

Frontend Development with LLMs: Creating UI Code

CS 485/698: AI-Assisted SE

Today's Agenda

- Team meeting (10-15 minutes)
 - Standup with your team, one of us will check-in with each team
- Results of feedback and what we're going to change in response
- Short lecture on accessibility
- In-class activity ("TPS")

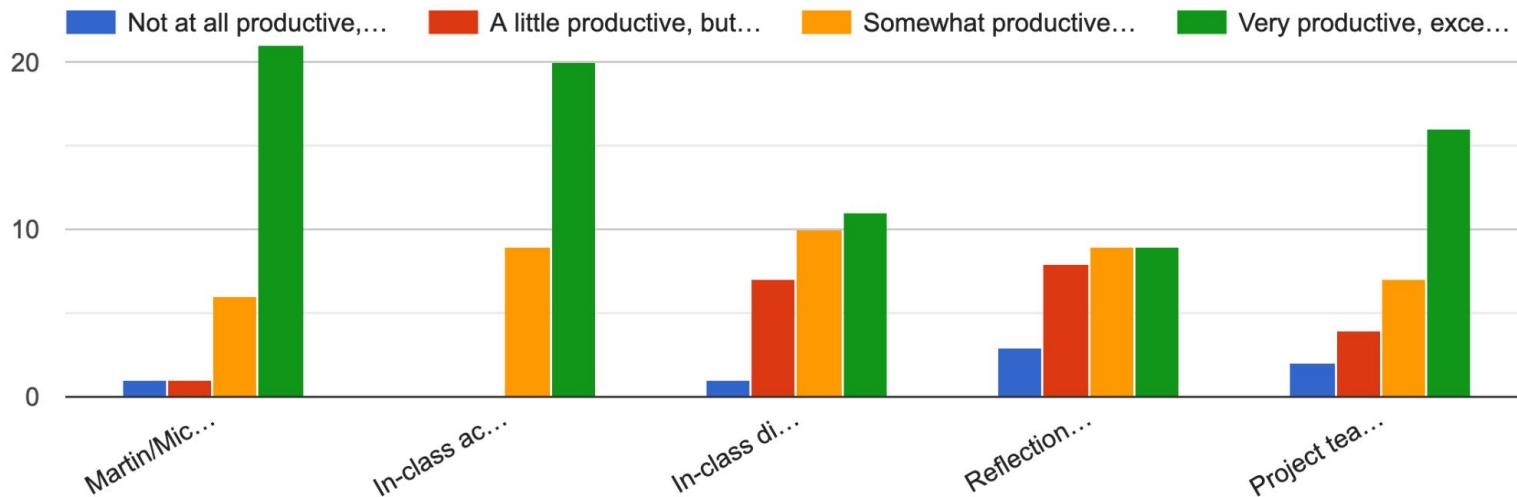
Team Meeting: Standup

- Discuss anything blocking you with your team
 - If nothing is blocking anyone, update everyone on your progress and then spend any extra time working on the project
- Michael and I will check in with the teams we didn't talk to on Monday (i.e., we're switching)
- Keep in mind that you will be expected to demo significant progress towards P3 by next Wednesday to the course staff
 - Our recommendation: have your “cloned” frontend for whatever product yours is based on working by then, so that you can focus on your own user stories before the deadline

