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)

Feedback Survey: Results

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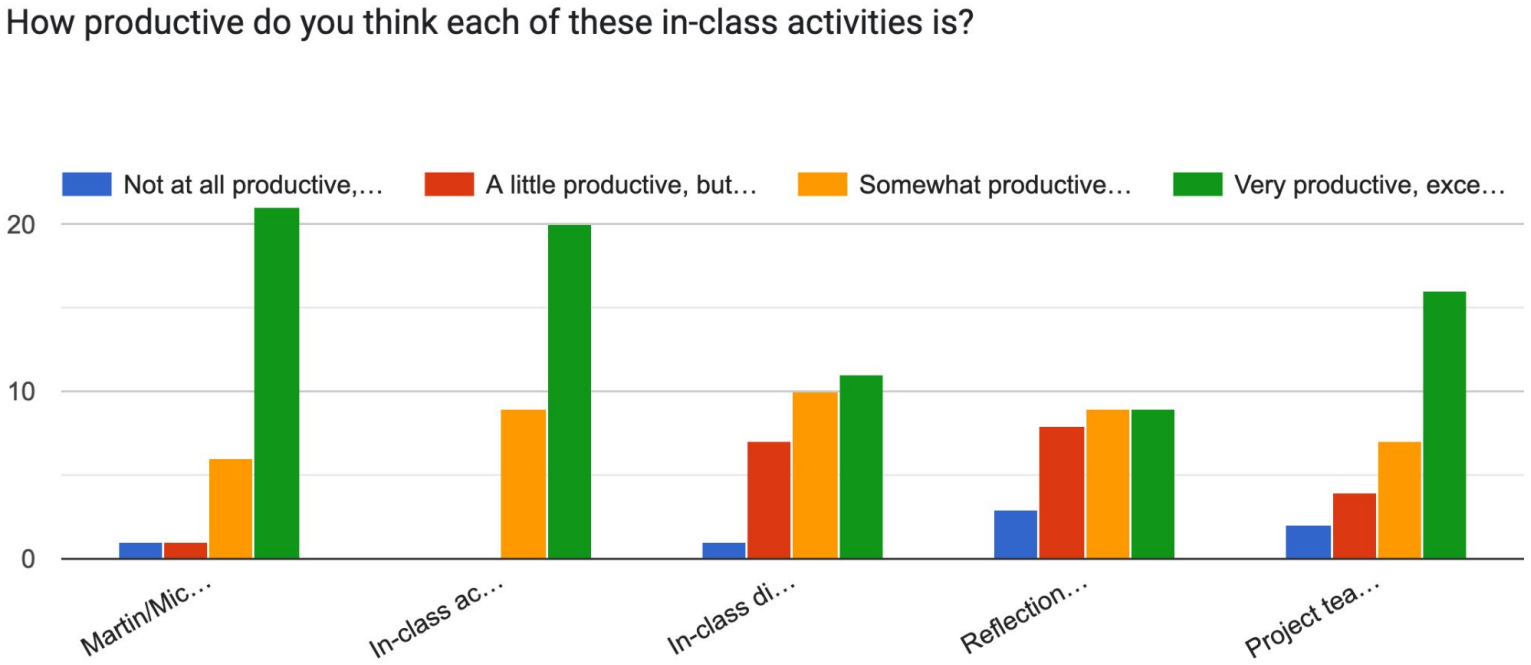
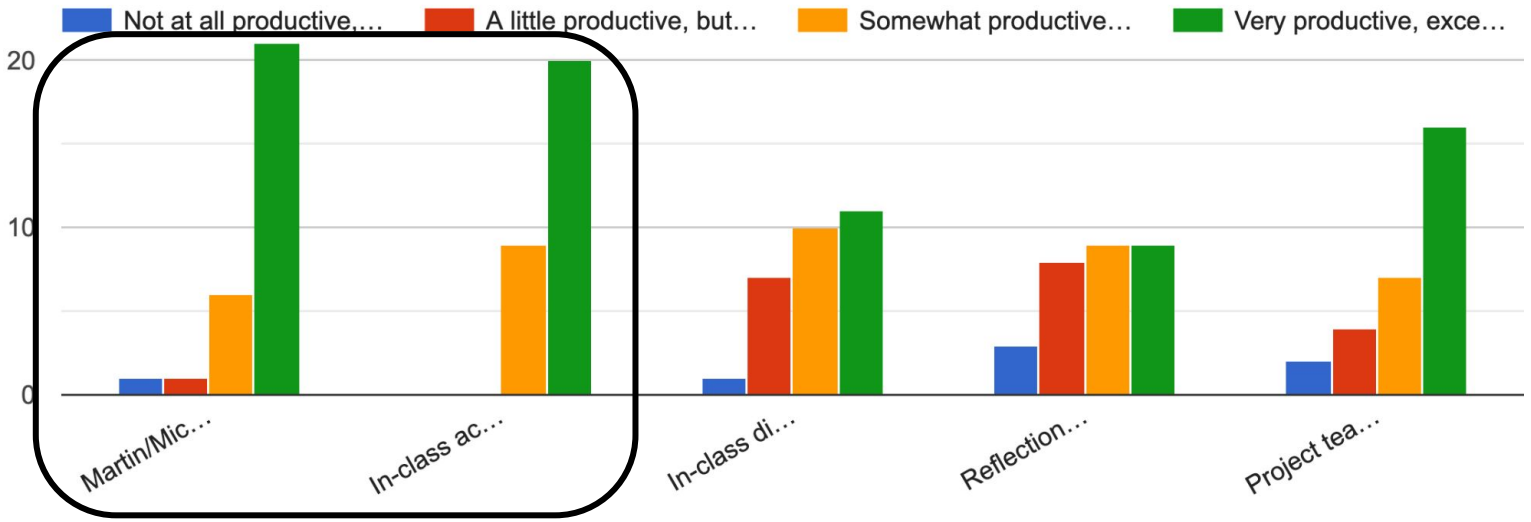


