

# CS181DT Class 13: Needfinding & forming groups



# Class 12 agenda

- Studio: forming project groups!
- Break
- Lecture: Needfinding methods

# Group making

# Round 1: Idea walk

Name \_\_\_\_\_

Enthusiasm 1-5

Tool idea in 1-2 sentences:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sketch of tool

*(bottom post-it area)*

- For each idea you want to do (at least 1), fill out the sheet and then tape it around the room in the appropriate domain category
- Walk around the room and read people's ideas and place post-its
- Other color post-it for general "yes and" or "what if" feedback/ideas ( $\infty$  amount, 0 required)
- Pink post-it for "I would join your team" (3 maximum)

# Round 2: Form teams

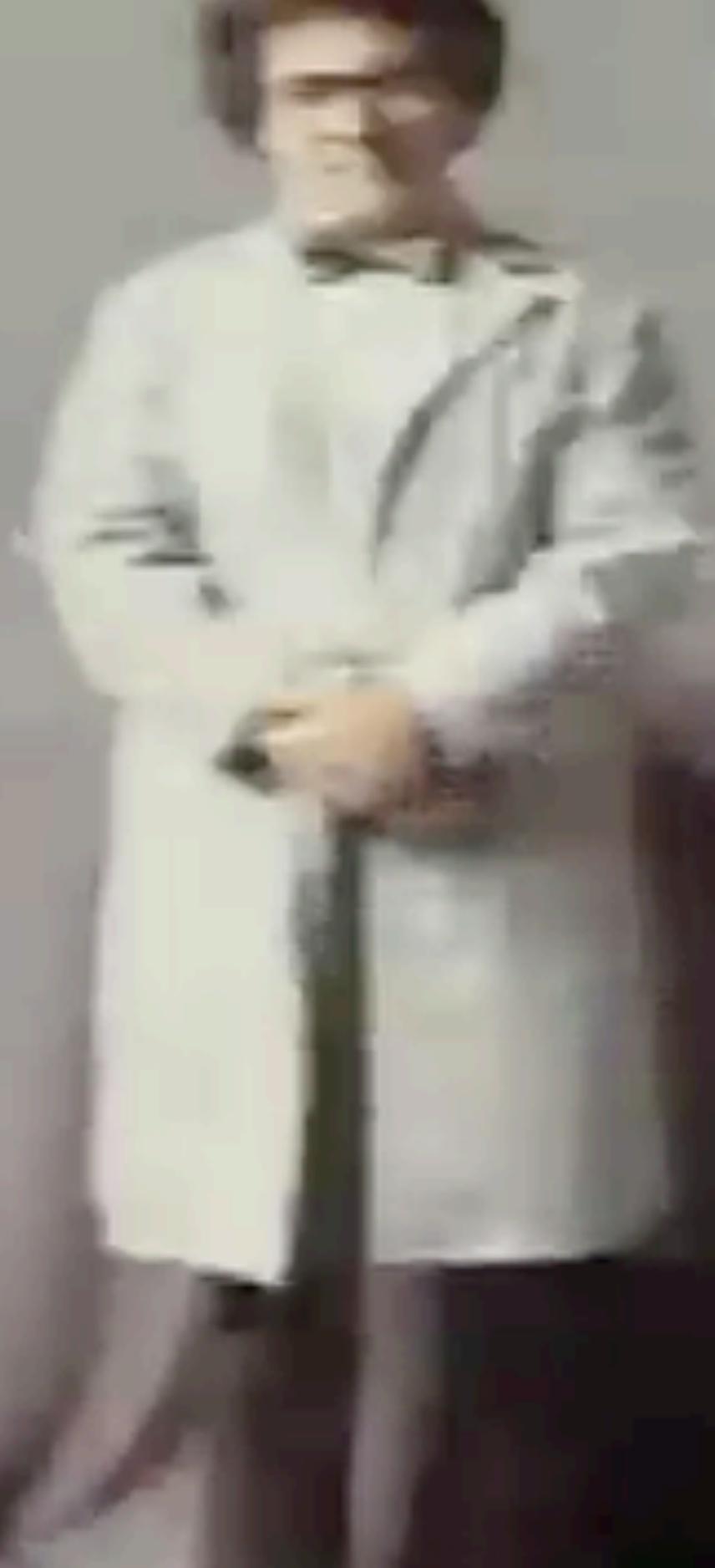
<https://forms.gle/XzeJ4xjjrfqyiBQh6>

- Walk to your top choice idea (can be your own)
- If there are too many people: can you split this into two ideas?
- If there are not enough people: can you find common ground with others (e.g., same domain neighbors)?
- Can move around and scope out other potential groups too
- After you have a team of 3-4, find a weekly 30 min meeting time and fill out the Google Form to record your group (only 1 person needs to submit). Then take your break
- I am here to help settle groups! Call me over!
- We move on at 11:40 latest



