L3: Interviews and Observations

Northwestern University

Winter 2019

A few announcements...

Verify Section Assignments

Can everyone please verify that they're assigned to the right section on Canvas? To do this:

1. Open Canvas and navigate to the EECS 330 course site
2. Click on the "People" link
3. Search for yourself
4. Ensure that the section you're assigned to is correct

Verify Section Assignments

Studio	Time	Location	Peer Mentor
70	Thursday 1-2pm	Tech LG68	David Latimore
62	Thursday 2-3pm	Tech F280	Vishal Giridhar
61	Thursday 3-4pm	Tech M349	Shu Han
66	Thursday 4-5pm	Tech M349	Richard Huang
64	Friday 12-1pm	Tech LG68	Abizar Bagasrawala
72	Friday 12-1pm	Tech MG28	Gabriel Caniglia
MSAI	Friday 1-2pm	Tech L170	Armaan Dhingra
68	Friday 1-2pm	Tech MG28	Cori Pitiger
69	Friday 1-2pm	Tech M349	Sanfeng Wang
65	Friday 2-3pm	Tech LG68	Anna Deng

Verify Section Assignments

If your section is not correct...

Please send a private message to the course instructors on Piazza with the following information:

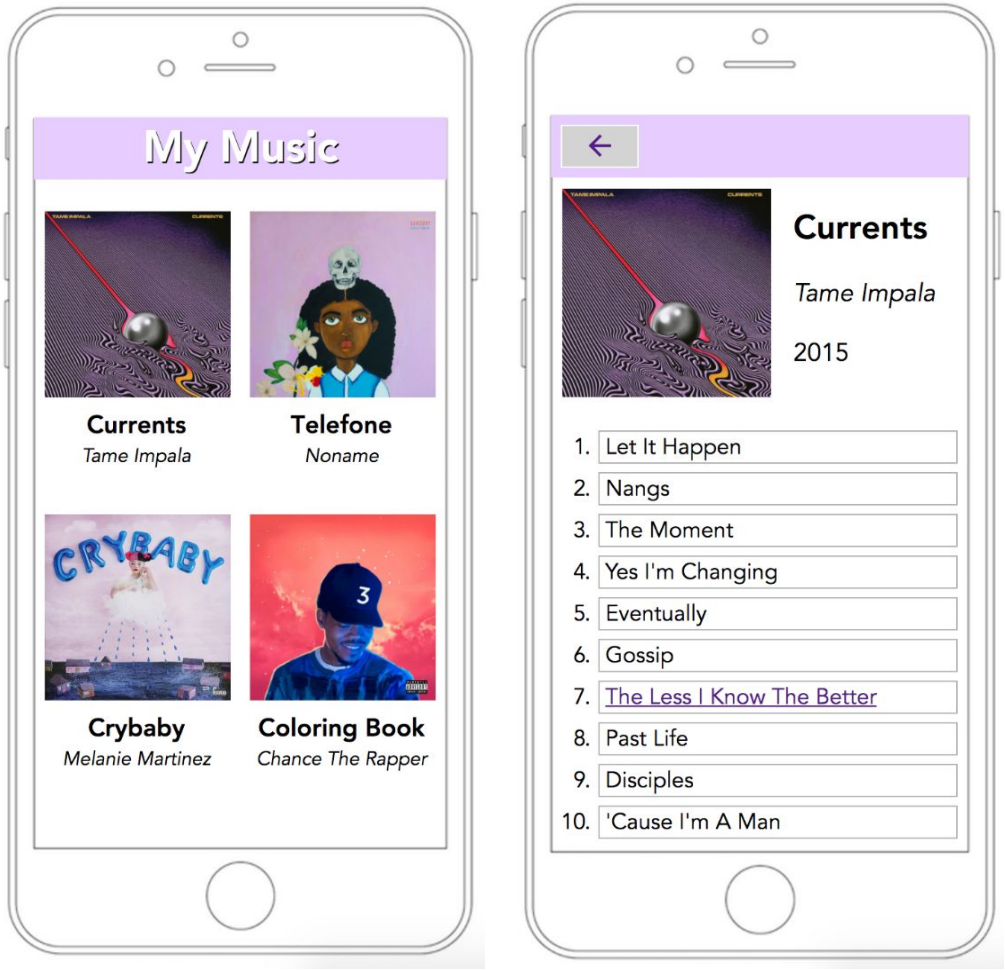
1. Your name (as it appears on Canvas)
2. Section you're currently assigned to (incorrect one)
3. Section you're supposed to be assigned to

