

CS 147 Introduction & Course Overview

Design Thinking for User Experience Design, Prototyping & Evaluation

Prof. James A. Landay
Computer Science Department
Stanford University

Autumn 2026

September 23, 2026

Hall of Fame or Shame?



weather.com

Search City or Zip Code

54° Meiringen, Bern, ... 65° Denver, CO 51° Tahoe City, CA

Today Hourly 10 Day Monthly Weekend Radar

TOP STORY

ON OUR RADAR



Keeping An Eye On Still Active Atlantic

- El Niño: How The First In 4 Years Could Impact You
- 5 Changes To Expect From The Weather This Fall
- Severe Turbulence Injures Passengers On JetBlue Flight
- Last Dance With Harvest Moon This Week — 2023's Final Supermoon

- Hurricane Season: Looking Ahead To October, November
- Norovirus Outbreak On Iconic Hiking Trail? It Can Happen, And It Did
- Free COVID Tests Are Back; How To Get Yours
- Heat Has Many Wondering "What Happened To Fall?"

Web Notifications

Get breaking news delivered straight to your browser from The Weather Channel.

[Get Notifications](#) [No, Thanks](#)

Web Notifications

Breaking News & Top Stories ☐

Stay up-to-date on the latest weather news with desktop and mobile phone notifications.

If you need help to opt in, please visit our [Support Center](#).

Hurricane Tracker

Tropical Storm Philippe Sep 27, 5:00 am



Max Winds **45 mph** Movement **W at 12 mph** Pressure **1003 mb**

[Track Storm](#)

weather.com

Hall of Shame!



The screenshot shows the weather.com homepage. Red circles highlight several areas:

- The top navigation bar, including the search bar and location bar.
- The location bar showing three locations: 54° Meiringen, Bern, ...; 65° Denver, CO; and 51° Tahoe City, CA.
- The 'ON OUR RADAR' section, which features a map of the Atlantic Ocean with a large red area labeled 'I'.
- The 'Keeping An Eye On Still Active Atlantic' section, which includes four small video thumbnails.
- The 'Web Notifications' sidebar, which contains a 'Get Notifications' button and a 'Breaking News & Top Stories' toggle.

weather.com

Need to click for weather

What is the “first read”?

videos

popups/ads

not my local weather!

It used to be worse!

Hall of Fame or Shame?



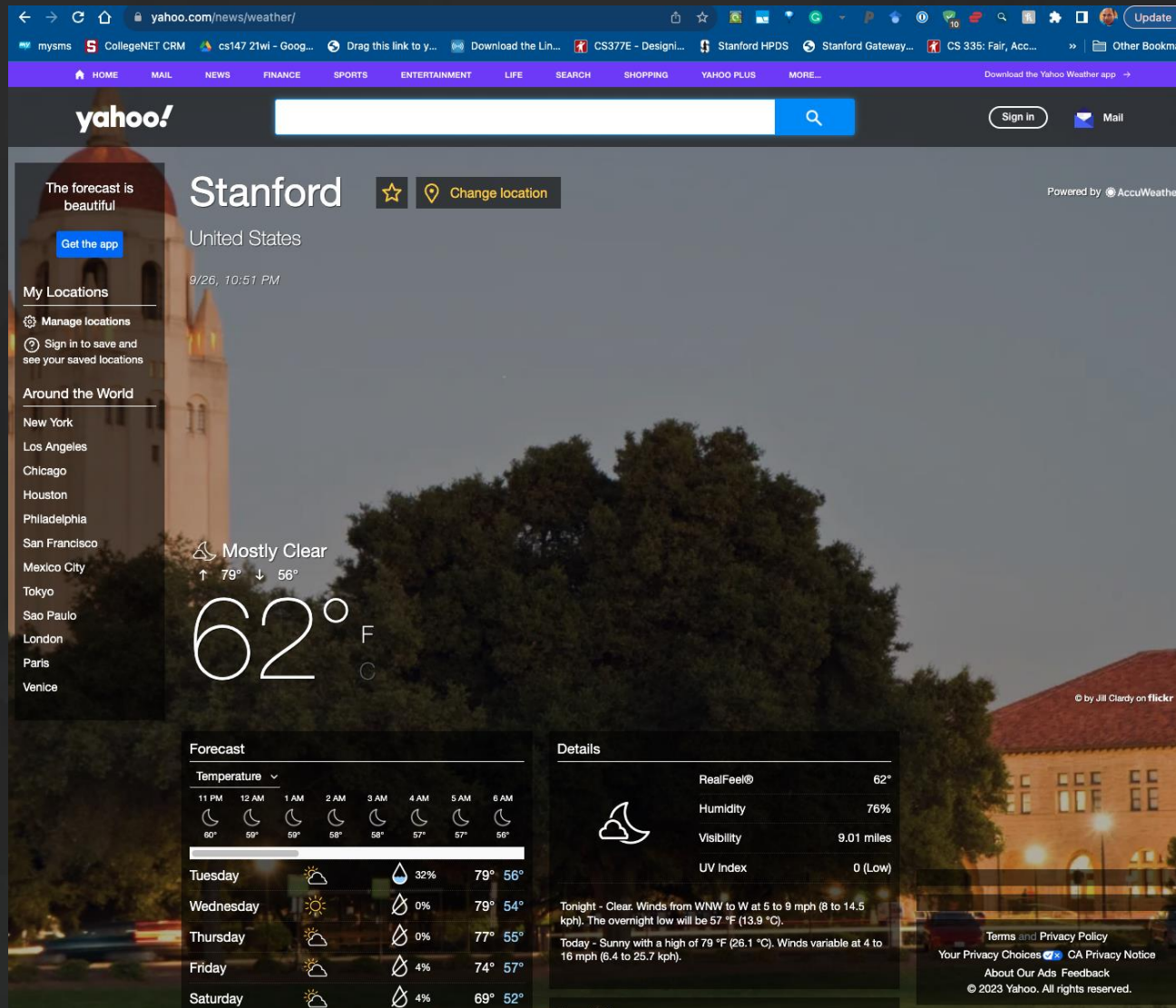
The screenshot shows the Yahoo! Weather page for Stanford, United States. The page features a large background image of a building at night. The current temperature is 62°F, with a high of 79°F and a low of 56°F. The forecast for the next few days is as follows:

Day	Weather	High	Low	Humidity
Tuesday	Partly Cloudy	79°	56°	32%
Wednesday	Sunny	79°	54°	0%
Thursday	Partly Cloudy	77°	55°	0%
Friday	Partly Cloudy	74°	57°	4%
Saturday	Partly Cloudy	69°	52°	4%

The page also includes a 'Details' section with RealFeel®, Humidity, Visibility, and UV Index. The footer contains links to Terms and Privacy Policy, Your Privacy Choices, CA Privacy Notice, and About Our Ads Feedback.

weather.yahoo.com
(last year)

Hall of Fame!



weather.yahoo.com
(two years ago)

Good!

aesthetic

clean typography & icons

Bad!

image is 1st read

too much empty space!

Hall of Fame!



yahoo!weather Search by city or zip code  News Finance Sports More  Sign in

Stanford  Clear 59° Add your favorite places Follow a location to see it here

Powered by  AccuWeather

California

Stanford

Partly Cloudy today with a high of 79 °F and a low of 59 °F.

H 79° L 59° 🌤️ 6:56 AM 🌃 7:06 PM

☆ Follow

Photo © by Jill Clardy on Flickr

Conditions

- Humidity Humid · 90%
- Air quality Excellent · 82 UAQI
- Peak UV tomorrow Moderate · 5 UV
- Allergens Low
- Pressure Average
- Visibility High
- Moon Waning crescent

Source: Includes air quality data from Google

Next 8 days

Today	Tomorrow	Tue 23	Wed 24	Thu 25	Fri 26	Sat 27	Sun 28
79° 59°	85° 60°	93° 66°	78° 60°	78° 59°	79° 55°	78° 55°	76° 54°

Now Midnight 1 AM 2 AM 3 AM 4 AM 5 AM 6 AM 6:57 AM 7 AM 8 AM 9 AM 10 AM 11 AM

59°	60°	60°	60°	59°	59°	59°	59°	Sunrise	59°	62°	66°	71°	74°
													

Precipitation in/hr

Wind MPH

↗	↗	↗	↗	→	→	→	→	→	→	→	↘	↘	
6 SW	6 SW	5 SW	5 SW	5 W	5 W	5 W	4 W	4 W	4 W	3 W	4 W	4 NW	6 NW

Map

 Radar 

weather.yahoo.com

Good!

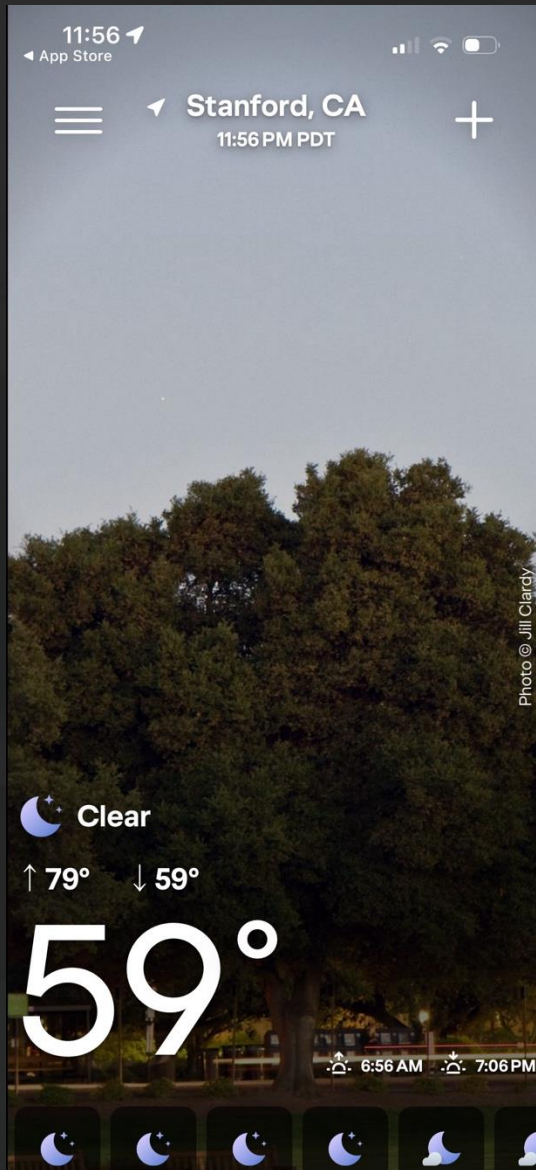
Weather clearly up front

Simple iconography

Bad!

image hidden

Hall of Fame!



iOS yahoo weather (2yrs ago)

Good!

