Front End Development

17-316/616 Fall 2025

AI Tools for Software Development

https://ai-developer-tools.github.io

Austin Henley and Andrew Begel

Project Team Meeting (20 min)

- Spend the next 20 minutes to meet with your team.
- Work on P2: Development Specifications

Class Feedback (15 min)

- Help us course correct and make this a better class for you.
- Fill out this survey: **bit.ly/ai-dev-tools-feedback**
- We promise not to read it until after class.

1. What should we (the instructors) start doing to support your learning?
2. What should we (the instructors) stop doing to support your learning?
3. What should we (the instructors) keep doing to support your learning?

4. What should you start doing to support your learning?
5. What should you stop doing to support your learning?
6. What should you keep doing to support your learning?

7. What suggestions do you have to improve the course?

S3D

Carnegie
Mellon
University

Sign up for reflections

- https://bit.ly/reflection-week-5

Using LLMs for Front End Development

- Can LLMs speak HTML and CSS?
- Can LLMs read and render a DOM?
- Can LLMs program in JavaScript?
- Can LLMs tell you what to put into a session cookie?
- Can LLMs design a web page? A whole web site?

- Can LLMs critique a web site design and implementation?

Requirements Engineering To Development

- User Story → UX Storyboard → Wireframe

- User Story → Development Specification

- Today:

  ## User Story + Wireframe + Dev Spec → Front End Code

Application Architecture

App Development Approach

- Information architecture

- Navigation

- Responsive Layout

- Technology Stack
    - HTML, CSS, client-side JS
    - Web frameworks (React, Svelte)

- Mock the Application Core/Data (i.e., Back End)

UI Architecture

- UI Architecture
  - Monolithic, Modular, Micro-frontend
  - Model-View-Controller (MVC), Model-View-Presenter (MVP), **Model-View-ViewModel (MVVM)**

- Standards Compliance
  - Accessibility (WCAG/ARIA)

Turn this user story into a front end with your project team

User Story: As a student, I want to be able to send an email to my parents every day to let them know I'm ok and not to worry about me. It would relieve me if I could be sure I didn't miss a day.

1. Use Figma Make to create a UX storyboard with suggested screen mockups.

2. Use Figma Make to turn one of those storyboard screen mockups into a wireframe.

3. Use ChatGPT to turn the user story and UX storyboard into a development spec.

4. Use Cursor to turn the development spec and wireframe into a new front-end project that uses React. Mock the backend with a well-defined REST API.

5. Again! Use Cursor to turn the development spec and wireframe into a new front-end project that uses Svelte. Mock the backend with a well-defined REST API.

Whole Class Discussion

- How did you pass graphics to the LLMs?
- What did you need to tell Cursor to ensure it generated the right front-end code?
- Did Cursor's result match your expectations?
- How many rounds did it take for ChatGPT or Cursor to generate good code?
- What are the differences between the project using React vs using Svelte?

Next class

- Turning wireframes into code
- Mocking the Backend
- Code Reviews