Lecture-11: Qualitative Analysis

CS798H: Human Computer Interaction

Logistics

- Tuesday – Guest lecture
  - We have a visitor give a talk on humans using AI systems

- Mid-sem
  - 1st March (Sat); 8:00am-10:00am; L20
  - 1 A4 sheet of notes, closed book.
  - Seating plan available at the venue, 15 min before exam.
  - Physical ID is must, no showing on phones (Print online ones if needed).

Recap

- So far in this course…
  - Good vs. Bad design
  - Gulf of execution and evaluation
  - Basics of Humans

- Today…
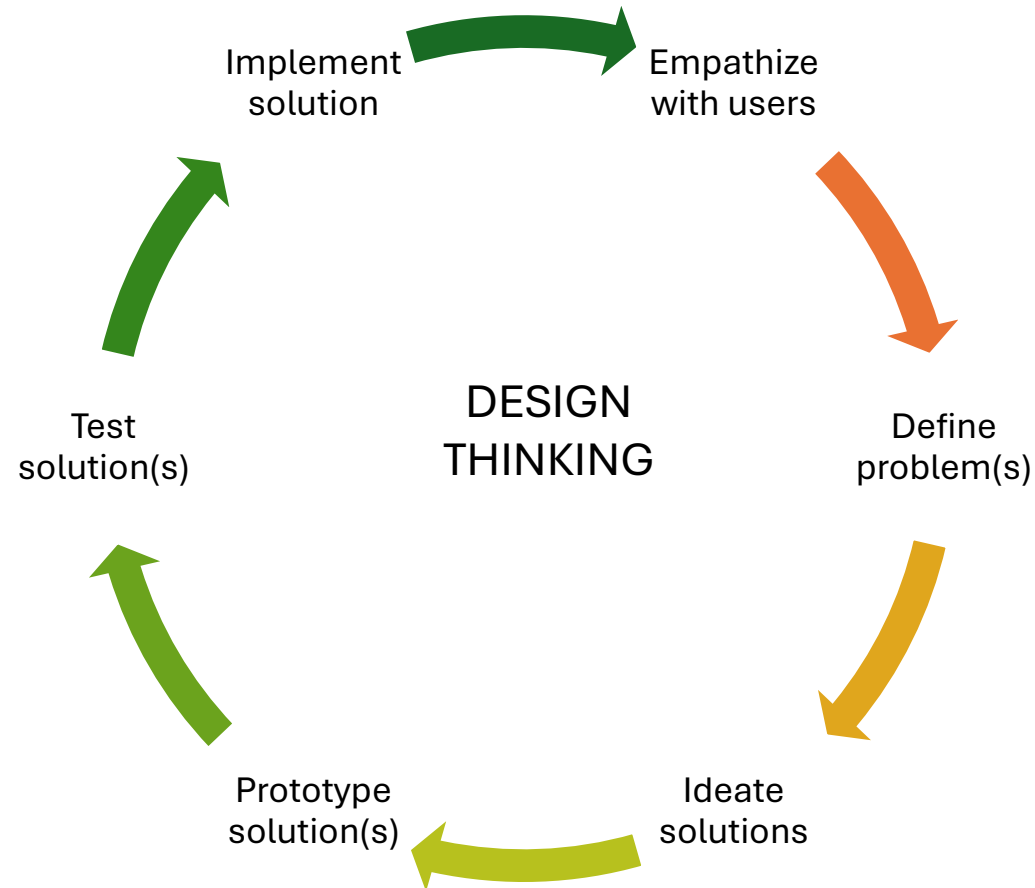 - Design thinking
  - Need finding

Recall…

- Consider all four pillars
  - During IxD, UXD, interface design, etc.

- Humans → We know quite a bit
- Devices → fixed, we just need to know which ones
- We don't know about tasks & contexts
  - And some about humans
  - E.g., What does a user's process involve, for a task?
  - E.g., Where do users face challenges?
  - E.g., What are the contexts in which people might use tools.
- How do we then know these? → Needfinding