aesthetic

clean typography & icons
(new version not as nice)

image recedes to
background w/ flick

CS 147 Introduction & Course Overview

Design Thinking for User Experience Design, Prototyping & Evaluation

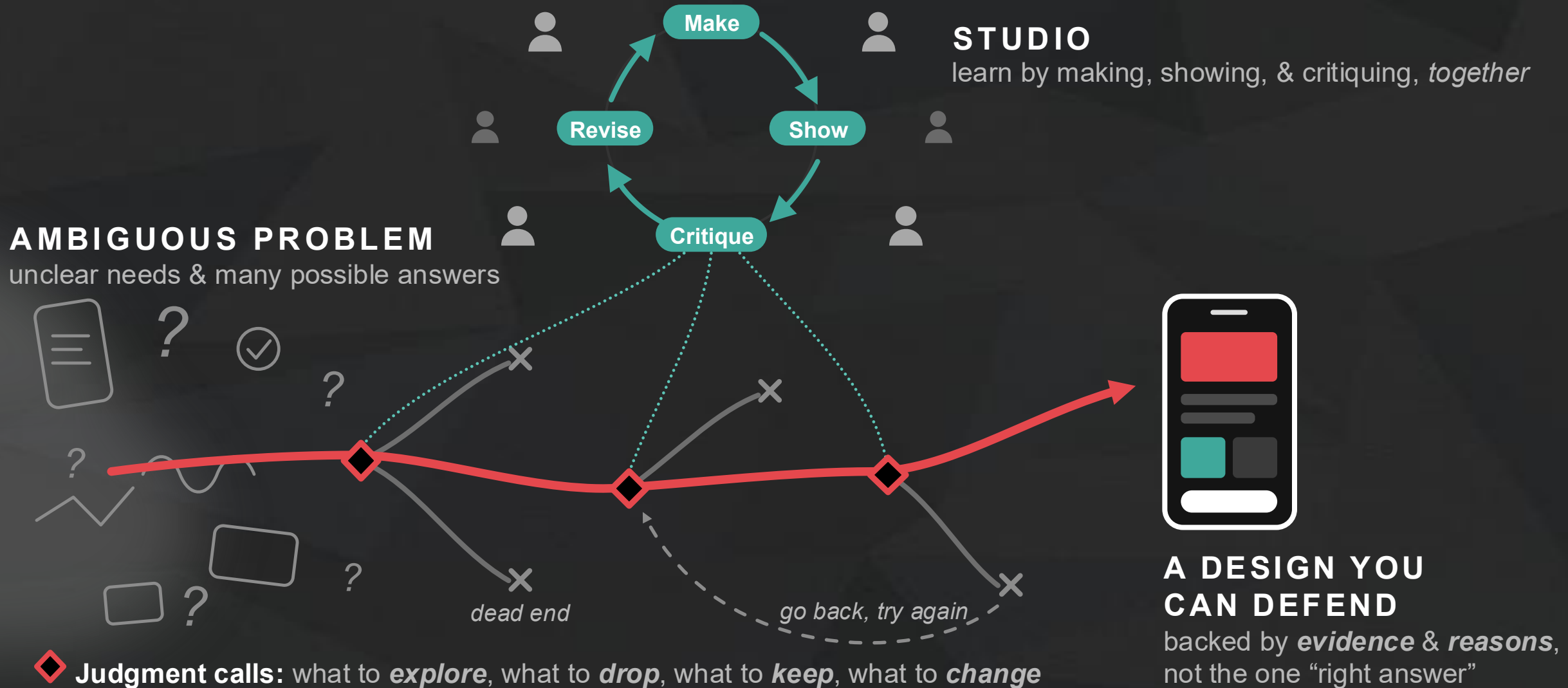
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What Kind of Course is CS147

Studio course to develop design judgment under ambiguity





Who are We?



James Landay

he/him

- . Professor in Computer Science at Stanford
 - formerly at Cornell Tech (1 year), University of Washington (10 years) & UC Berkeley (7 years)
 - spent 3 years as Director of Intel Labs Seattle
- . PhD in CS from Carnegie Mellon
- . HCI w/ focus on ubiquitous computing, design (tools, patterns, methods), HAI
- . Founded NetRaker, 1st in web experience management (sold to Keynote)
- . Co-authored *The Design of Sites* with Doug van Duyne & Jason Hong
- . **Office Hours:** TBD (CoDa E354) or by appointment (slack me)
- . Email: landay@[insert usual Stanford email domain]



Alan Cheng

he/him

- PhD candidate in Computer Science, working on MA in Education
- BA & MEng in Computer Science @ Cornell
- I do HCI x education research, building learning experiences with AI & AR
- I (used to) sing a cappella with O-Tone, Stanford's East Asian interest a cappella group
- Next year: Assistant Teaching Professor, Department of Information Science @ Cornell
- **Office Hours:** By appointment



Lindsay Popowski

she/her

- PhD Candidate in Computer Science
- BS in Computer Science & Mathematics @ Harvey Mudd
- I do social computing research, building alternate designs for social media
- I love baking, cooking, reading, and following online discourse <- talk to me about any of these!
- **Office Hours:** TBD and by appointment (contact me on slack)

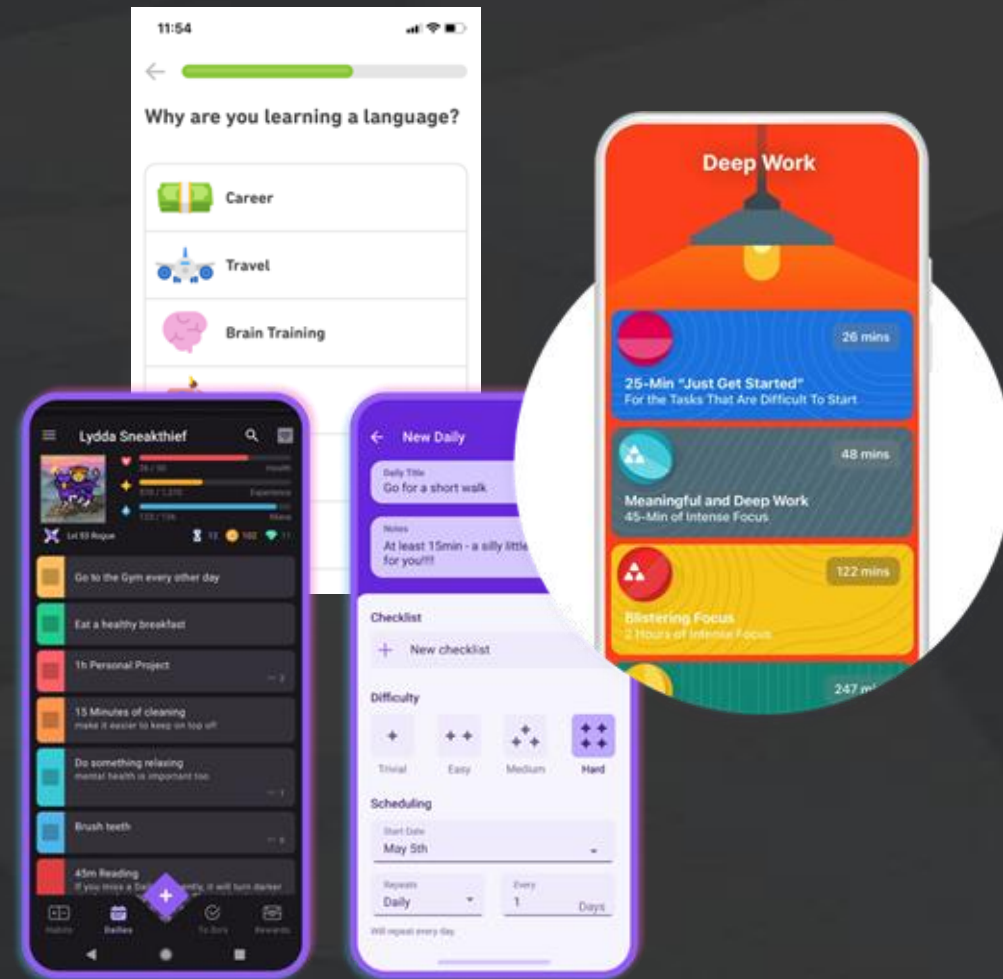
AI for Self-Improvement

Some personal goals are easy to track with numbers: steps walked, books read, or hours practiced.

Others are harder to measure: emotionally supporting loved ones, improving art skills, maintaining boundaries, and improving mental wellbeing. Progress in these more nuanced goals may be **qualitative, subtle, or distributed across contexts**, so tracking growth is more complicated than following a single metric.

Projects in this studio will explore ways AI can support people in pursuing these more complex self-improvement goals. How might we **connect different sources and modalities of data** to help people reflect on change over time? How can AI help people **translate broad aspirations into concrete actions** (and offer useful feedback)?

Studio Friday 9:30-11:20
Examples: Duolingo, Five Minute Journal, Habitica, Fabulous



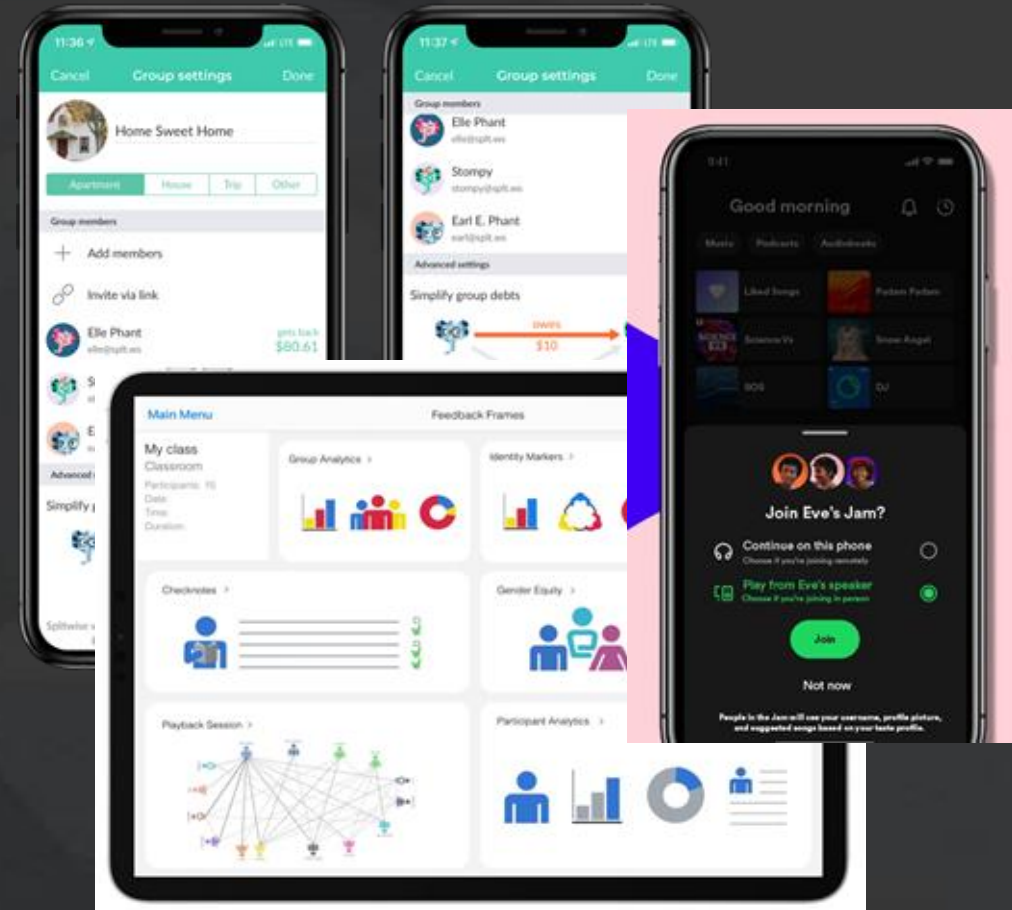
Design for Offline Experiences

Technology is well used to coordinate meet-ups, but can it also **improve our experiences when we meet**?

