MOON CHO

MDES 2023 PORTFOLIO

Hi👋 I’m Moon.
I’m a 💫 multidisciplinary ✨ product designer.

Berkeley
UNIVERSITY OF CALIFORNIA

Master’s @UC Berkeley
College of Engineering
Major in HCI & HCD

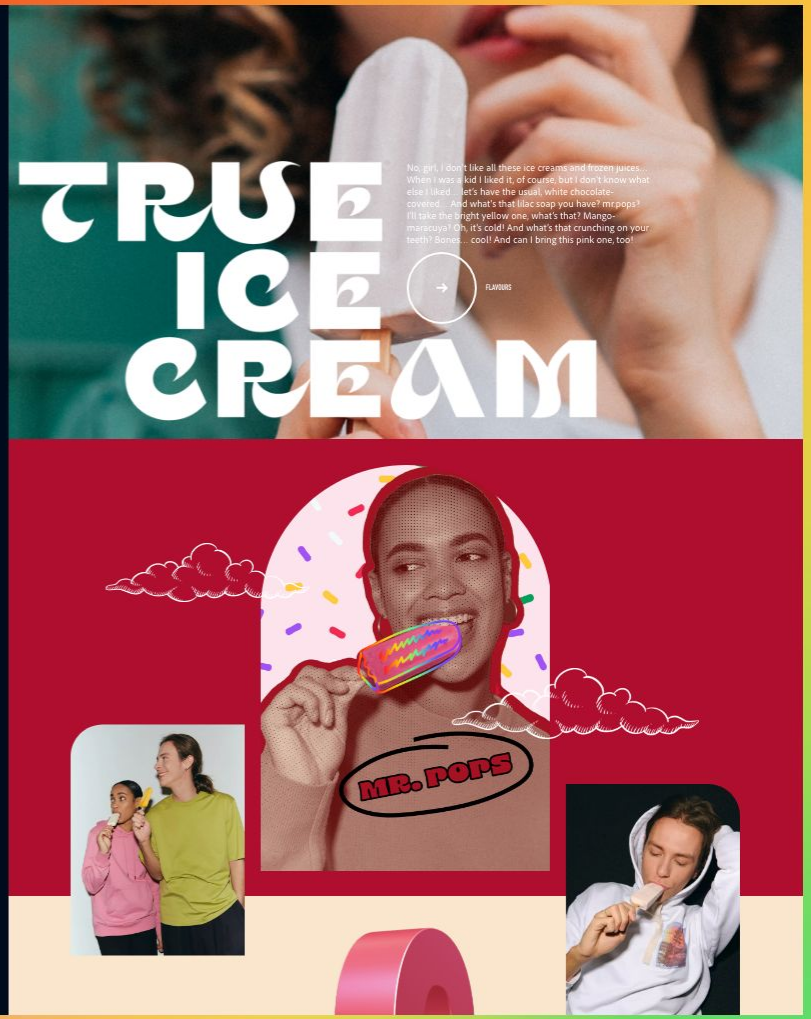
UX Design @Adobe
Design new GenAI features
for Adobe Express

Digital Design @Bandujo
4+ years, leading digital design
for JPMorgan Chase

Adobe Creative Cloud Express

Interoperability + creative expression for web content

Moon Cho
Experience Design Intern
Authoring Design team at Adobe Express



Overview

ROLES
Experience Design intern for Adobe Express

RESPONSIBILITIES
User research: competitive analysis, user interviews, task analysis
UX design: brainstorming, design iterations of low&high fidelity wireframes

DURATION
May 2023 – August 2023 (12 weeks)

PROJECT SCOPE
MVP and fast-follow work (P0-P1)
Blue-sky concept (P2-P3)

TEAM
Authoring design team
Manager: Mila Levkovsky
Mentors: Lilian Lin, Kathie Xiao

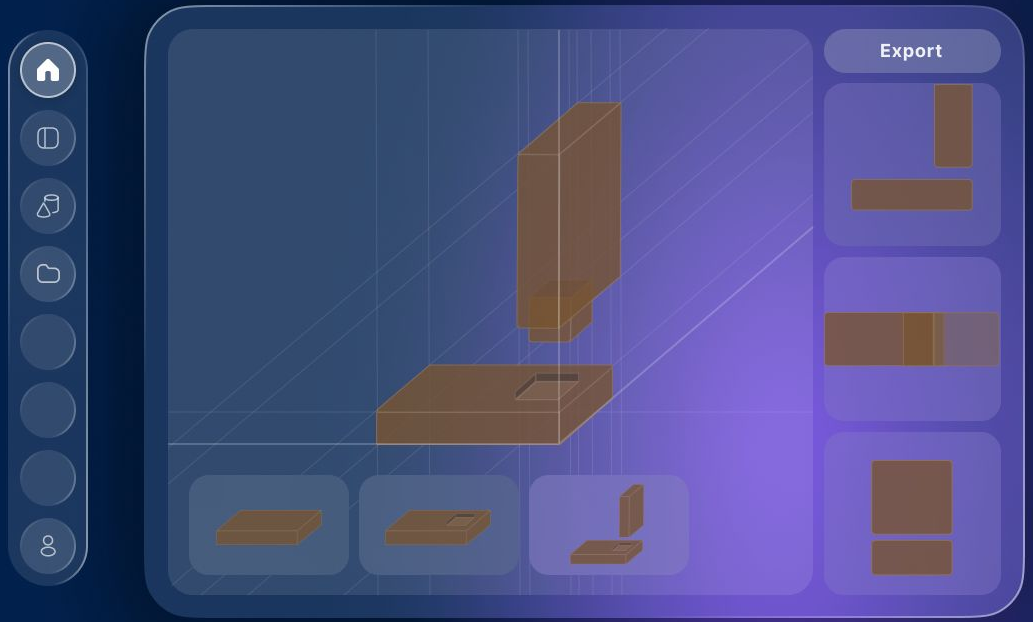
OUTCOME
- Shared with leadership
- Influenced the future vision of the product
- Impacted the strategic planning of resources and investment for the future framework

Contact me if you’re interested!

The project is under NDA, so it cannot be shown or described to public in detail.

VR prototyping tool

Design an intuitive virtual prototyping tool for non-professional furniture designers



Overview

PROJECT TYPE

Academic project, VR product development

DURATION

Oct 2022 - Dec 2022 (3 months)

TEAM

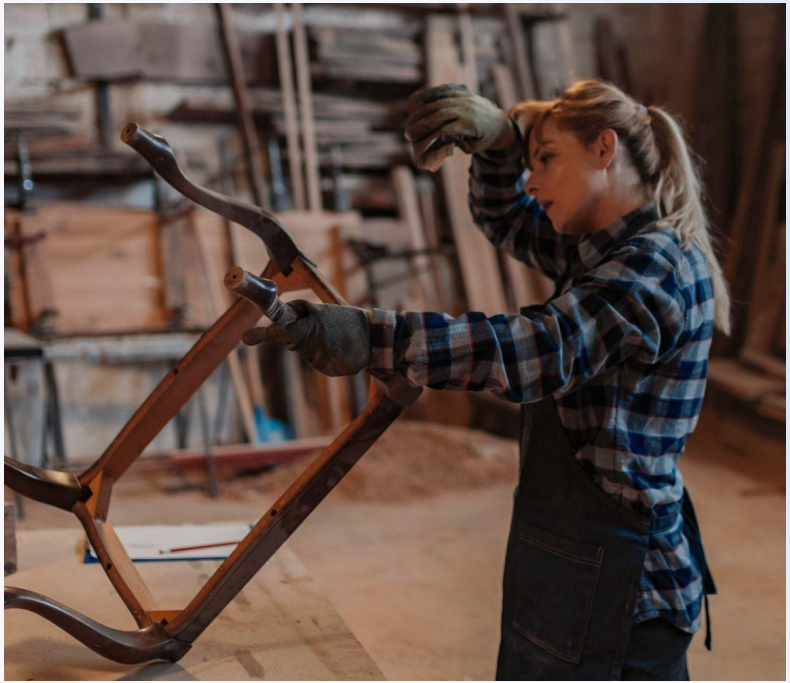
- **Product designer: Moon Cho**
- Engineer: Aaron Li, Nian Tong
- PhD Mentor: J.D. Zamfirescu-Pereira

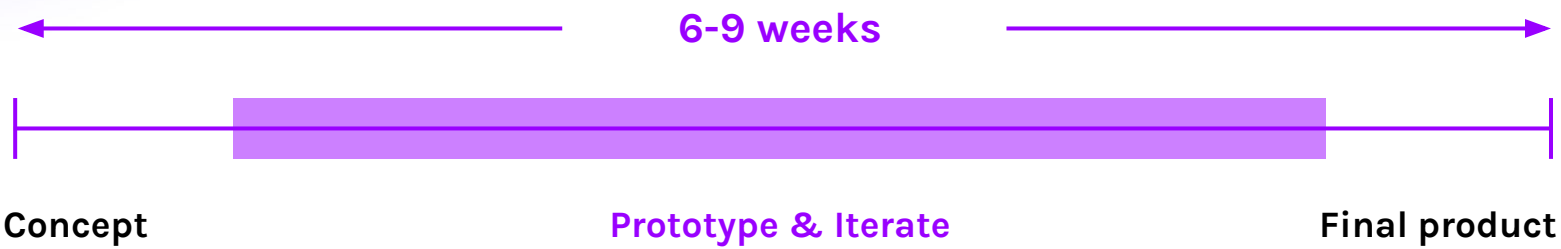
MY CONTRIBUTION

- UX Research
- UX Design
- VR Interface Design

Who is our target user?

Non-professional **furniture designers** who **prototype** with raw materials and tools to test and improve their design




6-9 weeks
Concept
Prototype & Iterate
Final product

What’s the problem?

Workspace, budget, and safety limitations in physical prototyping hinder **effective evaluation** in furniture design, and screen-based prototyping **lacks** real-scale visibility.

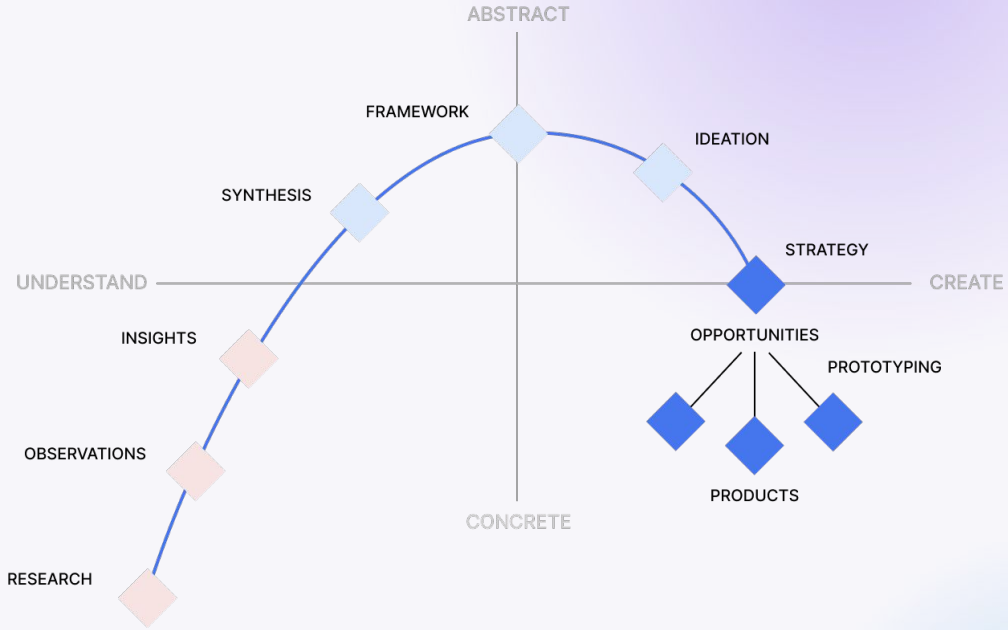
What’s the goal?

Develop a **user-friendly** and **intuitive** prototyping tool to accelerate the furniture design process.

How might we make furniture prototyping more accessible and intuitive for non-professionals?


FLARE
FOCUS
DISCOVERY + SYNTHESIS
FLARE
FOCUS
IDEATION + SELECTION
FLARE
FOCUS
PROTOTYPING + TESTING
FLARE
FOCUS

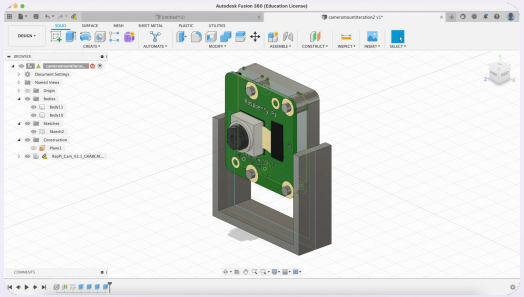
Problem-solving strategy



Identify problem areas

Physical tools & makerspaces

- Materials
- Hand tools
- Power tools



Screen-based software

- 3D CAD
- 3D computer graphics

Virtual Reality software

- 3D design
- 3D sketch

Conduct user interview to understand pain points and needs

"

Working with power machines is **daunting**. It requires significant **training** and **experience** to avoid accidents, making it stressful.

Tyshon
Physical prototyping

"

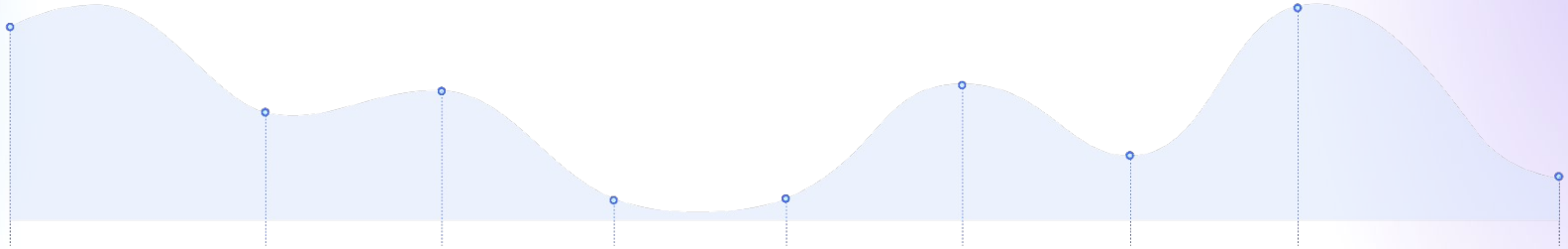
It's frustrating when CAD software fails to offer a sense of **real perspective and scale** on screen, making it hard to visualize the final product.

Grace
Digital prototyping

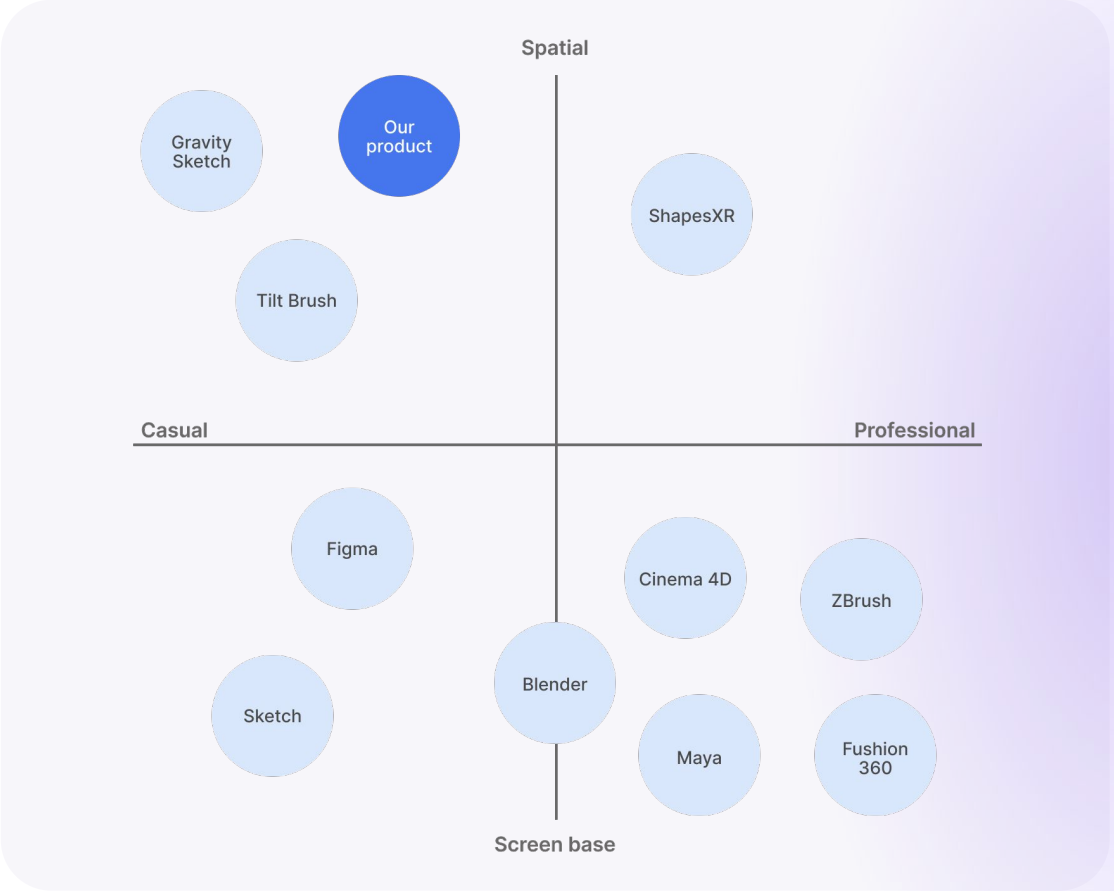
"

I don't prototype personal projects because I **lack access** to a maker space or workshop with raw materials and tools.

