# CSE 440: Introduction to HCI

## User Interface Design, Prototyping, and Evaluation!

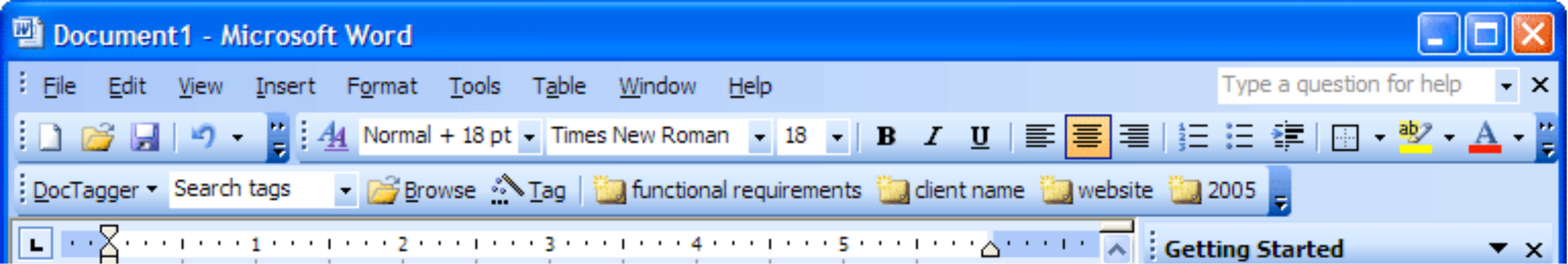## Lecture 05: User Research I

Instructor: Amy Zhang, 10/14/2021
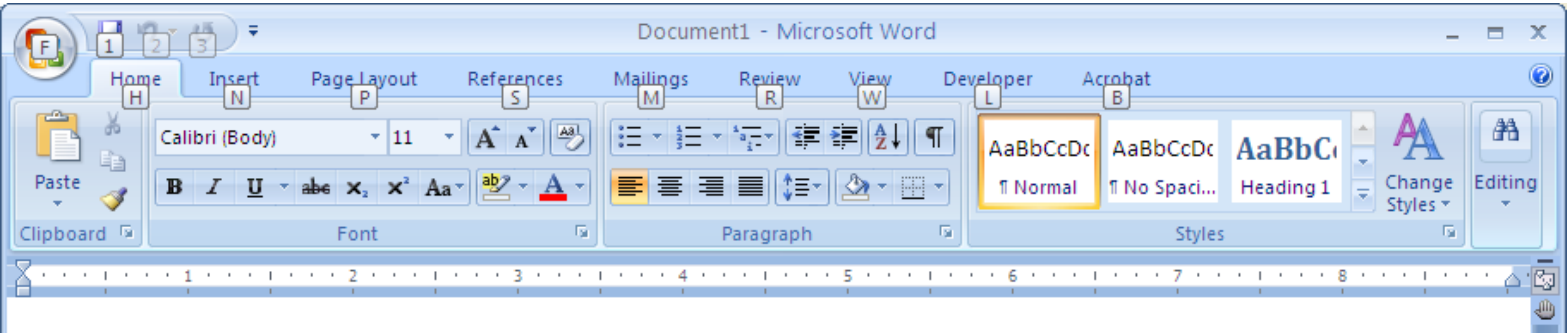
# Today's Topics

- UI Hall of Fame or Shame

- User Research

  - User research methods:

    - Observational

    - Self-Report

  - Practice interviewing

- Work with your group on 2b

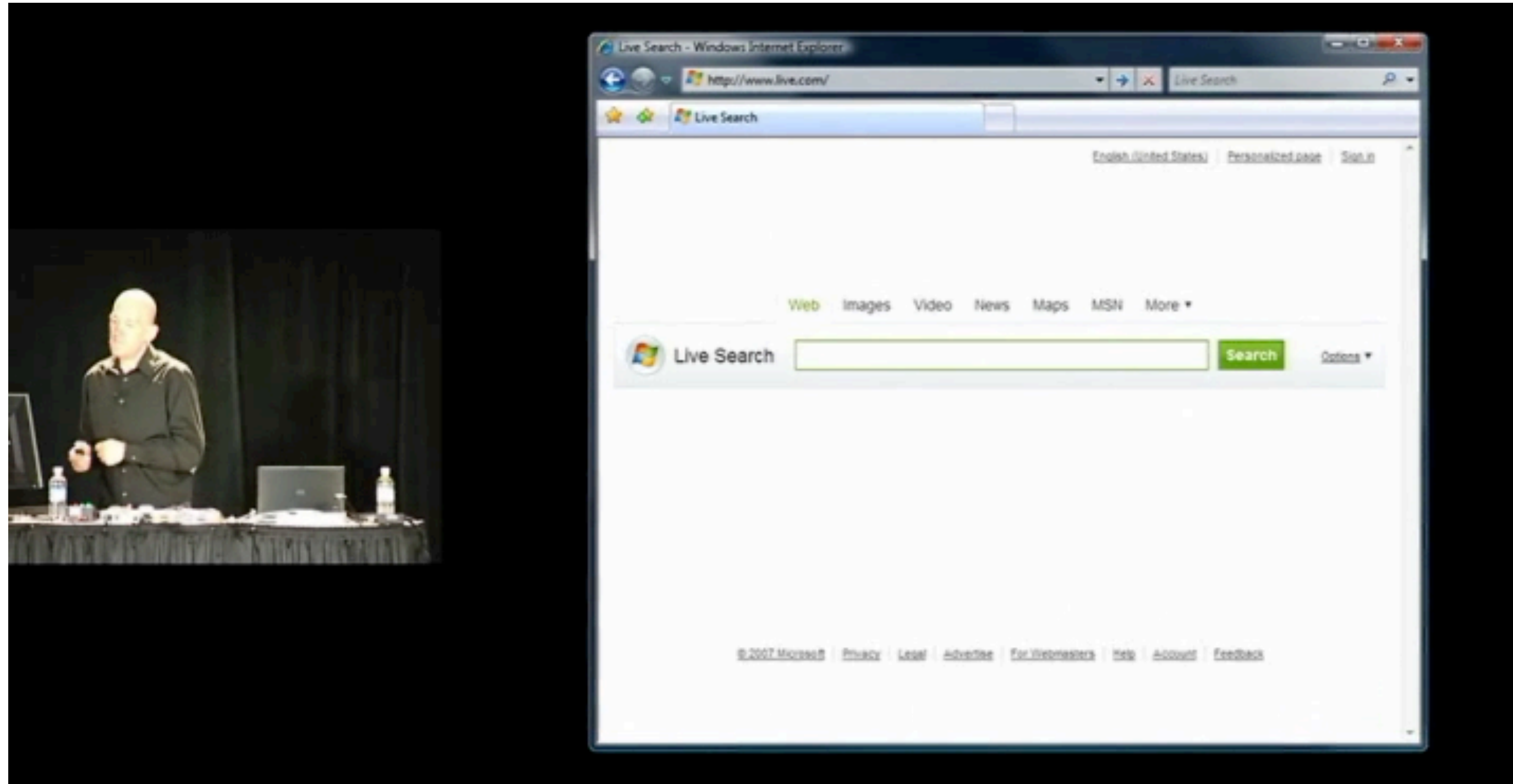# UI Hall of Fame and Shame

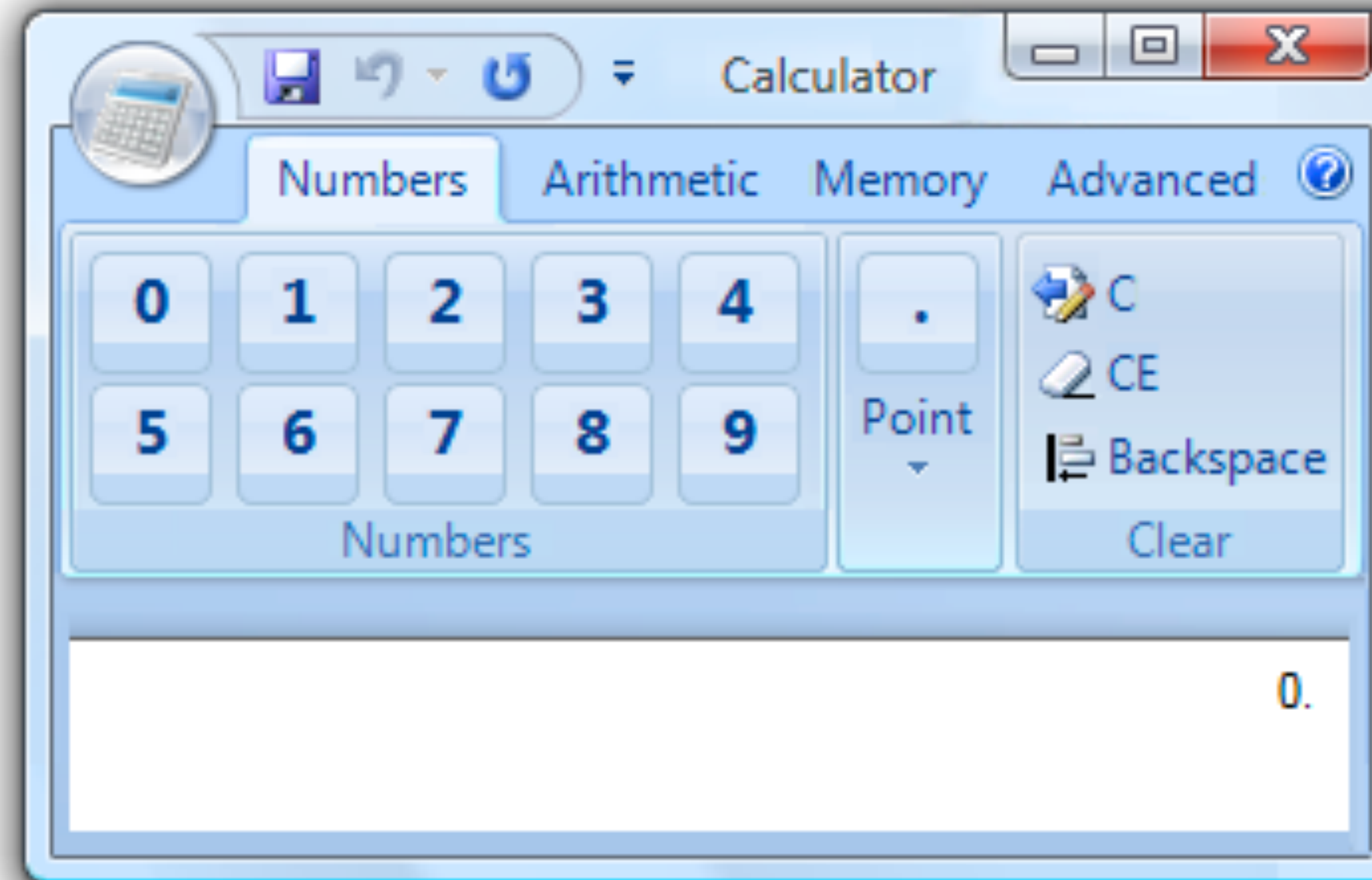# Office 2003



# Office 2007

The Story of the Ribbon: https://channel9.msdn.com/Events/MIX/MIX08/UX09

Should you use a Ribbon in your UI?: https://docs.microsoft.com/en-us/windows/win32/uxguide/cmd-ribbons

# User Research

# User Research Methods

# Quick Tips for Conducting User Research

- Some research subjects are more helpful than others depending on your research questions

- Make the environment comfortable for the subjects

- Have a plan, drive towards goals, but leave room for tangents and interesting things that come up

- Guide but don't dominate. Silence is okay - if you listen, they will speak

- You're looking for the implicit insights behind the explicit ones

- Respect your subjects, accommodate them, and thank them for their time

Most importantly, **keep an open mind**. Look without presupposing what you're looking for. Trust that your ability to define the problem will emerge during this process.

# Observational vs Self-Report

# Participant Observation

- Goal: Viewing users and their behavior in context

- When: You want to see users in their element and learn about their experience

- How:
  - "deep hanging out" - spend time in the vicinity of the subjects
  - active participation in the activities they are doing
  - experience of membership in the context, culture, or subculture
  - forming connections and empathy with the people and things important to them

# Fly-on-the-Wall Observation

- Goal: To gain a deep understanding of how people behave in a specific location

- When: Use when you want to study people unobtrusively (to avoid bias or the Hawthorne effect)

- How: Go to a location and observe what is happening there without interacting or talking to people. Be a fly on the wall!

# Behavioral Mapping

- Goal: To uncover discrepancies between how participants use a space and how it was intended to be used

- When: Use when you want to study a specific space/environment in order to plan improvements

- How: Unobtrusive (done "at a distance")

  - Start with a site plan or map and a list of behaviors you want to record, then note when those behaviors happen on the map