Everyday activities offer opportunities where technology can enhance social interactions—offering discussion topics when meeting someone, supporting playlist collaboration, or facilitating equity in group discussion—**without taking focus** off of what matters in the moment.

Projects in this studio will pursue ways that digital tools and AI can **enrich offline experiences** without dominating attention: by sparking the conversation, supporting shared decisions, and helping people better express themselves. How can technology offer support before or after the experience to remain unobtrusive during? How might our tools be **responsive to the social dynamics and context**?

Studio Friday 11:30-1:20
Examples: Equity Maps, PictureThis, Merlin Bird ID, Spotify Jam, Splitwise, Paired





Julia Markel

she/her

- PhD Candidate in Computer Science
- BS in Computer Engineering @ UC San Diego
- I work on *philosophy of self x AI* research, working on leveraging identity to design AI + exploring how these systems influence user self-concept
- I enjoy reading, creating and consuming art, being outdoors, and hopping into (preferably natural) bodies of water
- **Office Hours:** By appointment (contact me on slack)

Beyond Human-Centered: Designing for More-Than-Human Worlds

Studio

Thursday 4:30-6:20 PM

Our designs never live in a world of humans alone; they're shared with the dog waiting by the door, the lake on campus, the delivery robot rolling down the sidewalk, and the phone headed for a landfill.

Animals, ecosystems, machines, and materials all shape, and are shaped by, what we build. Projects in this studio will still start with people, but will design for the relationships between humans and everything else.

How might we make the **needs of non-humans visible** to the people deciding for them? How might we **design shared spaces** that work for people, animals, and machines **alike**?



*Examples: Project CETI,
Melbourne's email-a-tree program,
Rainforest Connection, Apple
Clean Energy Charging*

Designing for Serendipity

Studio

Thursday 6:30-8:20 PM

Some of our best discoveries are things **we never went looking for**: the book shelved beside the one we came for or the passing comment that reframes an entire project.

Today much of what reaches us is chosen by search engines, feeds, and AI assistants built to give us more of what we already like. The better these systems predict us, the **less room they leave for the unexpected**, and for who we might become.

This studio explores how design and AI can make room for **discovery in how we find ideas, music, information, inspiration, and ultimately ourselves**. How might AI systems help us surface something we'd never think to search for? How might we help people notice, and act on, the unexpected when it appears?



Examples: Wikipedia's Random Article, Radio Garden, Are.na, Spotify Discover Weekly



Renn Su

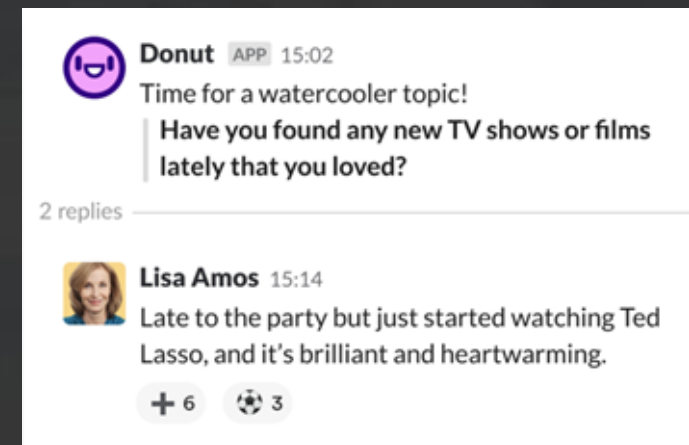
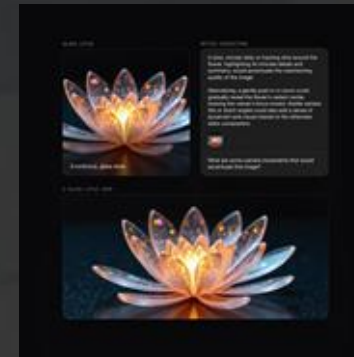
- Cotermin in Computer Science (HCI), BS in CS (AI)
- I research human-AI interaction, AI agents, and how we build tools that empower users.
- You can find me discovering niche music genres, camping out at makerspaces, and making high-effort pasta dishes.
- **Ask me about:** doing research as an undergrad, Wikipedia rabbit holes, doing HCI abroad (I did research in Zürich and Montréal!), AI ethics.
- **Office Hours:** TBD or by appointment (Slack me!)

Design for Meaningful Work

Work fills a huge share of our waking lives, yet for many people **work has come to feel fragmented, draining, and disconnected from any real sense of purpose**. AI threatens to replace big parts of what we do, leaving us with repetitive administrative tasks: prompting, monitoring, output verifying.

However, could we instead leverage new technologies to build **tools that allow us to work both productively and with purpose**? This studio explores how design and AI can make work more **focused, humane, and fulfilling** rather than merely faster. How might we help people do their best, deepest work with less friction and less burnout? How can AI take on the tedious and repetitive while leaving people the parts that build skill, judgment, and agency?

Studio: Friday 12:30-2:20 PM
Examples: Notion, Slack's Donut Bot, Forest, Flora AI, BetterUp



Join our Slack!

cs147-2026au.slack.com

What Do You Hope to Learn in CS147?

Put a few key phrases in the #lecture slack channel

* if you aren't in our cs147 slack grid, direct message **Julia** (jmarkel@stanford.edu)

** For all **during** lecture activities & questions use the #lecture slack channel so we can see them.
For questions **outside** of lecture time, use the #q-and-a channel.

Outline

- *Who are we?*
- AI & User experience design
- Balancing design thinking & technology
- Design discovery & exploring ideas
- Rapid prototyping & evaluation
- Goals of the course
- Course format & schedule
- Course policies

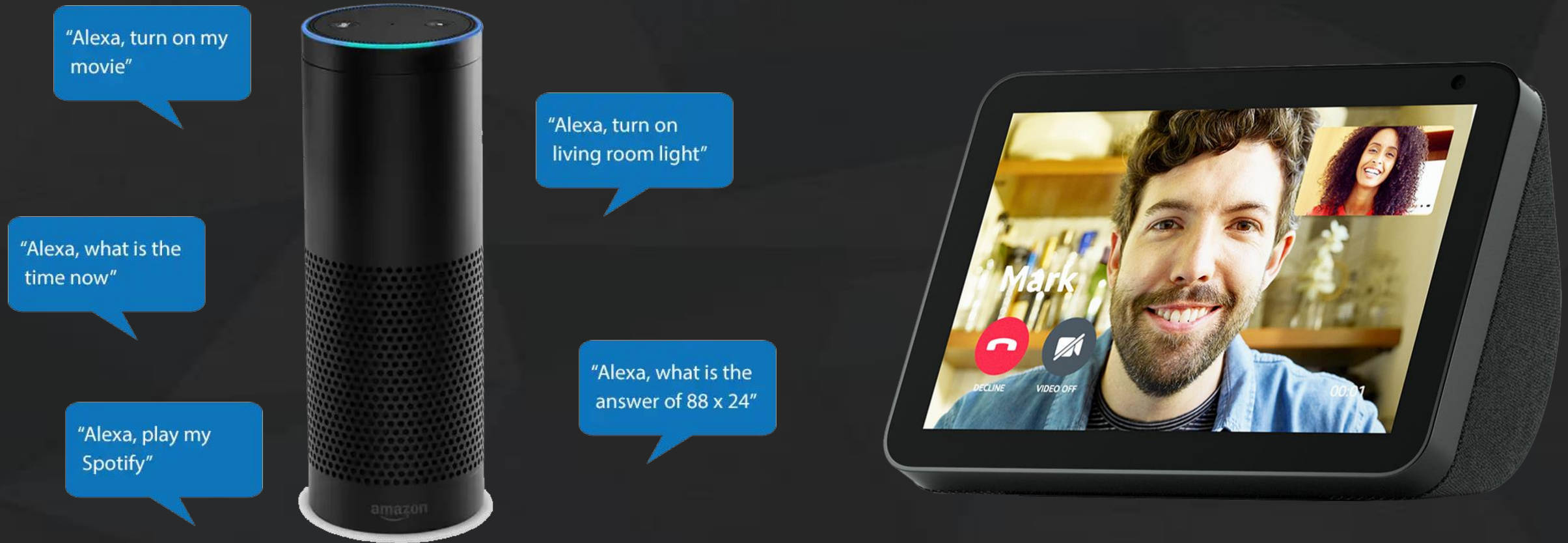
AI Needs User Experience (UX) Design



- Tesla Model S “Autopilot”
- Future of autonomous cars
- How do we design the UX?



AI Needs User Experience (UX) Design



- Amazon Echo, Google Home & other Smart Speakers use Voice UI
- How do we design them to deal with natural human conversation?
- How do we design to support multimodal input? (e.g., + screen or vision)

AI Needs User Experience (UX) Design



Computer vision-based skin cancer detection getting better and better

- What is appropriate to show a patient?
- What should be the interface for the doctor?
- Is there a set of design patterns for these Smart UIs?