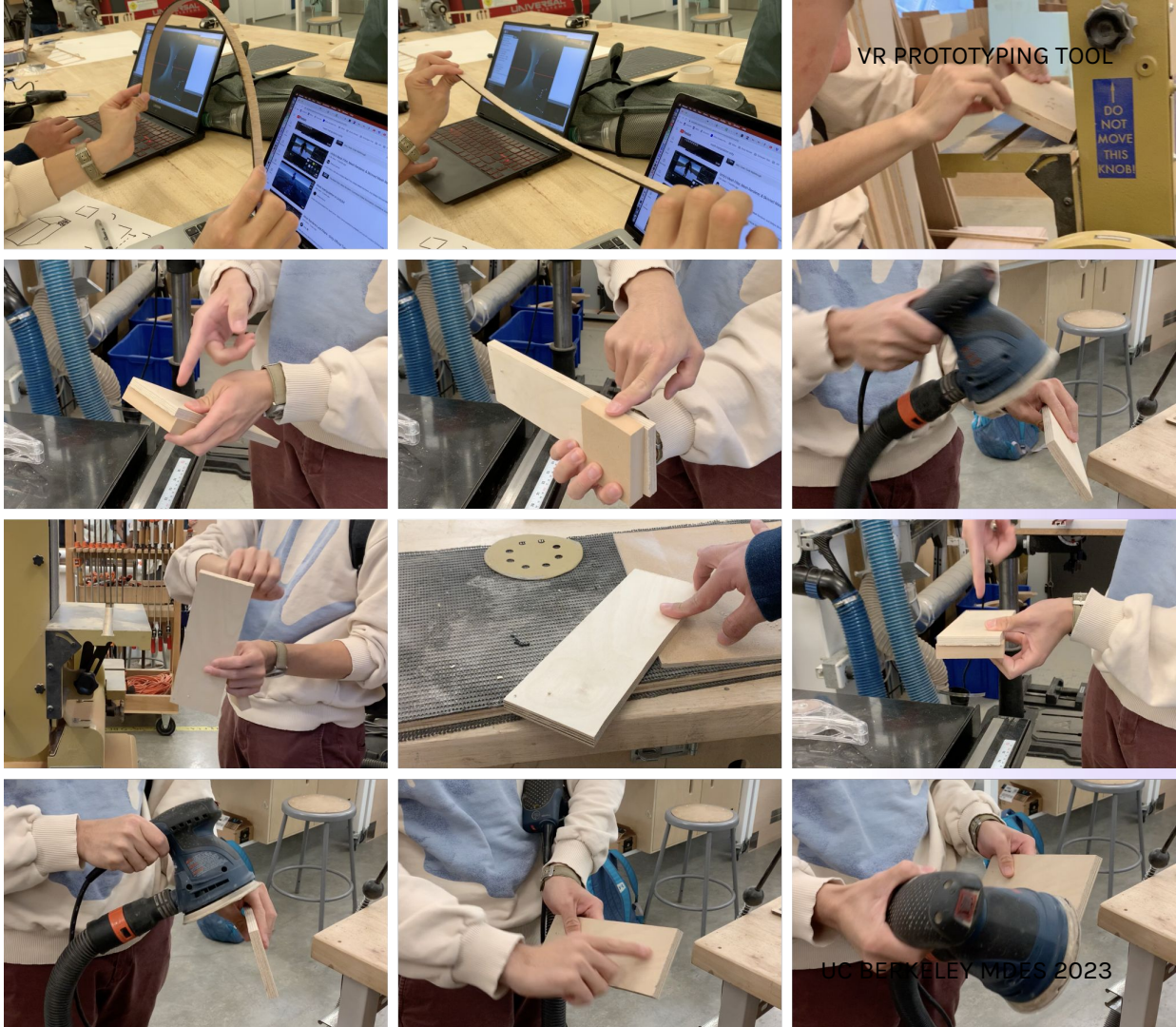
Alex
General prototyping

STAGES	PRODUCT DEFINITION & CONCEPT FEASIBILITY			TEST USABILITY & ITERATED DESIGN		TEST FUNCTIONALITY & ITERATE PROTOTYPE		IMPLEMENT	
OBJECTIVES	Generate a product idea	Create an initial design	Validate/ Verify	Physical prototype	Review results of prototype	Re-design in 3D CAD	Re-validate/ Re-verify	Produce a final design	Test a product
THINK & DO	• Come up with an idea what product I want to make. • Is it a product what user will need? • How can I make the product in reasonable cost with best quality? • I need to check the feasibility of my product and I need to compromise my idea. • What should I consider for before execution of my product?	• Create the initial design by drawing a sketch on sketchbook. • How can I sketch from scratch? • Does my sketch describe the concept of my product visually well? • My drawing and sketching are hard to understand • It is confusing to think beforehand and plan ahead. • I want to determine exact demension of my product.	• Check the initial design for functional correctness. • How big this product will be? • How many tools and materials do I need for creating this product? • Is it going to work or not? • Where can I buy tools and materials? • Where can I make a prototype? I have no access to work space. • What is a better shape and appearance for this function?	• Create a physical prototype of the design and test the functionality of the design. • It is hard to design specific point for join together. • It is challenging to bring all parts together and assemble them. • I prefer to use cardboard and foamboard because they are cheap and easy to make. • I feel I need more training and experience to use power tools. They are so scary.	• Identify whether the design functions as expected and identify any issues raised and/or problems with the design that need to be resolved. • First time never succeeded. I need to buy materials again to prototype again. • I tried multiplied times, but I don't like it at all. • I'm continuously finding the weakness of my product.	• Based on the issues and problems identified, undertake a product redesign to address them in 3D CAD. • It is hard to get real interaction with bending materials and not giving me intuitive feedback. • It is hard to imagine curve surface in different angles. • How can I set constraints correctly in CAD? • I feel huge learning curve in the software. CAD software is difficult to navigate.	• Check the new product design for functional correctness. • How can I imagine real scale of my product? • There's no physical collision on the screen, so it is difficult to validate its functionality. • It is hard to test and take their feedback of physical interaction. • Why do 3D printing pieces not fit together? It's troublesome to print and retest.	• Once the design has been passed as functionally correct, then it is produced with actual materials and tools. • Is every materials and tools ready for final production? • This is the last time I can make any mistake before producing the final product. • I should have been more conscious and prepared for making things. • If I make any mistake at this stage, it will cost a lot.	• The final product is tested to identify any failures created by the production process. • How can I improve it more? • I should double check if my final product is produced exactly what I wanted • Does my product function correctly? • Is it ready to submit or give it to user?
FEEL	• Excited, motivated, full of drive, confident, calm	• Little confused, dispirited, wondering	• Worried, concentrated	• Afraid of getting hurt, fear of cutting myself, disapointed of result	• Dissatisfied with the prototype, feel overwhelmed by time-consuming, annoyed	• Tired of multiple iterations, challenged in nagivating software	• Annoyed, tired, uncomfortable with getting feedback	• Excited but anxious, uncertain and exhausted	• Fullfillmet and feel satisfied on the final product
EMOTION FLOWS									
PAIN POINTS	Lack of motivation and hard to overcome laziness.	Lack of confident in hand drawing and sketching.	Hard to plan ahead what materials and tools to buy and how it will function.	Have fear of getting hurt and stress of workshop training.	Lack of materials and tools. Limited access to enough scale of work space.	Hard to navigate in CAD software and see real scale of the product.	Hard to get intuitive feedback.	Tired of time-consuming multiple iterations.	Less satisfied because of lack of prototyping iterations.

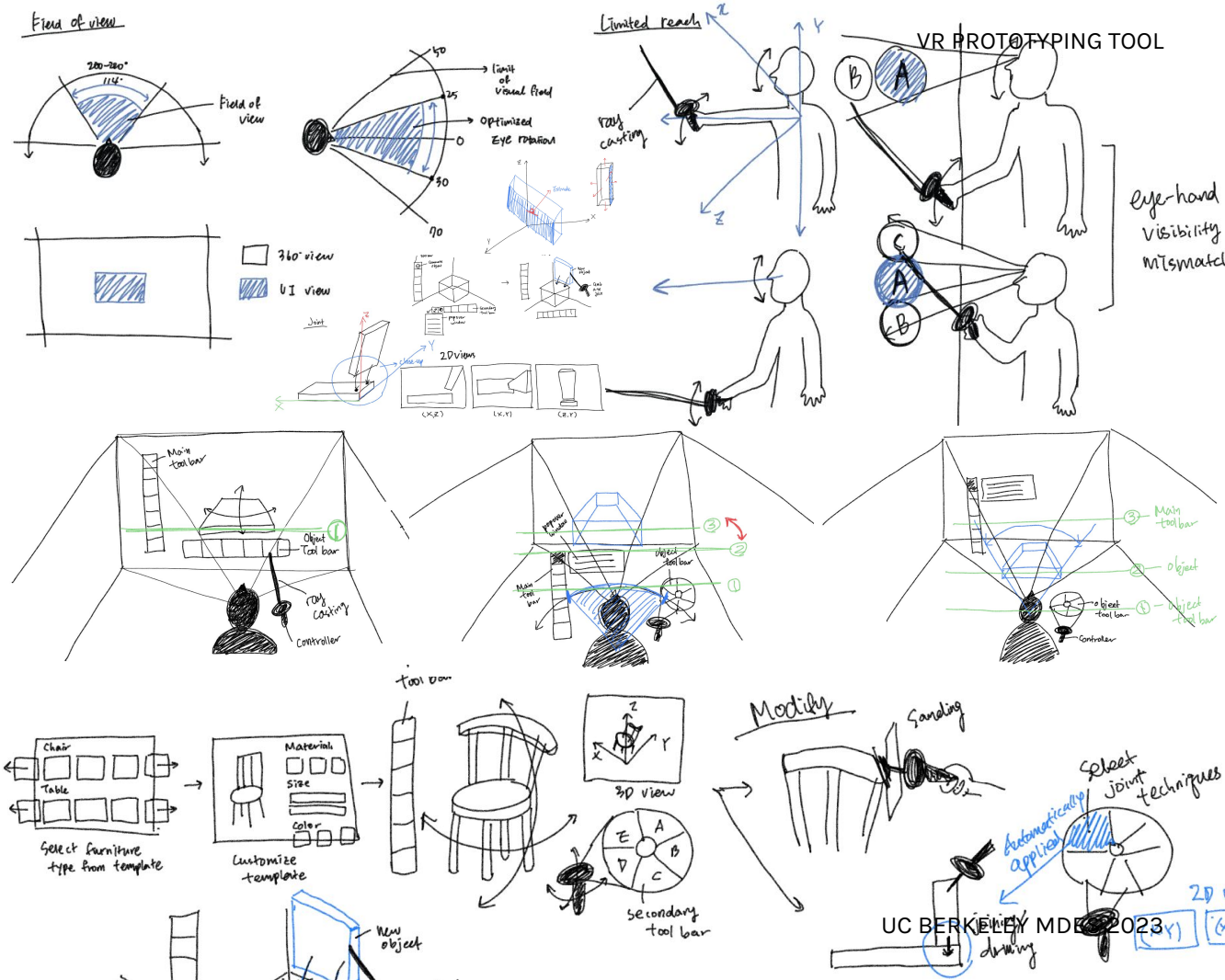
Differentiate our product from competitors

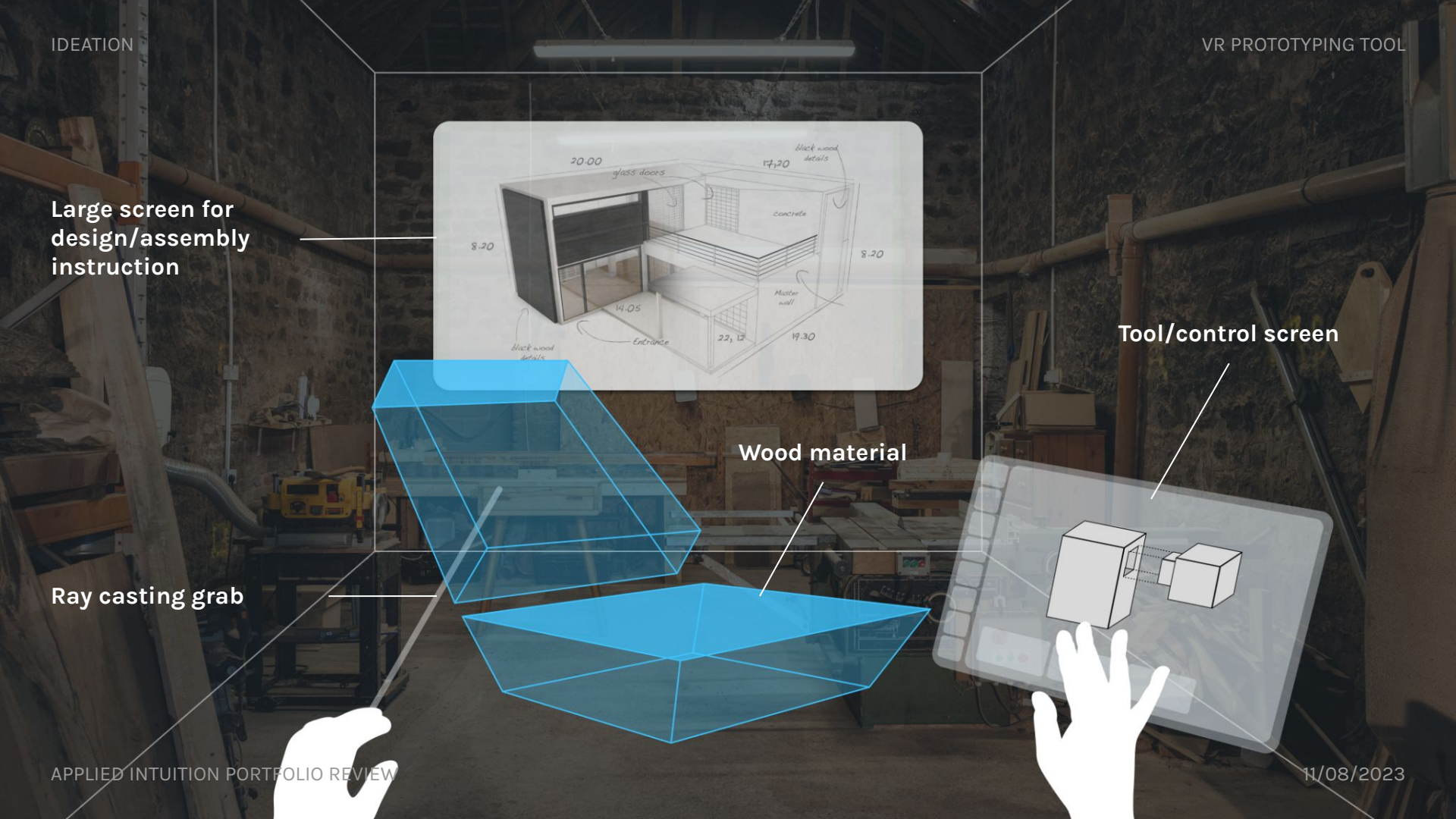


Understand user's behavior & analyze its pattern



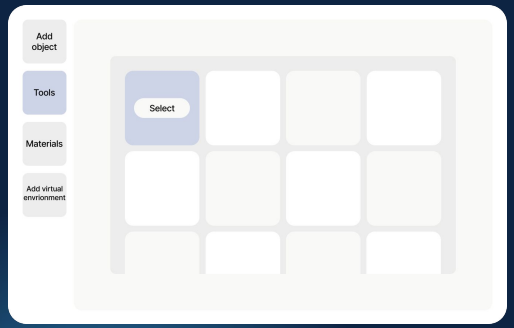
Apply findings to the product ideation



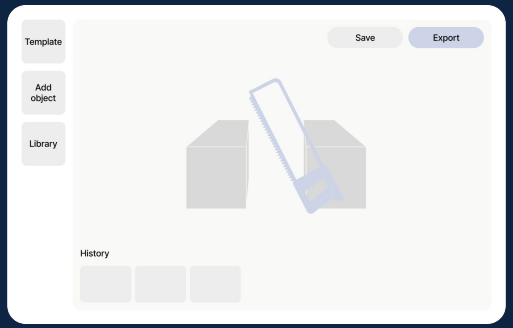

Large screen for design/assembly instruction
20.00
glass doors
17,20
black wood details
concrete
8.20
8.20
14.05
Master wall
entrance
22, 12
19.30
black wood details
Wood material
Tool/control screen
Ray casting grab

Process overview

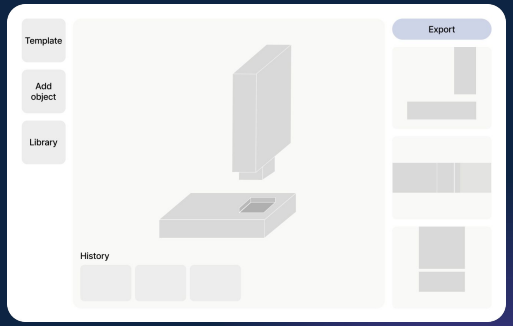
1st prototype
“Too complex”



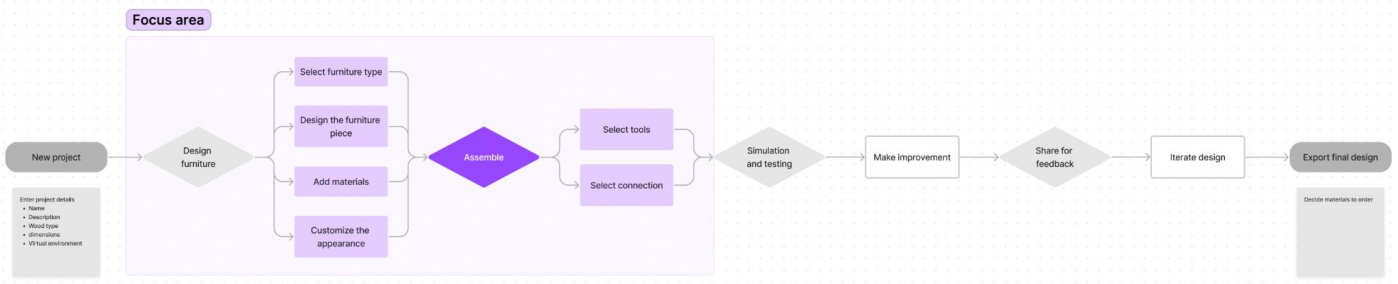
2nd prototype
“Disoriented perspective”



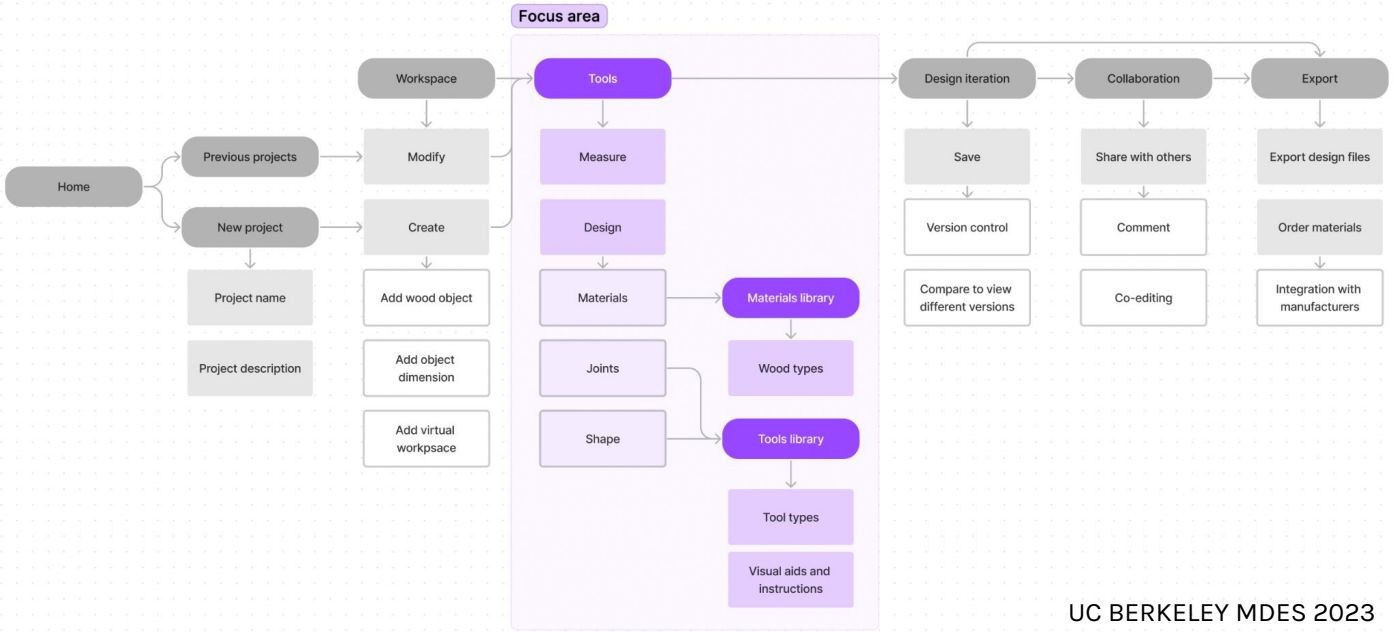
3rd prototype
“Simple and intuitive!”