We want to fix this **today**, if possible

Project & Team Selection Process

- Sponsored Proposals – emails out
- P1.3 – Bids – due Wednesday 1/16 at 1pm
  - Fill out a Google Form (on Canvas)
  - Enter top three favorite project ideas (ordered)
  - Enter 0-3 people you'd like to work with
  - Enter priority (project idea or people)
- Projects/Teams out by Thursday at 1pm

HW1: HTML & CSS



- Build these two screens in HTML and CSS
- Instructions and starter code on Canvas
- Due Friday 1/18 at midnight

Office Hours this Week

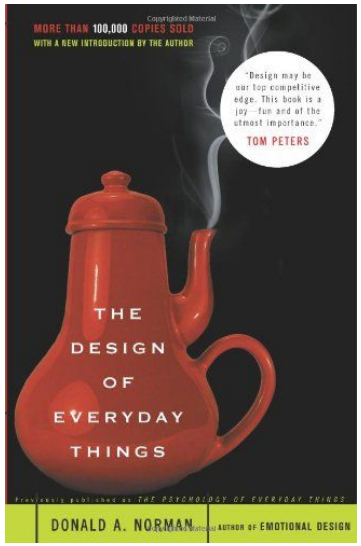
Office Hours Schedule

Day	Time	Location	Peer Mentor
Monday 1/14	5-6pm	Mudd 3538	Vishal
Tuesday 1/15	4:30-5:30pm	Mudd 3538	David
Tuesday 1/15	7-8pm	Mudd 3538	Anna
Wednesday 1/16	11-12pm	Mudd 3538	Cori
Wednesday 1/16	4-5pm	Mudd 3538	Gabriel
Wednesday 1/16	5-6pm	Mudd 3538	Richard
Thursday 1/17	2-3pm	Mudd 3532	Shu
Thursday 1/17	3-4pm	Mudd 3532	Sanfeng
Friday 1/18	10-11am	Mudd 3534	Armaan
Friday 1/18	11-12pm	Mudd 3534	Abizar

Readings

- Before studio (no quiz) – Javascript Tutorials: https://www.w3schools.com/js/

- *The Design of Everyday Things*, Don Norman
  - Wednesday 1/16 (quiz) – Chapter 1
  - Wednesday 1/23 (quiz) – Chapter 2



Reading Quiz

Canvas Access Code:

UnderstandingPeople7

Agenda

- Needfinding
- Overview of P2
- Interviews
- Observations

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What is Human-Computer Interaction?

Understanding People

Understanding Technology

Designing Interactions that Support Human Needs

Interaction Design

Two key questions:

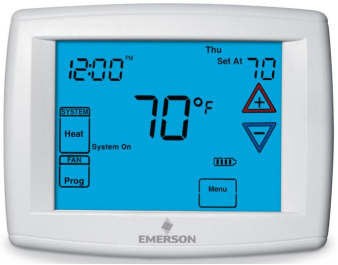
- What do users need?

  If you get this wrong, no one **will** use it…

- Are your interface and interactions usable?

  If you get this wrong, no one **can** use it…

What happens when this goes wrong?



the EPA has been unable to confirm any improvement in terms of the savings delivered by programmable thermostats

