Storage (if beyond Supabase):

- Included in Supabase free tier (1GB)
- Supabase Pro includes 100GB

The $0 Path to Start

You can genuinely start with $0 and only pay for a domain (~$12) when you're ready to go live:

Free tier everything:

- Claude or ChatGPT (free tier for learning)
- Cursor (free tier: 2,000 completions/month)
- GitHub (free)
- Vercel or Netlify hosting (free)
- Supabase (free tier: 500MB)
- Use a free subdomain (yourapp.vercel.app) - skip buying domain until validated

When to upgrade:

- AI Assistant: When you hit free tier limits (usually after 2-3 weeks of daily use)
- Cursor: When free completions run out (if building intensively)
- Supabase: When you exceed 500MB database or need more than 2 projects
- Domain: When you want professional branding (can start with free subdomain)

Realistic Monthly Costs

Learning phase (Month 1-2):

- $0-20 (can use all free tiers)

Building phase (Month 3-6):

- $20-40 (Claude/ChatGPT Pro, maybe Cursor Pro, domain)

Launched with users (Month 6+):

- $40-65 (AI tools + infrastructure + domain, only if you exceed free tiers)

Important: These are maximums. Many successful apps run on free tiers for months or even years.

My Recommendation for This Guide

We're going to use **Path 2** (Next.js + Supabase) in Chapter 4 because:

1. It's what 90% of you need
2. It scales from MVP to millions of users
3. Free to start, grows with you
4. One service handles database + auth + storage
5. AI tools know it extremely well
6. Huge community = easy to find help

If you need Path 1 or 3, the principles in Chapter 4 still apply - just different tools. The mental models are the same.

Ready to build something real? Chapter 4 is where we get our hands dirty.

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💌 **Newsletter**: Build to Launch - Weekly AI building tips, templates, and real builder stories

✍️ **Medium**: AI Builders - Read more articles and guides

💬 **Reddit**: r/VibeCodingBuilders - Join the community

🦋 **Bluesky**: @jenny-ouyang - Connect

💼 **LinkedIn**: Jenny Ouyang - Connect