User flow

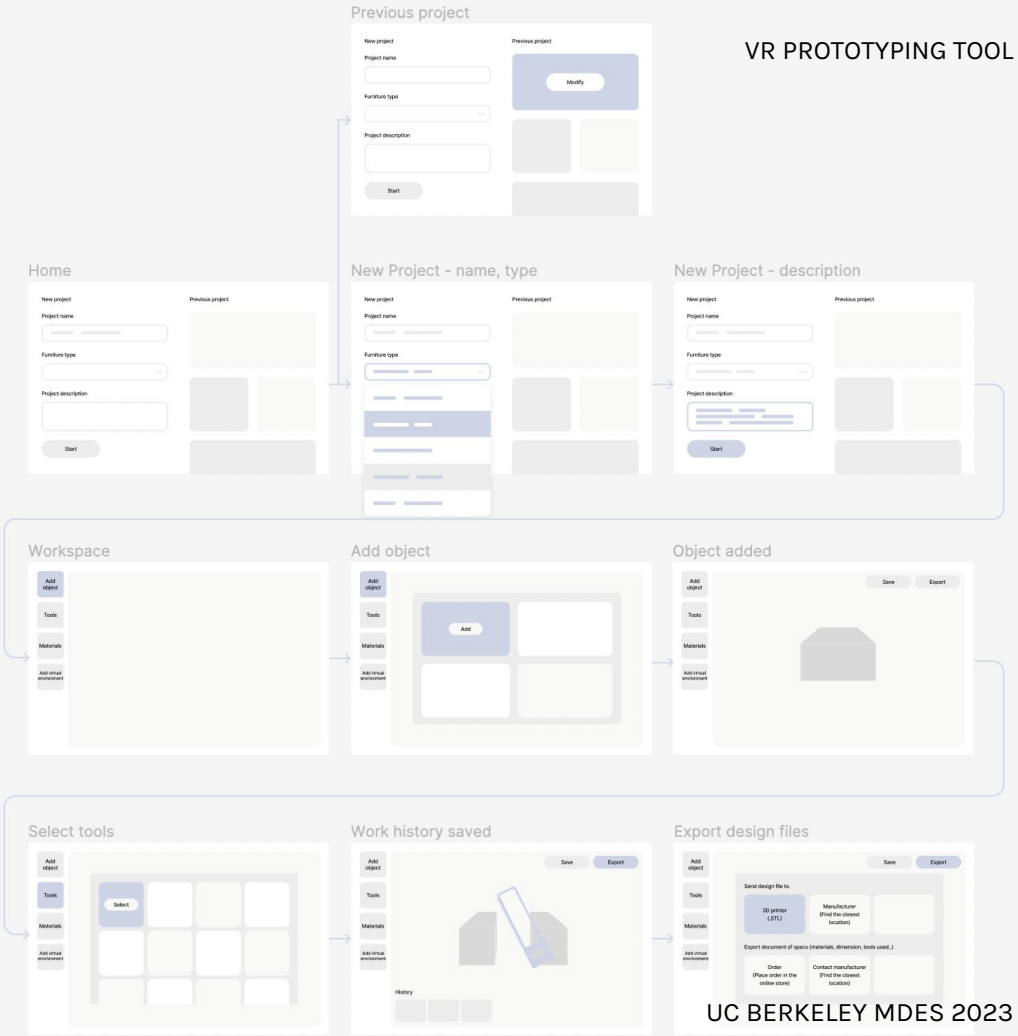


Information architecture



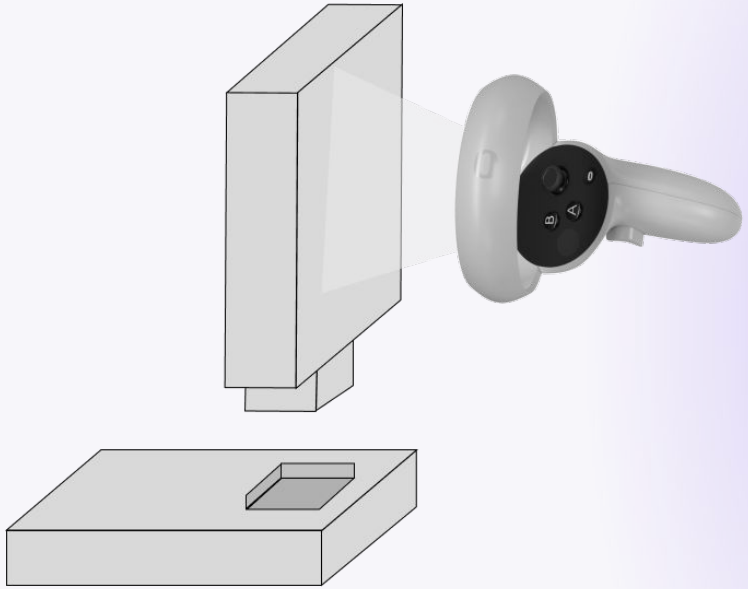
Version 1.0

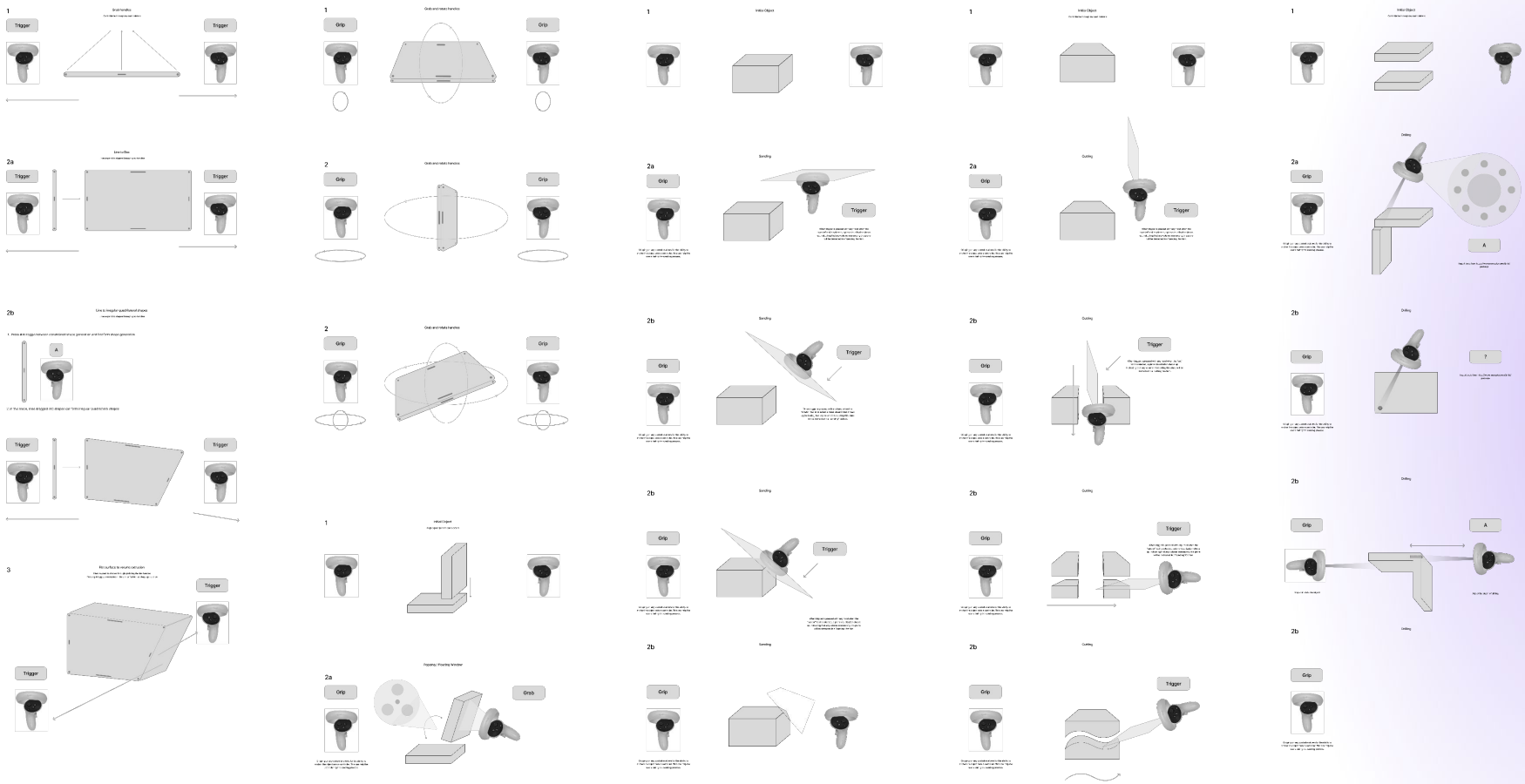
Mid-fi prototype of user interface



Version 1.0

Prototype user interaction with ray cast handles




1
Trigger
Trigger
2a
Trigger
Trigger
2b
A
Trigger
Trigger
3
Trigger
Trigger
1
Grip
Grip
2
Grip
Grip
2
Grip
Grip
1
2a
Grip
Grab
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Trigger
2a
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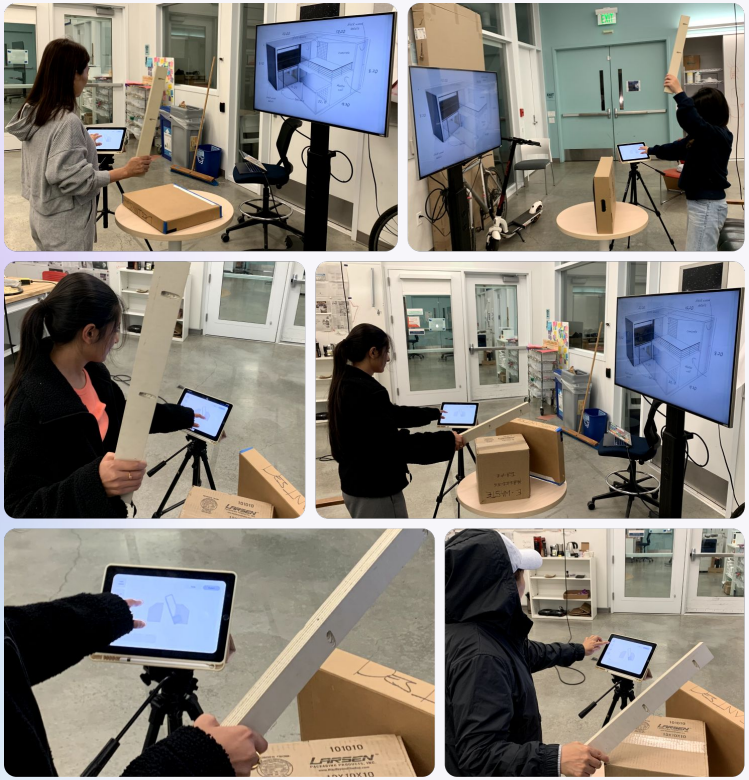


Positive feedback

“The transition to 3D prototyping in a virtual space is **so much faster**, saving a lot of time”

“I love the idea of an **infinite workspace** for creative experimentation.”

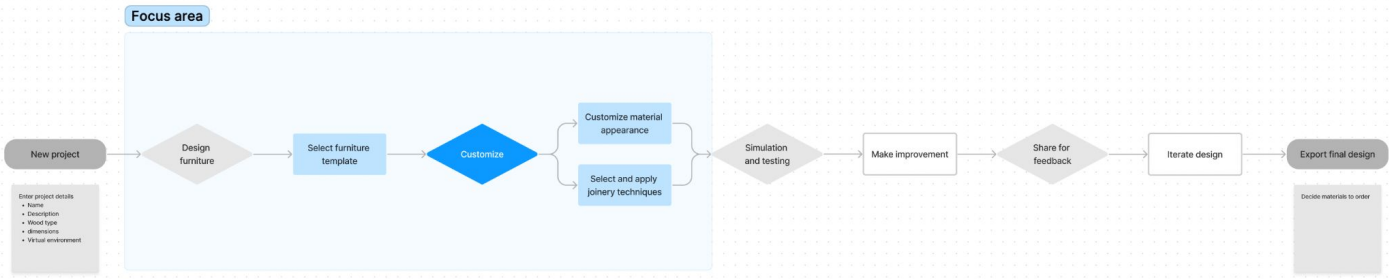
Improvements

"It's really hard to control the tool; the assembly process felt **overly complex**."

"I found it **challenging to navigate** the specific tools and materials I needed”