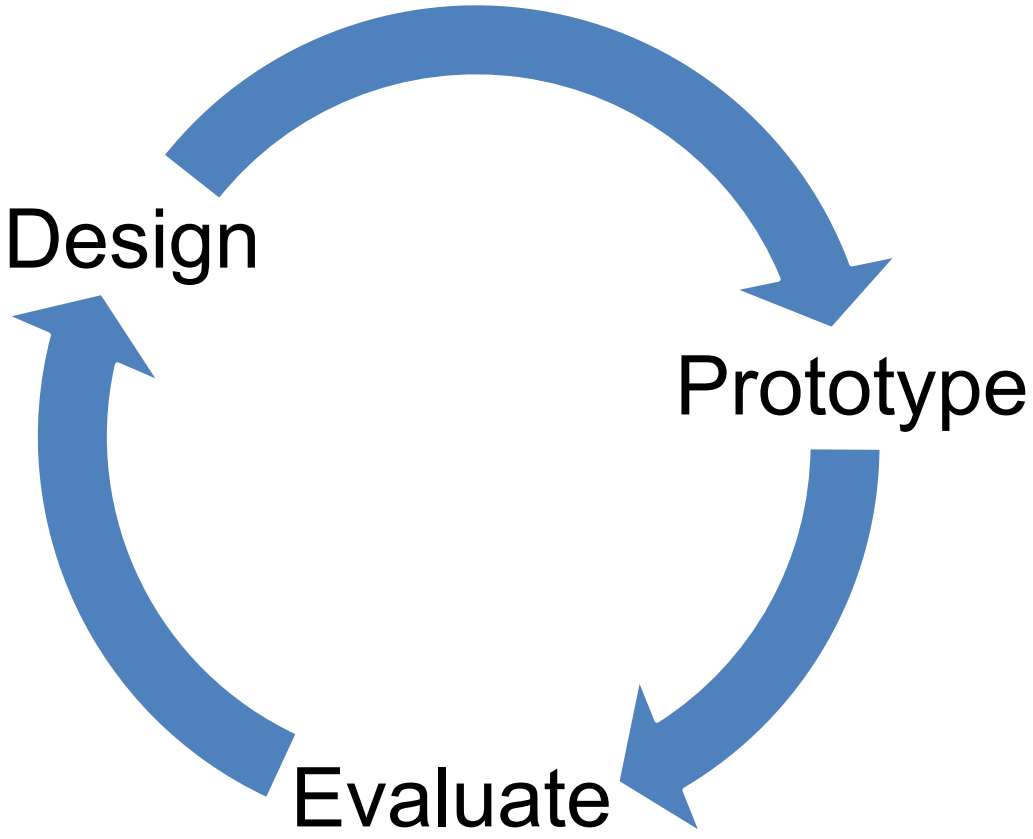
User-Centered Design

A design framework in which the needs, wants, and limitations of the end users of system are given extensive attention at each stage of the design process

Key Features:

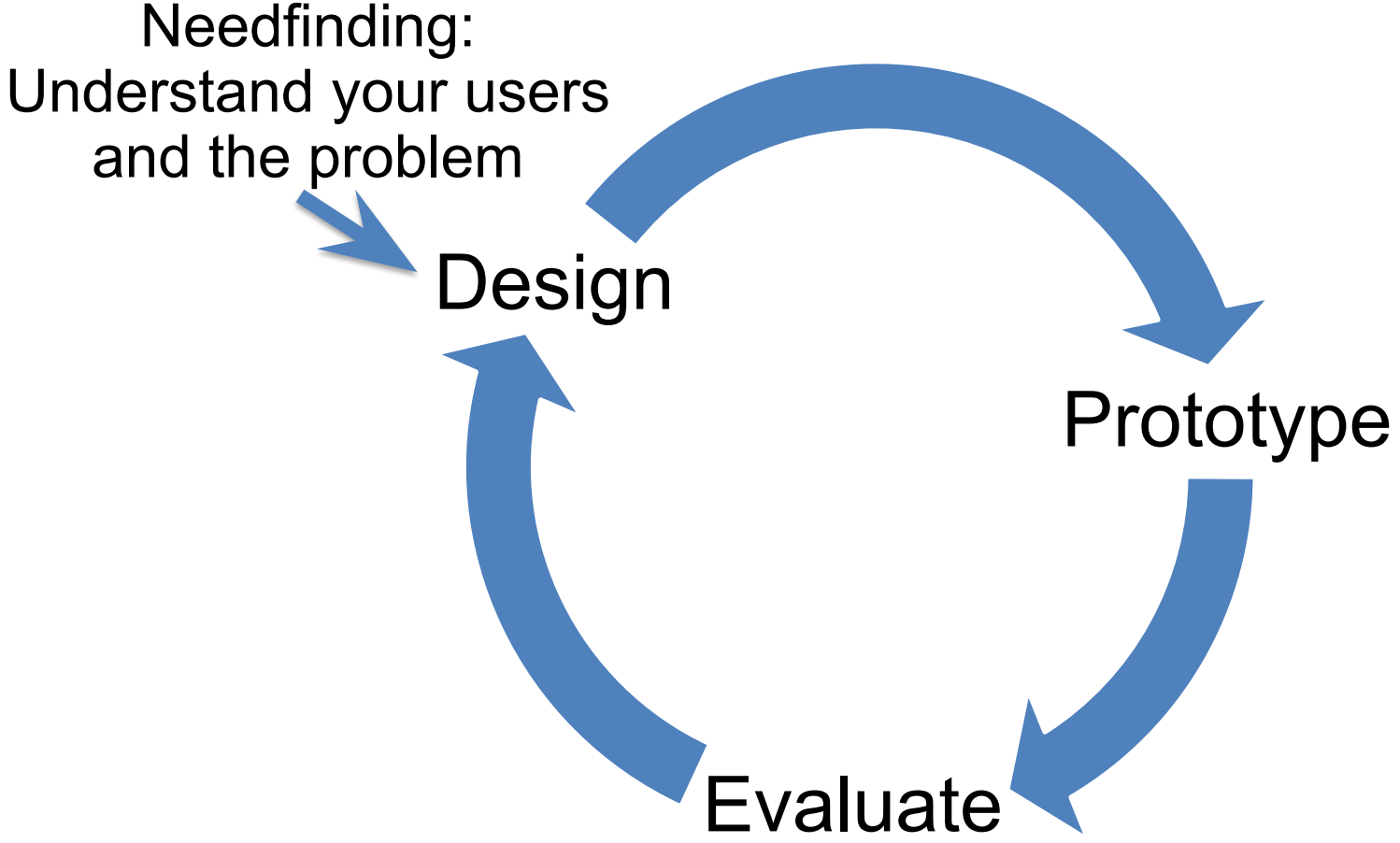
- Iterative design
- Early focus on users and tasks
- Constant evaluation