dairy

meat

seafood

frozen

dry products

deli

bakery

alcohol

checkout

produce

candy
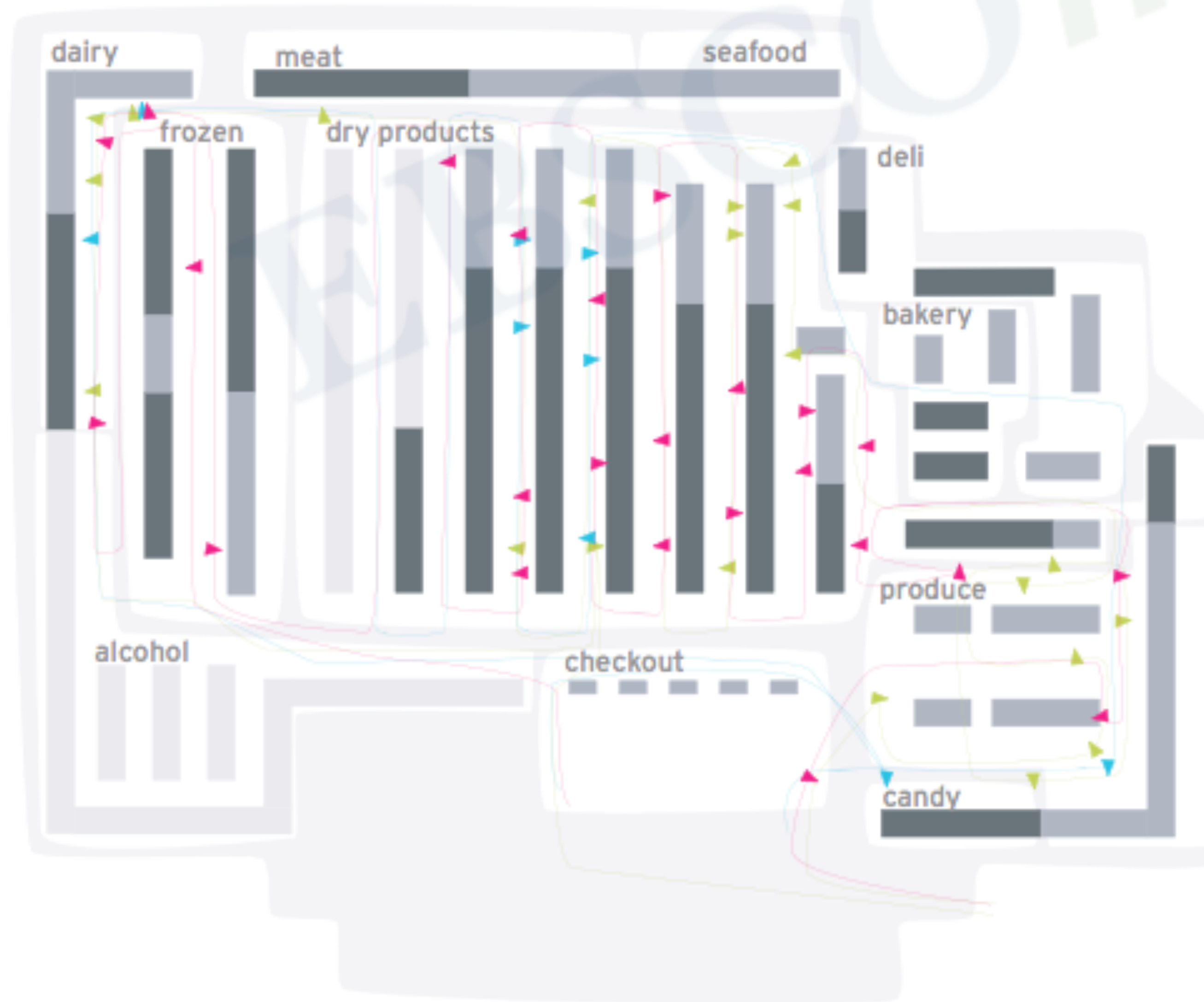
► Participant 1
31 items total =
17 food +
14 sad nonfood

► Participant 2
13 items total =
7 food +
6 sad nonfood

► Participant 3
40 items total =
16 food +
34 sad nonfood

processed nonfood
food
n/a substance

# Contextual Inquiry

- Combining both observation and self-report:

- "The core premise of Contextual Inquiry is very simple: go where the customer works, observe the customer as he or she works, and talk to the customer about the work. Do that, and you can't help but gain a better understanding of your customer." - Beyer & Holtzblatt (1998)

# Contextual Inquiry

- Goal: To study actual behavior in real contexts of use and see how context impacts interactions.

- When: Use when you are not worried about biases introduced by your observation and discussion, and you are interested in specific tasks

- How:

  - Unlike participant observation, you aren't doing the task yourself with them

  - Define your tasks up front, asking participants in advance about the types of things that they do, and the places where they do them to help design your session

  - Conduct the session in the place and time that the task is normally conducted

  - Let the participant complete the task with as few interruptions as possible. Have them think aloud throughout the task and assist you in understanding what they are doing.