Feedback Survey: Results

How productive do you think each of these in-class activities is?



keep doing what we're doing

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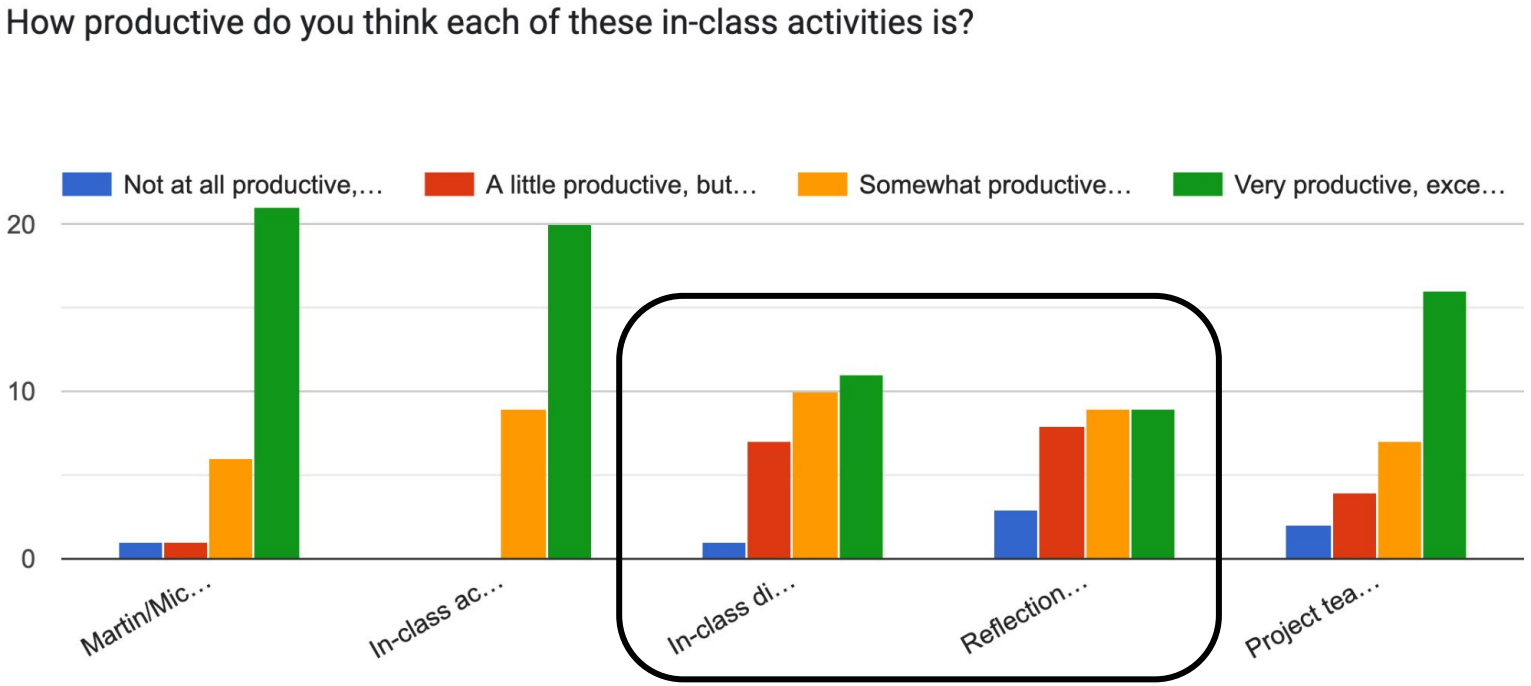