# Needfinding

**We shouldn't rely solely on our intuition  
to design things.**

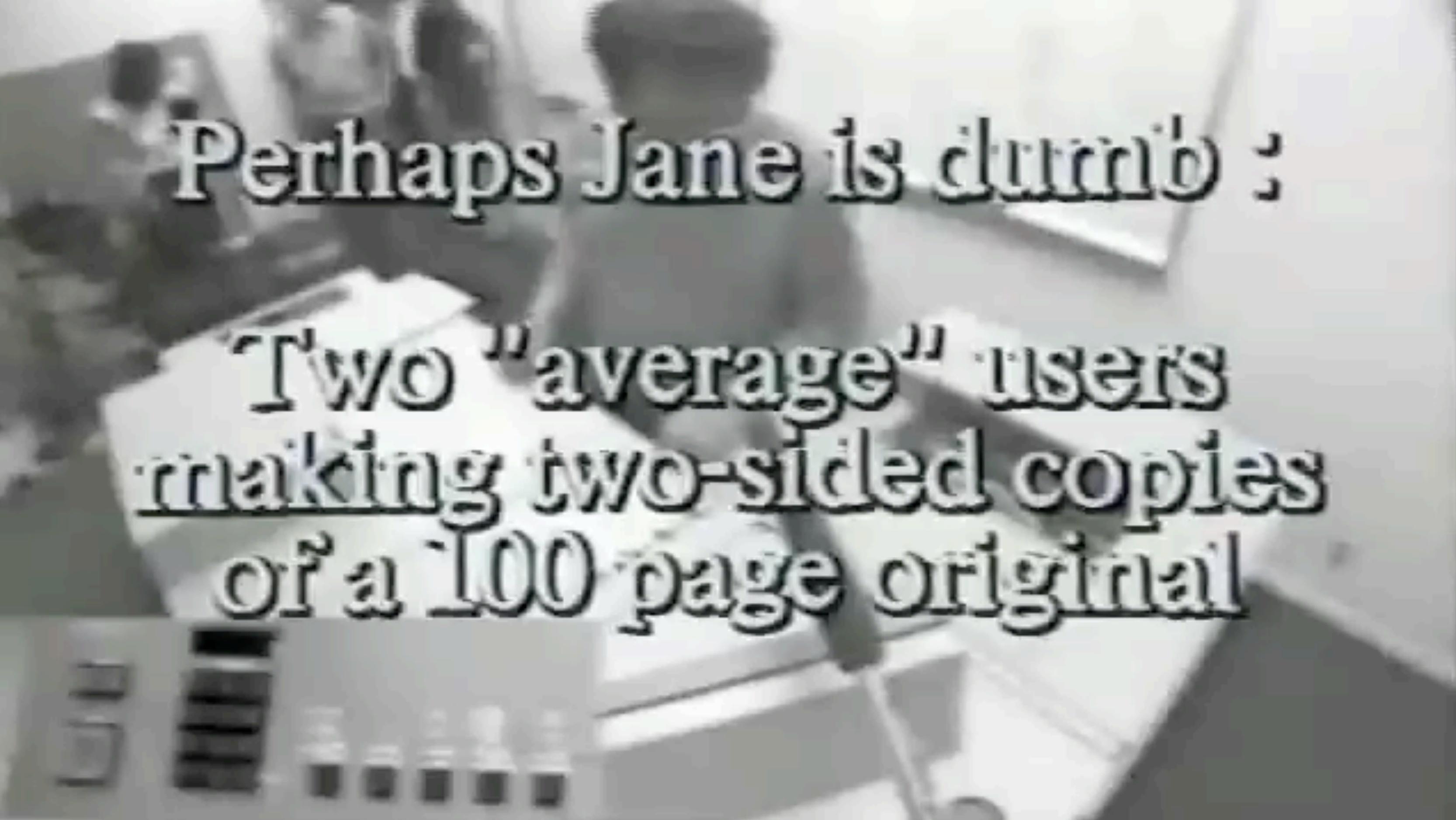


# Xerox copier ad

- Xerox PARC (1983)
  - Complains that existing copiers were “too complicated”
- But why?
  - Lucy Suchman (influential HCI researcher, comes from anthropology) suggests *videotaping interactions*