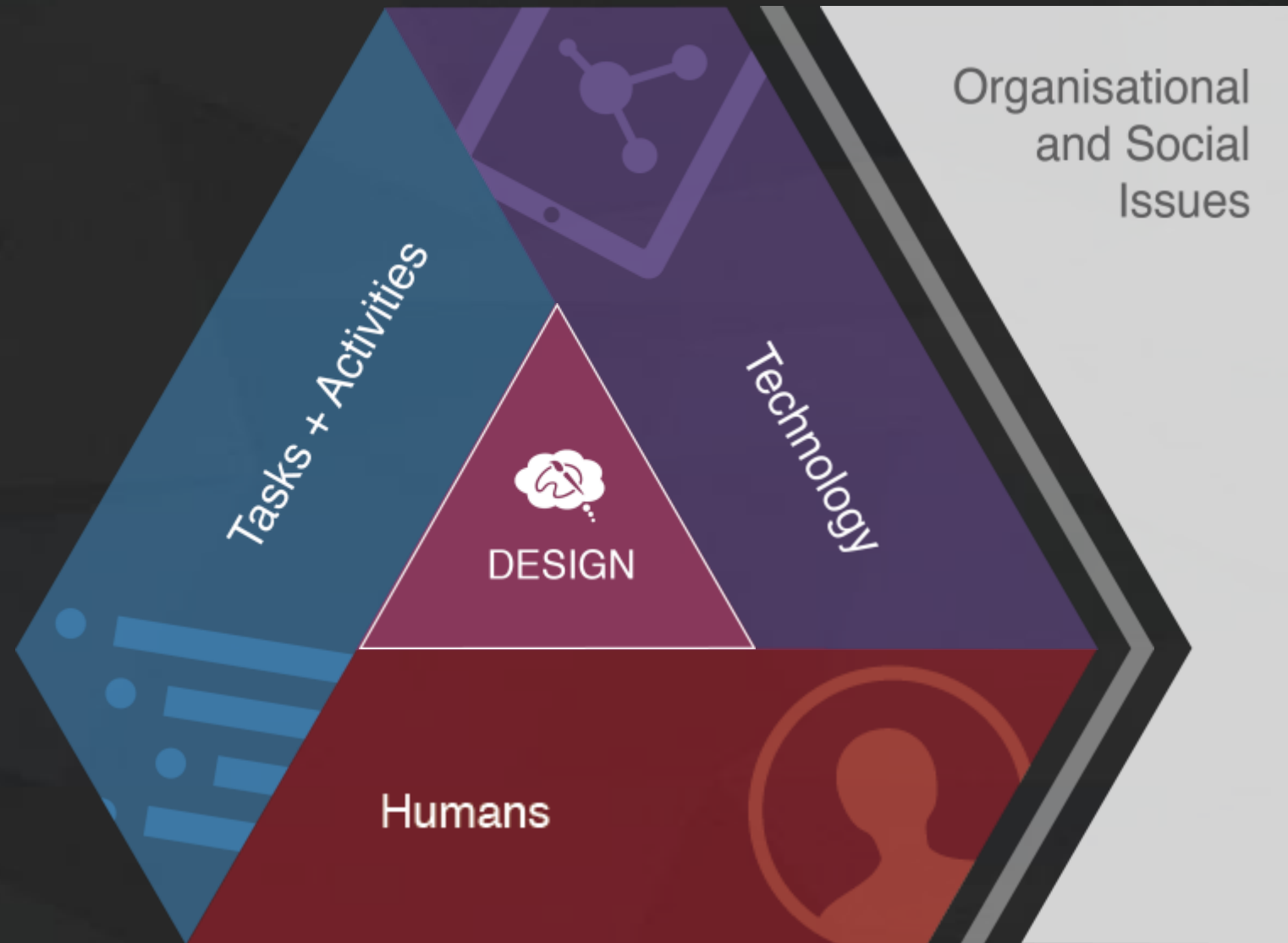
Balance

DESIGN

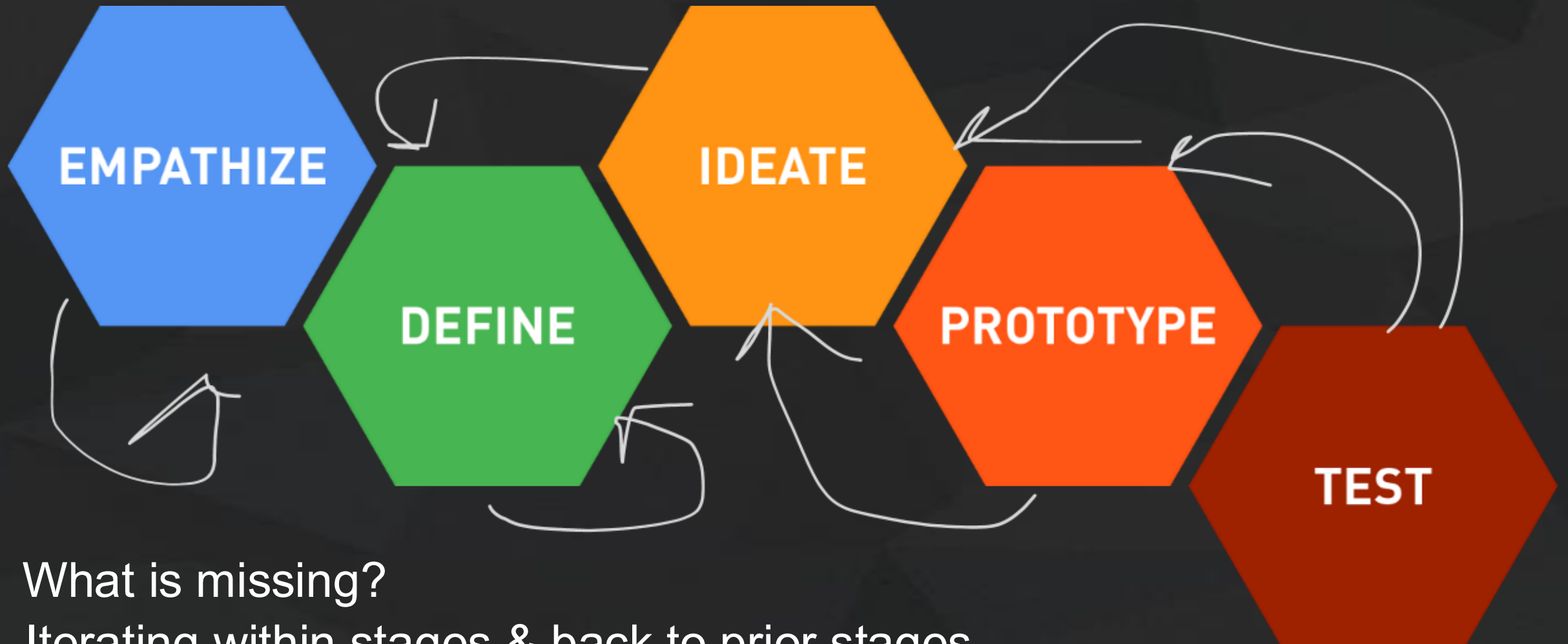
TECHNOLOGY



Approach to Application Design & Prototyping



Design Thinking Process



What is missing?

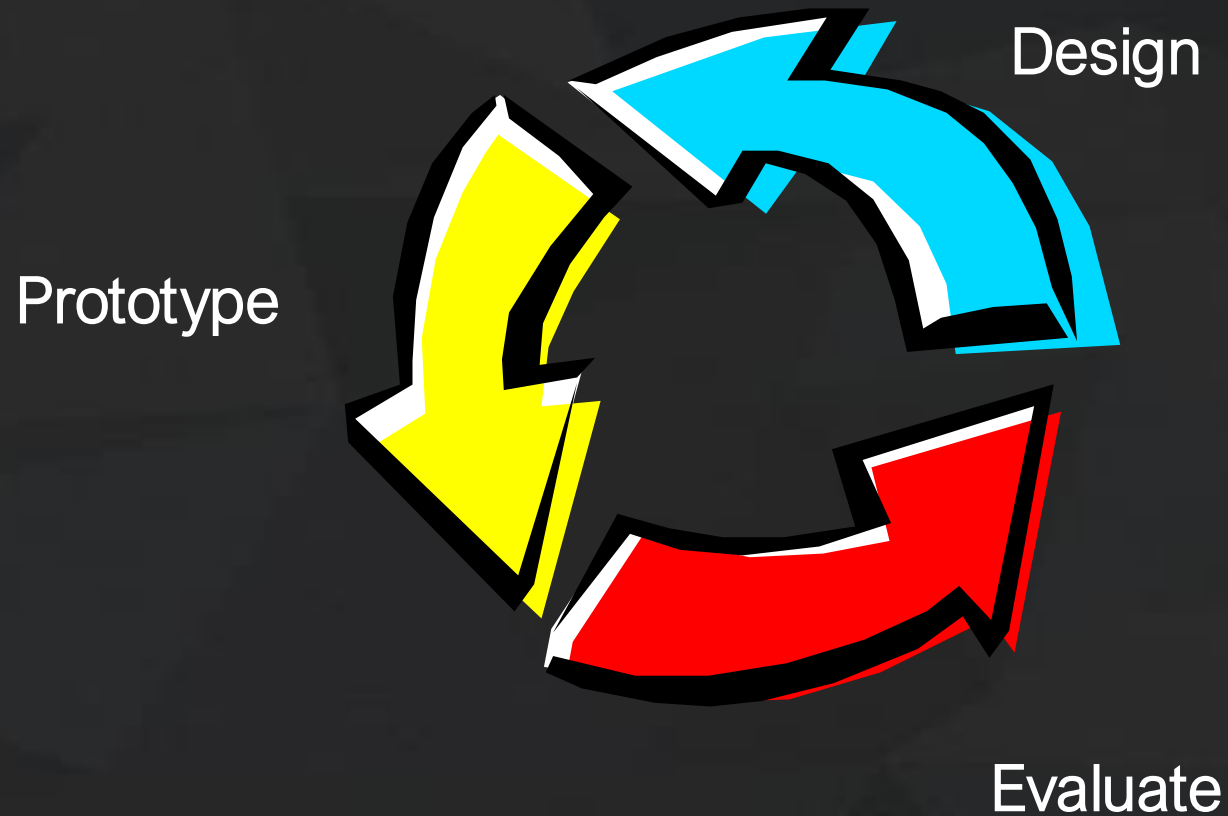
Iterating within stages & back to prior stages

How to Design and Build Good UIs

- Iterative development process
- Usability goals
- User-centered design
- Design discovery
- Rapid prototyping
- Evaluation
- *Programming*

Iteration

At every stage!



Repetition is intentional & is how design judgment is built

Usability(?)

According to the ISO:

The *effectiveness, efficiency, and satisfaction* with which specified users achieve specified *goals* in particular *environments*.

This doesn't mean you have to create a “dry” design

Usability/User Experience Goals

- Set goals early & later use to measure progress
- Goals often have tradeoffs, so prioritize
- Example goals(?)
 - Learnable
 - faster the 2nd time & so on
 - Memorable
 - from session to session
 - Flexible
 - multiple ways to do tasks
 - Efficient
 - perform tasks quickly
 - Robust
 - minimal error rates
 - good feedback so user can recover
 - Discoverable
 - learn new features over time
 - Pleasing
 - high user satisfaction
 - Fun



User-centered Design

“Know thy User”

- Cognitive abilities
 - perception
 - physical manipulation
 - memory
- Organizational / educational job abilities
- Keep users involved throughout
 - developers working with target customers
 - think of the world in users' terms

Accessible Design

- Different abilities
 - vision, hearing, cognitive, mobility
 - e.g., blind users with screen readers
- Moral and ethical purpose
 - inclusive design benefits everyone
 - e.g., sidewalk curb cuts
- Legal guidance
 - Americans with Disabilities Act (ADA)



<https://www.appspringtech.com/wp-content/uploads/2020/09/descarga.jpg>

User-centered Design: Needfinding

- Observe existing practices for inspiration
- Make sure key questions answered
- Ethical questions in design w/ underserved communities

Canonical Example

Where were our interviews conducted?



01

Antonio's home in Mnt. View

We interviewed Antonio a frequent home cook and data engineer at his home in Mnt. View



02

Center for Academic Medicine

We interviewed Jessica an amateur cook, and Biomedical Engineer outside the Center for Academic Medicine



03

Athlete Dining

We interviewed Chef Jason the head chef of Stanford Athletic dining inside of Athlete dining.