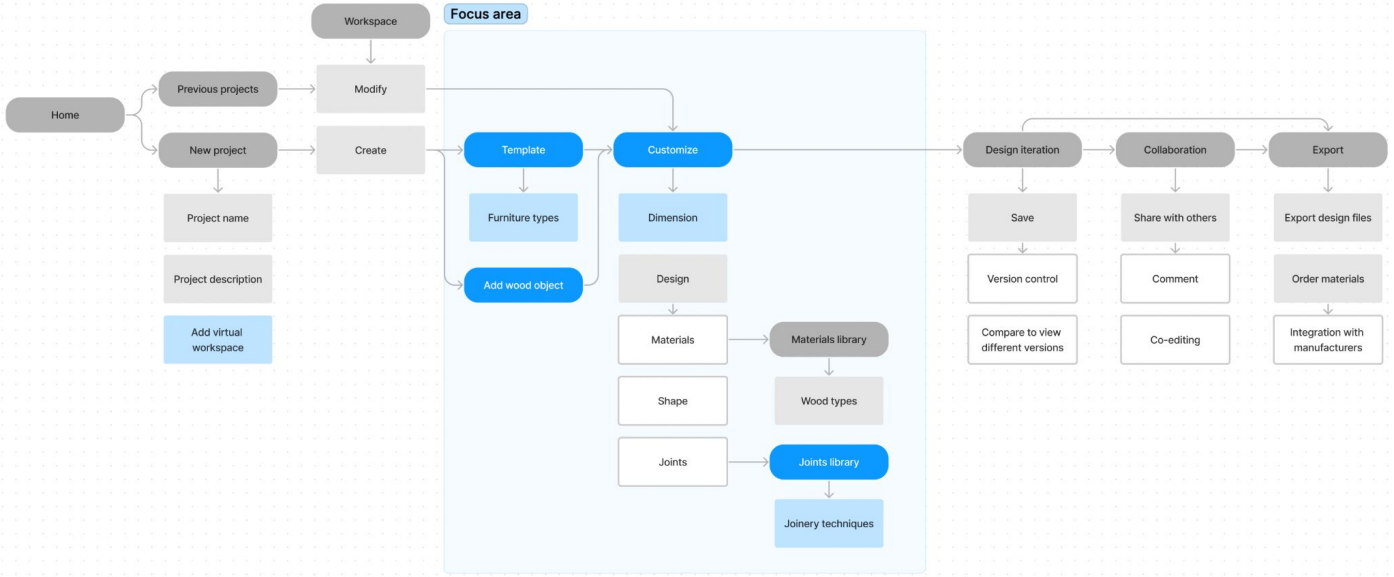
Redefined

User flow



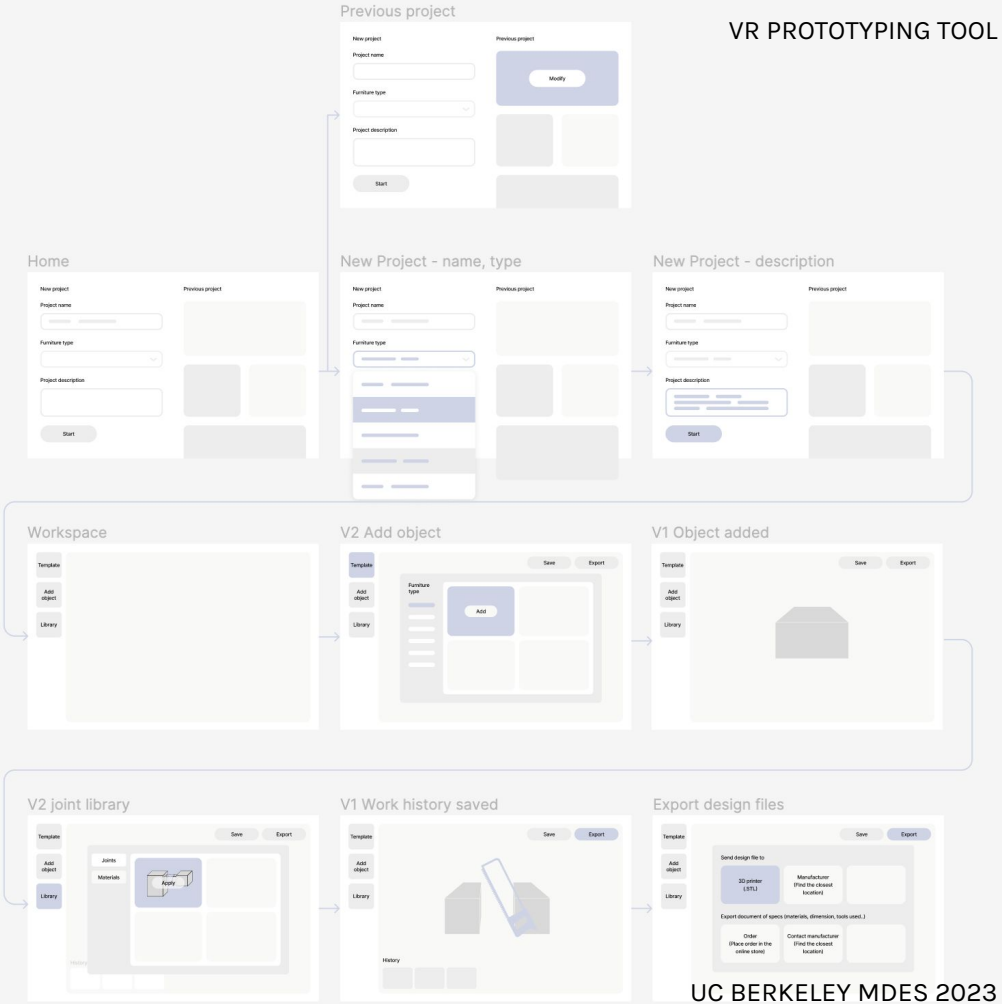
Redefined

Information architecture



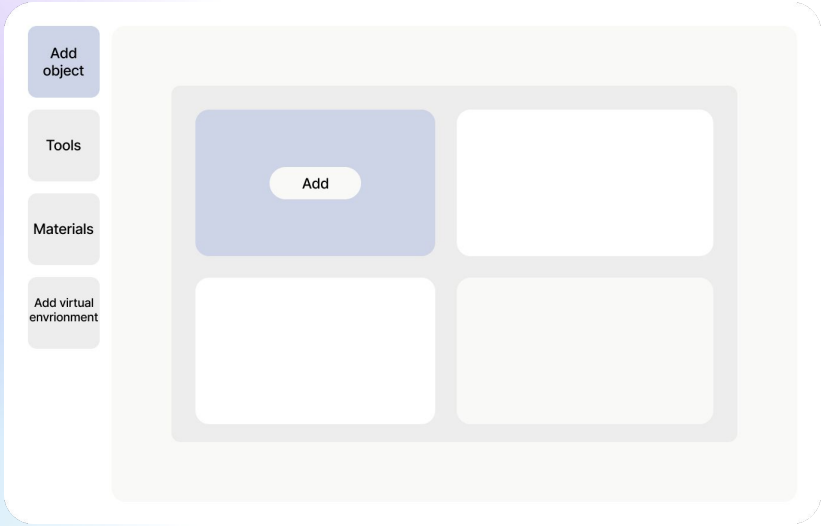
Version 2.0

Iterate design based on user's feedback



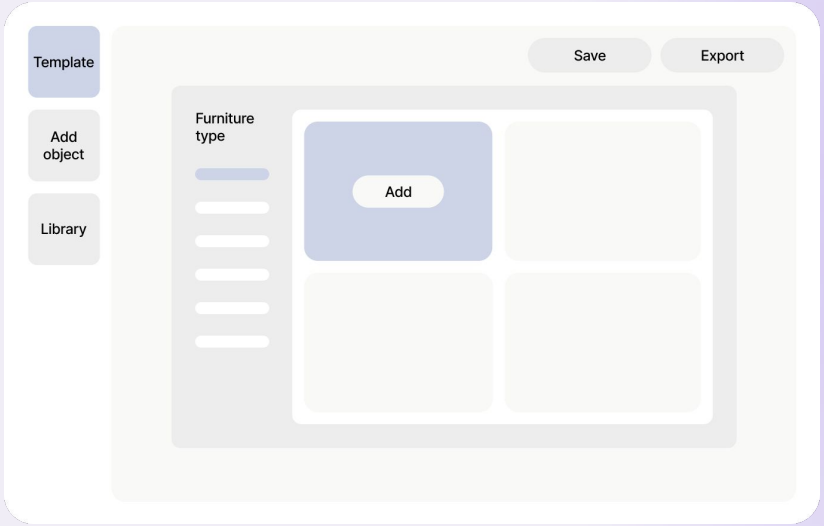
V 1.0

Start from scratch. Add wood assets to the workspace.



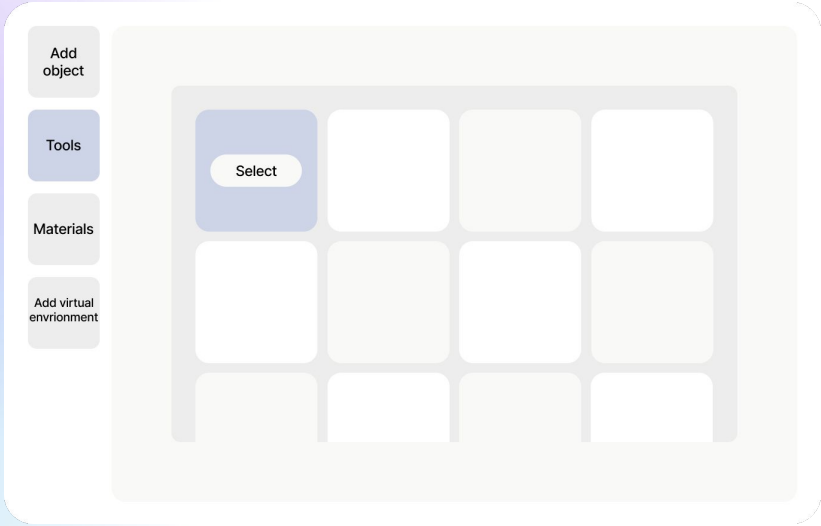
V 2.0

Start from a template. Select a template of furniture and customize it.



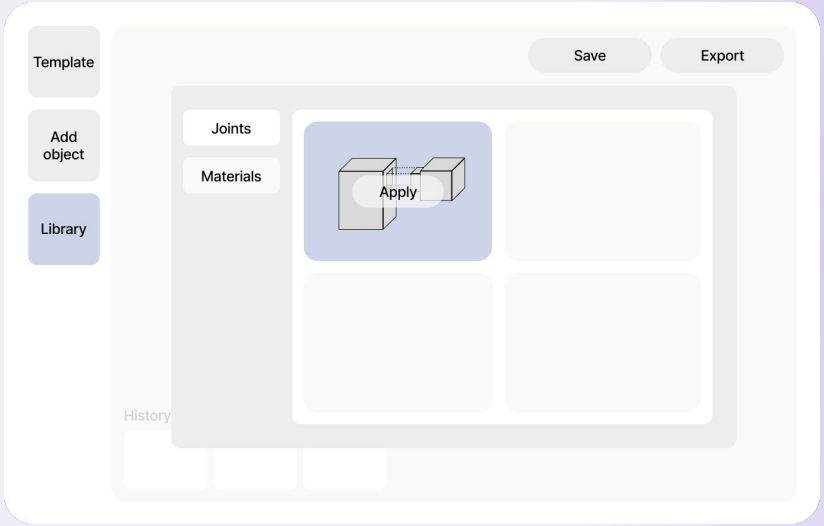
V 1.0

Select a tool to assemble assets.



V 2.0

Select joints techniques and materials from library.



Positive feedback

"Customizing the design templates is a breeze; I **no longer struggle to find** specific tools or materials."

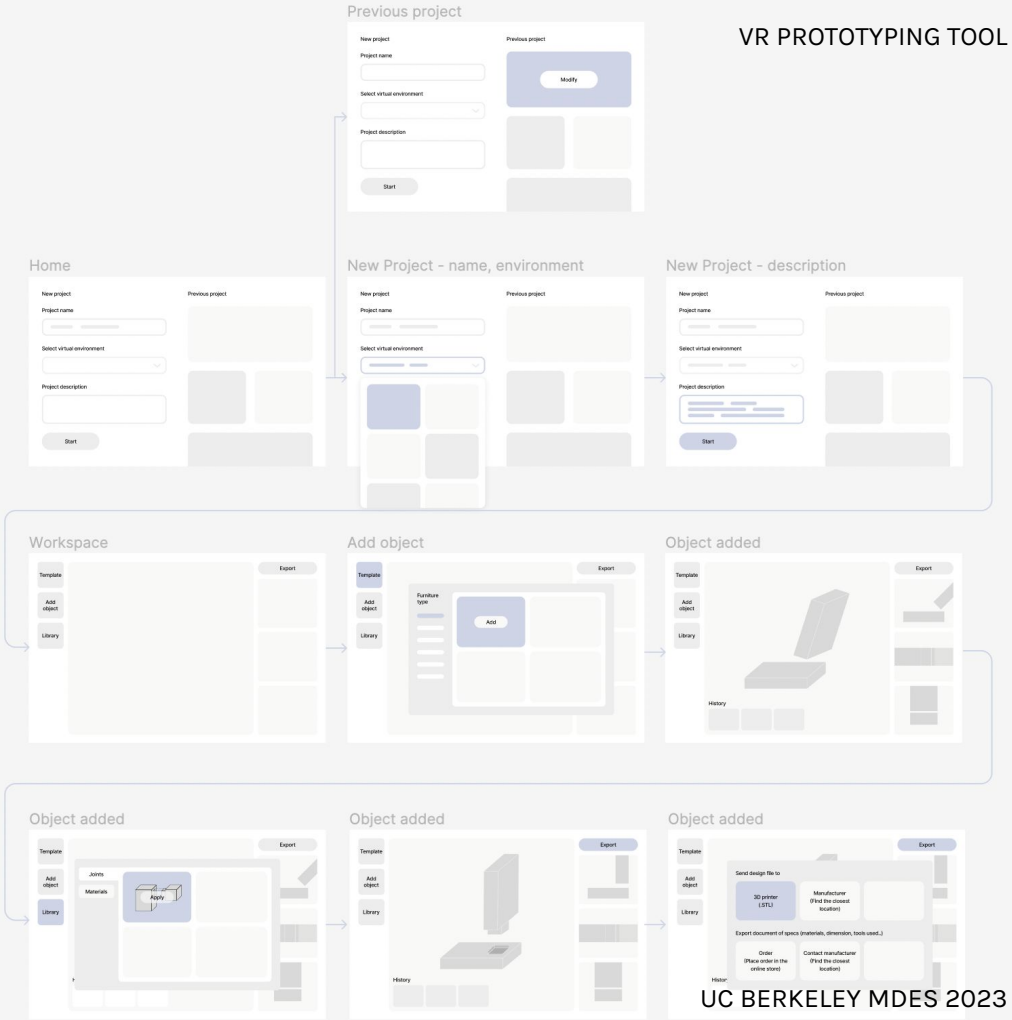
Improvements

"While the join techniques template is helpful, I'd like a **more intuitive way** to see the input and output, especially for complex designs."

"Rotating objects to view different perspectives can be **disorienting**; a fixed, assistive master view would be helpful."

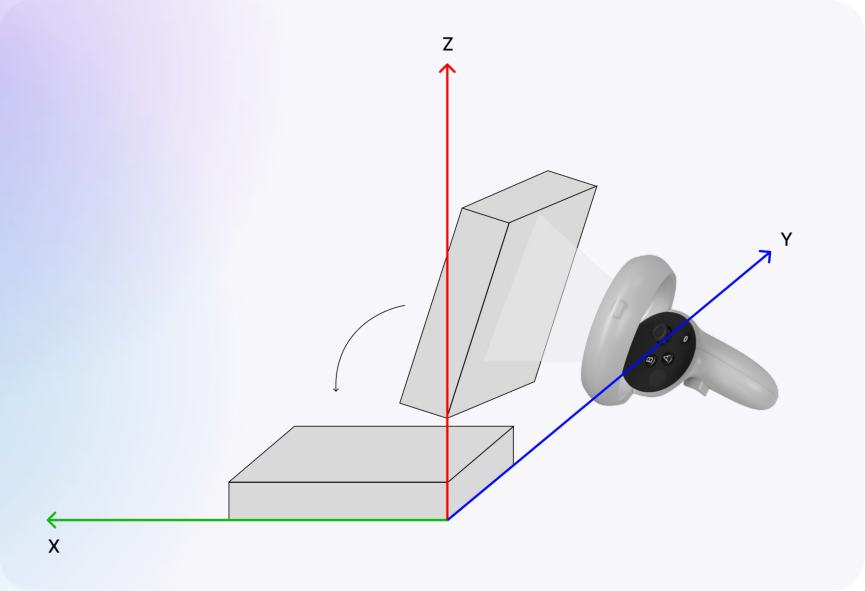
Version 3.0

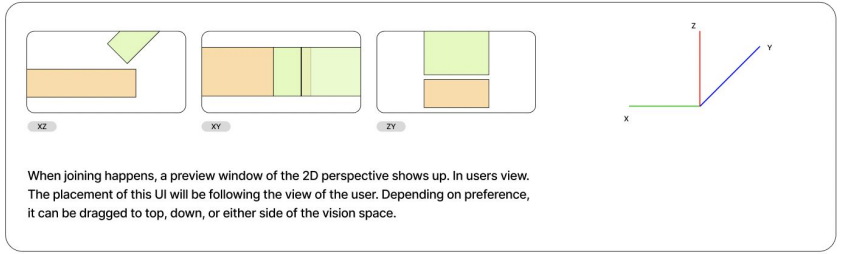
Iterate design based on user's feedback



Version 3.0

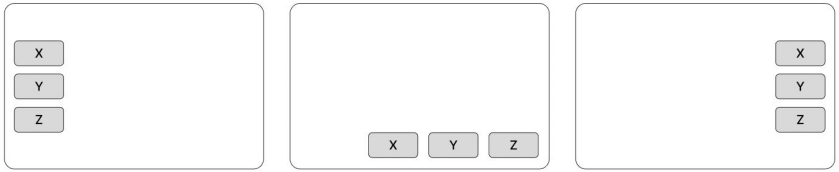
Add 2D perspective preview



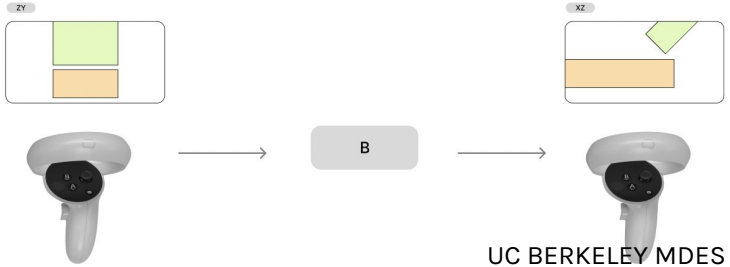


When joining happens, a preview window of the 2D perspective shows up. In users view. The placement of this UI will be following the view of the user. Depending on preference, it can be dragged to top, down, or either side of the vision space.

Alternative Preview Window Arrangements

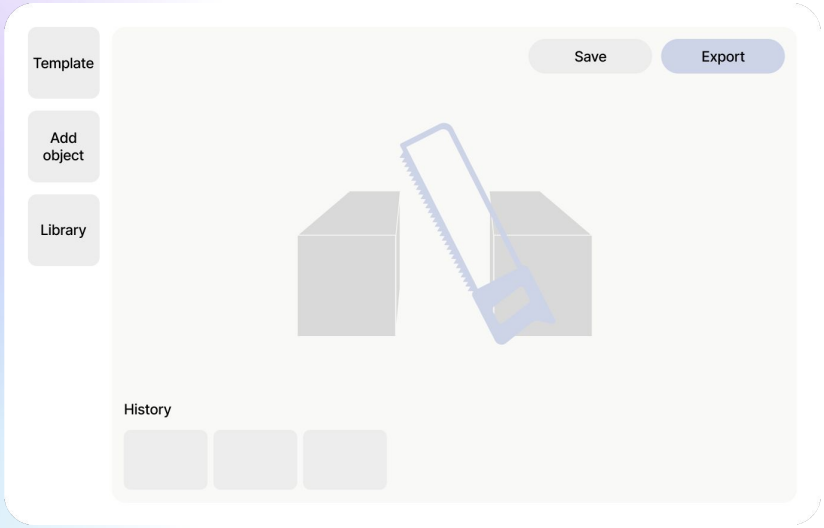


Alternatively, this preview could also be attached(floating) next to the controller. Users can flick between the views by pressing **B**.



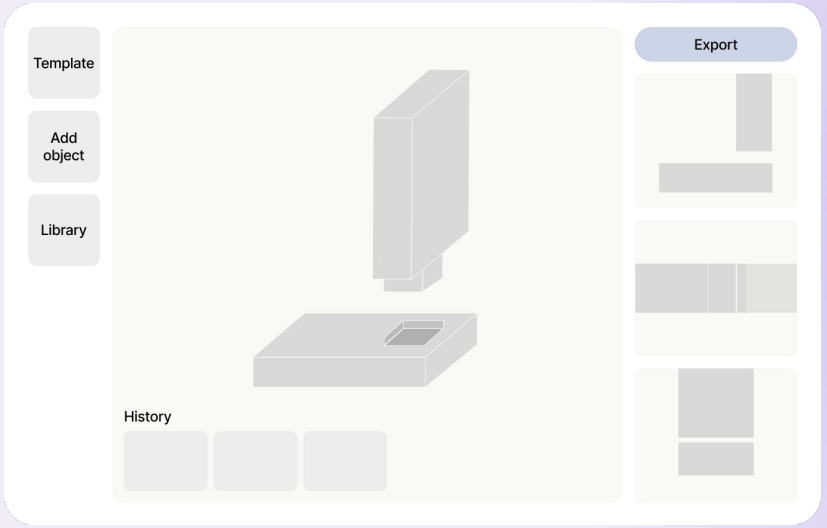
V 2.0

One window. One perspective.