Human / User	Task
Interface / Device / Tool	Context

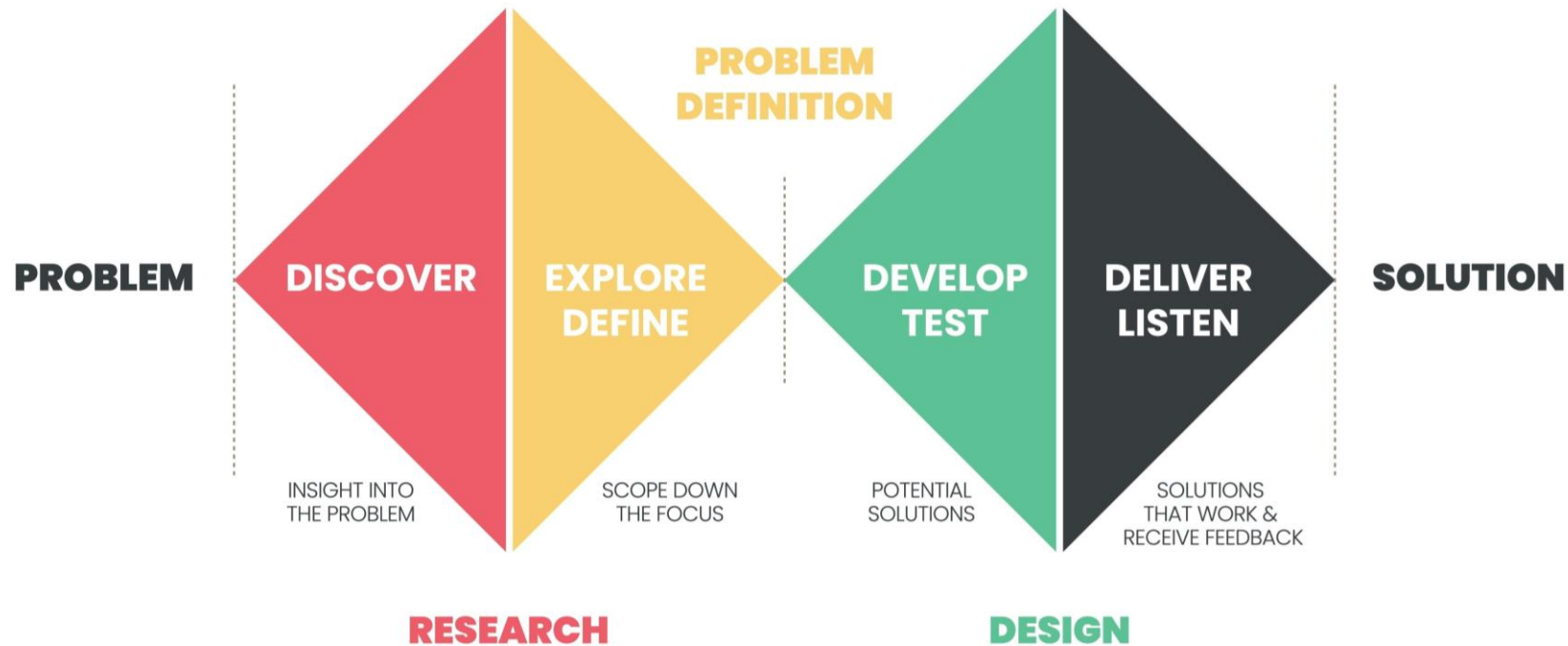Components
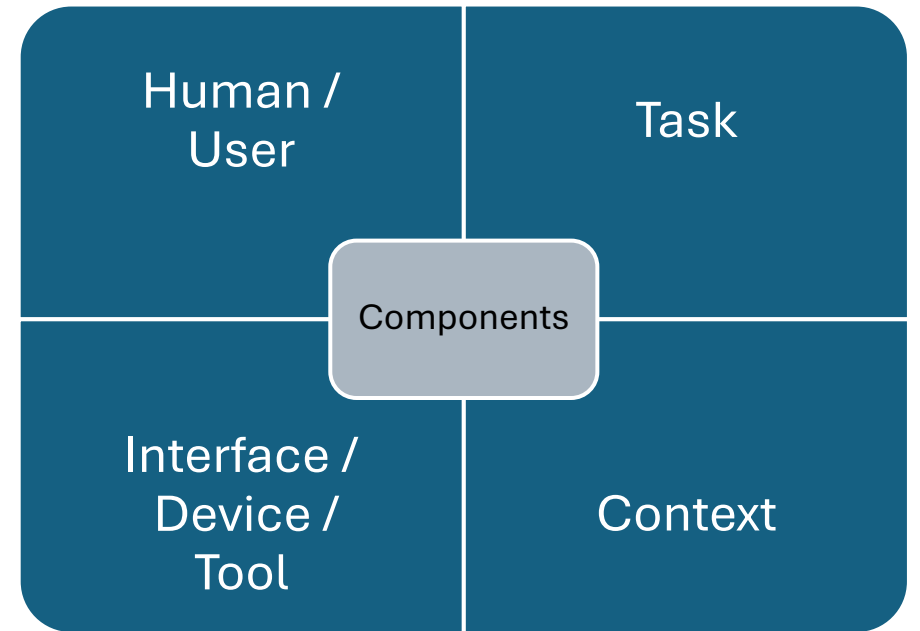
Needfinding