04

Coffee shop in San Francisco

We interviewed Claire a MPH Grad Student, and track athlete for Tennessee at a coffee shop in San Francisco

Simmr

Unpacking the Needfinding

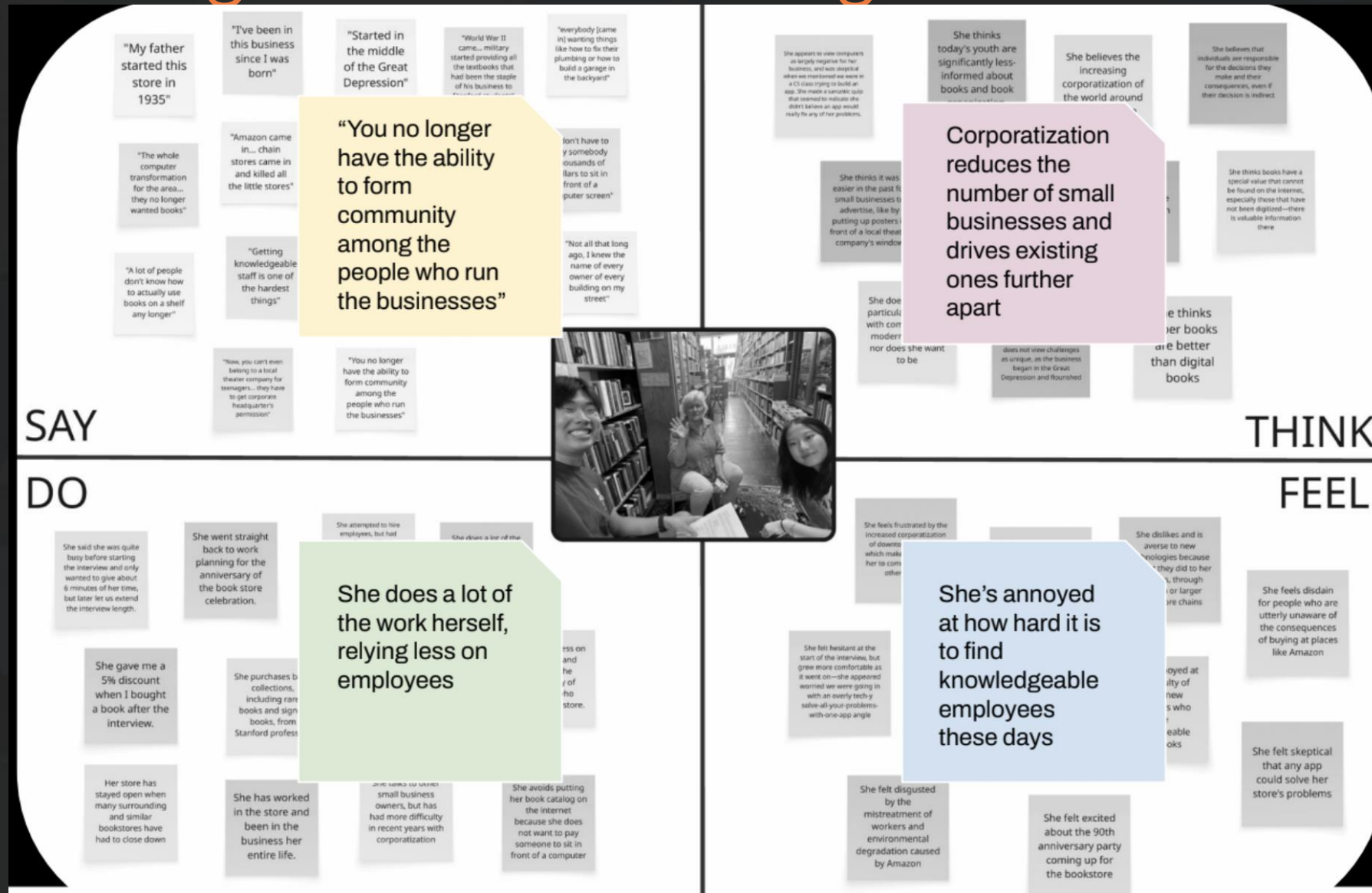
The whiteboard is organized into four quadrants, each representing a different type of user feedback:

- SAY:** The top-left quadrant, labeled 'SAY' in the top-left corner. It contains approximately 25 sticky notes, mostly yellow and orange, representing direct user statements.
- THINK:** The top-right quadrant, labeled 'THINK' in the top-left corner. It contains approximately 15 sticky notes, mostly yellow and orange, representing what users think or believe.
- FEEL:** The bottom-left quadrant, labeled 'FEEL' in the top-left corner. It contains approximately 25 sticky notes, mostly yellow and orange, representing user emotions and feelings.
- DO:** The bottom-right quadrant, labeled 'DO' in the top-left corner. It contains approximately 15 sticky notes, mostly yellow and orange, representing user actions and behaviors.

At the bottom center of the whiteboard, the word **Records** is written in black marker.

This whiteboard is divided into a grid structure. The top-left cell is labeled **SAY** and the bottom-left cell is labeled **DO**. The right side of the board is labeled **Tensions, Contradictions, Surprises**. The grid is currently empty, with only the labels visible.

Unpacking the Needfinding





budder

Develop Point of Views (Person + Insight + Challenge) Brainstorm on How Might We Solve

WE WERE AMAZED TO REALIZE ...
(what did you learn that's new?)

THAT THANKS TO THE BOAT OWNER'S MENTORSHIP, TRUST, AND DESIRE OF
THE FISHING LIFESTYLE AND CONNECTION TO NATURE, HE HAD TURNED HIS LIFE
AROUND FROM DRUG ADDICT W/OUT A JOB TO SOMEONE WITH SKILL & COURAGE

IT WOULD BE GAME-CHANGING TO ...
(frame up an inspired challenge for yourself
don't dictate the solution)

ALL OF US COULD TAKE A RISK TO SEE A SPARK IN OTHERS AND
NURTURE IT INTO A PURPOSEFUL TRANSFORMATION.

HMW bring
routine (and
discipline)
to homeless?

Experience Prototype to Test Assumptions

Prototype 2: Digital Pranks

Test Setup (n=3)



Participant is asked to read a book



Their reading flow is interrupted by a page of goblin stickers, mimicking the surprise of an unexpected prank

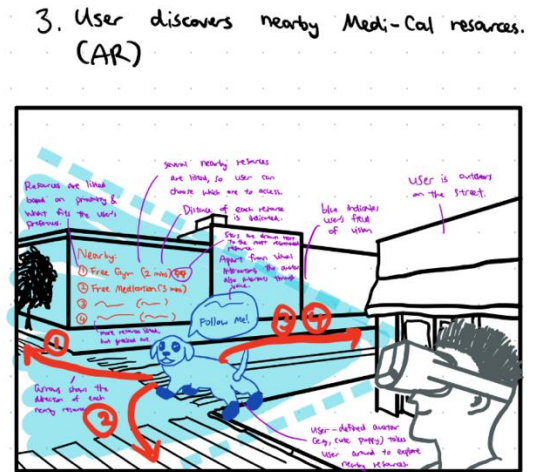
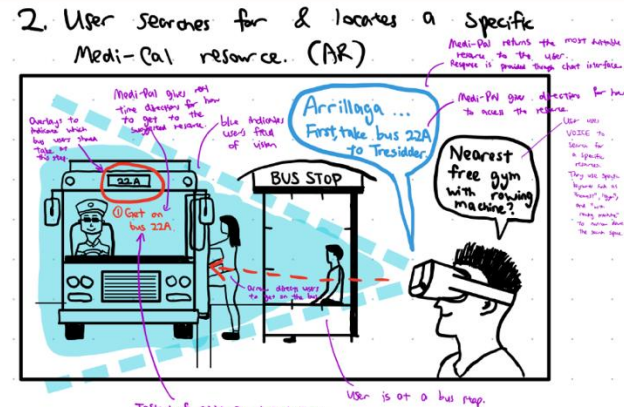
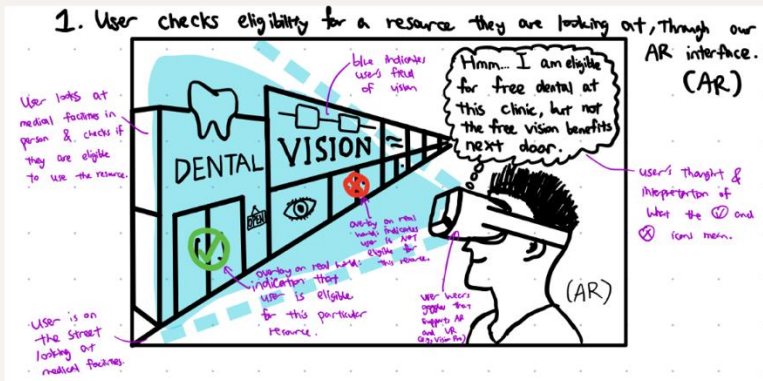
Wayn

Sketching & Storyboarding



artbot

Sketching & Storyboarding



Medi-Pal

Concept Videos

- Illustrate context of use rather than specific UI
- Quick & inexpensive
- Forces designers to consider details of how users will react to the design