try some new things to improve

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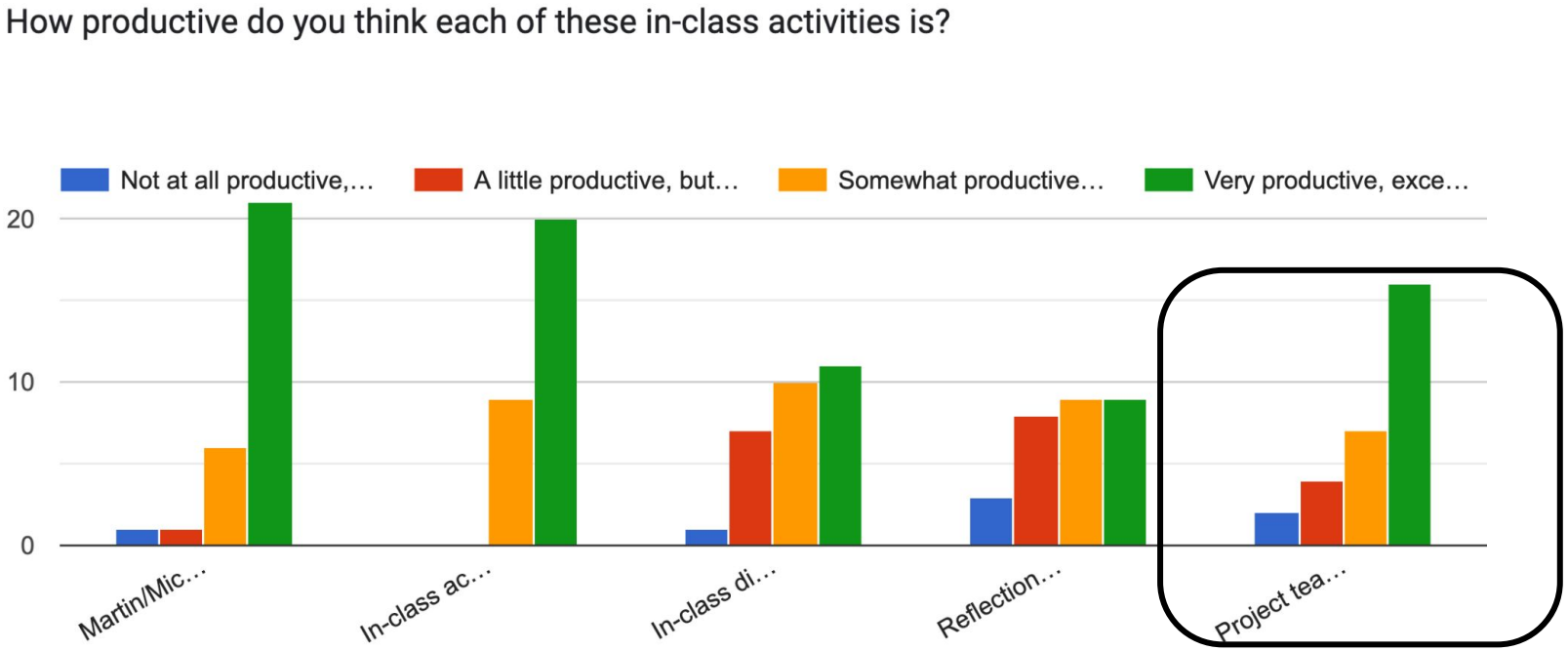

explain why we need to do this

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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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  - today, I'll introduce it a little more formally
- ***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
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  - 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)