  - Ask questions afterward

# Contextual Inquiry

- Back-and-forth between researcher and participant:

  - The participant is doing a task in an appropriate context

  - The participant explains what they are doing

  - The researcher offers an interpretation

  - The participant agrees or corrects

- You're not just observing and learning but you're also not leading the interaction either
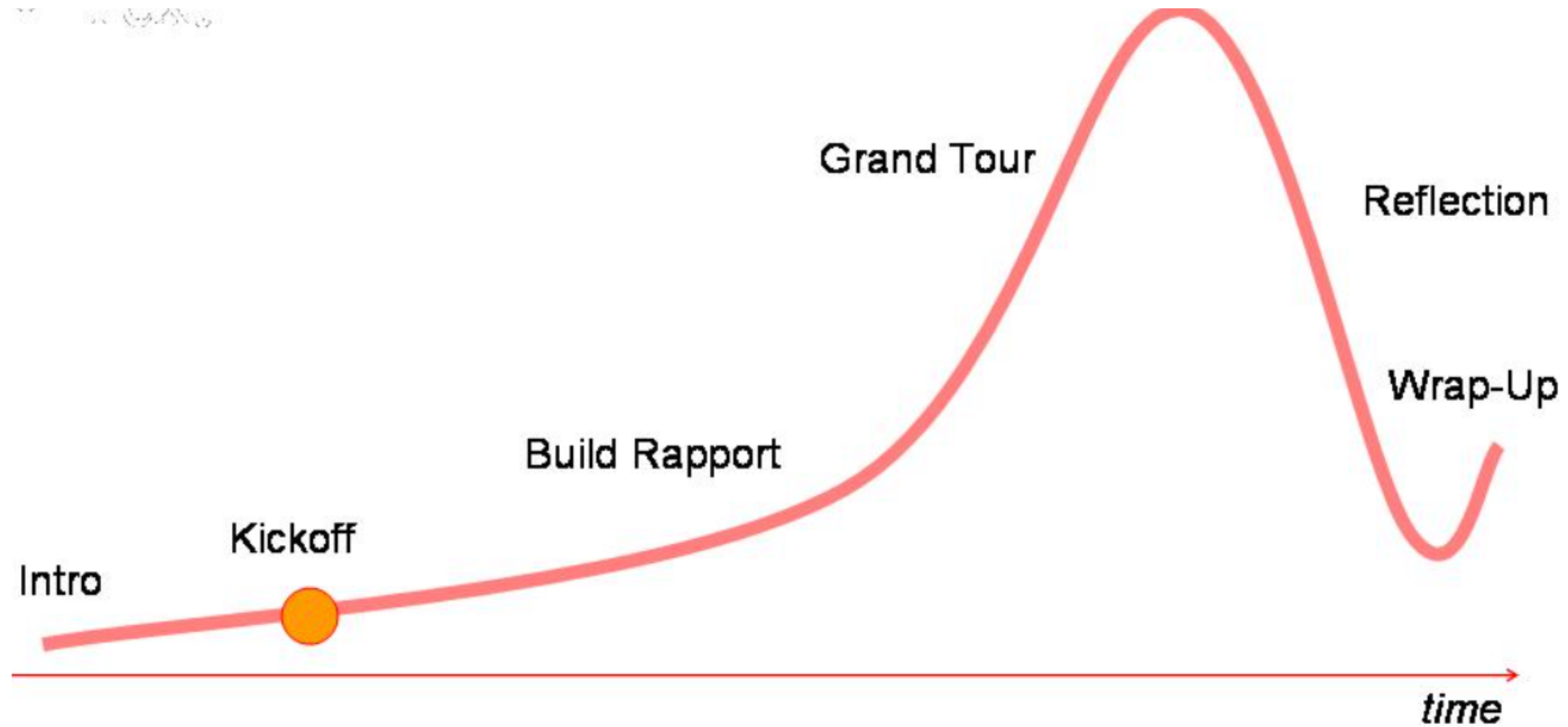
# Observational vs **Self-Report**

# Interviews

- Goal: To collect first hand personal accounts of experiences, opinions, attitudes, and perceptions

- When: Use when you want to maximize the amount of information you can get per time spent, you are likely to have follow-up questions, and if context is less important

- How:

  - Write up an interview script and then meet with participants to ask questions on your script

  - Script is "semi-structured" for flexibility - meaning you can deviate or reconfigure your script on the fly