Concept Videos: Planning Storyboards



Theo

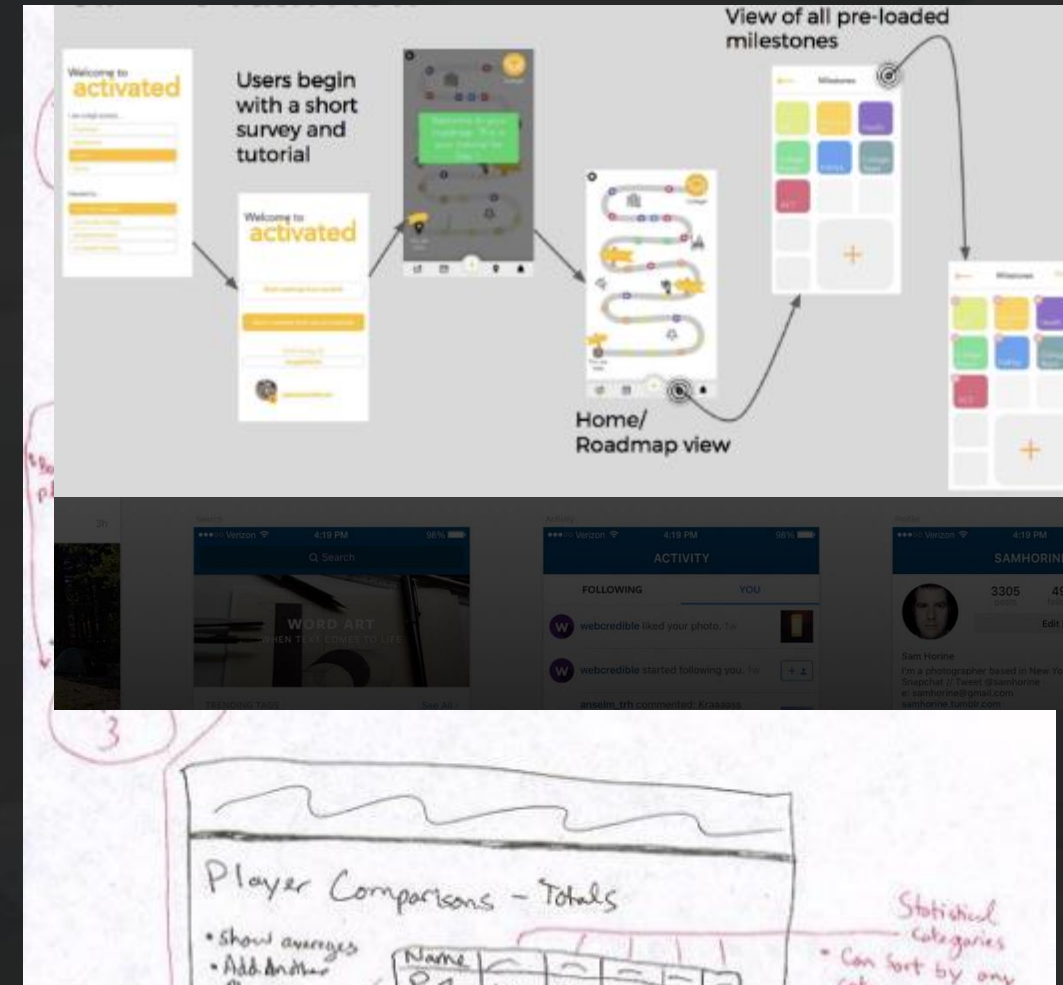


Chatatouille

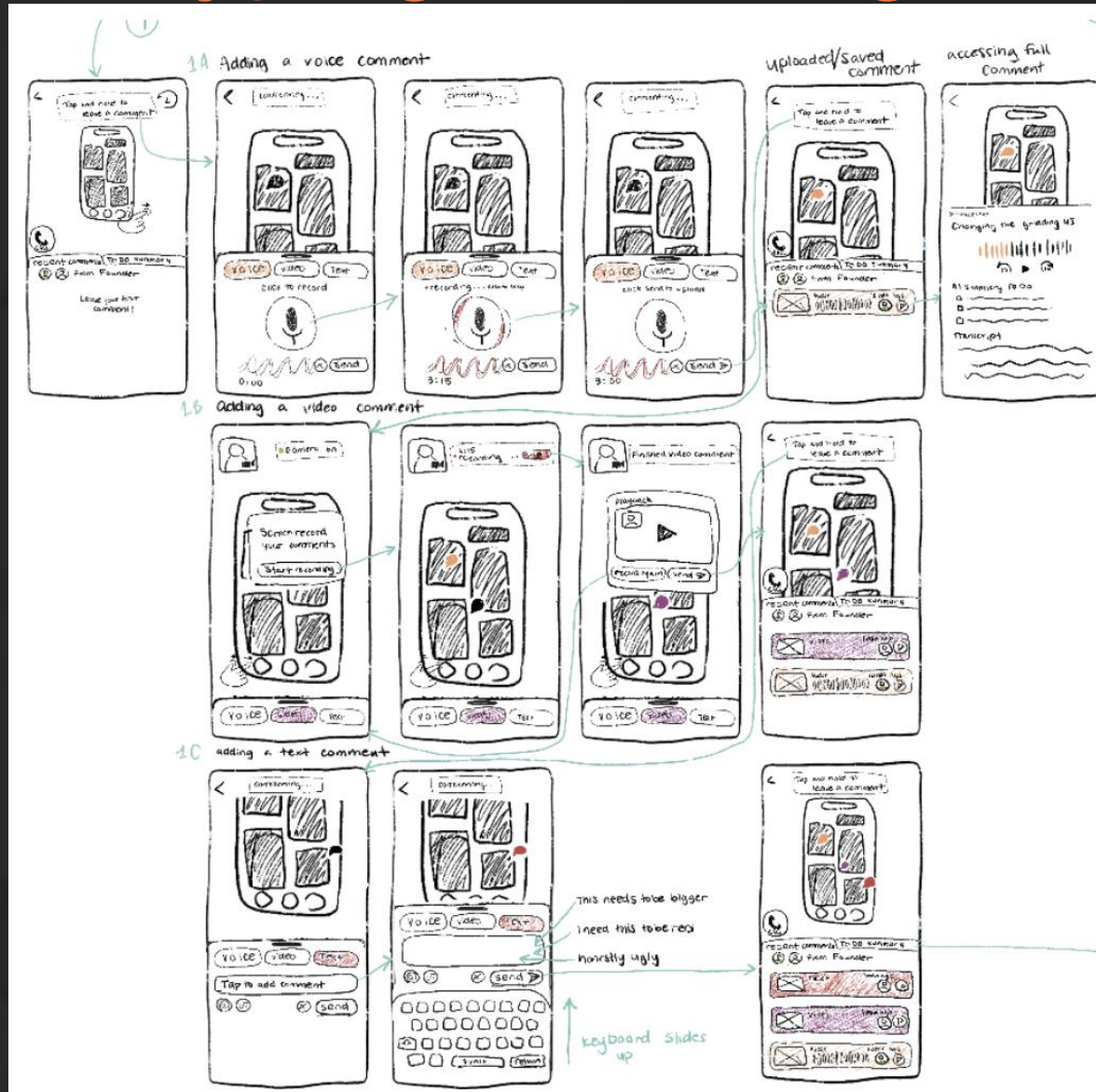
Rapid Prototyping

Fantasy Basketball

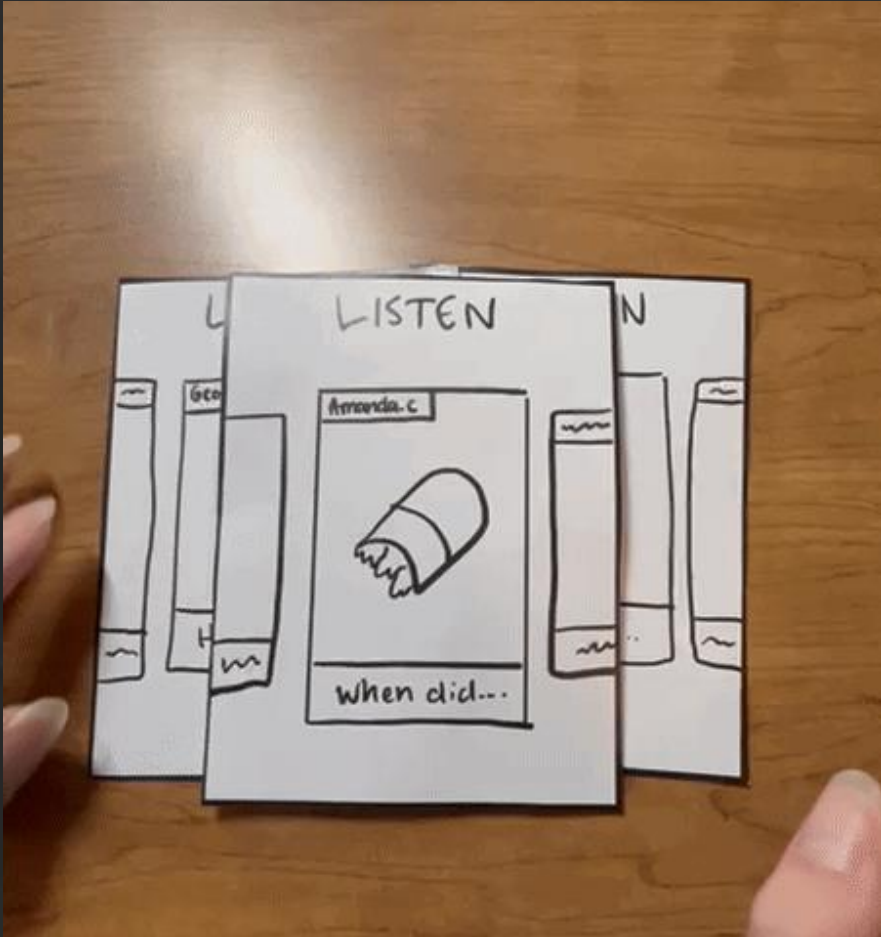
- Build a mock-up of design so you can test it
- Low fidelity techniques
 - paper sketches
 - cut, copy, paste
- Interactive prototyping tools
 - HTML, Balsamiq, Axure, proto.io, Sketch+Marvel, Figma, Modao, etc.
- UI builders
 - Expression Blend + Visual Studio, Xcode Interface Builder, etc.