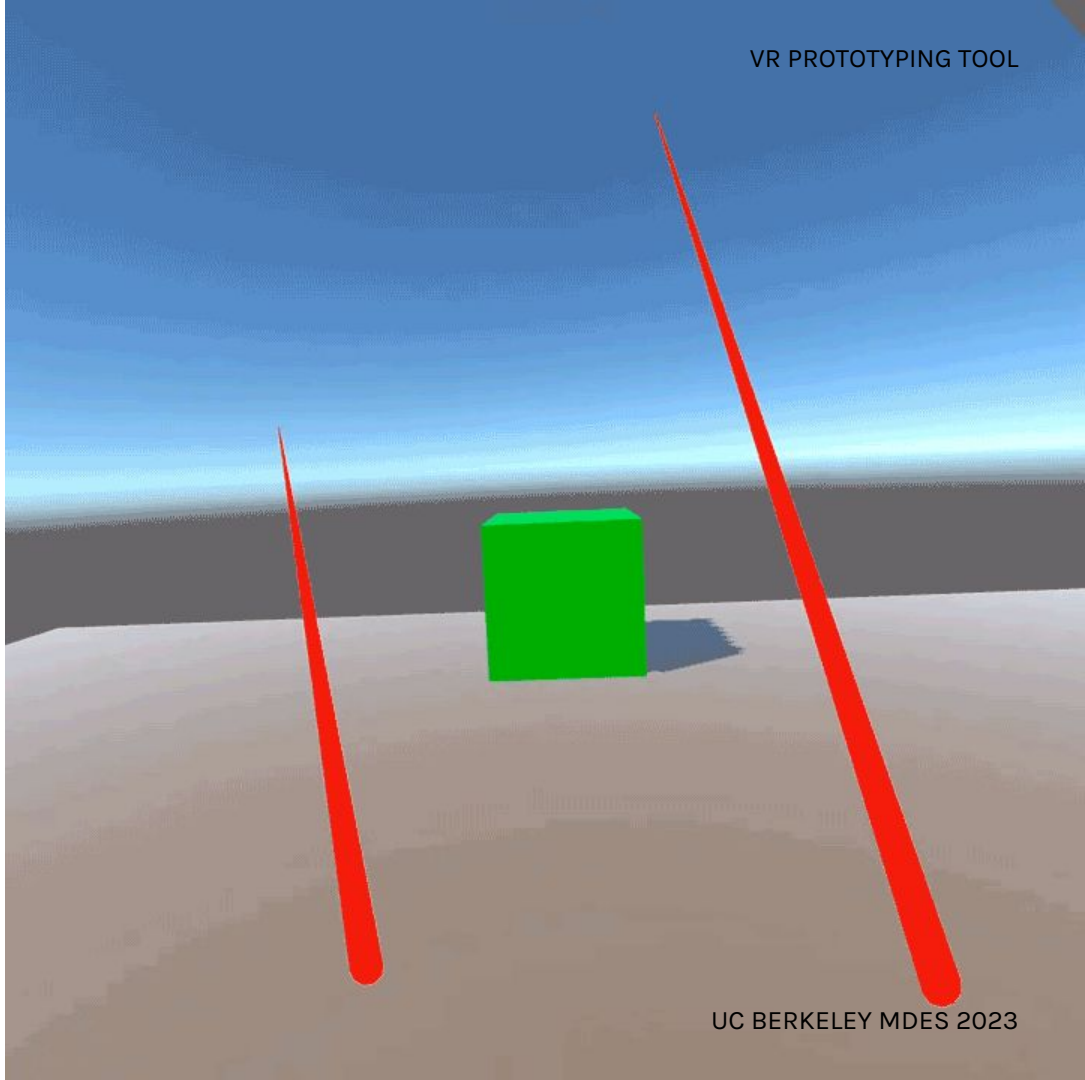
V 3.0

Add 2D preview windows of 3 perspectives.




Export

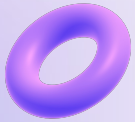
Develop interaction in Unity VR application



Slicing and cutting

Deformation

Outcomes



TIME SAVED

Reduced prototyping process time, leading to increased productivity

COST SAVED

The decreased cost of materials and resources contributes to more **budget-friendly** prototyping.

EASILY ADAPTED

Simplicity leads to a smoother learning curve and **quicker adaption** to 3D virtual prototyping

What's next?

1. **Testing and validating**
   the interactions and their effectiveness within the VR application

2. **Exploring ways to transform imprecise human interactions**
   into accurate outputs without relying on numerical inputs

CISCO DUO SECURITY • PORTFOLIO PRESENTATION

Design for one, Beneficial for all.

Project Overview

Project Type

Industry-Sponsored project

Target user

Duo end user with vision impairment

Timeline

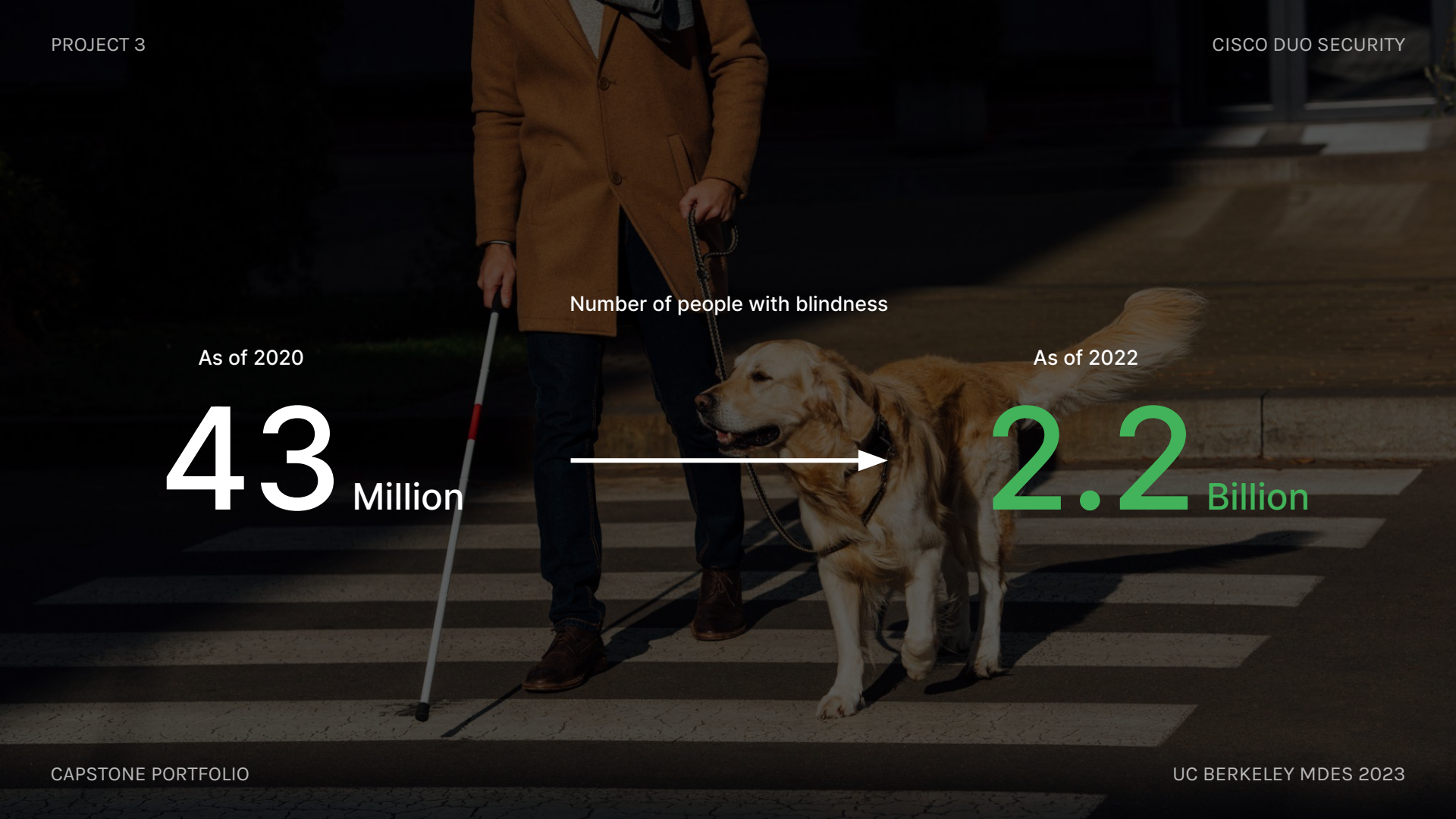
Sep 2022 - Present

My Role

UX Research
UX Design
Visual Design

Team

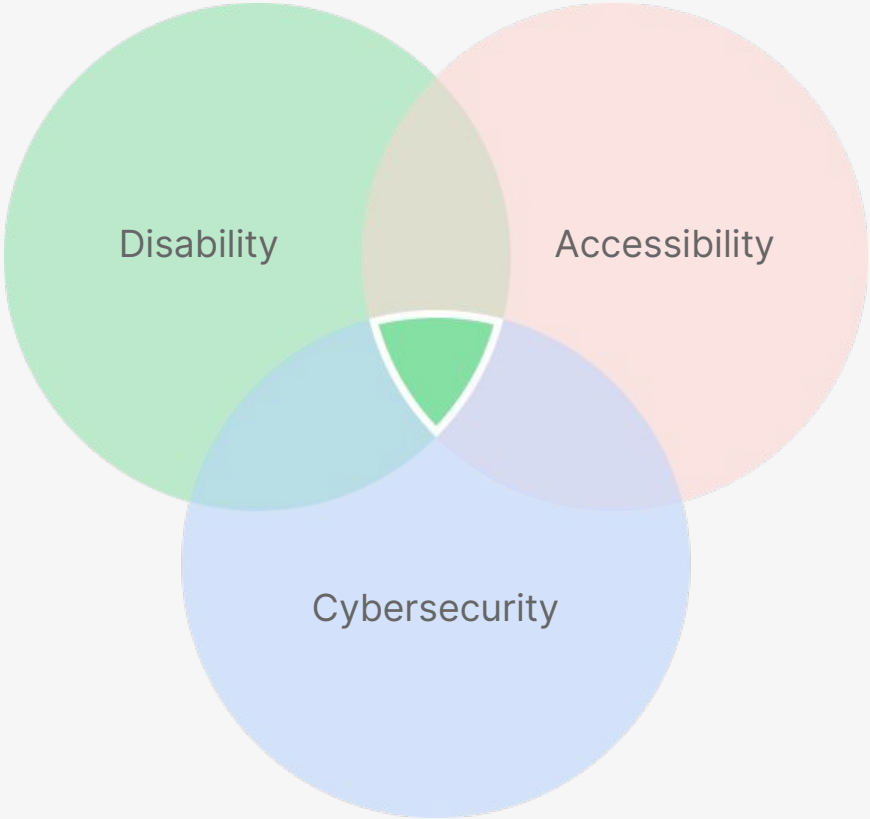
Collaborating Researcher:
Phyllis Fei
PM: Melanie Girod
Partner: Cisco


Number of people with blindness
As of 2020
43 Million
As of 2022
2.2 Billion

“How can we make cybersecurity more accessible and inclusive?

Cisco

My Focus



“

How might we alert cyber attacks to professionals with low vision in a way that is **safer**, **faster**, yet **less overwhelming**?

Solution

Proximity Authentication

Empathize


Empathize
Define
Ideate
Concept Test
Prototype
Usability Test

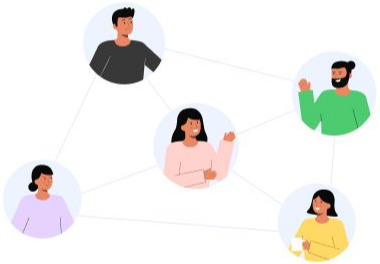
Research Strategy

Secondary Research

Competitive analysis

Primary Research

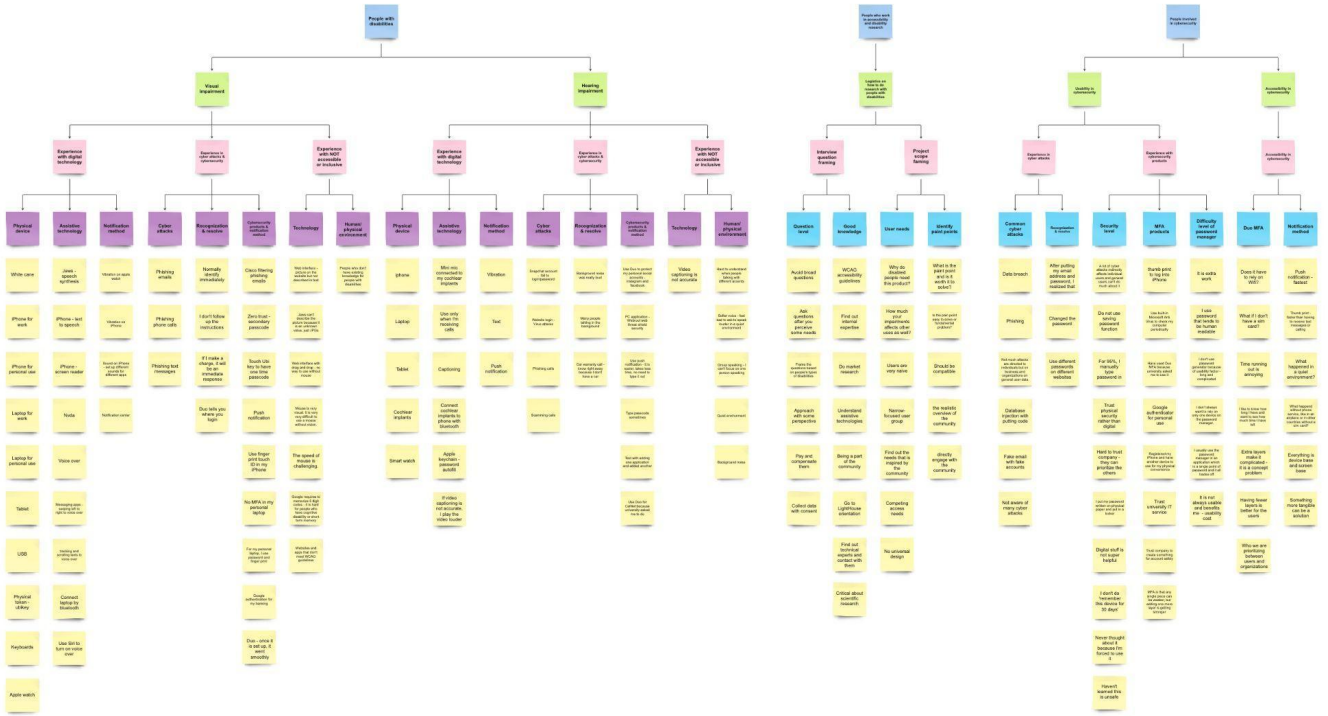
15 in-depth interviews

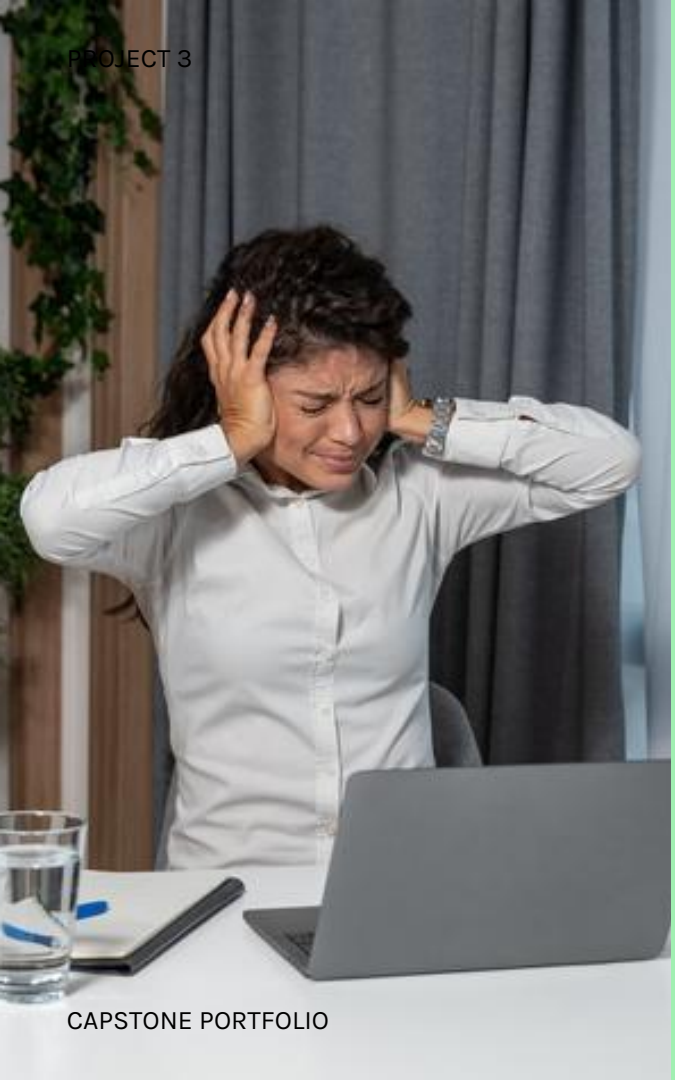


Synthesis

Key insights and findings

Research Synthesis





Auditory Overload

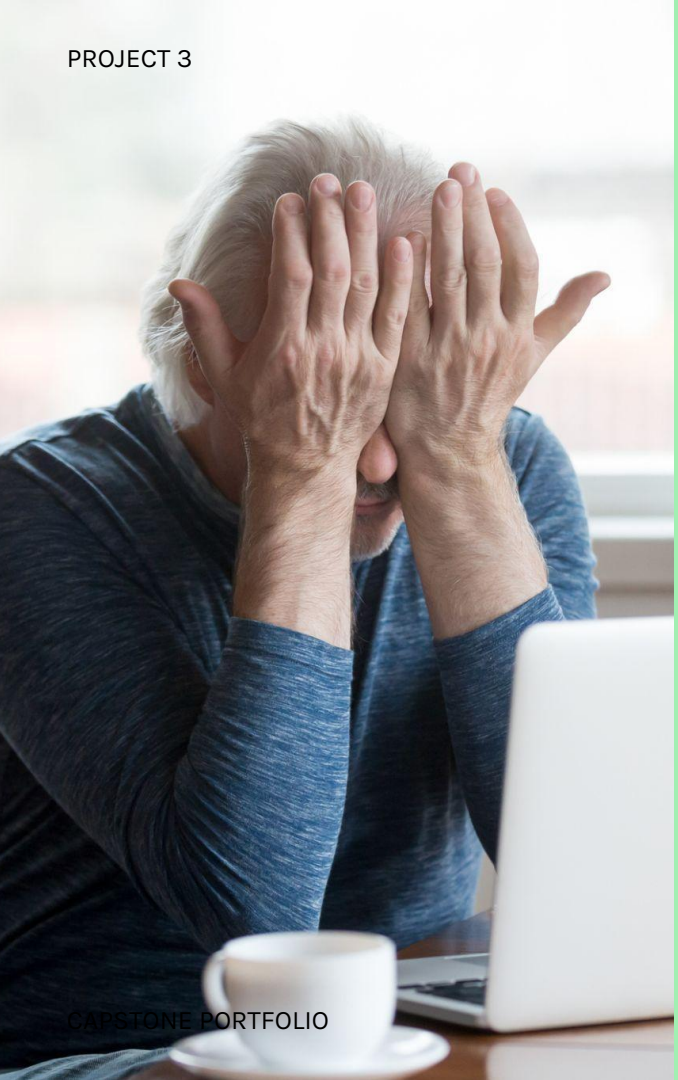
Dealing with notifications in different sounds and vibrations is extremely stressful and overwhelming.

The potential risk of missing time-sensitive notifications is increased.

VoiceOver Usability

Switching between the browser and Duo mobile app requires additional effort.

Using VoiceOver to swipe through all elements on the screen to proceed authentication is painful.