Iterative Design Process



Remember: **you won’t get the design right the first time**

Iterative Design Process



How do you go from a problem space to a first design?

What is Needfinding?

A qualitative research approach for studying people to identify their unmet needs.

Why focus on needs?

- Needs last longer than any specific solution
- Needs are opportunities waiting to be exploited
- Needs spur action

What if I know what my users need?

Remember: **you are not the user!**

Seems obvious but…

- You have different experiences
- You have a different level of comfort with tech
- You use different terminology
- You have different ways of looking at the world

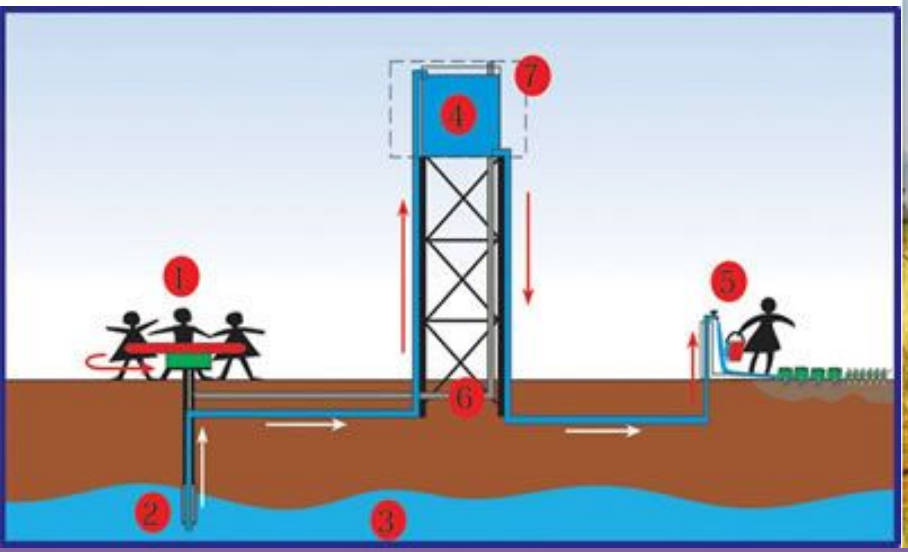
Easy to think of yourself as a typical user

