Building Simple Web Apps with AI Tools

Lucas Soares, Instructor

March 20, 2025

Course Agenda

1. **Methodology Notes**

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2. **What this Course is and What is Not**

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11. **Hands-on: Interactive Live Coding**

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4. **Interactive Q&A**: Addressing specific questions
5. **Break**: Time to process and reflect

What This Course Is and Is Not

NOT About:

- Building commercial applications
- Deploying apps for profit
- Complex software architecture

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- Building commercial applications
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IS About:

- Learning how to be more productive with AI tools
- LeveragingAI tools effectively to build apps for yourself
- Using pure HTML/JavaScript for personal apps without hassle
- Building tools for your own workflow needs
- Understanding AI-assisted development

Course Overview

This course will empower you to:

- Build functional web applications using AI assistance

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The goal isn't to turn you into a professional developer, but to give you the tools and confidence to create solutions for problems that matter to you.

Target Audience

- Technically curious non-developers
- Low-code/no-code tool power users
- Professionals looking to solve specific problems
- Community builders with specific software needs

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If you've ever thought, "I wish there was an app for that," this course is for you.

Tools and Resources Needed

To participate fully in this course, you'll need:

- Computer with browser and internet connection
- Free accounts for Cursor IDE and Claude
- Optional: GitHub account

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All the tools we'll use have **free tiers** sufficient for our coursework.

Motivation

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- **AI tools lower the barrier to software creation**

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- Gain **practical skills** for leveraging AI in software development
- Move beyond reliance on big tech by creating **your own tools**

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Why this mindset matters

- Empowers individuals to take control of their digital tools
- Encourages practical experimentation with AI
- Bridges the gap between no-code and full software development

AI Tools

Core Components Overview

Our development stack consists of five key elements:

1. **Large Language Models** (Claude, GPT)
2. **AI-enhanced IDEs** (Cursor)
3. **Frontend technologies** (HTML, CSS, JavaScript)
4. **Storage options** (local-first approach)
5. **Deployment methods**

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This combination of tools enables us to build complete applications with minimal technical background.

Hands-on: Claude Walkthrough

Q&A & Break

Claude Recap

- **Multi-Modal Chat**: General-purpose multi-modal communication
- **Context**: 200k+ tokens of context length (~500 pages)
- **Code Generation**: Writes code based on the context
- **Code Review**: Helps refine code
- **Claude Projects**: Work on multiple files at once for complex projects
- **Claude Artifacts**: Run and preview code in the browser
- **Prompting tips**: use role, give context, be clear, specific and direct
- **Meta Prompt**: ask claude to improve your own prompt

Hands-on: Cursor Walkthrough

Q&A & Break

Cursor IDE Recap

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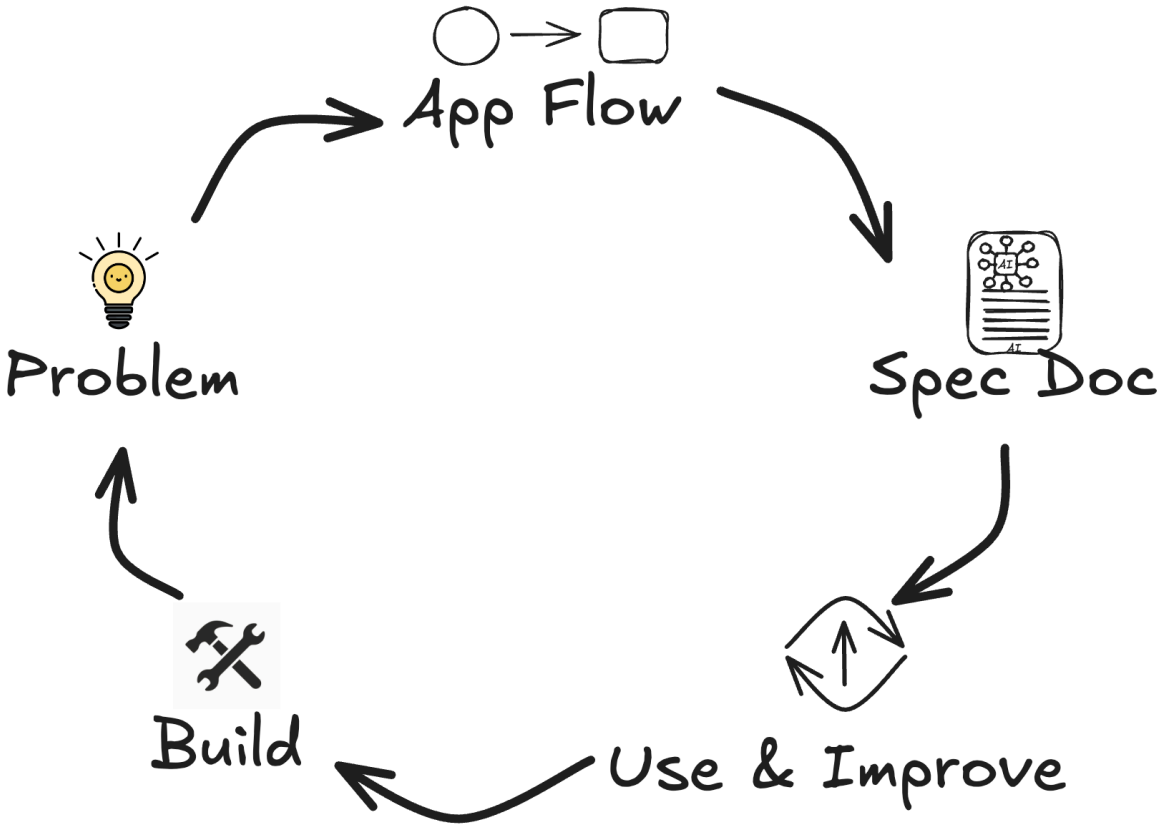
Workflow for Building Apps