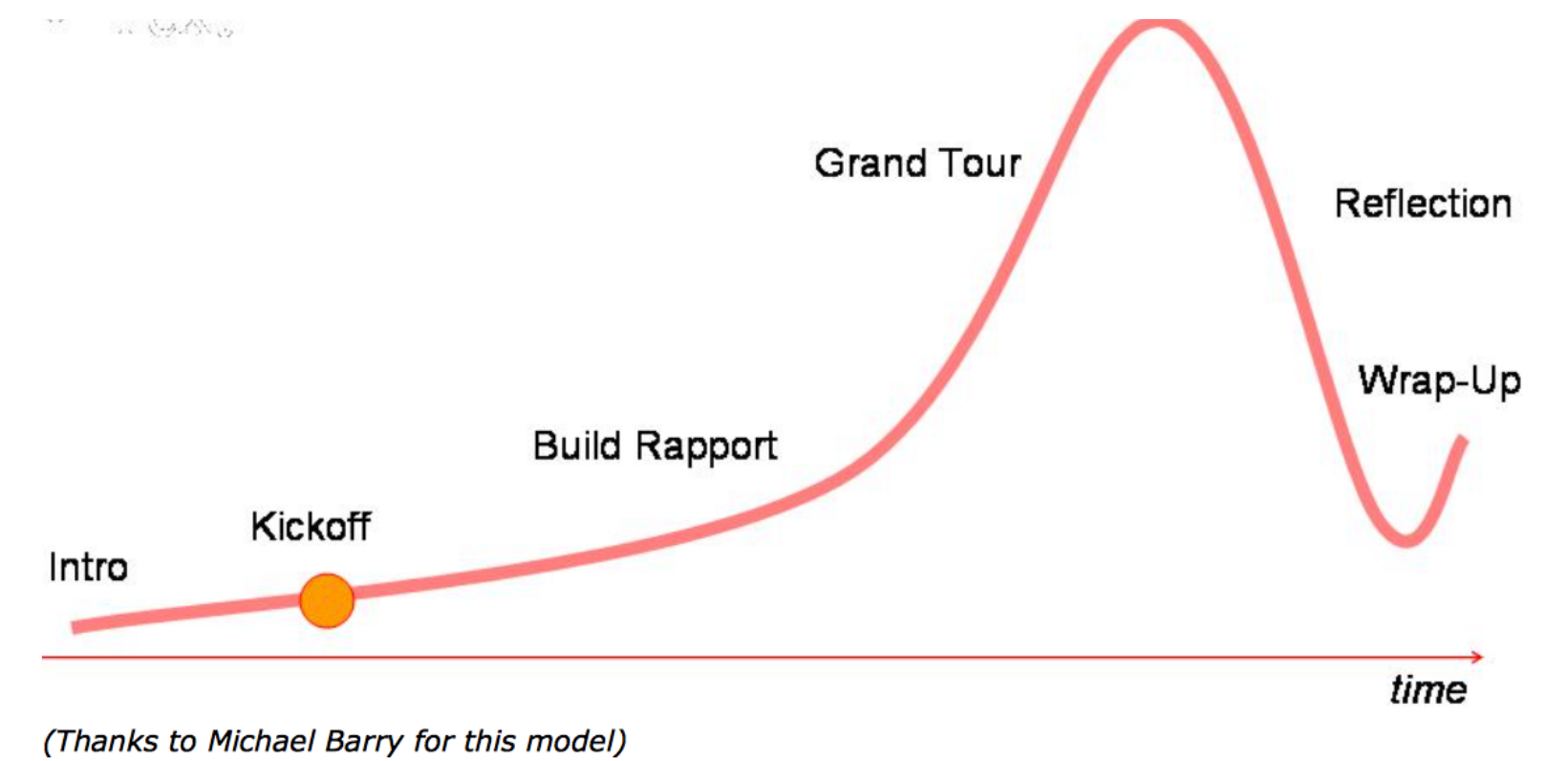# Interviews

- Why not?

  - People are bad at remembering specific details of activities

  - People remember almost nothing about routine events (e.g., a specific time you checked your phone)

  - People are bad at estimating frequency (how many times an hour do you check your phone?)

Intro　　Kickoff　　Build Rapport　　Grand Tour　　Reflection　　Wrap-Up

time

*(Thanks to Michael Barry for this model)*

*(Thanks to Michael Barry for this model)*

- Intro: "Hi, I'm a UW student studying coffee drinkers. I'm interested in hearing about your experience with coffee. There are no right or wrong answers, I just want to hear what you have to say."

- Kick-off: "Do you drink coffee?"

- Build rapport: "Did you have a coffee today? How was it? Do you have a favorite coffee?"

- Grand Tour: "Can you describe your most memorable coffee experience? Why was it so unique? What happened?"

- Reflection: "If you were designing the ultimate coffee shop based on your ideal experience…"

# Directed Storytelling

- Goal: To collect rich stories of people's experiences

- When: Use when you want to collect stories from participants when time or other factors prevent direct observation or longer forms of research inquiry

  - Good when you wouldn't be able to come up with questions for an interview because more knowledge is needed

- How:  Similar to interviews, but focused on stories. E.g., "Tell me a story about the last time you…"

# Focus Groups

- Goal: To gain insights into themes, patterns, and trends that are likely to come out more in a group setting.