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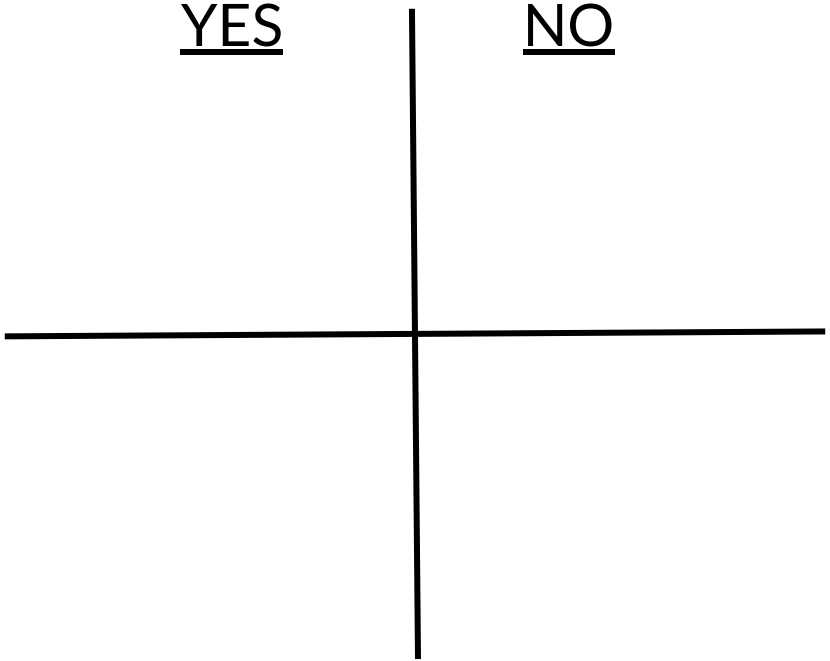
Aside: false positives and false negatives

Can X **actually** happen?



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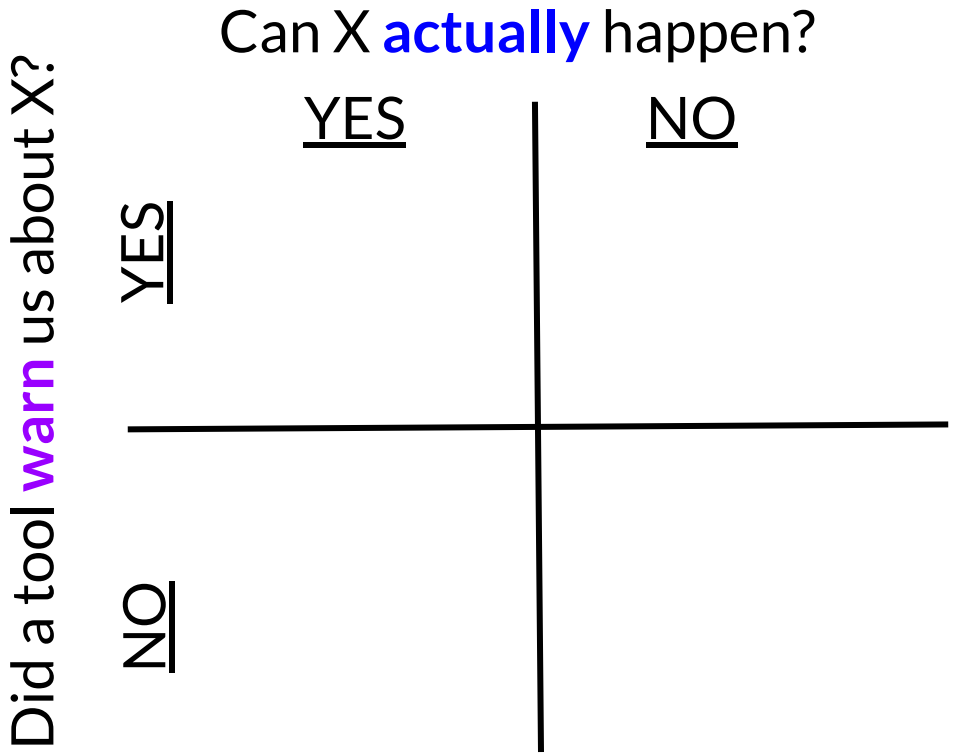