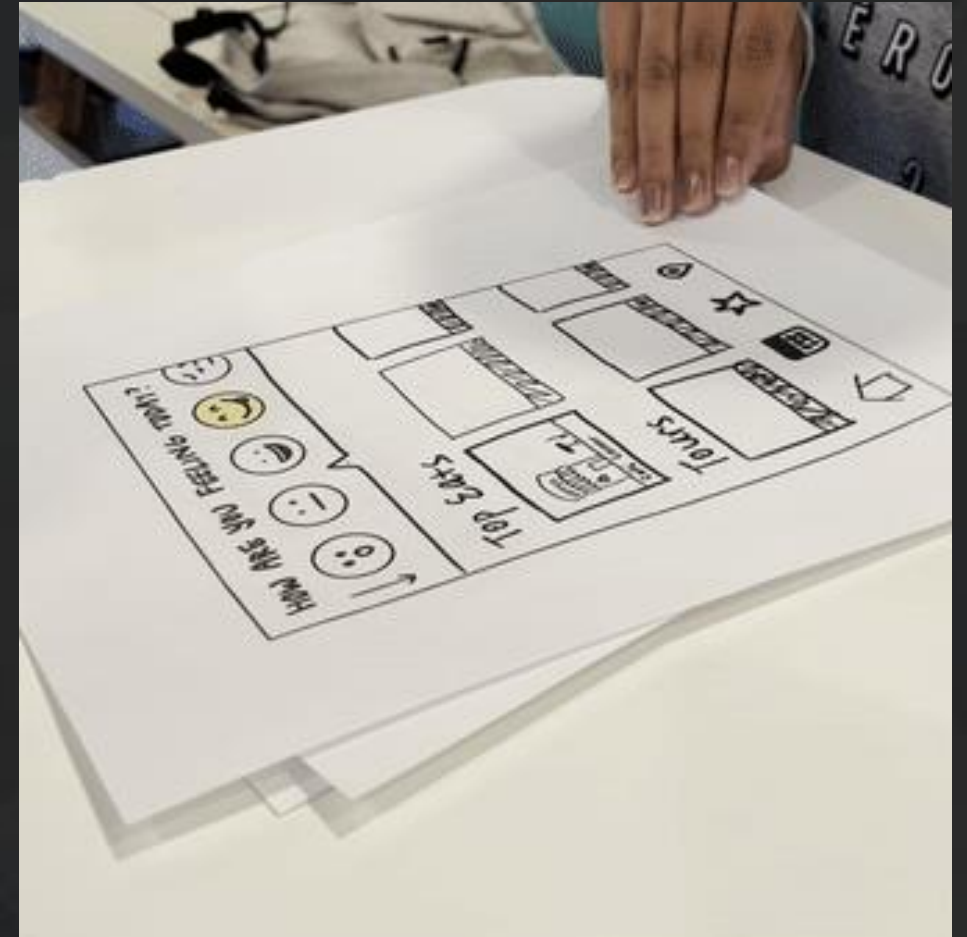
Low-fi Prototyping & Testing



Low-fi Prototyping & Testing



StoreaTime



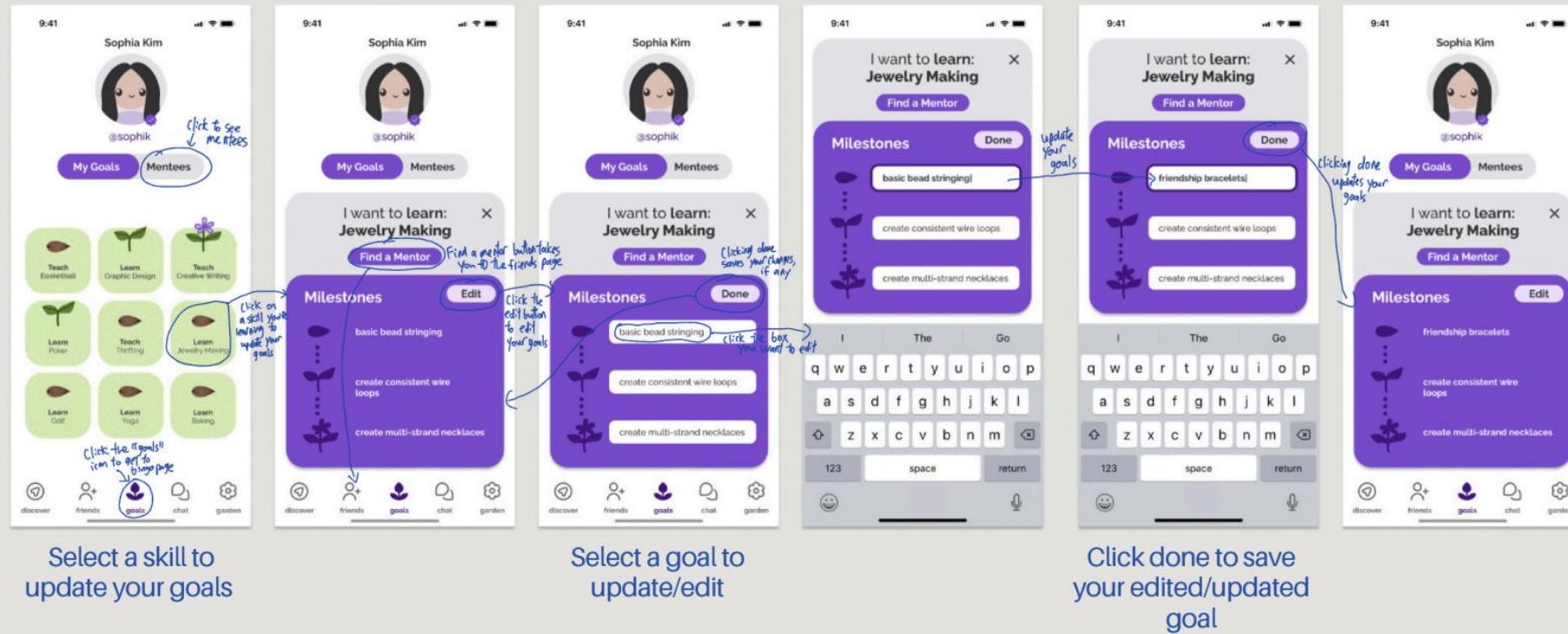
UnCover

Interactive Prototypes

Medium Fidelity

Complex Task

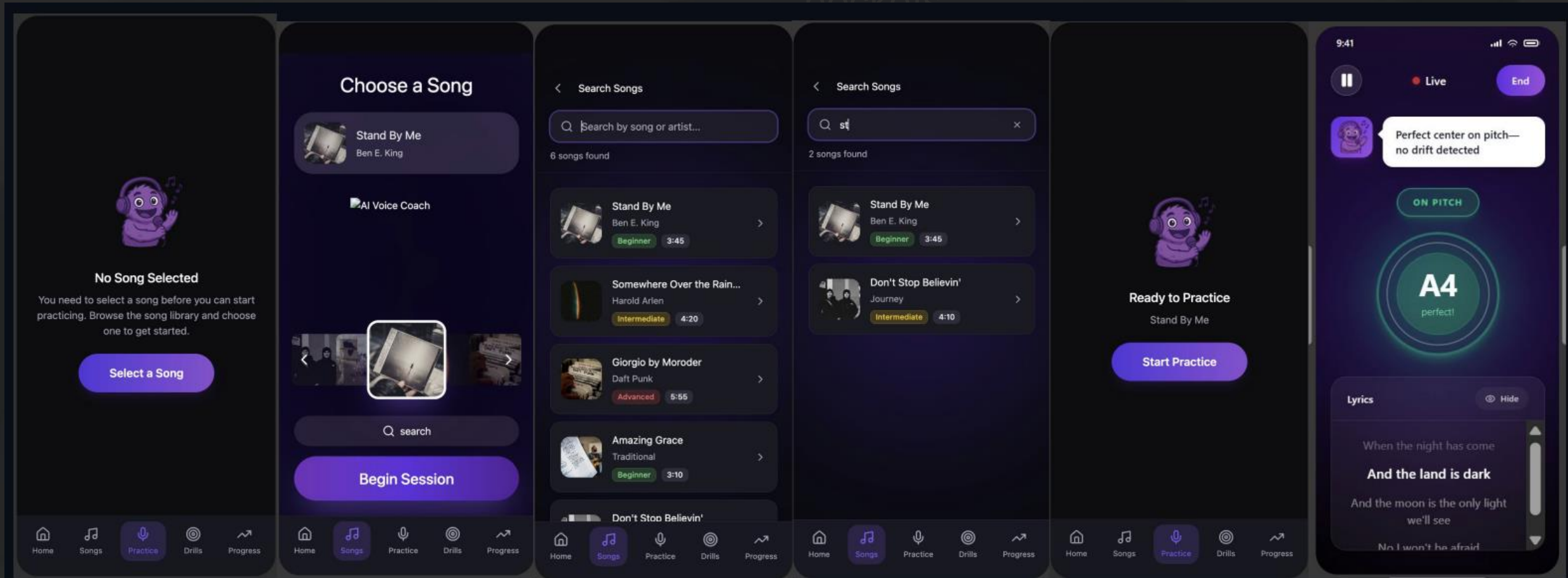
update your learning goals
mentee perspective



Nomi

Interactive Prototypes

Hi-Fidelity

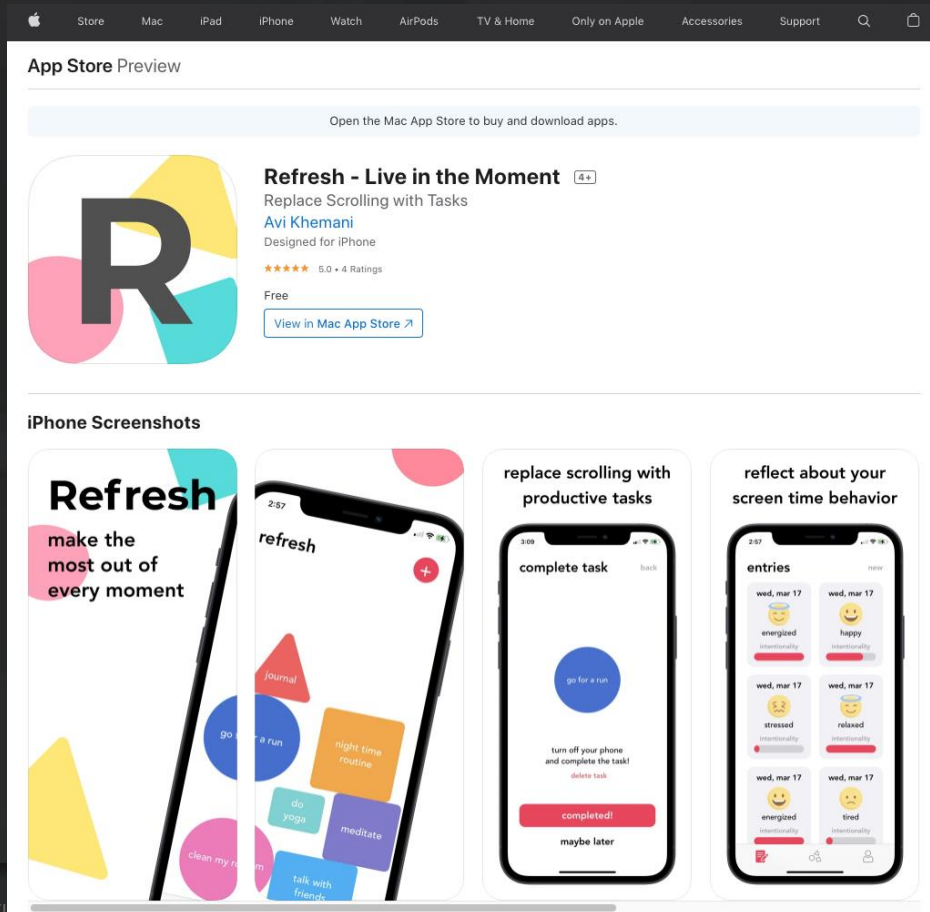


AI-Capella

Interactive Prototypes

Hi-Fidelity

- Does this mean at the quality to go in an app store?
 - for a few yes, but for most no (this is not a requirement & many will push to this in CS194H)



- You **will** be building a real app (with code)
 - **not** a click-thru prototype (e.g., using Figma or InVision)
- It should support most of your functionality
- But it might be missing
 - polish
 - back-end implementation
 - maybe data stored locally, social networks incomplete, etc.
 - can use AI to help you here (see policy at end of lecture)
- CS (intended) majors should have pre-reqs (106B/X, 142/193P/193A or experience building apps)
If not...

CS147L – Cross-Platform Mobile Development

- Create a mobile app on both iOS & Android using the React Native framework in just 10 weeks
- Tue/Thur 3:00 – 4:20 PM, Shriram 104, 3 Units
- You can dual use CS147L/CS147 projects!
- Course web site: <https://cs147l.stanford.edu>
- CS147L form: <https://hci.st/cs147L-26au-A0-survey>

Evaluation

- Test with real customers (participants)
 - w/ interactive prototype
 - low-fi with paper “computer”
- Low-cost techniques
 - expert evaluation (Heuristic Evaluation)
 - online testing



Wanderlust

AI Activity

How does AI impact us?

- Break into groups of 4-6 at each table
 - introduce yourself to the folks at your table
 - name, year, major, pronouns (if you want)
 - person with the longest first name will be the *notetaker*
 - shortest first name will be the *presenter*
- Questions to discuss on the next slide

How Does AI Impact Us?

- Q1: What is the role of AI in your learning? What should it be?
- Q2: What will the role of AI be in your career? What should it be?
- Possible topics to drive the discussion
 - How is AI *showing up* in your classes?
 - What is your *relationship* with AI tools?
 - How does it *help* your learning? How does it *hinder* your learning?
 - When do you *want* to use AI? When do you *not want* to use AI?
 - How do you see AI being used in the *workplace* & in your future *career*?
 - Is this use of AI in work *good*? *Bad*? *Mixed*? What are the *tradeoffs*?
- Presenters synthesize the highlights of the discussion on the sheet of paper at your table. (*No need to write names on it, but we will collect*)

Learning Goal of CS 147

*Learn to design, prototype, & **evaluate** UIs*

- Tasks, activities & practices of prospective users
- Cognitive/perceptual constraints affecting design
- Techniques for brainstorming, ideation & prototyping
- Methods for evaluating UI designs
- Importance of iterative design for usability
- Technology used to prototype UIs
- Developing design judgement under ambiguity

- *How to work together as a team*
- *Communicating results to a group*

Course Format

- Interactive lectures → you speak!
- Each week
 - 2 lectures on techniques & background
 - 60-80 minutes of lecture
 - 20-30 minutes team meeting each lecture → you need to be here to work with your team
 - 10-20 minutes for in class exercises
 - 1 studio with hands-on activity or team presentation
- Quarter-long project
- Readings, Videos, Podcasts
- Course material will be online
 - slides, exercises, readings, schedule
- Have fun & participate!