Feedback Survey: Results

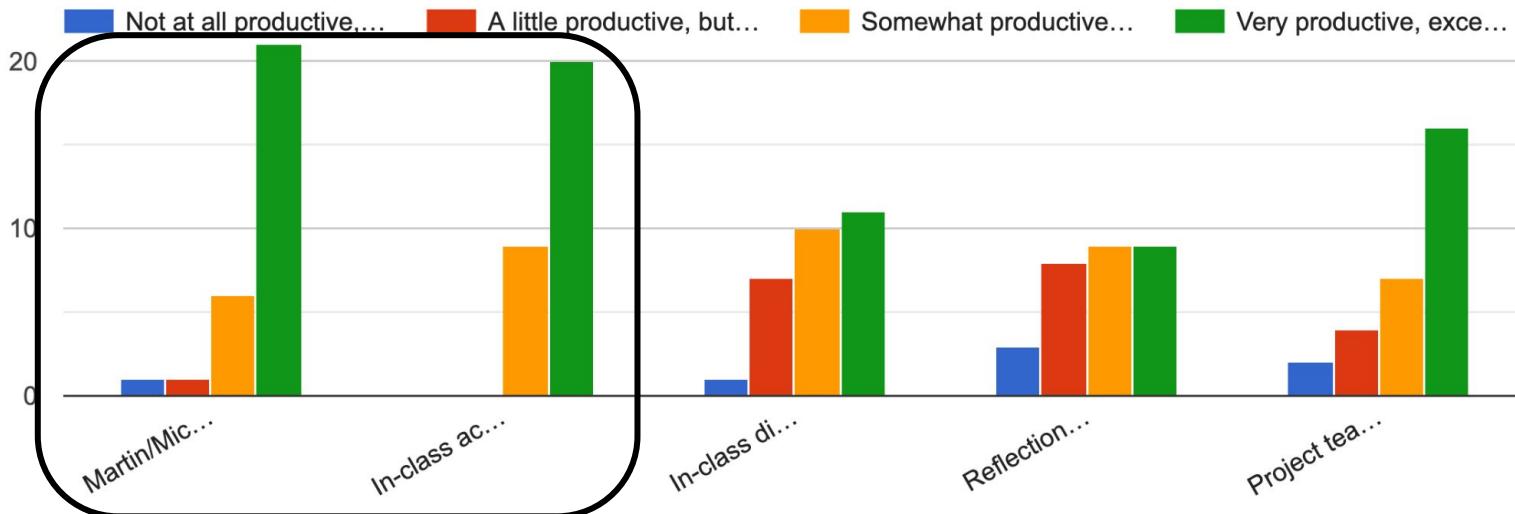
Feedback Survey: Results

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keep doing what we're doing

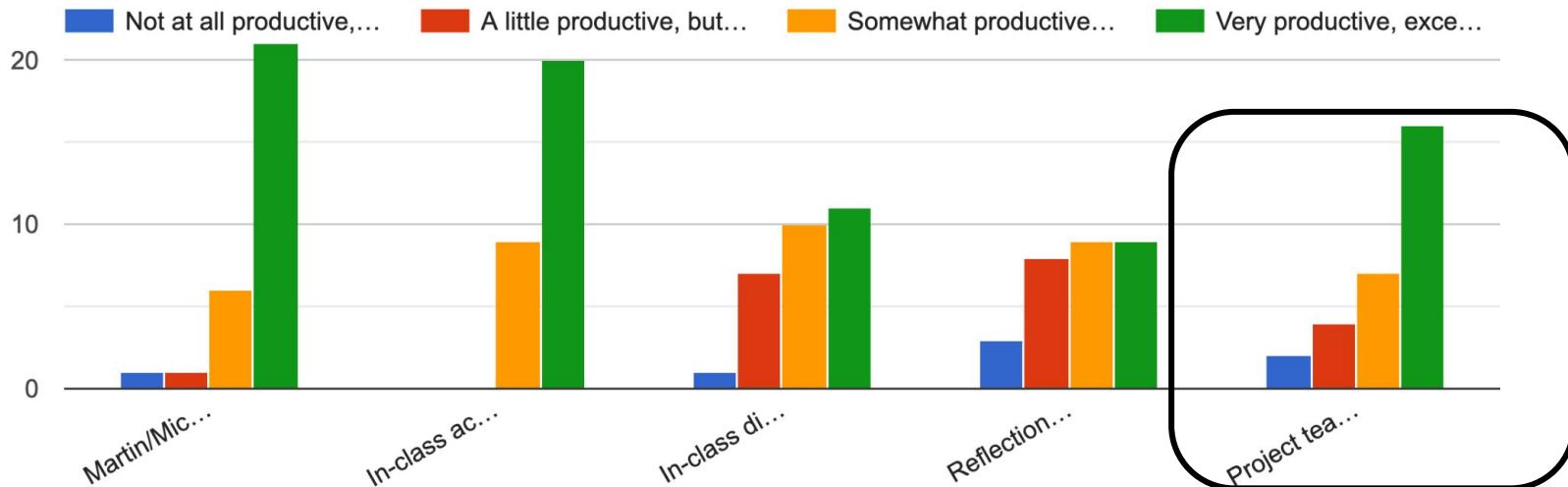
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explain why we need to do this

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- **desire for more technical focus**: this will occur naturally given the topics on the calendar.
- **student time management**: most common response *by far* to “what should you stop doing” was “procrastination”.