Basic Workflow Cycle



Our approach is **iterative and AI-collaborative**, focusing on continuous refinement based on user feedback.

Whiteboard Session

Hands-on: Building a Simple Webpage

Q&A & Break

Notes on Best Practices

Problem 

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Brainstorm with Claude 

- Explore problem space
- Generate initial ideas
- Refine concepts through dialogue

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Research with AI Tools

- Perplexity
- ChatGPT
- Gemini

App Flow

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Diagramming Tools

- Use Claude for Diagrams (mermaid)

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Diagramming Tools

- Use Claude for Diagrams (mermaid)
- Sketch the raw app flow
    - Excalidraw
    - Figma
    - Other visual tools

Writing Detailed Spec Docs 

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Documentation Approaches

- Claude Projects instructions

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Documentation Approaches

- Claude Projects instructions
- Write detailed context files
  - context.md files
  - .cursorrules files in Cursor

Build

- Prototype with Claude Artifacts And/OR Claude Projects

Build

- Prototype with Claude Artifacts And/OR Claude Projects
- Build through dialog with Cursor in Agentic Mode 

Hands-on: Building a Quiz App

Q&A & Break

Cursor Spec Doc Template

```
# Quiz Application Specification

## Problem Statement
Create a simple quiz application that allows users to test their knowledge on vari

## Core Features
1. Present questions with multiple choice answers
2. Track user score
3. Show results at the end
4. Save progress locally

## Technical Requirements
- HTML/CSS/JavaScript only
- Mobile-responsive design
- Local storage for saving progress
- No external dependencies
```

CursorRules Files

CursorRules help maintain consistency in AI-generated code:

```
# CursorRules.md

## Coding Standards
- Use camelCase for variables and functions
- Use PascalCase for component names
- Add JSDoc comments for all functions
- Follow accessibility best practices

## Project Structure
- Keep components in separate files
- Store utility functions in utils.js
- Use consistent error handling
```

Hands-on: Putting Everything Together

Q&A & Break

Extending capabilities with APIs

Extending with APIs: The Basics

What is an API?

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Why use APIs?

- They let your app access external services and data

Extending with APIs: The Basics

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2. Make requests using JavaScript's fetch() function
3. Process and display the returned data

Hands-on: Interactive Live Coding

No-Code/Low-Code AI Tools

- **Vercel V0**
  - Text-to-interface generation
  - React component creation
  - Integrated with Next.js
- **Replit**
  - Collaborative coding environment
  - Built-in hosting
  - AI coding assistant (Ghostwriter)
- **Replicate**
  - Model deployment
  - API access to various AI models
  - Custom model hosting
- **Together.ai**
  - AI orchestration
  - Model fine-tuning
  - Enterprise-grade infrastructure

Connect With Me

 Course materials

 LinkedIn

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 YouTube

 Email: lucasenkrateia@gmail.com