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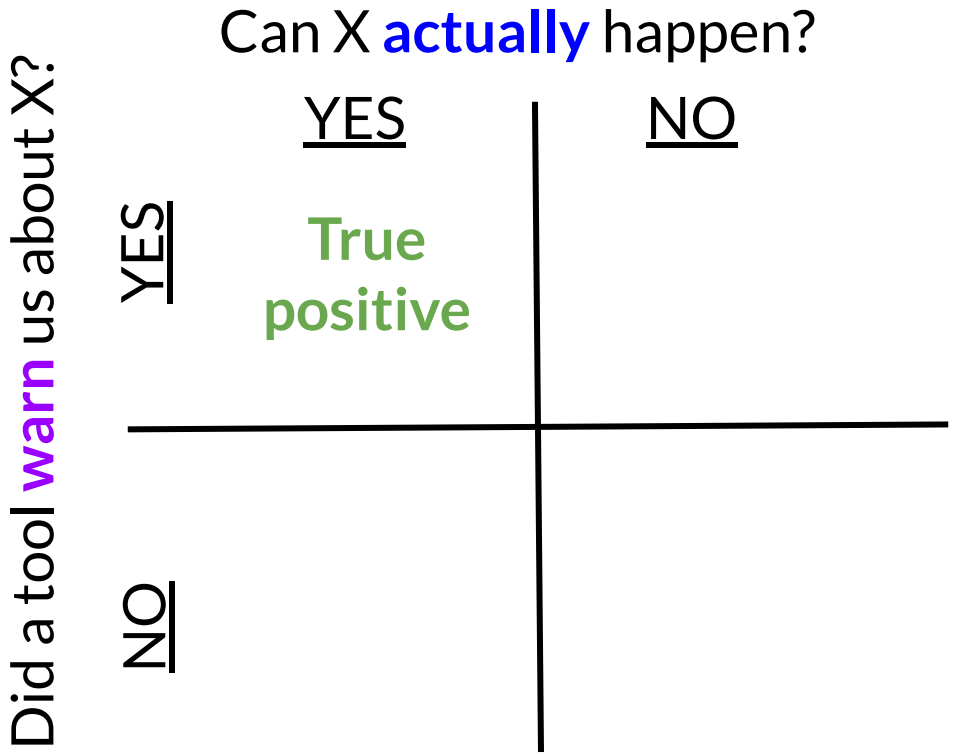

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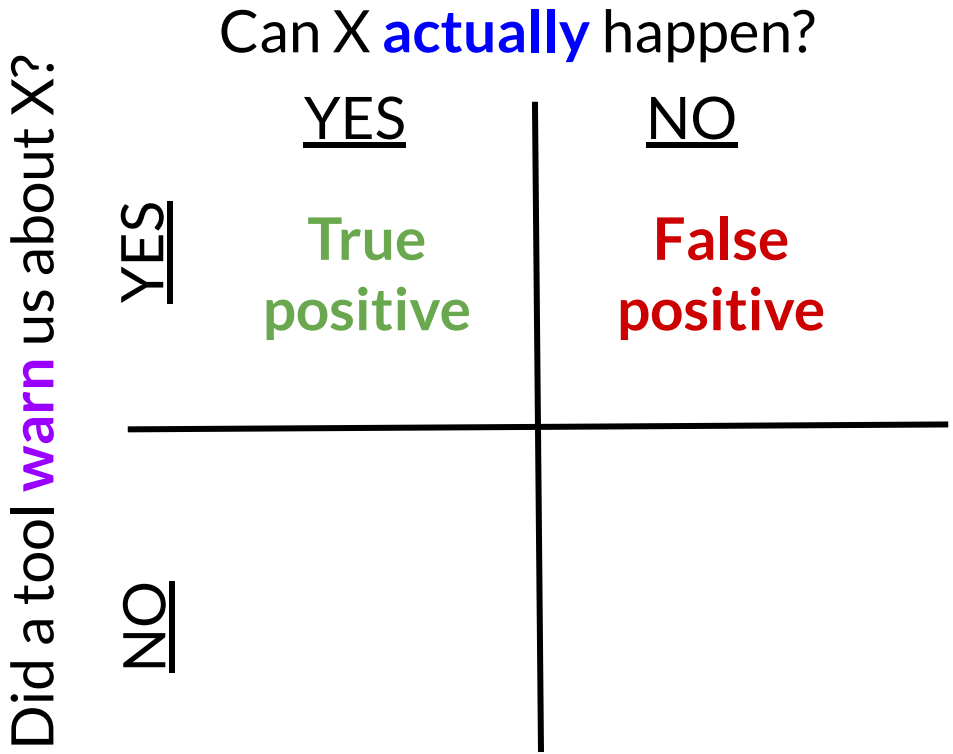