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- **Accessibility** (in the context of software engineering) means the ability for people with disabilities of any kind to use your system in the same ways as people without disabilities
 - e.g., if the text size in your frontend can't be adjusted, it might be difficult for visually-impaired users to read labels

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 - One in ten Americans has a **severe** disability
 - An impairment that significantly limits one or more major life activities
 - The Americans with Disabilities Act (“ADA”) **requires** that we provide accommodations so that disabled people are included

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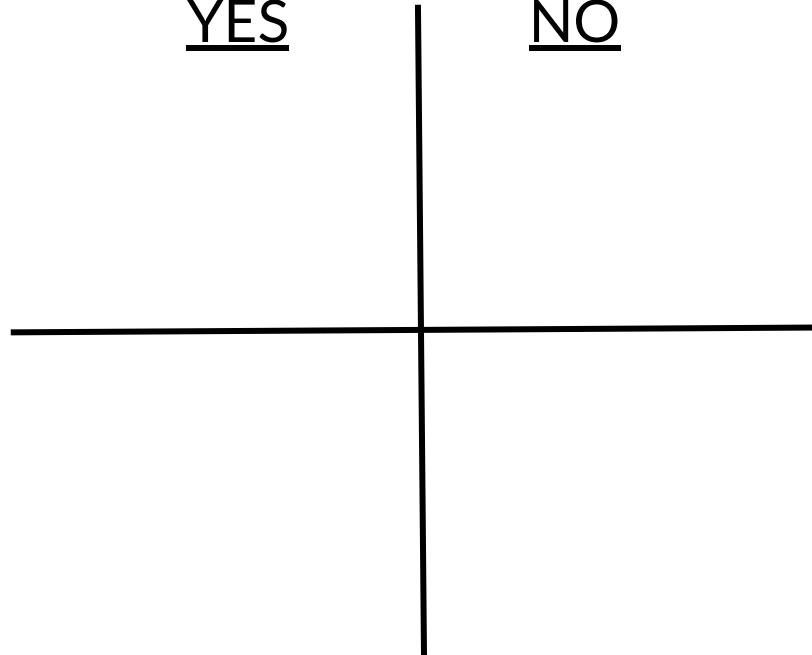
- State of the practice: mostly by hand :(
- Checkers exist, e.g., <https://wave.webaim.org/>
 - But are imperfect (false positives *and* false negatives)

Aside: false positives and false negatives

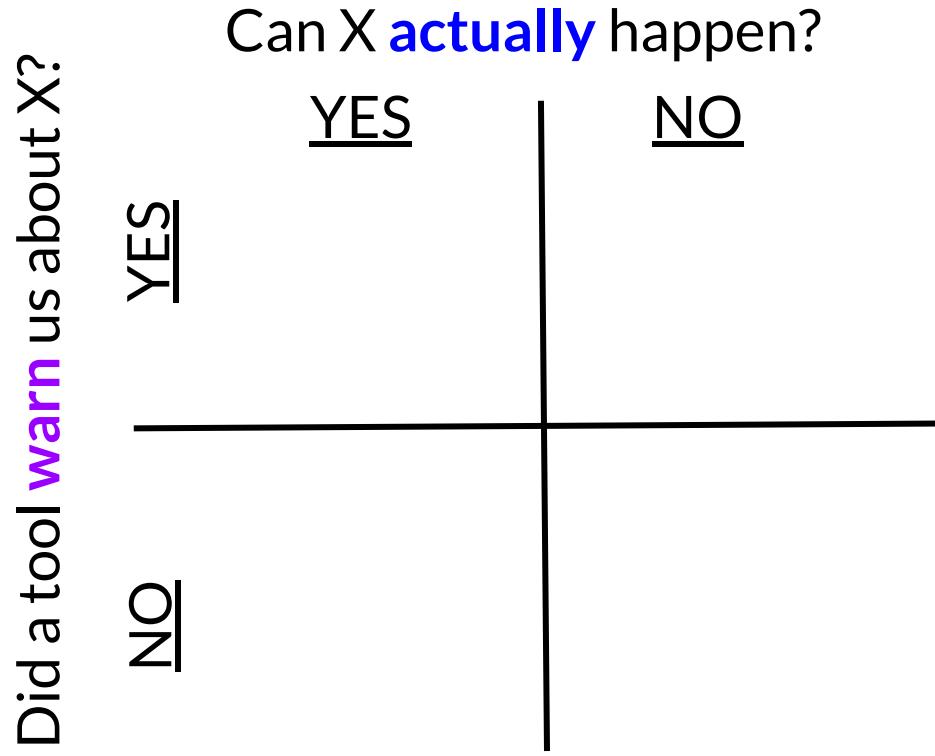
Can X **actually** happen?