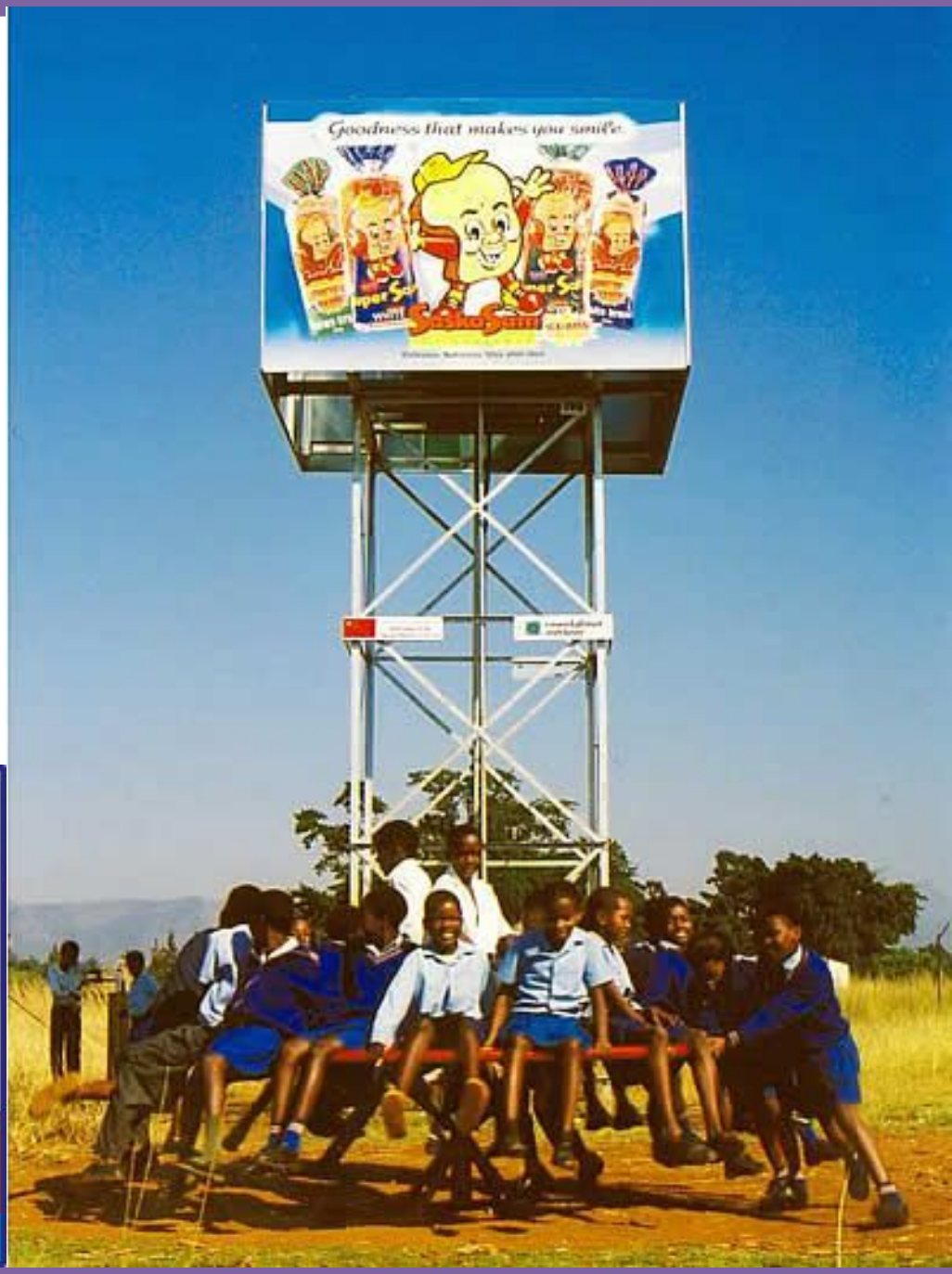
Easy to make mistaken assumptions

Case Studies

Needfinding done poorly (if at all)

Play Pump





Google Buzz (2010)

- Automatically created groups (and revealed identity of group members)
  - Random people (like your car insurance person) were suddenly in groups and chatting you
- Access to content that was previously private
- Took quite a bit of effort to turn off / opt out

Google Buzz (2010)

“I use my private Gmail account to email my boyfriend and my mother. There's a BIG drop-off between them and my other ‘most frequent’ contacts. You know who my third most frequent contact is? My abusive ex-husband.

Which is why it's SO EXCITING, Google, that you AUTOMATICALLY allowed all my most frequent contacts access to my Reader, including all the comments I've made on Reader items, usually shared with my boyfriend, who I had NO REASON to hide my current location or workplace from, and never did.”

Resulted in a lawsuit

Google Buzz

“This, of course, is the failure of the engineering imagination to deal with the reality of human interaction. Google tested Buzz internally a great deal before releasing it (the product was called "Taco Town" during testing) but the weakness of that is that it doesn't have many people who really hate each other internally. Or perhaps none. And of course stalking would be the sort of thing that would lose you your job at Google.”

Anticipate these issues via needfinding!

How well you do needfinding is critical to the success of your project

What do you need to know?

User Characteristics:

- Age, gender, culture, language
- Physical abilities, cognitive abilities, special needs
- Education (literacy? numeracy?)
- Computer experience (typing? mouse? smartphone?)
- Knowledge, skills, domain experience
- Work environment and other social context
- Relationships and communication patterns with other people

User Needs:

- What are their underlying goals?
- What are they trying to accomplish?
- What are their priorities?
- What problems do they currently have?
- What inefficiencies or costs are they currently putting up with?