- Finding user needs

- First step in user-centred design

- User-centred design
  - Design with user needs in mind
  - Not technology's capabilities in mind (tech-centric)

User-centred design processes

User-centred processes


The double diamond of design!

PROBLEM

PROBLEM DEFINITION

SOLUTION

DISCOVER | EXPLORE DEFINE | DEVELOP TEST | DELIVER LISTEN

INSIGHT INTO THE PROBLEM | SCOPE DOWN THE FOCUS | POTENTIAL SOLUTIONS | SOLUTIONS THAT WORK & RECEIVE FEEDBACK

RESEARCH | DESIGN

In general…

- Good user-centred design starts with users
  - Understanding what users have to say
  - What problems people have
  - …

- In other words, we start from need-finding
  - This is like defining research problems!
  - In fact, called user research!
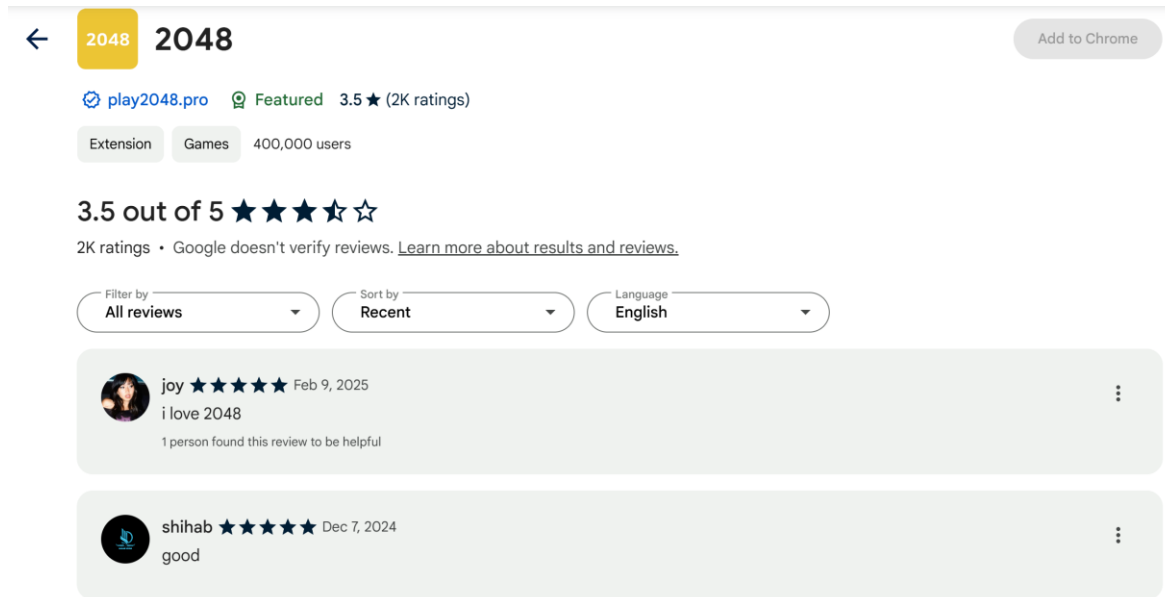
How do we do this?

- Gather data – from users
- How all? – Listen to users directly (direct method)
  - Analyze reviews from users
    - App store, complaint emails/calls, etc.
  - Interview users
  - Survey users
  - Observe users as they do something
- Sometimes, users hard to get
  - Listen to trainers, sales/marketing folks
  - People dealing with customer service
  - Not really users, but indirectly hear about user perspectives
  - Not ideal, but sometimes the only way!