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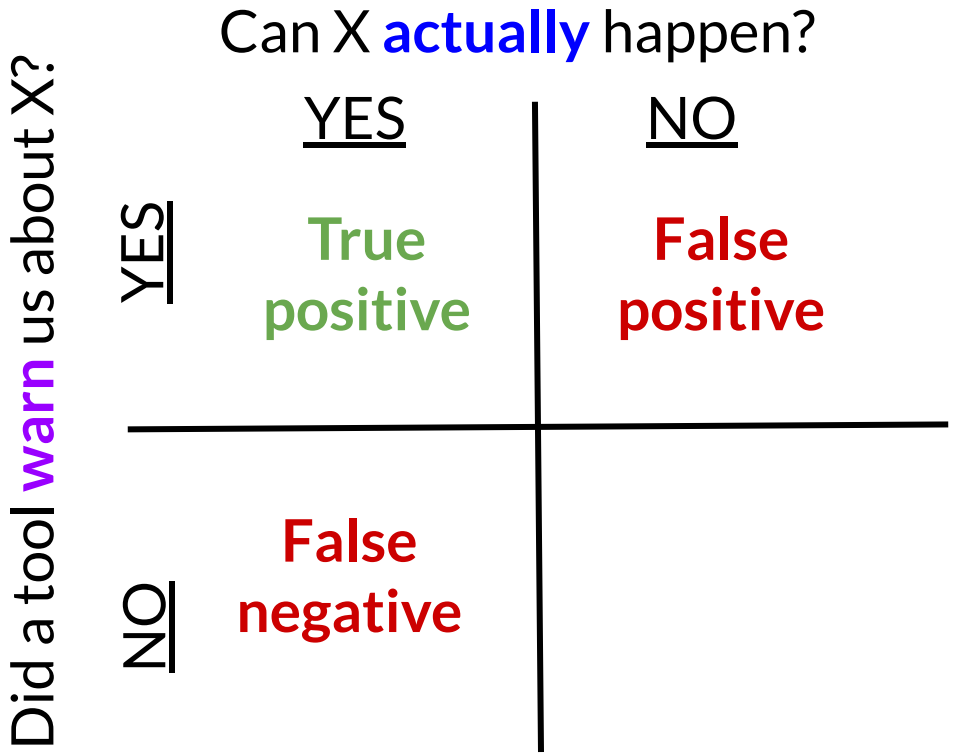

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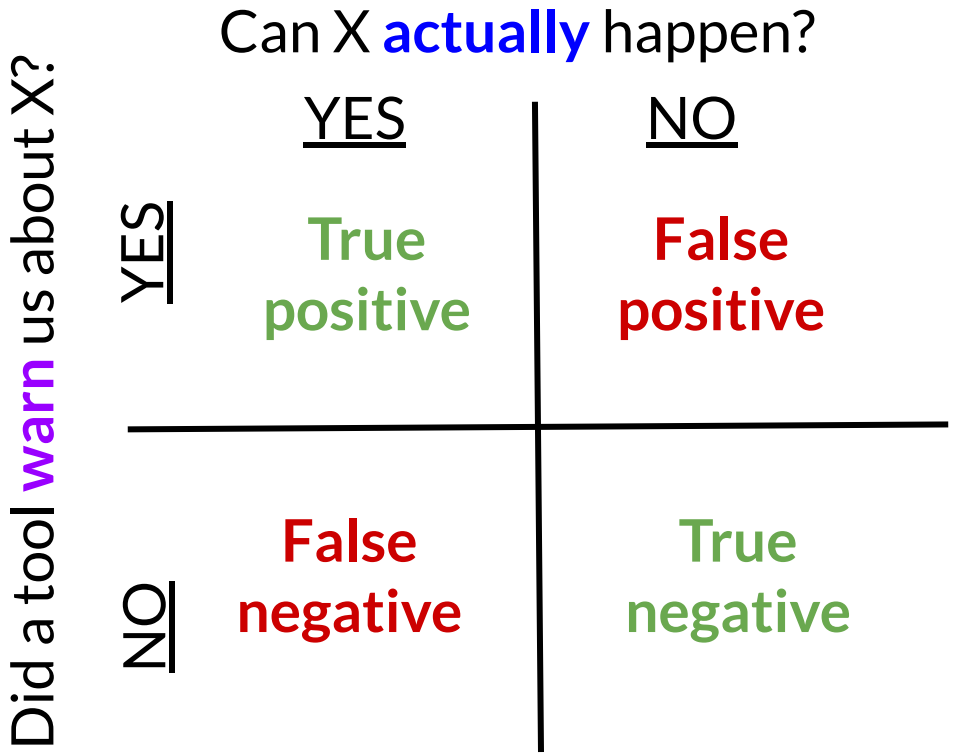