Common Pitfalls

- Assume all users are alike
- Assume all users are like you (Google Buzz)
- Describe what you ***want*** a user (or the situation) to be, instead of what it actually ***is*** (naïvety)
- Not even be aware of the assumptions you're making

Common Pitfalls

“Users should be literate in English and be able to use a smartphone with only one hand”
(often this assumption is implicit)

“If users see the information, they will change their habit!”
(knowing something is the same as doing it)

Common Pitfalls

"If data indeed led simply to change, there would be no need for the entire field of psychology"

— Psychologist, Stanford Quantified Self Conference (Fiore-Gartland & Neff, 2015)

Caveat

Think beyond information delivery

- Does better info about nutrition lead to more healthy eating habits?
- Does telling someone that smoking is bad for you solve the smoking problem?

What else is important?

- Understanding the context / the nature of the problem you are trying to solve
- Understanding the levers you need to move to effect change (beliefs, stigma, social supports, etc.)
- Understanding the trade-offs (benefits and risks)

How can we learn about users?

Collect and analyze data.

We will talk about two common techniques:

- Interviews
- Observations

There are many other techniques

- Ethnography
- Participatory Design
- Experience Sampling
- Task analysis

Project Brainstorm Samples

Samples from Homework

Goal: Enab ve same hobbies and spare ppointments with each other.

Obstacle: S ance to talk with and many of th dship with others.

Is this important? Why?

Why does this obstacle exist? How does an ICT make sense, given this obstacle? What are other obstacles?

Samples from Homework

Goal: Help ey by transferring money to sa dollar by day one, 2 dollars by day two, and 3 dollars by day three...365 dollars by day 365.

Obstacle: P and do not have save

Is this important? Why?

Why does this obstacle exist? How does an ICT make sense, given this obstacle? What are other obstacles?

Agenda

- Needfinding
- Overview of P2
- Interviews
- Observations

P2: Interviews and Observations

Due Wednesday 1/23

1. **Describe your target user population**. Write a paragraph describing your target users, including age range, background, occupation, computer experience, etc. You may find that you have multiple classes of users. If so, identify each class.

2. **Talk to and observe at least four representative users**. Every member of your project team should participate in at least one session. Observe users in settings where they would typically use your design.

P2: Interviews and Observations

Example For Part 1:

We are designing a product for **moms with newborn babies** who want to include regular low-to-medium intensity workouts in their already busy schedules. These are women from many different backgrounds who work at least part-time and have an infant to care for at home. Typical ages can be anywhere from 20 to 45 years old. Most of these women will own a smartphone and will be active on one or more social media platforms (such as Facebook, Pinterest, or Twitter). Most of our users will probably not be computer experts, but they will be savvy enough to easily navigate online.

P2: Interviews and Observations

Steps for Part 2:

1. Introduce your problem
2. Make sure to tell them that you are not testing them!
3. Ask them to perform a task related to your problem. Ask them to **talk aloud** while performing the task.
4. Take notes:
   - Pain points, mistakes, or false assumptions
   - Things that were fun
   - Things that were confusing
   - Anything else that was surprising or unexpected
5. Ask them to reflect on the task they just performed
6. Ask interview questions that could help inform your design

P2: Interviews and Observations

Step 7: Write up your report. This should include the following for each representative user:

- Tell us who you talked to (age, gender, occupation, life details) and why they were good representative users for your project. Don't use people's real names.
- Tell us what task you observed them doing.
- Write up your interview and observation notes in a way that other people in your team will find helpful
- Tell us what you learned about your problem area. What was surprising or unexpected? Are there pain points that you should be thinking about for your design? What are your users' needs? What opportunities for innovation did you uncover?