User research methods
(based on who you ask)

Direct

Indirect
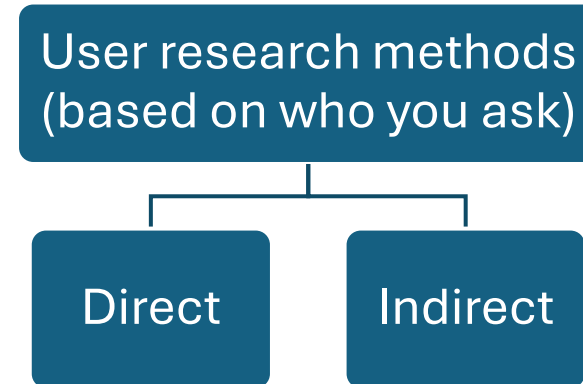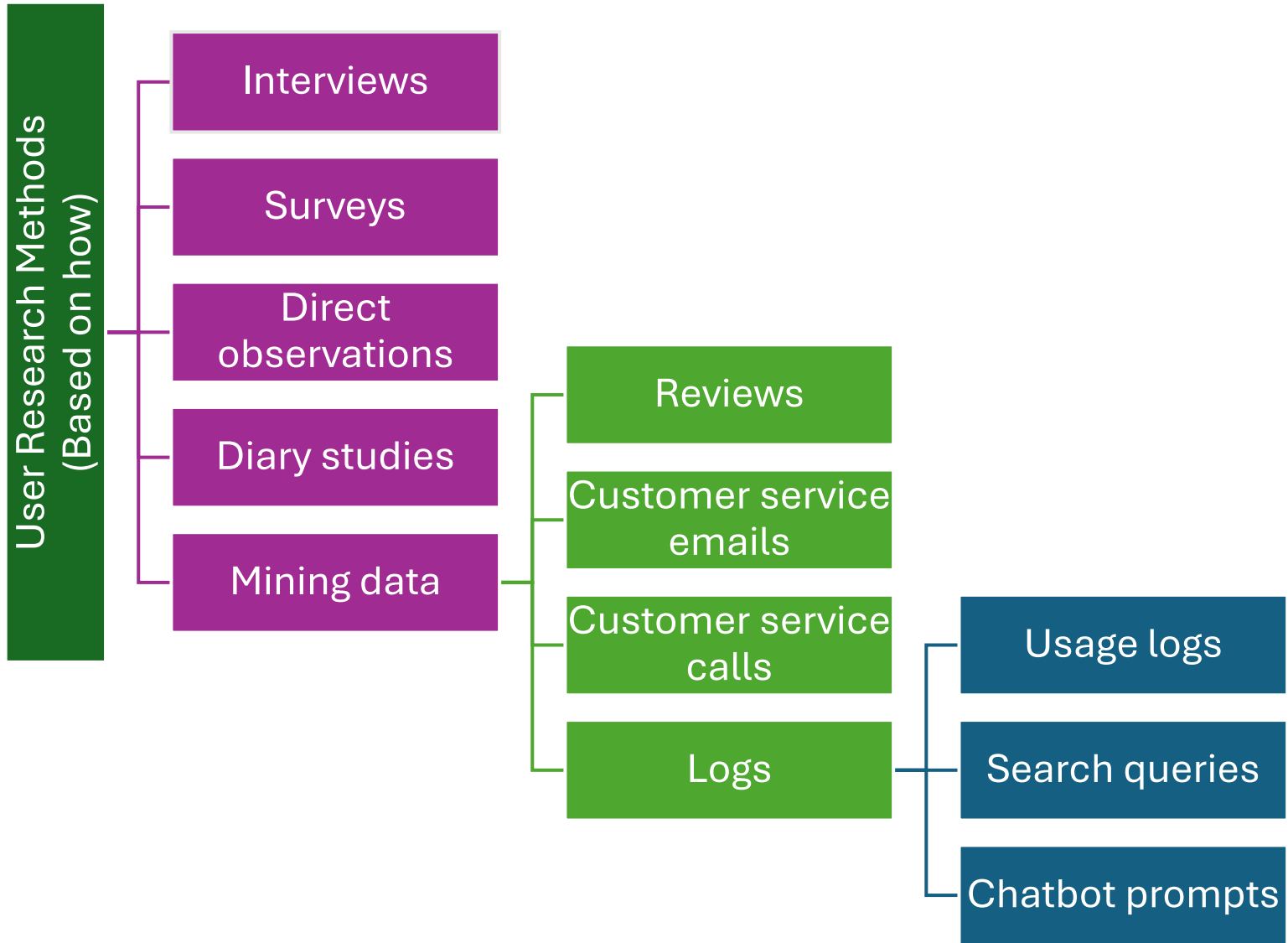
Need finding: analyzing reviews