- When: Use when you want to learn about the opinions, feelings, and attitudes from a group about a specific product, service, brand, location. Interested in how people build off of each other's thoughts.

- How:

  - Write an interview script (i.e., a number of questions) and meet with participants in a small group to ask these questions

  - Be flexible enough to allow the group to carry the conversation elsewhere

# Surveys

- Goal: To collect large amounts of self-reported information from people

  - E.g., to understand how common a specific behavior is

- When: Use when you want to get as many perspectives rapidly and/or quantify and statistically test insights and when you have a good understanding of the questions you want to ask

  - Can be remote

  - Less flexible than interviews -> requires more knowledge about the population, no chance to ask follow-ups

  - Can complement interviews to understand broader patterns

- How:  Develop and sequence questions, test the survey, recruit participants

# Diary Studies

- Goal: To capture specific details of real interactions, close to when they happened

  - Capture specific context of interaction (photo diaries, screenshots)

  - Better understand frequency of use of a feature/app (when you don't have access to logged data)

- When: Use when you want to learn about specific activities over an extended period of time (e.g., when it is impossible to observe users throughout that time period) and if it doesn't matter that participants might be more aware of the task you're interested in

  - Less frequent activities can take months to document!

- How:  Ask participants to note down specific activities

|   | A | B | C | D |
|---|---|---|---|---|
| 1 | **10am ping** | | **1. Sally** | **2. Joseph** |
| 2 | When was the last time you used _____? Have you used it since you last responded? | | I used it at 9am | I used it at 11pm last night |
| 3 | How long did you use it? | | ~10 minutes | 35 minutes |
| 4 | What motivated to you use it? | | I was bored and was looking for something new to entertain me. | I couldn't sleep so I decided to go use the app to kill time |
| 5 | | | | |
| 6 | **1pm ping** | | | |
| 7 | When was the last time you used _____? Have you used it since you last responded? | | I just used it a few minutes ago! | No I haven't used it since |

Day 1     Day 2     Day 3     +

# Personal Inventories

- Mix of observation and self-report

- Goal: To understand the relationship between the product and users from the participant's point of view

- When: Use when you want to explore the relationship between user and a specific artifact/product

- How:

  - Prepare questions that you may ask when the participant talks about the things they own

  - Ask participants to walk through their inventories

  - Ask specific questions to find out their relationship/emotions

# Cultural Probes

- Goal: To inspire new forms of self-understanding and communication about participants' lives, environments, thoughts, and interactions

- When: Use when you want to uncover genuinely new ideas that will benefit the group (e.g., if the group is unfamiliar to you)

  - E.g., to study bullying in a classroom and enable children to express themselves through cultural probes

- How:

  - Provide participants with kits made up of a variety of items and tasks (e.g., disposable camera, maps, stickers, notebooks)

Envelopes with magnets to put on fridge

05 Open this after grocery shopping

06 Open this on the last day before handing back your kit.

Hi Maggie,
This is your kit for the week.
Thanks for participating!

Instructions/Checklist

Placemat to put on table for at home activities.

To-go kit

# Graffiti Wall

- Goal: To collect participants' responses and thoughts on an environment or system, directly in the context of use

- When: Use when you would like to collect information from people where interviews or observation might be unsuitable

  - E.g., to study people's thoughts about the elevator at the light rail station throughout a day without biasing them with the presence of a researcher

- How:  Provide an open canvas on which participants can freely write or draw

Adjacent to the Expo Floor

# Activity

- Intro: "Hi, I'm a UW student studying coffee drinkers. I'm interested in hearing about your experience with coffee. There are no right or wrong answers, I just want to hear what you have to say."

- Kick-off: "Do you drink coffee?"

- Build rapport: "Did you have a coffee today? How was it? Do you have a favorite coffee?"

- Grand Tour: "Can you describe your most memorable coffee experience? Why was it so unique? What happened?"