**Pushing the Green Button**  
(advertisement for the  
8200 copier, c. 1983)



Perhaps Jane is dumb :

Two "average" users  
making two-sided copies  
of a 100 page original

# Who were these “average” users?

- Alan Newell

ACM Turing Award Winner (basically created AI subfield)

Unified Theory of Cognition



- Ron Kaplan

ACM Fellow

VP of Amazon

Consulting Professor at Stanford



# So did the big green button work?

- No
  - Opposite problem: too few buttons instead of too many buttons
  - Stripping away complexity  $\neq$  removing a learning curve
- AI approach: know what users want based off of sensors and a predefined user model
- HCI approach: observe how people are shaping their action based on the design of a machine, as opposed to a machine responding to and predicting user actions
- **Situated actions > plans**: so design your machines to allow for the *flexibility* of human behavior

# Why is user research important?

- Helps designers empathize with users
  - Before you develop an interactive system, you need to understand its users: who are they? What do they need? How does context change their activities and goals?
  - Behaviors, needs, wants, motivations, pain points
- Pinpoint problems
  - In order to create a useful tool/product/solution, you need to understand the problem - not generate new ones!
  - Identify **pain points** - problems users face when experiences  $\neq$  expectations

# Pain point example

- “Sorry, I couldn’t finish lecture today because my internet went out”
- Pain point: unable to finish lecture without internet
- Unmet needs:
  - Better internet provider
  - Access to a space with reliable internet
  - Way to make lecture without internet

# Activity: pain points

- In pairs, identify a shared pain point in your daily routines.
  - Think of things that bother you – inconveniences, tedious things, stuff that you don't want to think about...
- Convert this pain point into **3 possible unmet needs**
  - Choose 1 of those, and brainstorm **a possible solution**
  - Sky's the limit for this exercise! It can be as 'realistic' or not as you like.

# Methods to identify pain points

- HCI & UX researchers borrow from social science methods to find out user needs
  - Academic social scientists are interested in developing general theories of human behavior
  - HCI researchers are interested in meeting interaction specific goals, e.g., creating guidelines that inform the design of their systems
    - Also known as **design goals**
- UX researchers in industry are interested in meeting customer needs

# Needfinding methods

- Questionnaires (e.g., Qualtrics)
- **Observational studies** provide more depth
  - Semi-structured interviews (what you'll be doing for milestone 2)
  - Contextual inquiry: go into the site of the activity and observe and ask questions
    - "Master" & apprentice model (your participant is the master, you, the designer, are the apprentice)

# Types of semi-structured interviews

- Semi-structured means you have a set of questions to ask, but don't have to 100% stick to the script and can ask follow ups if participants say interesting things
- **Story interview:** results in real examples of interaction in context, captured through stories
- Tutorial interview: results in a description of how a system works (usually, story interviews gone wrong)
- Opinion interview: results in user opinions of a system