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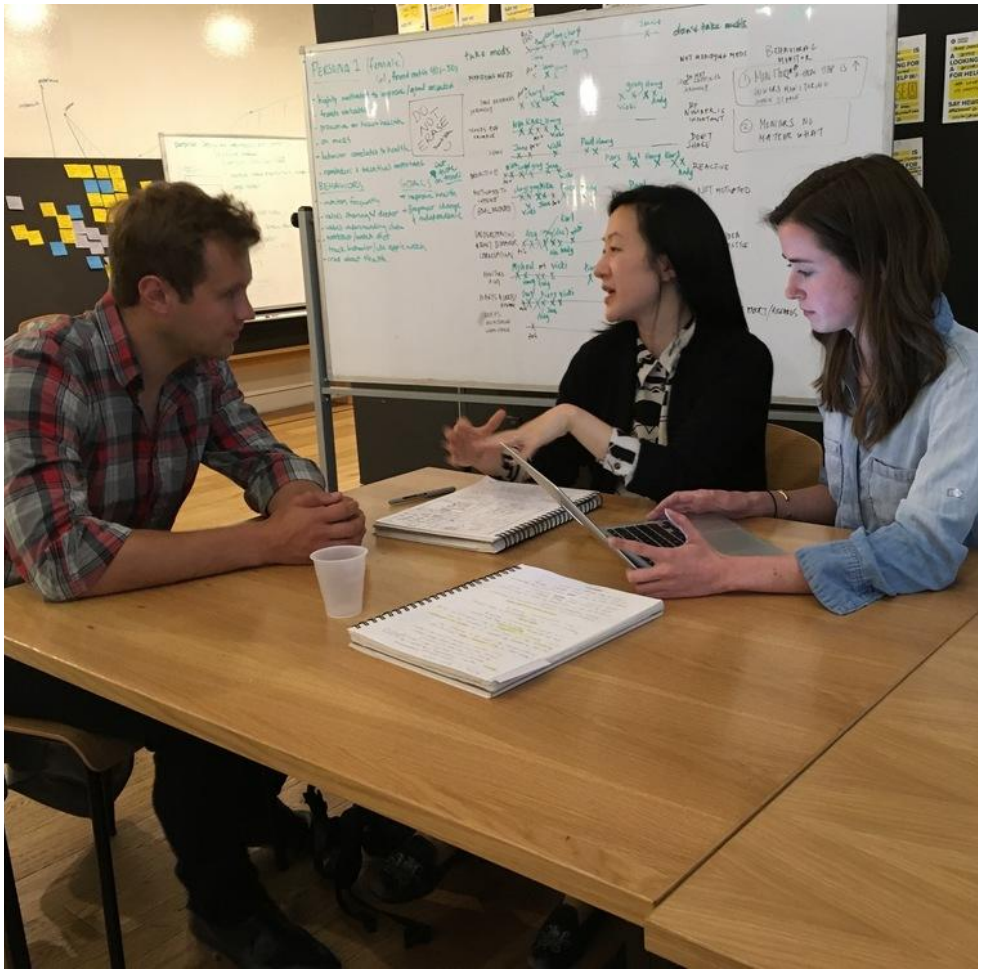
Interviews

Method of asking questions and listening



Format can be:

- Structured
- Semi-Structured
- Unstructured

Helpful to use:

- Props
- Competitor products
- Sample scenarios
- Prototypes

Interviews

Interviewing isn't as straightforward as is sounds

In the interviewer/interviewee relationship:

- The interviewer asks a question, the interviewee responds
- At a pause, the interview asks another question from a list
- When all the questions are answered, the interview is over

Potential Pitfalls:

- Traditionally the interviewer has too much power
- You don't know what will turn out to be important
- You need to make sure to ask the "right" questions

Interview Question Types

Open-ended: *What do you think about your job at the hospital?*

Close-ended: *Do you like your job at the hospital? (usually avoid)*

Behavioral: *Can you describe a recent occasion when a patient alert sounded, and tell me what you did?*

Feeling: *What do you like most about your job?*

Knowledge: *If a patient says she is in pain, what do you look for?*

Illustrative: *Some nurses hate working at night, but others like the flexibility. What's your experience?*

Role-playing: *If I were a new nurse coming to this hospital, and I asked you what I should do to succeed, what would you tell me?*

Be cautious about asking…

- How they would act in hypothetical situations
  - They can't accurately predict how they would act
- What features they would like
  - They will focus only on features they know are possible
- What other people would like
  - They can only speak to their own experiences
- How to design a user interface
  - They aren't experts, they don't know what's possible

Interviewing Guidelines

- Be flexible (semi-structured interviews help)
- Adjust your questions to their previous answers
- Ask follow-up questions, ask for examples

- Your ultimate goal: learn about the user's needs

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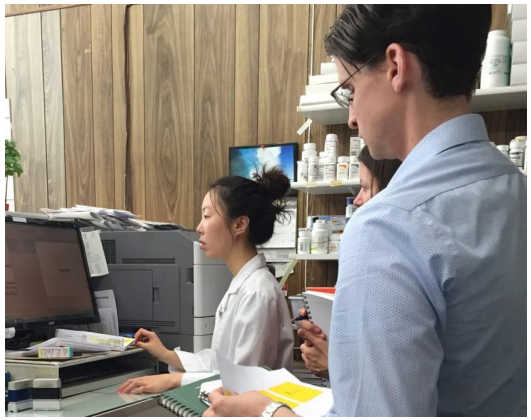
Why would you want to observe users?