YES

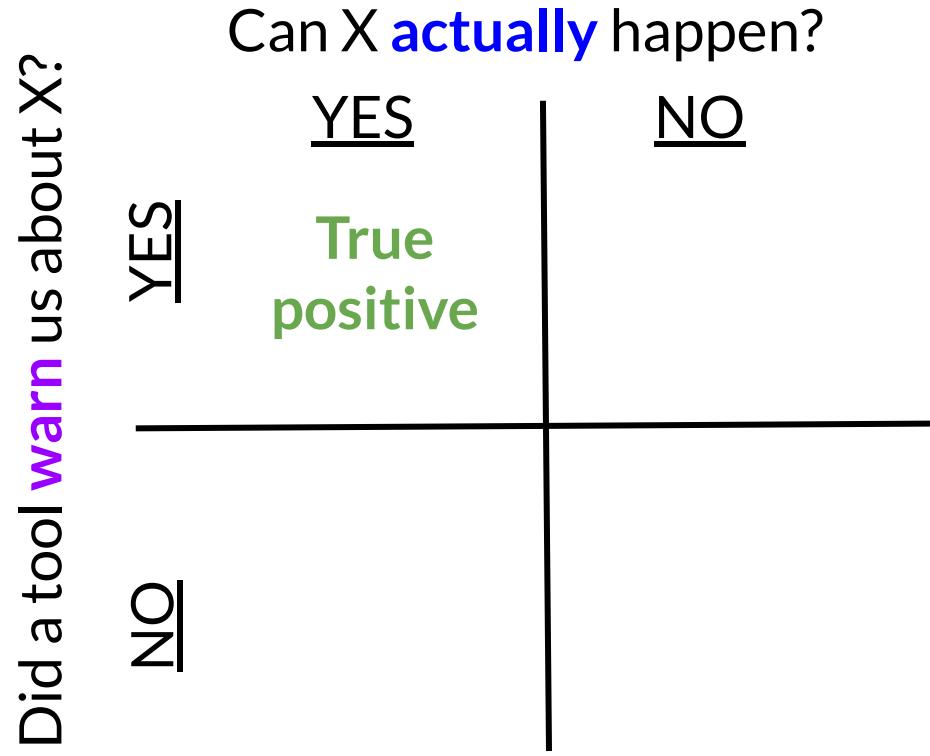
NO



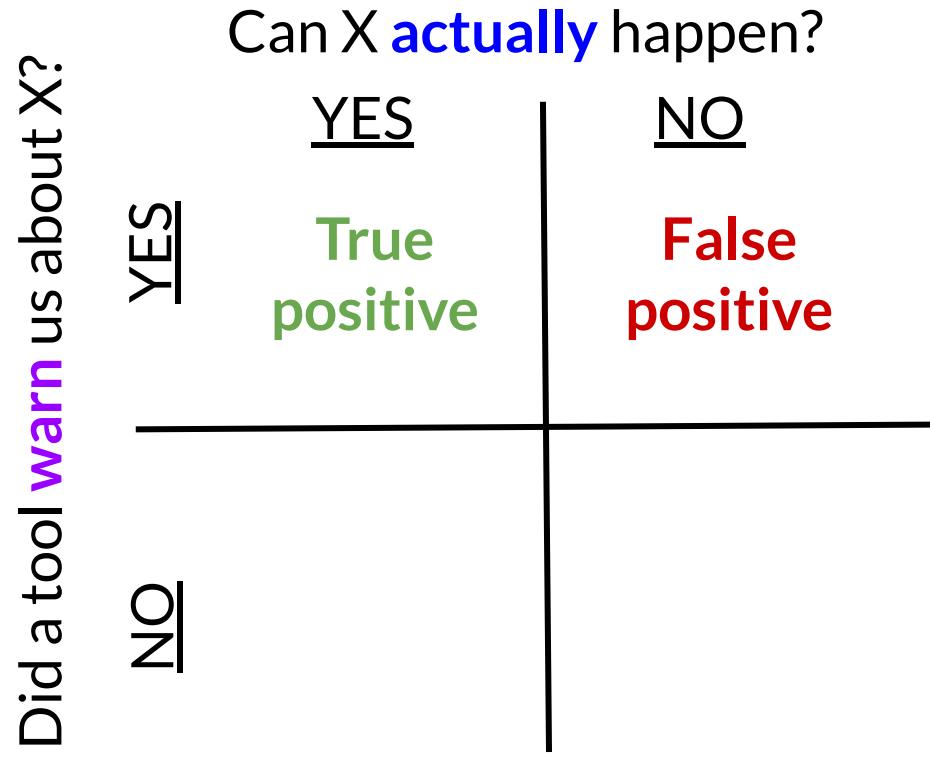
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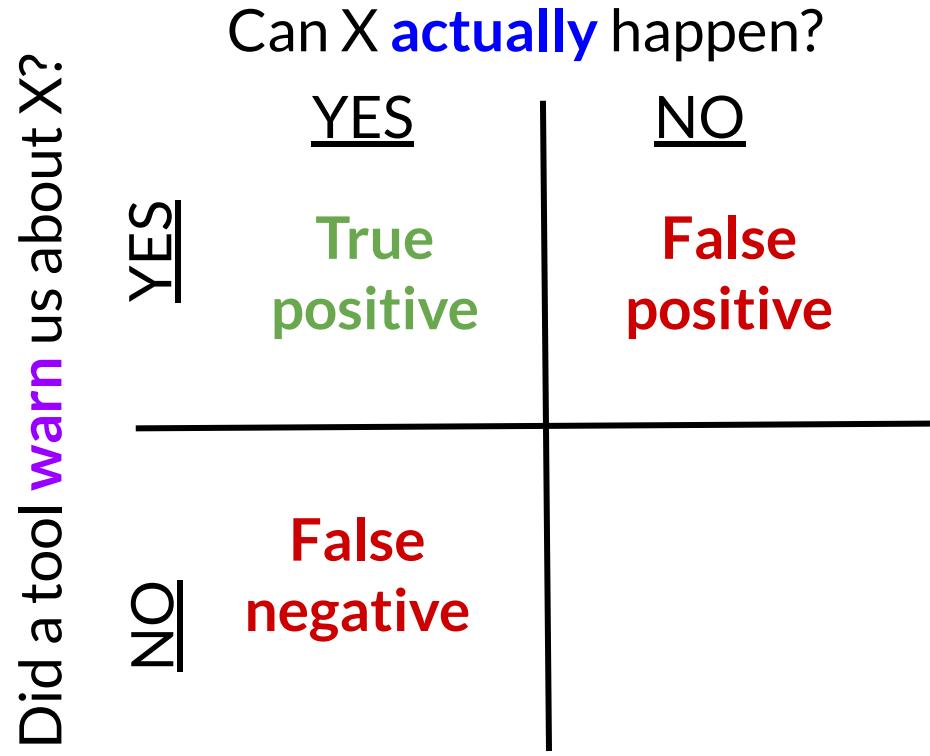
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		Can X actually happen?	
		<u>YES</u>	<u>NO</u>
Did a tool warn us about X?	<u>YES</u>	True positive	False positive
	<u>NO</u>	False negative	True negative

Aside: false positives and false negatives

		Can X actually happen?	
		YES	No
Did a tool warn us about X?	YES	True positive	False positive
	NO	False negative	True negative

Useful tool for thinking about anything that might warn us about a problem

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 - Note that screenreaders iterate in DOM order, not based on visual layout
- My experience: LLMs are pretty negligent when it comes to accessibility unless you specifically prompt them about it
 - report back based on your experiences in the in-class?

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 - in the last few minutes of class, I'll ask the class for lessons they learned from their partner's techniques

In-class Activity

- In 2013, the American government released [healthcare.gov](#), a marketplace for insurance plans
 - the rollout was disastrous, with technical glitches aplenty [1]
 - this turned into a big scandal, because the government had spent so much money on the website (estimated ~\$2 billion)

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 - the rollout was disastrous, with technical glitches aplenty [1]
 - this turned into a big scandal, because the government had spent so much money on the website (estimated ~\$2 billion)
- Today's activity: pretend we're the contractors responsible for the frontend of [healthcare.gov](#) in November 2013.

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In-class Activity: Specification

Your [healthcare.gov](#) frontend should:

- allow users to browse available plans
 - assume these plans are supplied by the backend and vary based on the zip code where the person lives; some zip codes have no plans and should redirect to a state exchange
 - (“27939” will get you past the zip code filter on the live site)
- allow users to sign up with information about their family to see customized plans
 - collect demographics about each family member and pass to the backend
 - must get an attestation from the user that all live in the same household
- be accessible to people on any device
- mock the backend completely

Wrapup and reminders

- If you haven't yet signed up for A3, do so today
 - we will send you a nastygram if you haven't, which hurts your professionalism score
- Make sure you're making progress on P3
 - you will need to demo your progress in-class for either me or Michael on Wednesday next week
- Last chance to talk to me about summer research is probably this week!