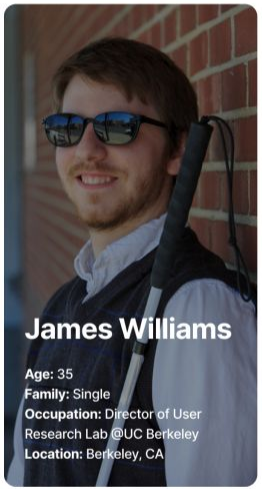


Safety Concerns

Top 3 security concerns of people with vision impairment:

- private information being stolen (70%)
- financial information being accessed(65%)
- personal information being made public (65%)

Persona & Empathy Map



Bio

James is a Director of User Research Lab at UC Berkeley with over 12 years of work experience. He was born with very limited vision in one eye and no vision in the other eye, being blind in all his life. He has no caregivers. He cooks all his meals, uses a walking cane, and takes public transportation like everyone else does. He has little experience in cyberattacks. He receives phishing calls or texts every now and then and experienced data breach from his organization and company.

He highly relies on his iPhone and iWatch in his daily life. During work, he uses Ubi Key, Jaws (a screen reader), a braille keyboard, and a laptop. Over the past 7 years, he has been using Duo MFA for work to ensure safe logins. He receives push notifications from Duo MFA multiples times a day. He has 2-3 meetings daily and have all-department meetings once a week. He shares his office with other colleagues and enjoys his working environment a lot.

Goal

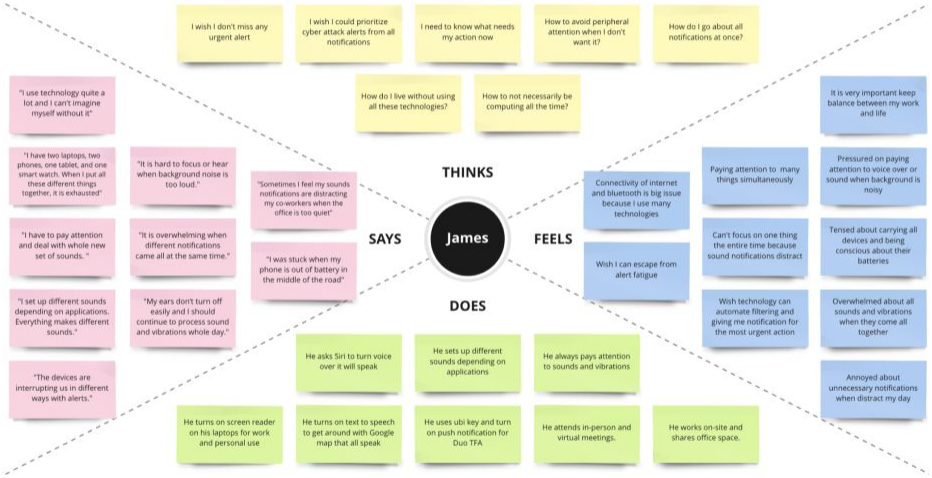
- To have better professional performances on my job.
- To have a better work-life balance of high quality.
- To be independent in all aspects including living, working, socializing, entertaining, and beyond.

Motivations

- To prove my ability to live independently and work professionally.
- To be more active and involved in the community and society.

Frustrations

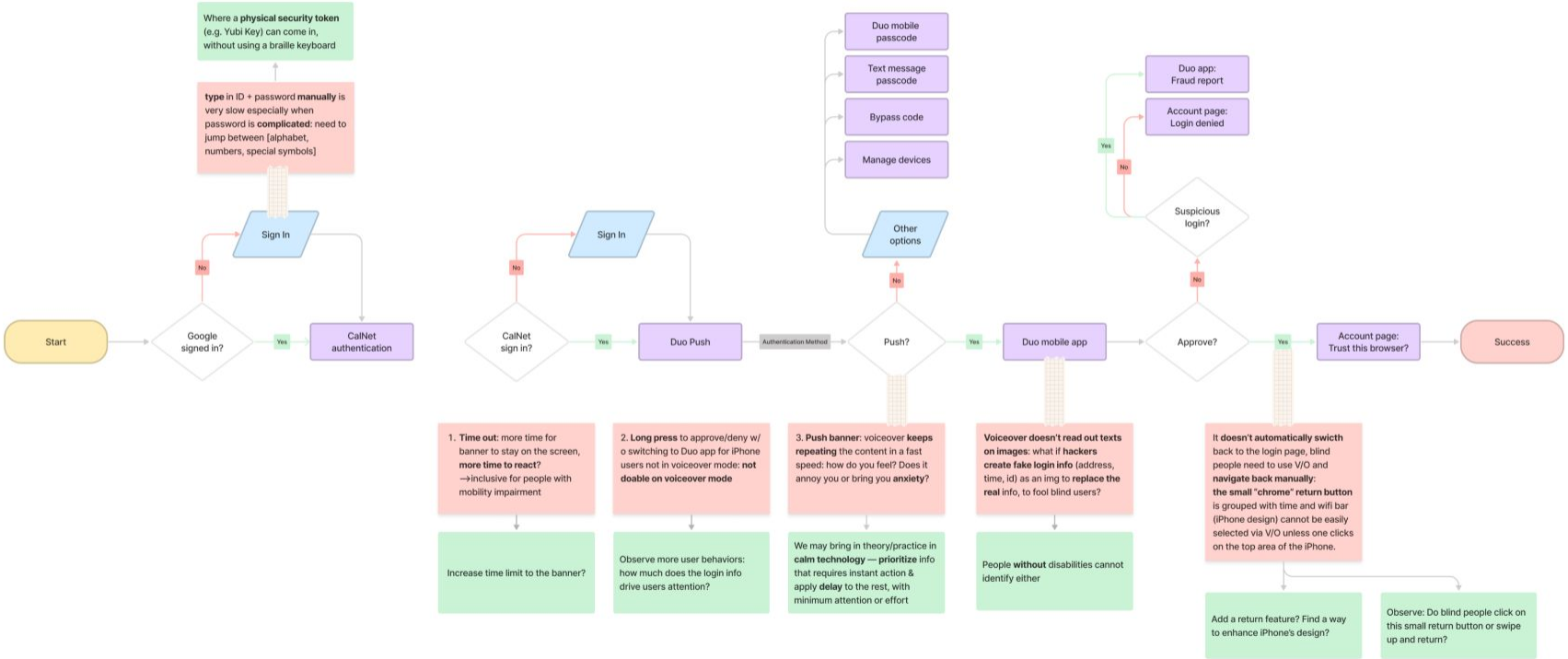
- Receiving different sounds and vibrations at an extremely high frequency are distracting and bring him anxiety.
- Due to the large number of notifications received each day, some important information or action items are be accidentally missed.
- Dealing with too many devices and technologies can be daunting sometimes.



Define

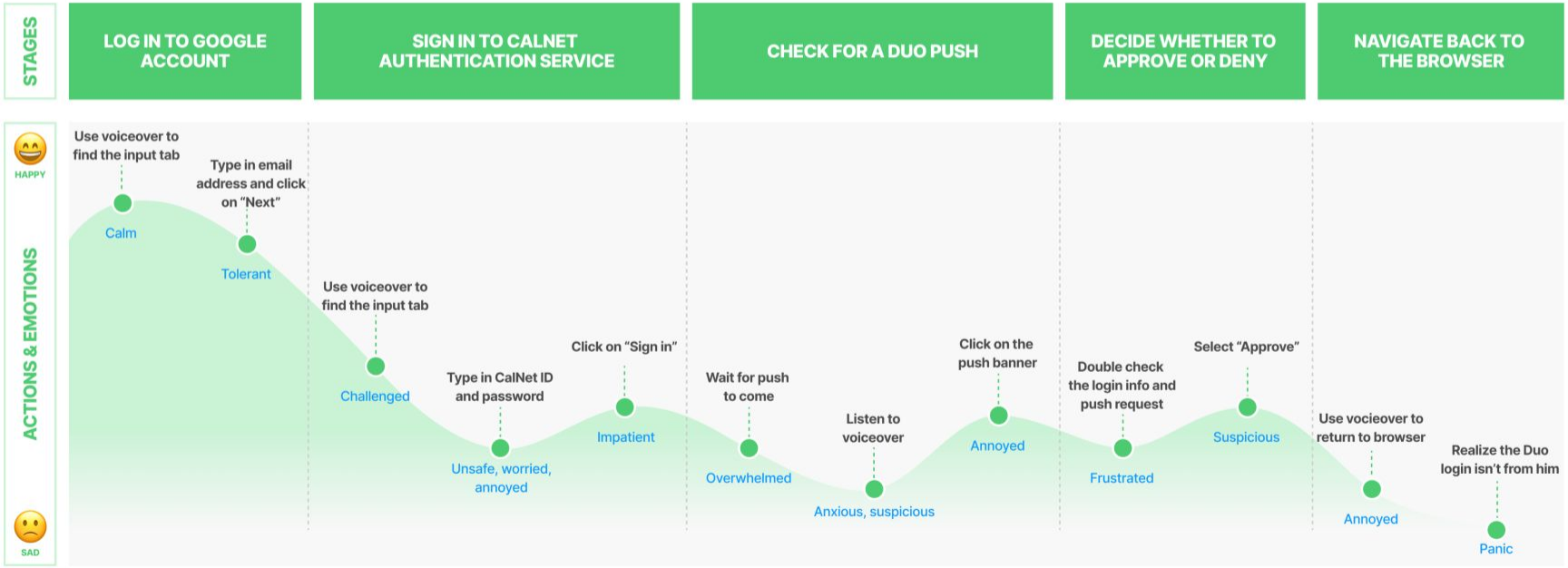

Empathize
Define
Ideate
Concept Test
Prototype
Usability Test

Task Analysis



User Journey

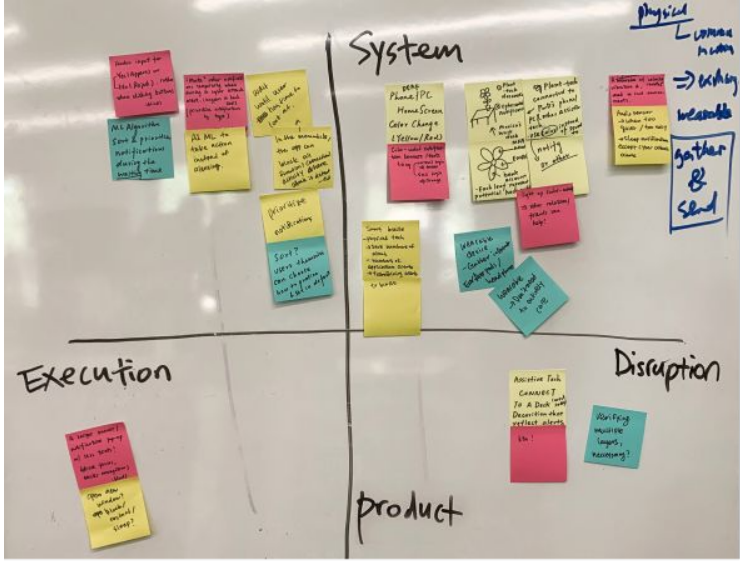
Persona: James Williams **Goal:** Confidently authenticate a login on both his laptop and his phone with assistive technology with full trust and minimum effort