Projects

- Each team will propose a UI-oriented project
 - fixing something broken or a completely new idea
 - based on team *needfinding*
- Theme
 - each Thursday/Friday studio has a theme
 - all projects mobile/wearable/off desktop/AI
- Teams
 - 3-4 students to a team (4 much preferred)
 - work with students w/ *different skills*
 - CS majors should have had 142/193p/193a or equivalent
 - if not, take CS147L, learn ReactNative, dual use project for 147L/147
 - teams meet in class & studio weekly
- Cumulative
 - apply several HCI methods to one interface
- Teams create explicit agreements
 - If you let your team down, we will lower your grade

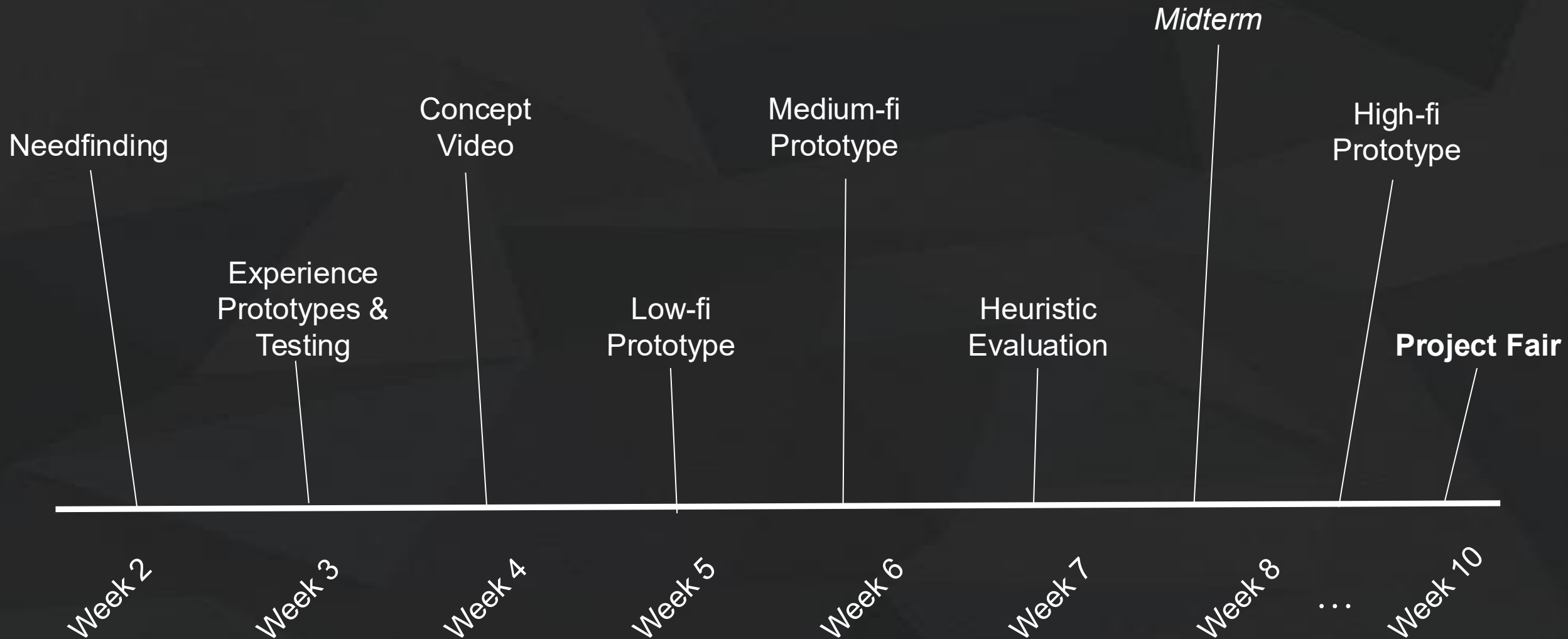


Design Studios

Teams attend small weekly studio (9-16 students)
-critique/feedback in more intimate environment



Project Process Timeline



Feeling uncertain in weeks 2-5 is expected & part of the learning process

CS 147 AU26 COURSE TIMELINE

- Lecture
- Studio (for most people)
- Special Event

WEEK 1

SUN	MON	TUE	WED	THU	FRI	SAT
20 SEP	21 No class	22	23 Intro Mixer 7-8 Studio preference form, due @ 8 PM	24 Design Discovery (Watch recording)	25 Design Project 0	26
Assignment 1 (Needfinding) released, due in studio 10/1 or 10/2						

*Team mixer this week

WEEK 2

27	28 Define	29	30 A1 Field Work *No Lecture	1	2 A1 Presentation, POVs	3
Assignment 2 (Define) released, due in studio 10/08 or 10/09						
Working on Assignment 1 (Needfinding), presented in studio 10/1 or 10/2						

WEEK 3

4	5 Ideate	6	7 Concept Videos	8	9 A2 Presentation, Tasks	10
Assignment 4 (Video) released, due in studio 10/15 or 10/16						
Assignment 3 (Website) released, final due 11/18 @ 11:59 PM						
Working on Assignment 2 (Define), presented in studio 10/08 or 10/09						

*Web Workshop this week

WEEK 4

11	12 Exploration	13	14 Early Stage Prototyping	15	16 A4 Presentation & Crit	17
Assignment 5 (Low-fi & Test) released, due in studio 10/22 or 10/23						
Working on Assignment 4 (Video), presented in studio for critique 10/15 or 10/16						
A4 Video Revisions (optional)						

*Figma Basics Workshop this week

WEEK 5

18	19 Visual Info Design	20	21 Film Fest!	22	23 A5 Presentation, Design Systems	24
Working on Assignment 5 (Low-fi & Test), presented in studio 10/22 or 10/23						
A4 Video Revisions						
Assignment 6 (Med-fi) released, due Monday 11/2 @ 5 PM						

*Design Systems Workshop this week

ASSIGNMENTS OVERVIEW

See corresponding colors on the calendar to see when these projects will occur during the quarter.

Assignment 1

Needfinding

In this assignment you will plan, develop, and execute the first needfinding round for your quarter-long team project. You will present your interview plan (methodology), data gathered from your initial interviews, and the key insights and inferences you have made. You will capture this analysis in an empathy map that you will share in your studio presentation.

Assignment 2

POVs and Experience Prototypes

You will revisit the findings from A1, interview more participants based on a deeper focus, and formulate points of view for your potential users. From there, you will craft several “How Might We” statements to frame the problem area and intended design goal. Based on the best HMW statements, you will brainstorm several solutions. You will then create and test 3 “experience prototypes” to learn more about these ideas.

Assignment 3

Website

The goal of this assignment is to learn how to present your work in a professional, engaging, and appealing manner. Previous students have used their websites to talk about their project when on the job hunt! Your website will be hosted on Stanford AFS.

Assignment 4

Concept Video

The goal of this assignment is to continue to learn how to brainstorm novel design ideas and turn these ideas into a concept video. You will start by conducting market research to find other apps in your space (ensure you’re thinking up a novel product). You will then shoot a video that will help you to learn how to both

Assignment 5

Low-fi Prototype and Usability Test

Learn how to use low-fi prototyping in the early stages of UI design. You will first sketch many different design realizations that will help you to learn how to both

Assignment 6

Interactive Medium-fi Prototype

Learn how to build medium-fidelity, interactive prototypes of UI ideas using an interactive UI design tool. Understand the tradeoffs compared to low-fi prototyping or even creating a prototype through coding. You will revise your UI ideas based on the insights from your low-fi prototype user testing and feedback from your studio peers and CA. Then, you will use interactive tools to

Assignments

- Individual
 - 1 presentation each
 - 2 written (handed in online)
 - class & studio participation (graded)
 - in class exit tickets to show you came to lecture & are paying attention
- Group
 - 10 assignments
 - 4-5 presentations with 3-4 write-ups + video + poster
 - all group work handed in online
 - team web site & online submission site

Grading

- A combination of
 - individual assignments & presentation (10%)
 - class/studio participation (10%)
 - midterm (20%) – *design knowledge & reasoning checkpoint*
 - group project (60%)
 - presentations/poster (group component for each)
 - project write-ups
- No final
 - **must be present at project fair on Friday 12/4 (6:00-9:30 PM)**

AI Policy

- Programming & creative industries have been increasingly adopting generative AI
- AI tools inhibit learning by undermining the **struggle & effort** it takes to learn a skill
- AI Policy: There will be a limited use of AI in this class. **We will make the AI policy clear in each assignment.**
- These restrictions preserve the *productive struggle that builds core design skills*
- We understand that the line can be fuzzy as to what counts as an AI tool these days, so reach out to the staff if you have any questions about the AI policy

Tidbits

- Late Policy
 - no lates on group assignments
 - individual assignments lose one letter grade/day
- Course web site
 - <http://hci.stanford.edu/courses/cs147/2026/au/> or cs147.stanford.edu
- Studio time preferences & team signups (you do **not** need a team in advance, we can assign you!)
 - form will be due Wed at 9 PM
 - hci.st/courses/cs147-26au-studios

Tidbits

- Team Mixer
 - Wed. in CoDa E160 from 7-8 PM. Meet people. *Eat pizza*. Find a team?
- OAE Letters
 - Send to landay@stanford.edu & ayc@stanford.edu within first 2 weeks of class
- Attendance
 - you are expected to be in lecture & studio in person
 - If you have a small conflict (less than 30 min), we will consider how to resolve it
 - fill out hci.st/cs147-26au-conflict for us to review & approve conflicts
 - studio misses
 - drop 1st miss w/ **pre-approved** excuse,
 - drop 2nd **pre-approved** miss w/ makeup assignment
 - *after that it comes out of your participation grade*
 - if you get sick, we will figure it out. Contact me & our co-instructor (Alan)

Laptop & Phone Policy

- We do not allow laptops or phones to be on in front of you during lecture (except during team break or when asked to do surveys / team exercises)
- This policy starts on Monday
- Policy is based on careful research on the negative impacts of screens on both student learning & the learning of neighbors in class
 - readings
Carter, S.P., Greenberg, K., and Walker, M.S. (2017). [Should Professors Ban Laptops? How classroom computer use affects student learning](#). *Education Next*, 17(4), 68-74. (due for Wed.)
 - optional readings
Adrian F. Ward, Kristen Duke, Ayelet Gneezy, and Maarten W. Bos (2017). [Brain Drain: The Mere Presence of One's Own Smartphone Reduces Available Cognitive Capacity](#). *Journal of the Association for Consumer Research*, 2(2), 140-154.
- Email Alan and I if you need an exception based on OAE or other important reason
 - teaching staff will decide on a case-by-case basis & may speak to you further
- Notetaking alternatives
 - write on paper (studies show you learn more as you process the info)
 - write on a tablet (e.g., ReMarkable or iPad – useful for design sketching as well)
 - just listen and review slides after class (posted by ~6 PM on lecture days)

Summary

- UX design is an important part of most software
- Getting the interface right is hard, but...
- Solution is *Iterative Design* including repeated cycles of
 - Design
 - Prototyping
 - Evaluation

Next Time

- Watch Design Discovery Lecture Before Friday Studio
 - <https://hci.stanford.edu/courses/cs147/2026/au/lectures/02-design-discovery.mp4>
- Read Before Studio Friday
 - Holtzblatt & Beyer, Ch. 3 from Contextual Design
 - d.school's Empathy Fieldguide
 - Carter, S.P., Greenberg, K., and Walker, M.S. (2017). Should Professors Ban Laptops? How classroom computer use affects student learning. *Education Next*, 17(4), 68-74.
 - optional: Holtzblatt & Beyer, Contextual Design, In *The Encyclopedia of Human Computer Interaction*, 2nd Ed.
 - If any readings are password protected, it should be “hcid”
- Watch Before Studio Friday
 - ABC News Nightline IDEO Deep Dive, July 1999 (22 minutes)
 - optional: ABC News, IDEO Design Thinking, January 2013 (13 minutes)

Next Time

- Lecture Monday
 - Define: unpacking needfinding results to define problem/domain of interest
- Read Before Lecture Monday
 - *Tips for Working Successfully in a Group* by Randy Pausch
 - *The Discipline of Teams*, by Katzenbach and Smith, Harvard Business Review
 - *How to Survive a Critique: A Guide to Giving and Receiving Feedback* by Karen Cheng
- Listen
 - *Invisible Women, 99% Invisible, Episode 363* (39 minutes)