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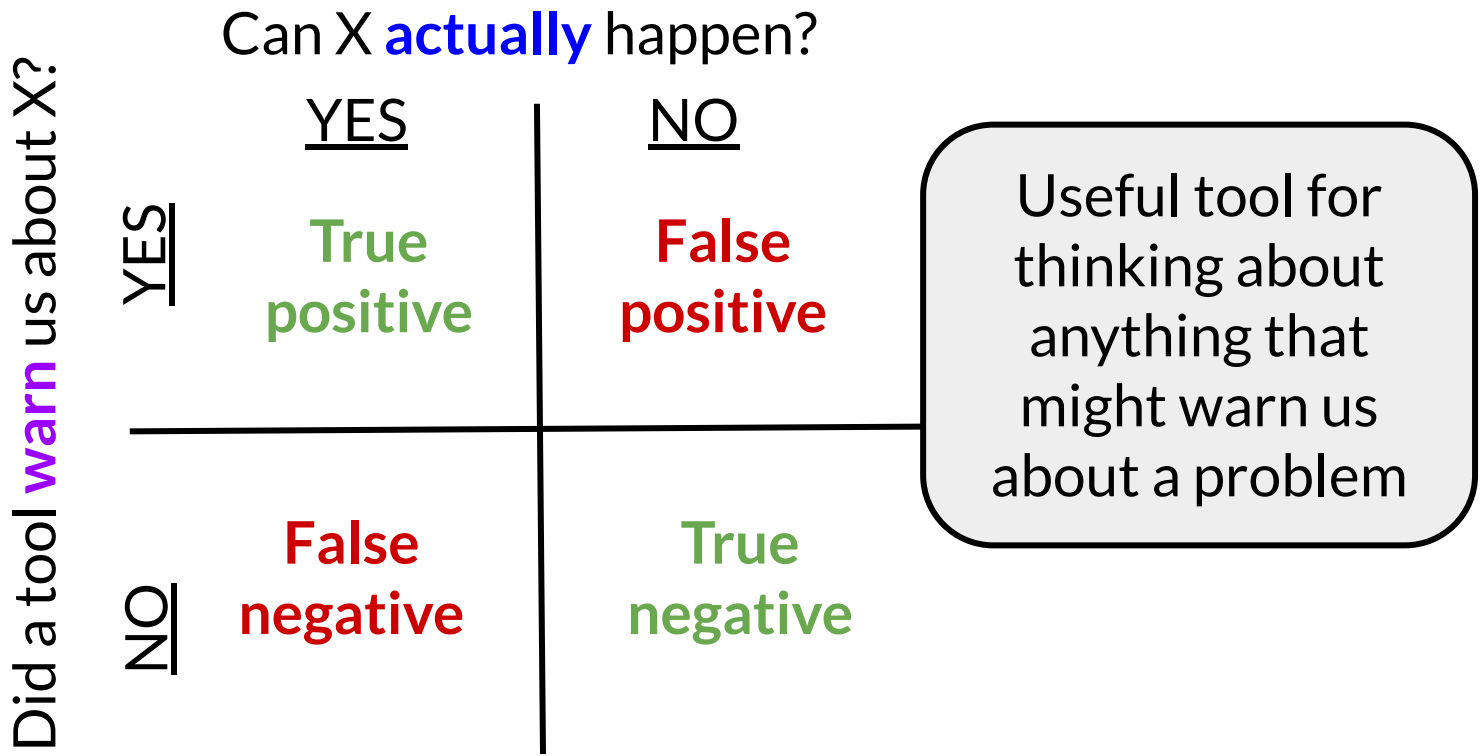

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- My experience: LLMs are pretty negligent when it comes to accessibility unless you specifically prompt them about it
  - report back based on your experiences in the in-class?

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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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  - 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!