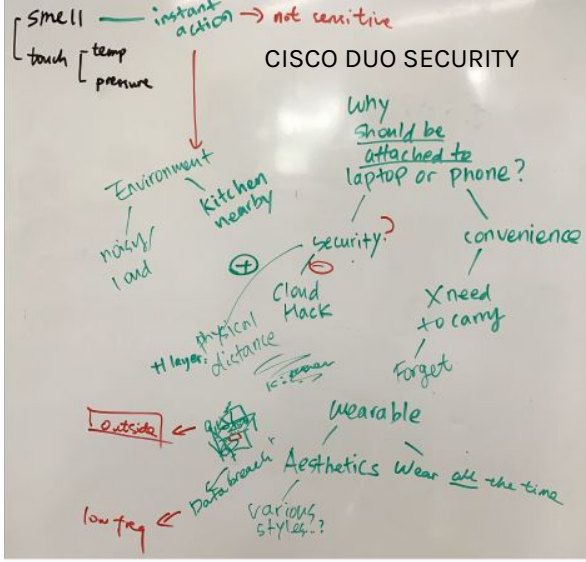


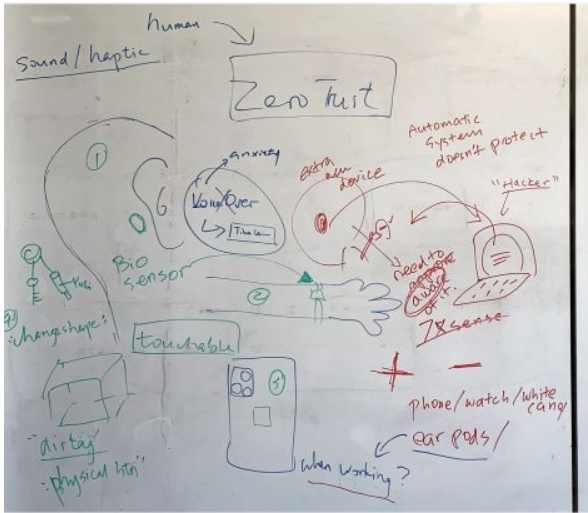
Ideate

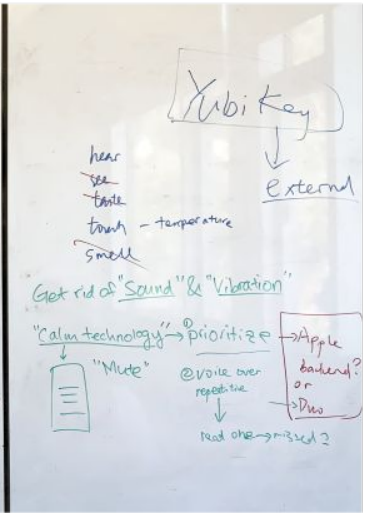

Empathize
Define
Ideate
Concept Test
Prototype
Usability Test

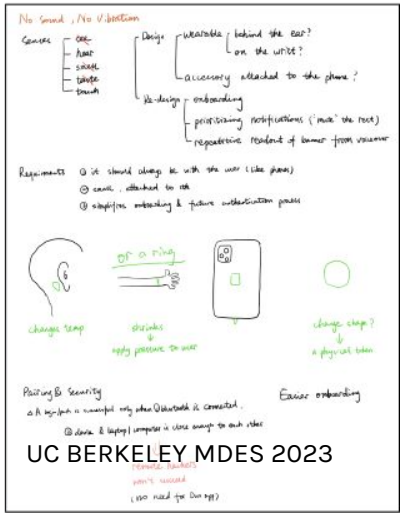
Solution Matrix



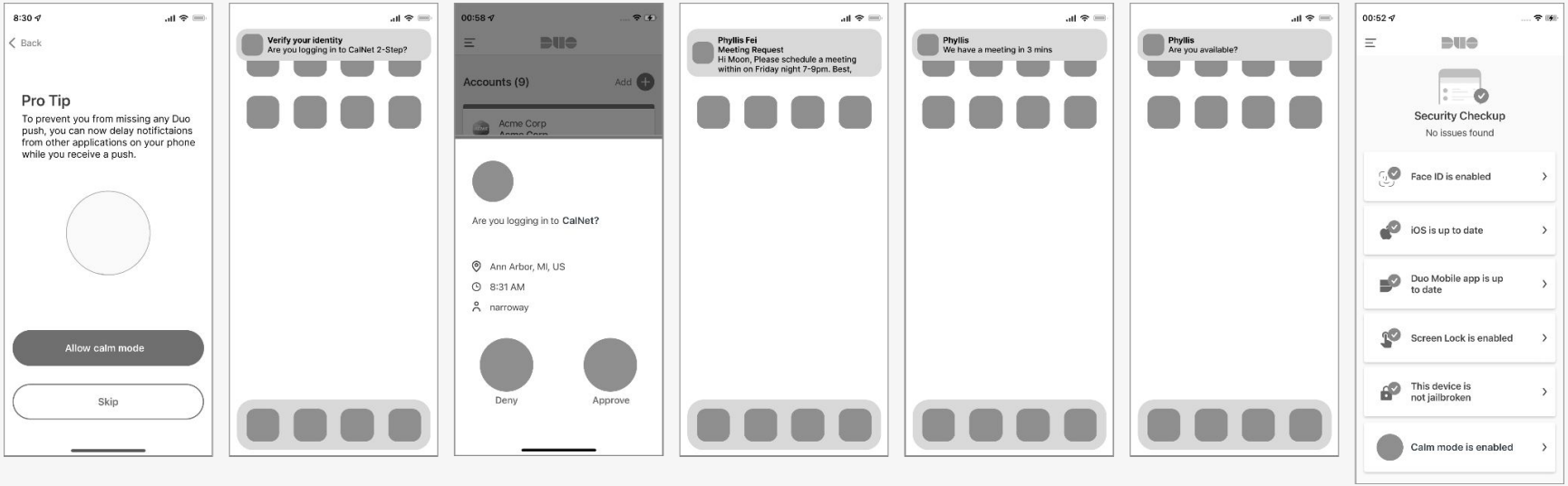




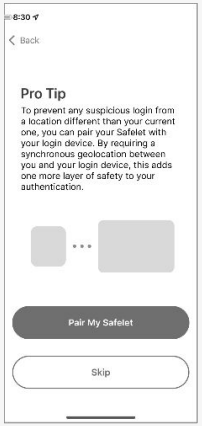


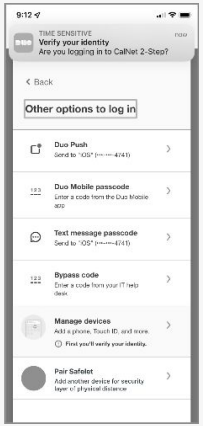


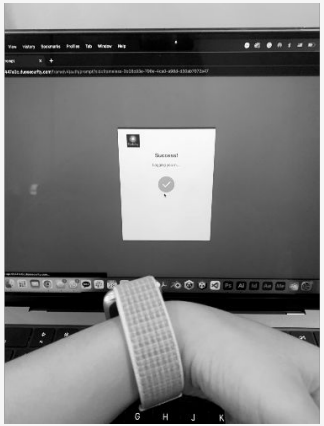
Potential Solution 1:
Calm Mode

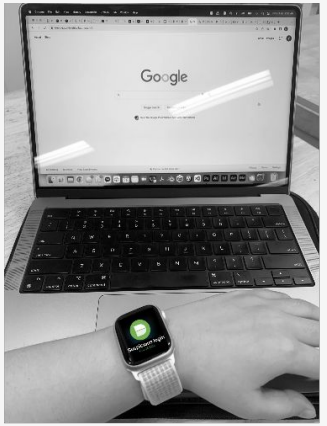


Potential Solution 2:
Wearable Safelet



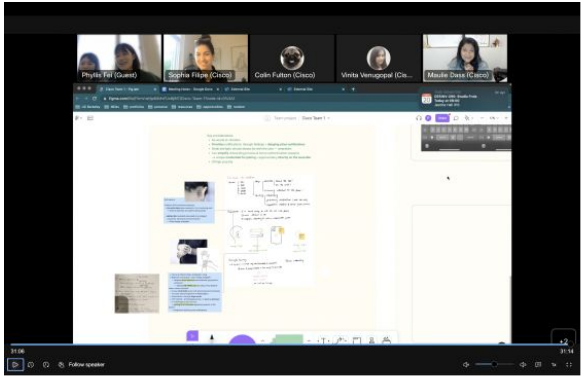


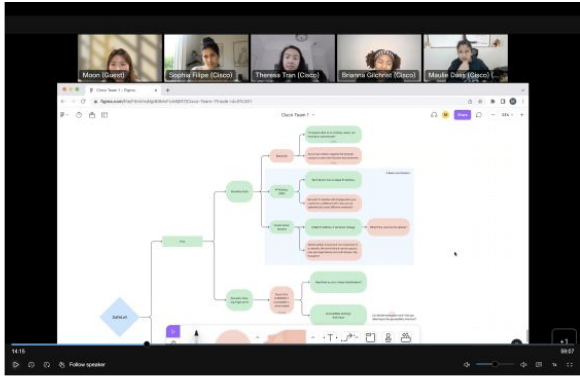


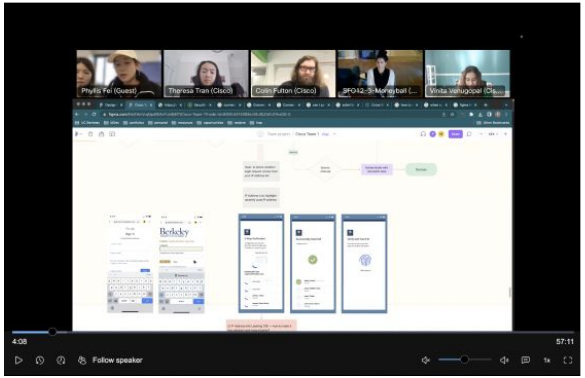


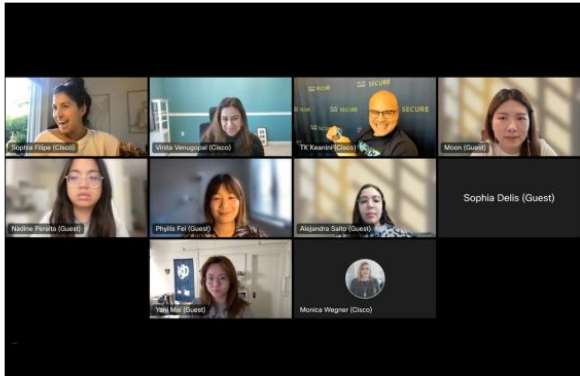
Concept Test

Stakeholder Review

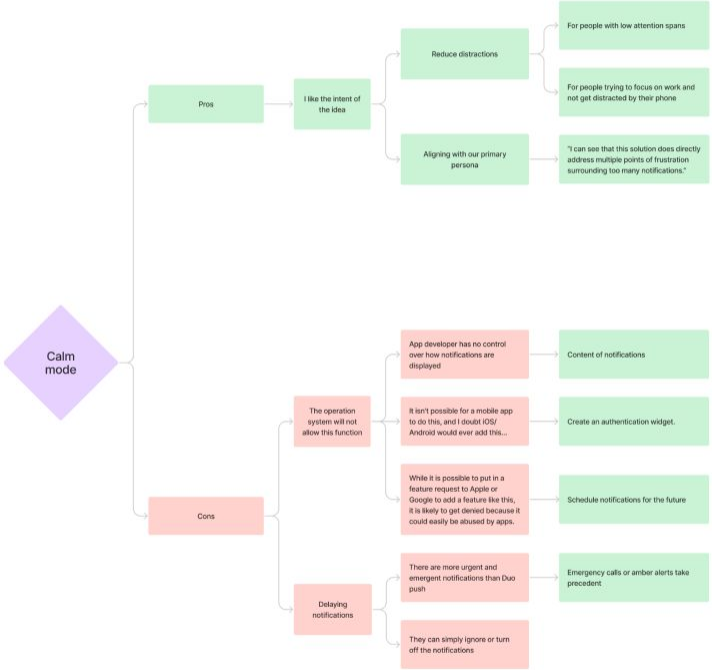


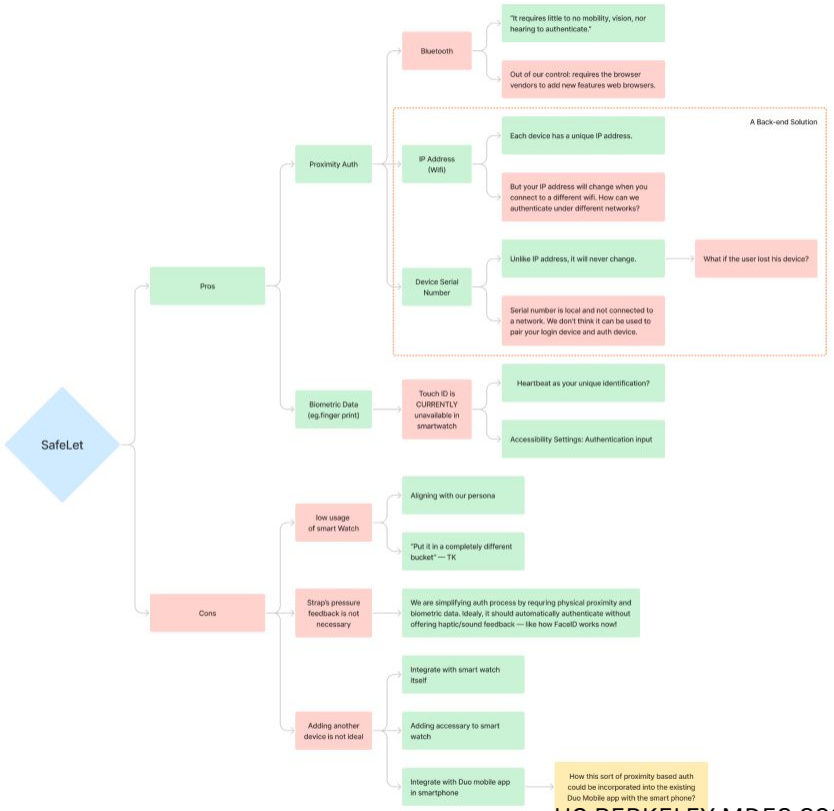






Synthesize Feedback

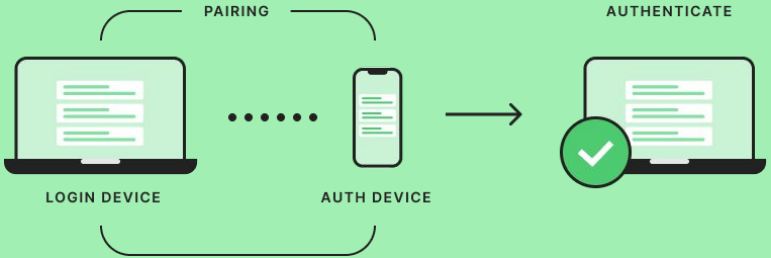




Prototype

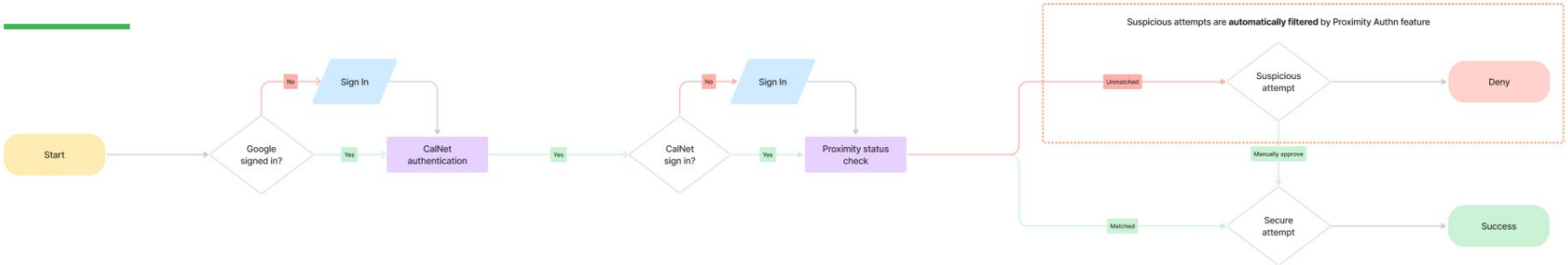

Empathize
Define
Ideate
Concept Test
Prototype
Usability Test

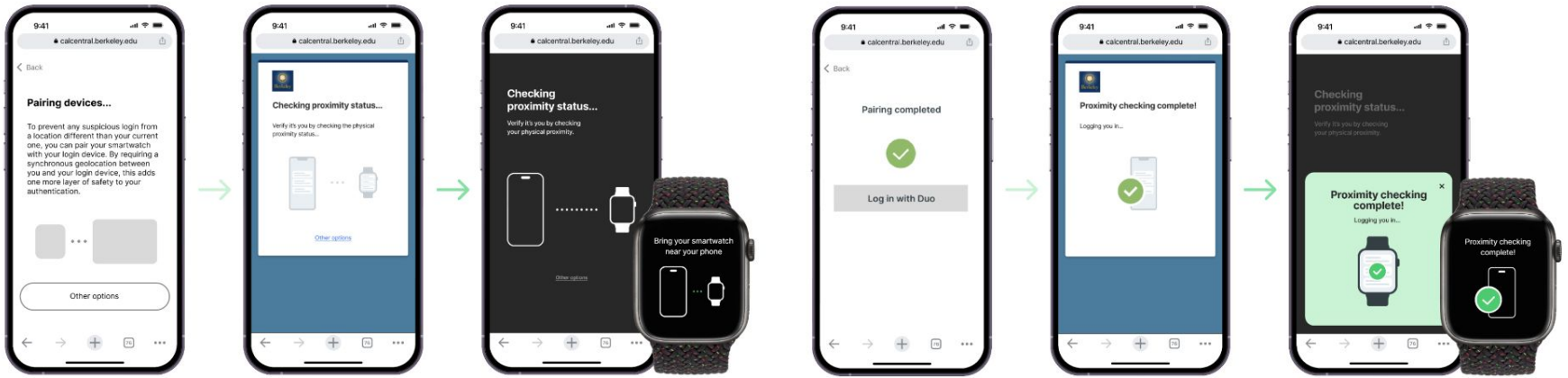
Experience


PAIRING
AUTHENTICATE
LOGIN DEVICE
AUTH DEVICE

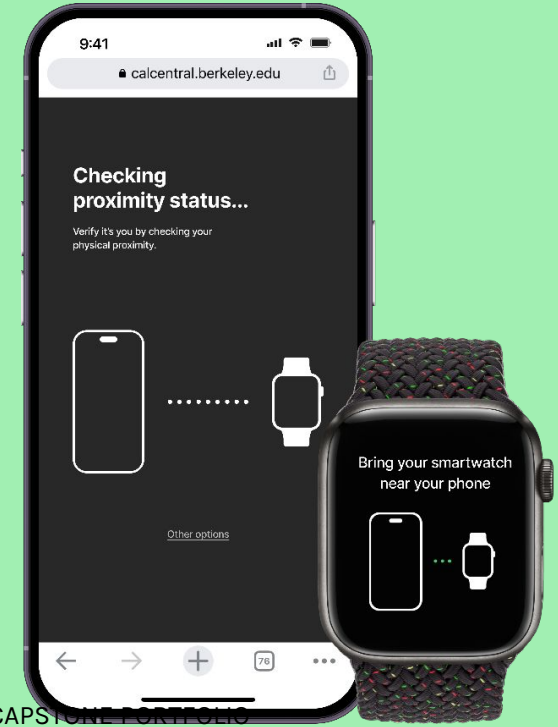

Checking proximity status...

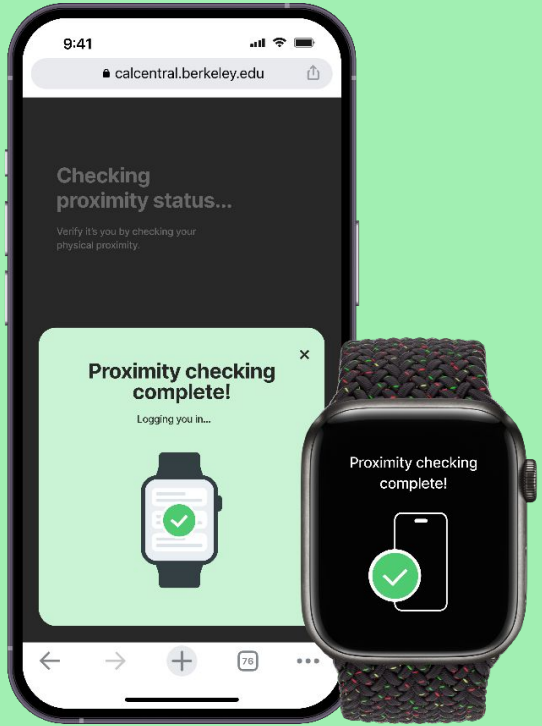
Iterate Design

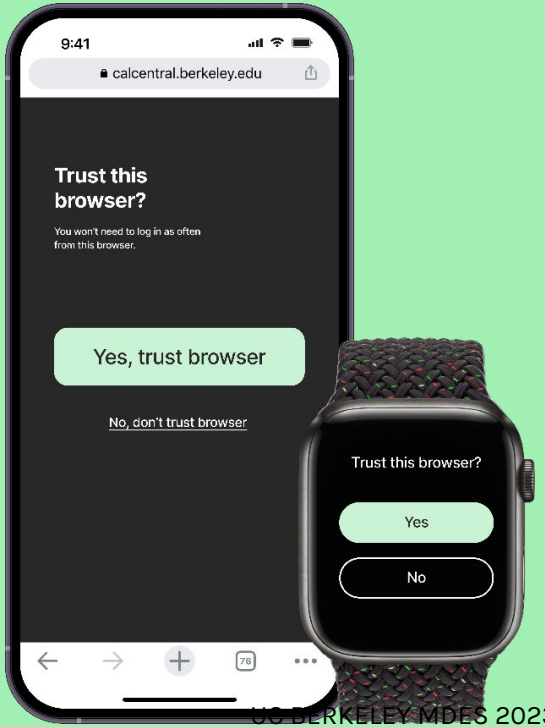




Final Design



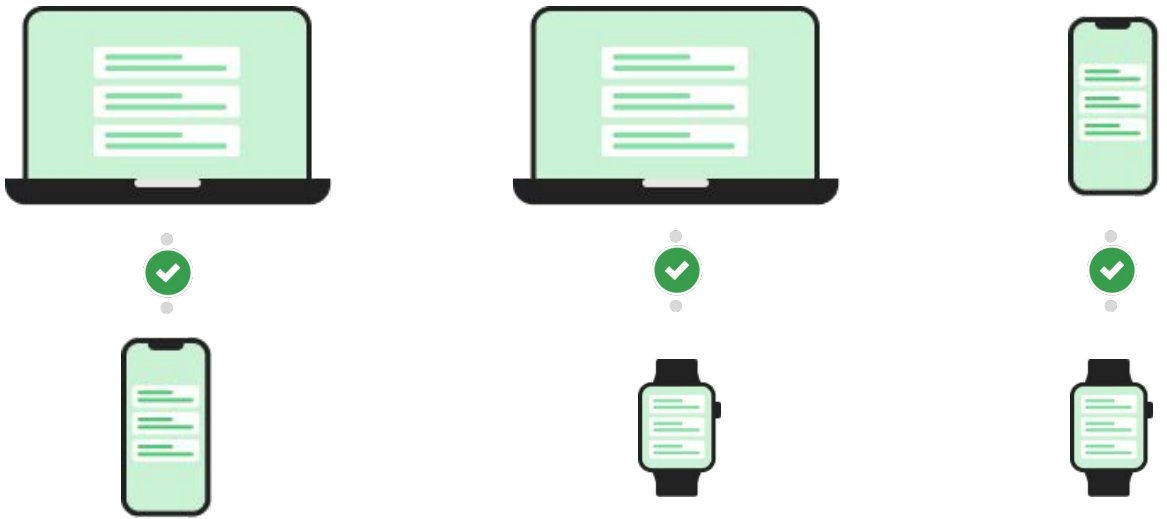




Alternative Pairing Options

Login Device

Authentication Device



Potential Technology Implementation

Bluetooth Low Energy

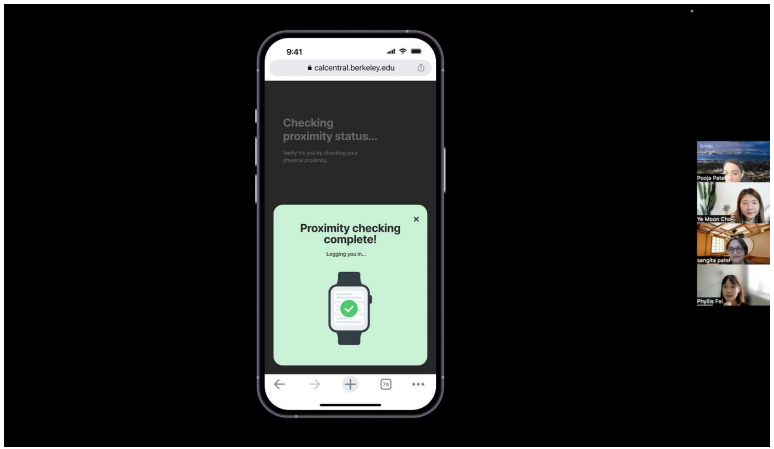
IP Address/ Mac Address

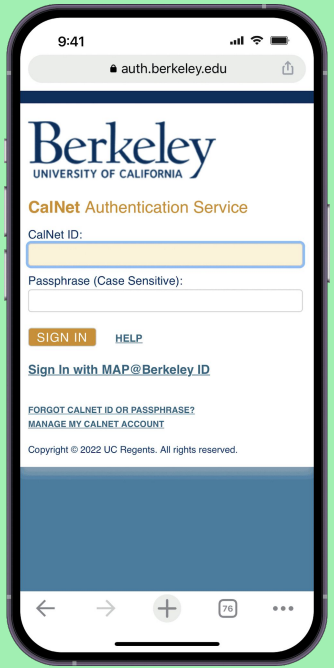
Existing Ecosystem of Duo

Evaluation

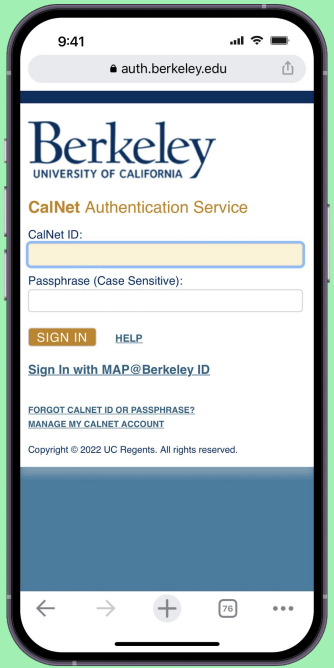

Empathize
Define
Ideate
Concept Test
Prototype
Usability Test

Usability Test





BEFORE



AFTER

Feedback

"I didn't realize how complicated the current experience is until I tried your design prototype. **It is so much better**."