- Reflection: "If you were designing the ultimate coffee shop based on your ideal experience…"

## Part 1

On your own, pick one of the following 4 topics that interest you the most, and come up with ~8 questions for an **interview** that you might conduct to better understand that topic (you can focus in on a specific aspect or stay broad).
- Remember to have questions that cover different parts of the above timeline.
- In Canvas, in the File tab, are two examples of interview scripts you can use as reference.
- Write down your questions in this form (but don't submit it yet!): https://tinyurl.com/yrtbp8ur
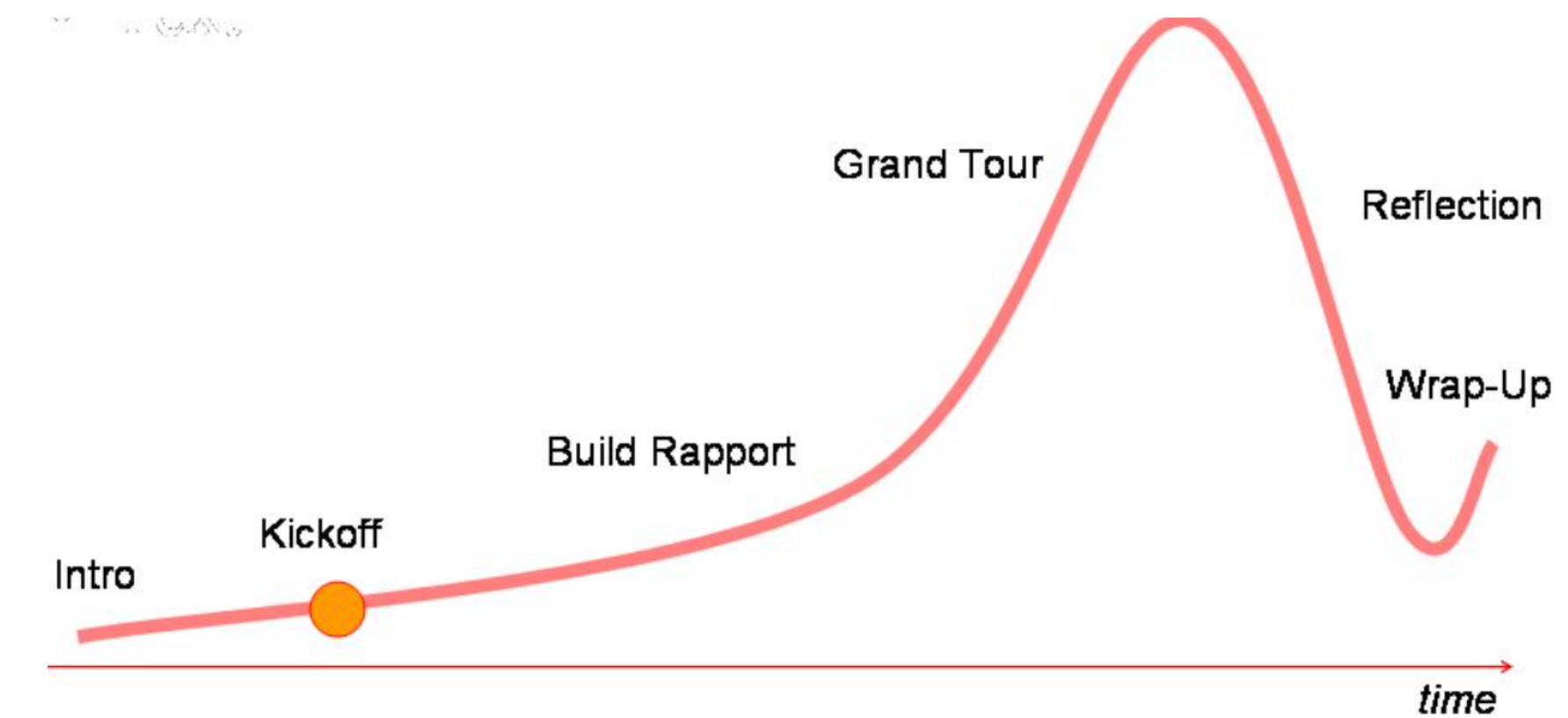
## Topics
- Commuting and getting around campus
- What to do about breakfast
- Getting exercise
- Managing email

## Part 2
- Find someone you don't know yet in this class.
- Interview them roughly following your questions. Remember, you can deviate from your script!
- Take notes on your interviewee's responses in the form.
- Now swap places! It's their turn to interview you.
- Submit your form.

# Group work time

To help you get going on 2b (coming up with a user research plan), we've provided the following worksheet that will guide you through how to think through 2b: https://tinyurl.com/7j25neue

In the worksheet, there's a link to a cheat sheet on the user research methods we covered today (also here for reference: https://tinyurl.com/3jzasfjv)

We'll spend the rest of class working on 2b. Tomorrow in section, you'll get feedback on 2a and share your 2a sketches with another group. Then you'll have time to continue working on 2b, which is due Monday at 11AM.

If you already have a good sense of who you're trying to reach, consider starting user recruitment soon! 2c (conduct user research) is due the following Monday, and it can take a bit of time to find participants.