- Interviews can only capture what users **say** and **think**, not what they actually do
- Observations can capture what users **do** to solve problems currently, and what solutions they **use.**
- Discovering problems and inefficiencies with users' current solutions can help you identify needs.

Contextual Inquiry

A design-oriented, ethnographically inspired method for finding out what users currently do, and the problems they encounter.





"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."

– Hugh Beyer and Karen Holtzblatt, "Contextual Design"

Example

Goal: Make it less confusing to buy BART tickets (like CTA trains, but in the Bay Area)

Obstacle: It takes people — even experience riders — way too long to figure out how to buy a ticket

HCI Project 2009:	Before | After
Masters' Project 2010:	Transporter
Company:	Automatic Labs
	Acquired for > $100M

Principles of Contextual Inquiry

Context:

- Must be done in the setting of the participant.

Partnership:

- Master/apprentice model; observer is humble.

Interpretation:

- Observed facts must be considered for their design implications. Raw facts without interpretation are not very useful.

Context

Go to the context of your users and see them work

People summarize, but we want details

Tips:

- Avoid summary data by watching the work unfold
- Have your users think aloud
- Keep it concrete when your users start to abstract
- “*Can you walk through the process for me?*”

Context

We once asked a secretary how she started her day. Her answer was, "I guess I just come in and check my messages and get started." She wasn't able to go beyond this brief summary overview. It was the first thing in the morning and she had just arrived at the office, so we asked her to go ahead and do as she would any other morning. She unhesitatingly started her morning routine, telling us about it as she went: "First I hang up my coat, then I start my computer. Actually, even before that I'll see if my boss has left something on my chair. If he has, that's first priority. While the computer's coming up, I check the answering machine for urgent messages. There aren't any. Then I look to see if there's a fax that has to be handled right away. Nope, none today. If there were, I'd take it right in and put it on the desk of whoever was responsible. Then I go in the back room and start coffee. Now I'll check the counters on the copier and postage meter. I'm only doing that because today's the first of the month. . . ."

– Hugh Beyer and Karen Holtzblatt, "Contextual Design"

Partnership – What is the relationship?

The “master/apprentice” relationship is at the heart of contextual inquiry

In a master/apprentice relationship:

- The master is doing stuff
- The master explains what they’re doing
- The apprentice asks clarifying questions
- The master answers

The participant is the master and you are the apprentice!

It’s not quite master/apprentice

- Your goal is not to learn how to do the task
- Instead, your goal is to learn how the participant does the task in order to learn how to support it
- To achieve this goal, you to enlist the participant’s active assistance in understanding the task

- Take-away: The participant is the expert, and you’re learning from them through observation

Partnership

Avoid Other Relationship Models

Interviewer / Interviewee

- You aren’t there to get a list of questions answered

Expert / Novice

- You aren’t there to answer questions

Guest / Host

- Move closer, ask questions, be nosy, fill in holes

Interpretation

Chain of Reasoning

- Fact, Hypothesis, Implication for Design, Design Idea

Design is built upon interpretation of facts

- Design ideas are end products of a chain of reasoning
- So interpretation had better be right

Share interpretations with users to validate

- Will not bias the data
- Helps participant to see structure in their own work

Contextual Inquiry Pitfalls

Forgetting to explain “the rules” of how you’ll be interacting

- If this isn’t clear, may devolve into a traditional interview (since an interview relationship is more familiar to people)

Slipping into abstraction

- Keep it concrete, in the work, in the details

Not being inquisitive or nosy enough

- If you have the impulse to ask, do it right away

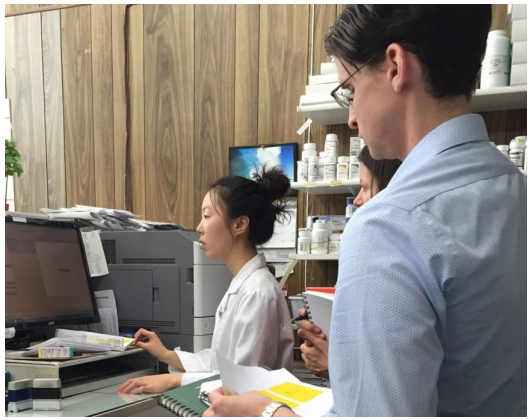
Overly disrupting the task

- Don’t ask so many questions that participants stop doing their tasks

Contextual Inquiry

A design-oriented, ethnographically inspired method for finding out what users currently do, and the problems they encounter.





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