- E.g., from app store, reddit, etc.
- What kind of data is in there?

https://chromewebstore.google.com/detail/2048/ijkmjnaahl
nmdjjlbhbjbhlnmadmmlgg/reviews

1. Numerical ratings – Quantitative
   - How do you analyze this?
   - Distributions, descriptive statistics, change over time

2. Textual, unstructured, qualitative
   - How do you analyze this?
   - Thematic analysis
   - Qualitative coding

Analyzing qualitative reviews

- Start with research questions → negatives vs. competitor analysis vs. summary of findings to upper management/investors.
- Sample → Identify themes → Sort according to themes → Count
- Sampling: which subset of reviews to analyze
  - Total population sampling
  - Purposive sampling
    - E.g., worst, most relevant, all 18-25 year old reviewers, etc.
  - Stratified sampling
    - Balance according to gender, age, device, super-user vs. rare user, etc.
  - Random sampling
- Sample size
  - Usually until saturation → no new theme emerges
  - Usually a few hundred "useful" ones.

Identify themes in sample reviews

- It's way better than all the other 2048 extensions out there.
  It saves progress even after shutting down my computer. 10/10

  Save progress

- It was good at first and then it got a bit boring. There isn't much gameplay time in this. Once you get 2048 there isn't much point bothering to increase your highscore because everyone on the leaderboard has some absurdly high highscore that is impossible to reach. I could just be bad at this but I still play it from time to time so thats why i gave it 4/5.

  Boring
Hard

- Really fun game to play, especially during school, where it's really easy to hide. I like how it's easily accessible, and it also saves your progress. One thing I don't understand is the many low ratings (most of which seem to come from little kids). Great game, I highly recommend it.

  Fun/Addictive,
Save progress,
School

Identify themes in sample reviews

- It works fine and the controls are great. It saves your progress when you click away. I don't know why it has such a low rating, probably because of fake bots. Totally recommend! Quick edit- Still 5 star rating, only one problem. The second to last move you can make (before you fail) an ad pops up. Can mess up your moves and ya fail quicker. :T

- the game is really addicting and fun. but after about 3 weeks of using it, the game would make a ad pop up when it thought i lost. once when i played, i had a full cube, almost close to beating my record, then ad comes up, game over. i would really appreciate it if they removed ads

- Perfect for the times when I need a short game that is so much fun! Love it, perfect for school when I need something for my fingers to do. :)

Good usability
Save Progress
Ads

Fun/Addictive
Ads

Fun/addictive,
School

Themes and sub-themes

- Positive
  - Save progress (3/6)
  - Fun/addictive (3/6)
  - Good usability (1/6)

- Negative
  - Addiction? (2/6)
  - Ads (2/6)
  - Boring (1/6)
  - Hard (1/6)

- Context of use
  - School (2/6)
  - Fidgeting (2/6)
  - …

You could then:

- Prioritize features / bug requests
- Think about what to do / not
  - Here, don't make sound mandatory (students will hate you!)
  - Take turns
    - How to deal with students not paying attention?
    - Addictive?

Problems

- How do we know it is done?
  - New themes stop, things repeat
  - Saturation; if your themes don't saturate, you continue.

- Subjective
  - One person might read the same review as good/bad
  - Two people do it together
  - If disagreements come → you discuss & come to an agreement
  - Or sometimes say both are valid
    - e.g., addiction to game is good vs. bad

This is the same for other methods too...

- Analyzing customer service complaints
- Analyzing customer service calls (after transcribing / after audio)
- Analyzing open-ended questions in surveys
- Analyzing interviews & observation notes

- After mid-sem:
  - Other methods for gathering data
  - Interviews, surveys, observations, diary studies, etc.

Homework-2

- Thematic analysis
  - Analyze reviews for your favorite app from app store
  - Due 21st February.
  - In pairs

- Specify app, mention sampling strategy, identify themes, Put reviews under themes, and then analyze them.

Project milestone-1 due 6th March

- Form a team of 2-3 people

- What goes into a project:
    - Evaluate existing system - redesign as needed - evaluate new design
    - Need-finding – design new features/systems – evaluate design
    - Optionally, you could implement system, and do a light-weight evaluation.
    - Bring your own projects
    - 5-6 projects (from a bank, non-profit, etc.) also available for you to pick
        - Same as above (some involve implement, some just design)
    - All projects evaluated on rigor, completeness, quality