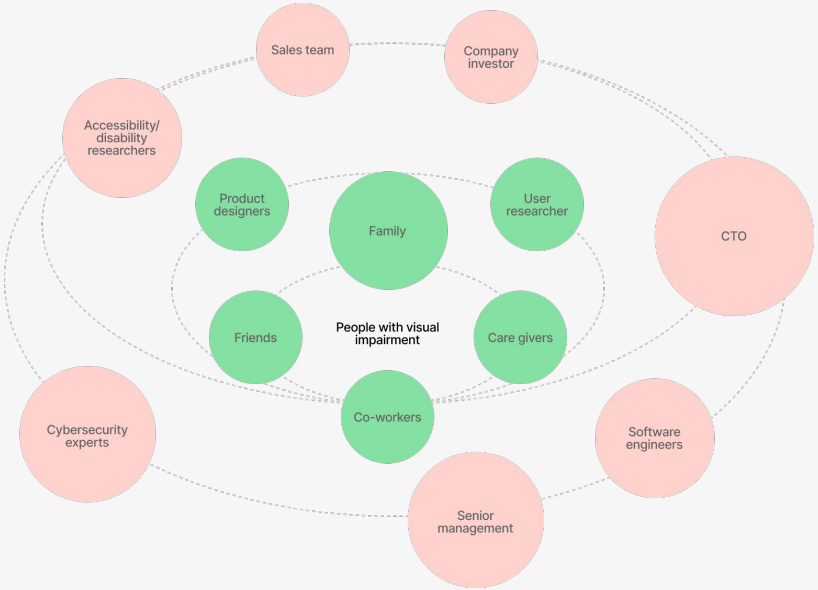
— Sangita, low vision

"As a person without vision impairment, I would even love to choose this auth method. **It's so fast and convenient!** I wish this option can be available ASAP."

— Pooja, general user/caregiver of Sangita

"The ultimate goal of a design is that you start from one focus group, and extend it to **benefit all users**. Proximity auth is great."

— Colin, senior accessibility engineer



Design for one, Beneficial for all.

27

Second (time) saved

9

Swiping gestures saved

1

Double-tapping gestures saved

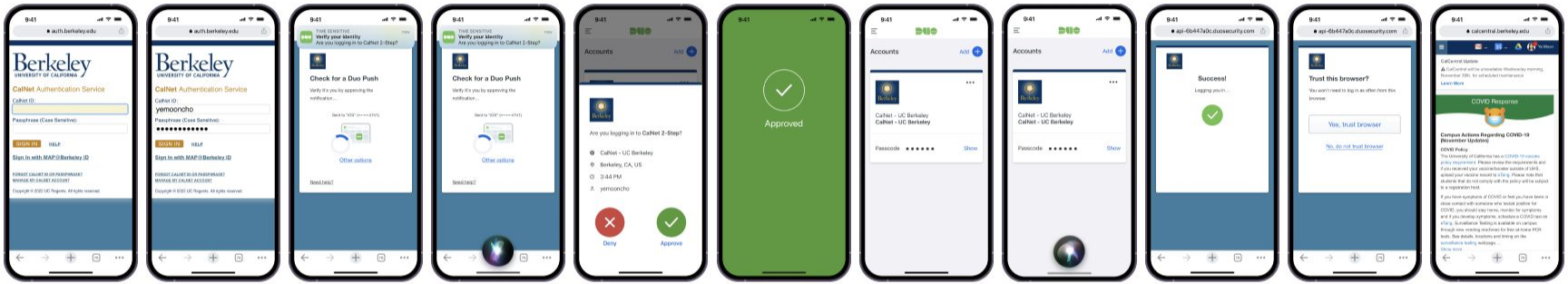
0

Siri being used

0

Switching among apps/devices

Comparison At A Glance



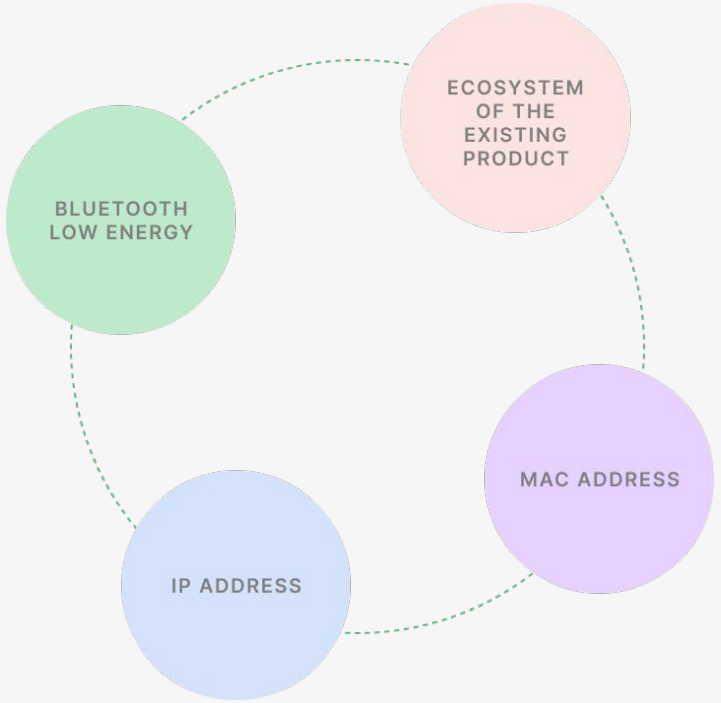
Next Step


Empathize
Define
Ideate
Concept Test
Prototype
Usability Test

Moving Forward

Educate users
New onboarding process
Practice demo video

Implement technology
Backend network architecture



Reflection


Empathize
Define
Ideate
Concept Test
Prototype
Usability Test

Learnings

The Origin Story

Product insight comes from ***anywhere.***

The User Story

I am ***not*** the user.

The Industry Story

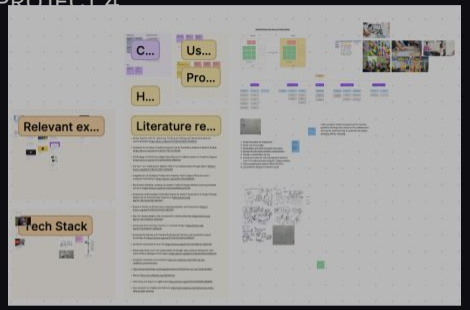
Benefit for all.

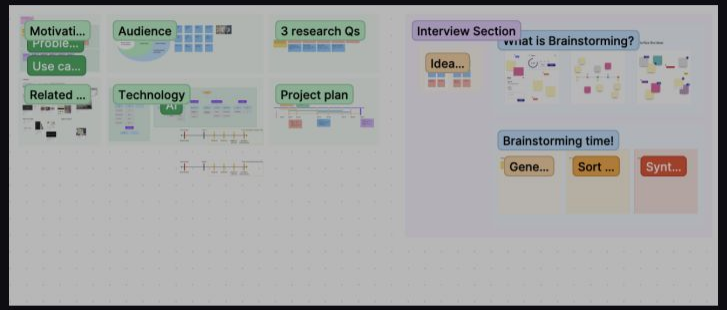
MDES 23
Thesis project

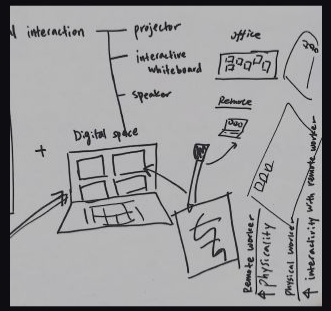
AI as a collaborator in a hybrid brainstorming

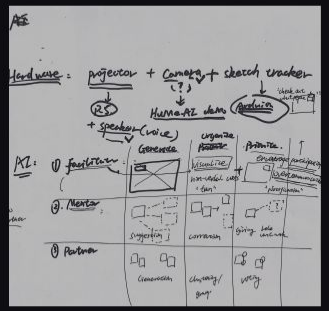
HOW MIGHT WE

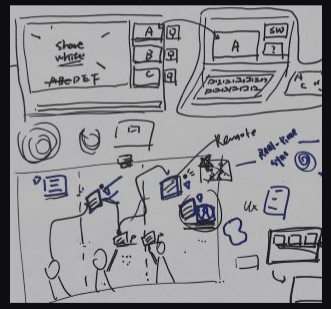
Enhance the creativity and productivity of brainstorming in a hybrid working environment?

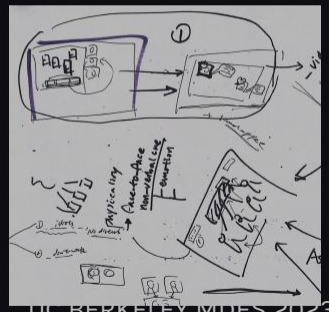

C...
Us...
Pro...
H...
Relevant ex...
Literature re...
Tech Stack


Motivati...
Audience
3 research Qs
Interview Section
Use ca...
Related ...
Technology
Project plan
Idea...
Brainstorming time!
Gene...
Sort ...
Synt...


interaction
projector
interactive whiteboard
speaker
Digital space
office
Remote
Physicality


projector
+ speaker
Mentor
Partner


Remote
Real-time
UX



USER SCENARIO

On-site participants


NEW EMOJI - BRAINSTORM
220 C
EQUIPMENT

USER SCENARIO

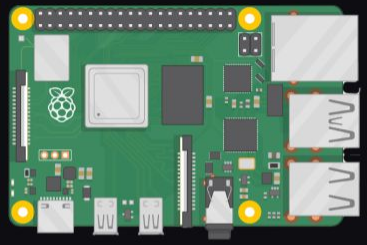
Remote participants


NEW EMOJI - BRAINSTORM

POTENTIAL SOLUTION #1

Digitize physical interaction

to enhance interactivity with remote participants
for on-site participants



IMU Sensor

Specific force
Angular rate
Orientation

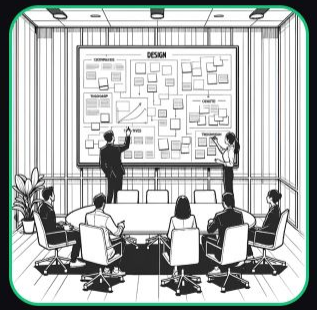
Raspberry Pi

Absolute position
Coordinates

Interactive Whiteboard

Trajectory
Visualization

Removable marker accessories

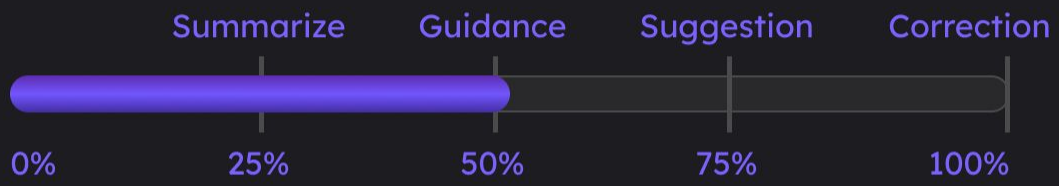


POTENTIAL SOLUTION #2

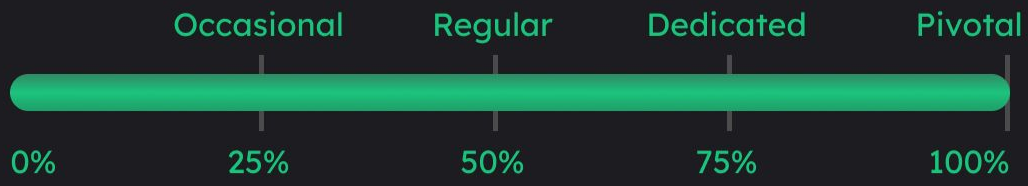
Personalize your AI involvement

to enhance the productivity in brainstorming

Advisor



Contributor

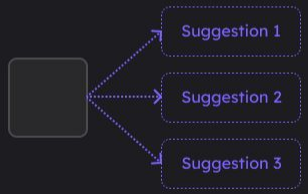


Coordinator

Deactivate  Activate

Generate

Advisor



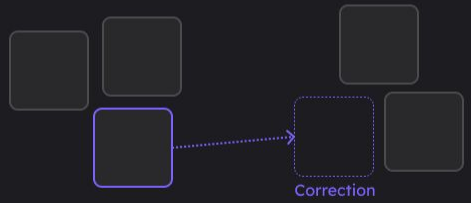
Contributor

Coordinator

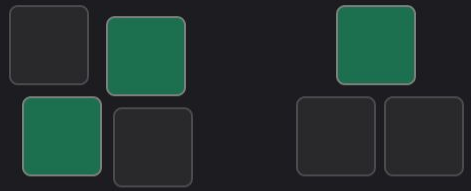
You're welcome to vocalize your thoughts!

Organize

Advisor



Contributor

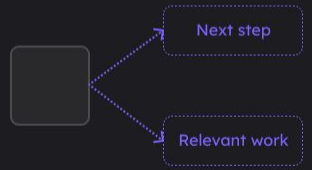


Coordinator

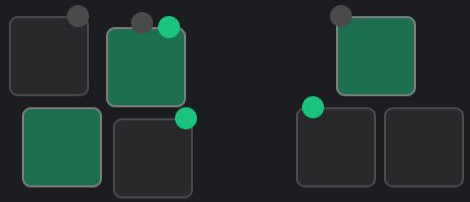
There's no silly question!

Prioritize

Advisor



Contributor



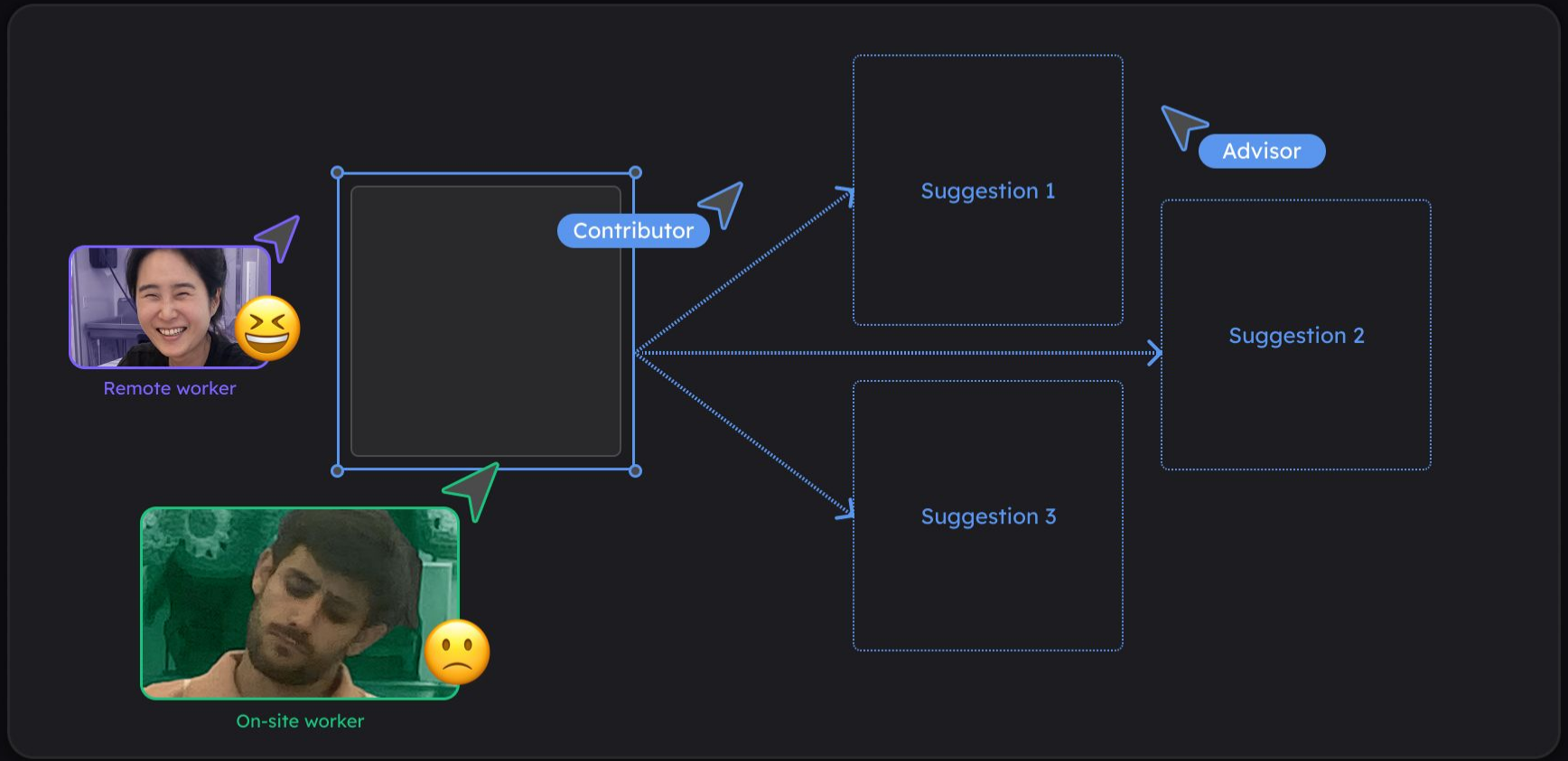
Coordinator

Your vote matters!

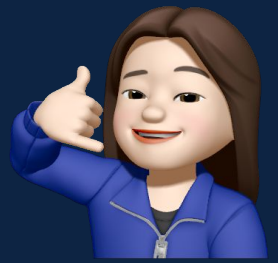
POTENTIAL SOLUTION #3

Visualize non-verbal cue

to enhance physicality for remote participants


Remote worker
Contributor
Suggestion 1
Advisor
Suggestion 2
Suggestion 3
On-site worker

Why I’m a good fit🌟



Fast learner

Never hesitate to learn new things
Adaptive to new technology

Collaborative

Great team player with independent mindset

Passionate to solve complex UX problem

User centric designer

Thank you!