# Story interviews: why? how?

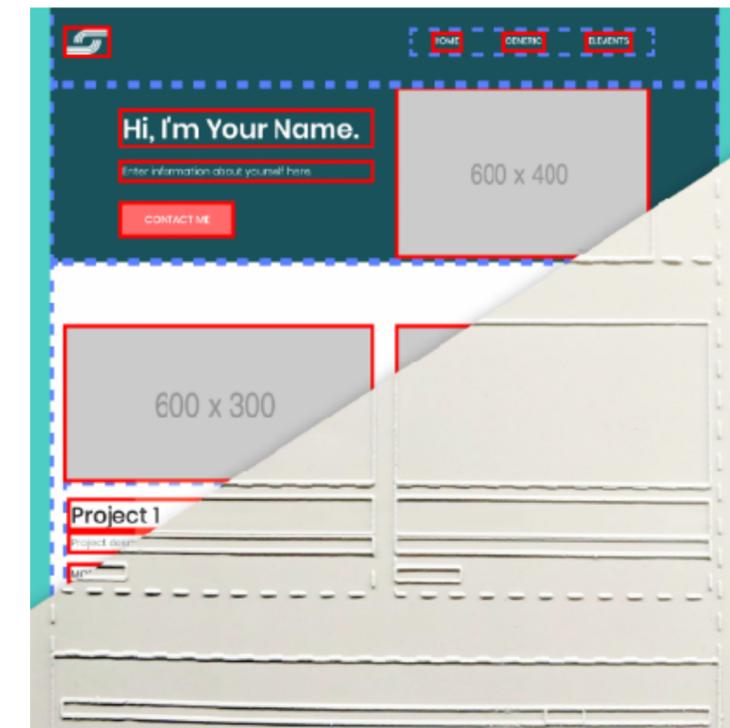
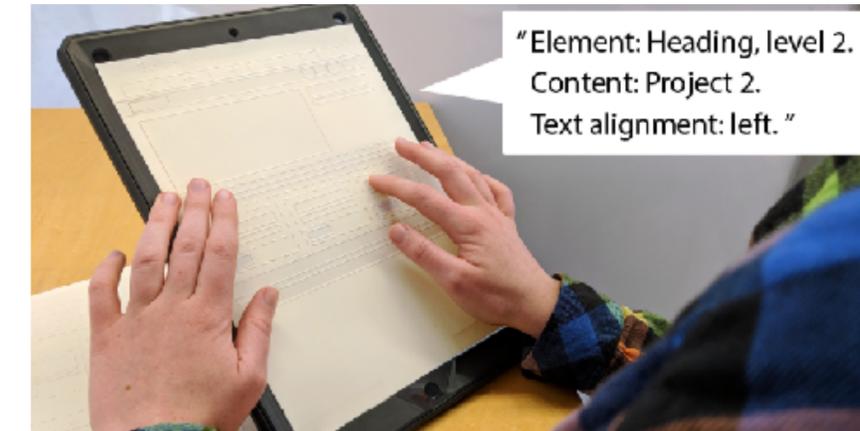
- **You can generate abstractions from detail, but you cannot generate detail from abstractions**
- Get participants to be as **specific as possible in identifying their pain points**
  - Ask a specific question (“**tell me about a time when you...**”) first to set the tone
- First talk about the problem in general you’re trying to address. Near the end of the interview it’s OK to get feedback on your tool idea
  - Don’t ask, “would you use it?”
  - Instead, ask for in what contexts or situations they could see this tool in their life, or if there are more salient needs in the domain

# Design goals from pain points

- Once you have a list of the most salient pain points / user needs, it's time to use them to inform the design of your tool through developing *design goals*
- No strict method: follow your intuition on how pain points or positive practices can map to tool requirements
- What kind of results do you wish to achieve? What things should you prioritize over others? Efficiency? Iteration? Expressiveness?

# Example design goals

- A tool that enables blind and visually impaired designers to make spatial layouts (like websites or slides) should...
  - 1) Leverage existing workflows of starting from templates (*from positive existing practice of finding templates*)
  - 2) Provide feedback on and the ability to make edits (*from pain point of not being able to make edits with a screen reader*)
  - 3) Present content-layout relationships in multiple modalities to avoid high cognitive loads (*from pain point of overloading audio channel*)
  - 4) Support learning of unfamiliar layout designs and concepts (*from pain point of it's hard to learn UI trends and standards*)
- More examples on the assignment spec under resources



# Milestone 2: Needfinding

- 1. Create shared interview guide for a 30-60 min semi-structured **story** interview
- 2. Everyone should conduct their own interview and take a page of notes. I recommend asking to audio record the interview
- 3. Come together as a group, synthesize and discuss results, and create design goals that address the pain points
- Due next Weds 3/11

# Summary

- Needfinding interviews are to check your assumptions and biases of the existing problems or design space
- Needfinding interviews are to justify your design decisions
  - Your design decisions can help address “pain points” unsurfaced through participant stories

# Class 12 recap

- End of class: submit your groups!
- TODOs:
  - Nothing due Monday :)
  - Milestone 2: Needfinding assignment released, due Weds
    - All milestone grades don't factor in your final grades, it's mainly for feedback/calibration
  - Next week's ZCs: Kellie, Ben

