UI/UX DESIGNER

TING-YU HSIAO

I'm Tingyu Hsiao, an adaptable UX designer with a focus in healthcare, smart tech, and innovation projects.

I have experience working on a variety of design projects, including but not limited to health tech design, B2B tools design, startup projects (service design), and responsive design (H5).

https://www.bruce-hsiao.com/

Experience

2023 — Shelter Tech
UX Researcher

Johnson & Johnson MedTech
UI/UX Co-op

2022 — Lenovo
Sponsored UX Design Studio

Samsung Research Project
Sponsored UX Research Studio

Walmart Global Tech
UI/UX Design Intern

Organization

2023 — CCA Student Council
Leader Specializes in Diversity & Inclusion

CCA Campus Activity Board
2020 — Leader

Education

2023 — California College of the Arts
Human-computer Interaction Design B.F.A.
G.P.A. 3.8

Léman International School
2018 — International Baccalaureate

Proj 1 - Laid-back Map

How might we assist first-time travelers to travel with ease through gamified tourism experience?

Proj 2 - Health Tech Interface

J&J Internship - How might we create the next-gen laparoscopic medical device with a deep focus on accessibility and usability?

Proj 3 - Corporate Check-in

Walmart Internship - How might we design a contactless visitor tool that could assist Walmart visitors in completing their tasks?

Proj 4 - AI Meeting Assistant

Lenovo Sponsored - How might we further enhance the efficiency & accuracy of the decision-making process during meetings?

Other Projects

My passion projects where I experiment with different art medias and technology.

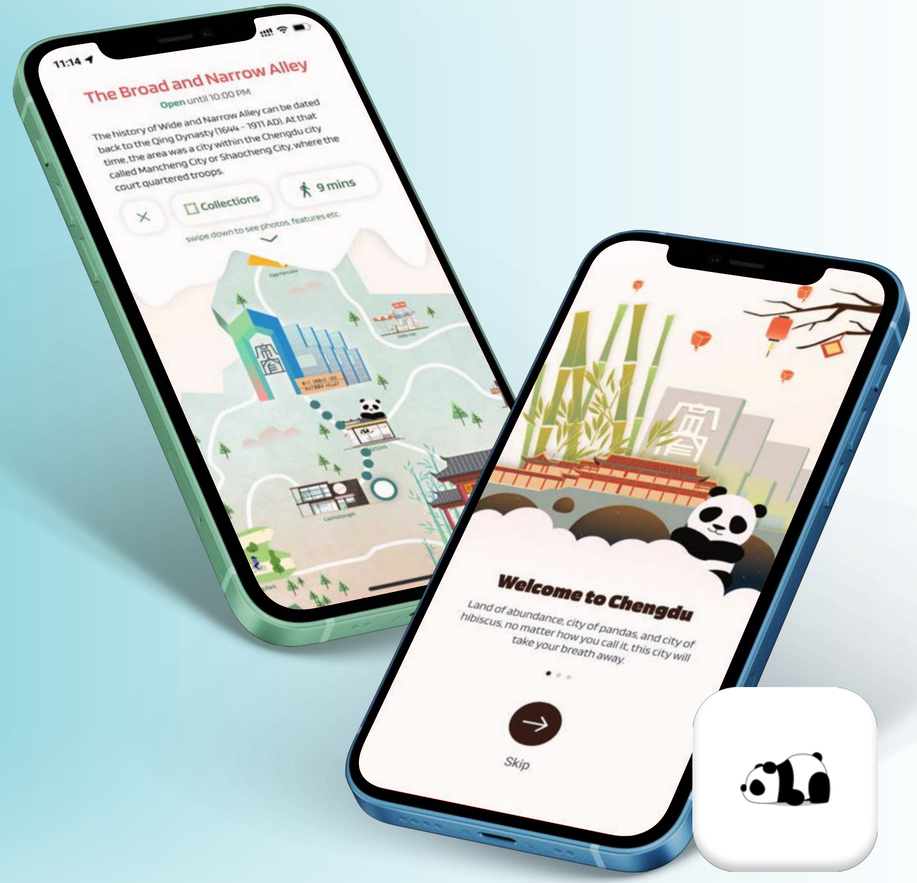
PROJECT 1 - B2C MOBILE APP DESIGN

CHENGDU LAID-BACK MAP

If you love pandas, Chengdu is the place for you. Home to the world's largest giant panda protection and breeding center, this city is gaining popularity for its rich culture.

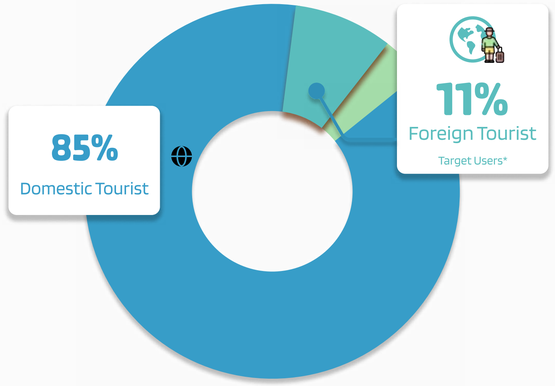
Renowned for its laid-back lifestyle, the city exudes a relaxed atmosphere. With significant tourism potential, we aim to inspire visitors to explore Chengdu's diverse culture **through a digital gamified touring experience.**

Timeline	February - March 2022 4 weeks
My Roles	UX Designer / UX Researcher / Prototype Developer
Tools	Figma / Adobe Illustrator / Mural / Slack

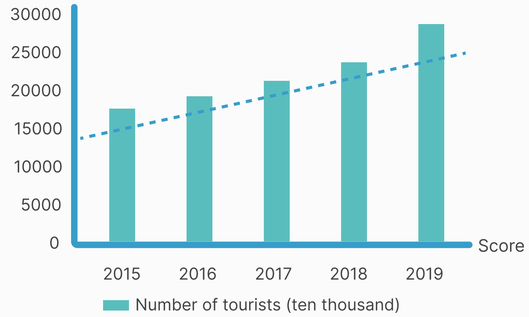


Chengdu & Its Tourism Potential

Chengdu stands as an exceptional travel destination, having welcomed an impressive 276.42 million domestic tourists in 2019. The city boasts a diverse array of attractions, from ancient marvels to contemporary wonders (CEIC Data).



Chengdu is getting famous worldwide! With 31.4 million foreign visitors, they make up 11% of all the tourists. The city is becoming a global hotspot!



Ideation & Initial Research

When creating the primary mind map for our initial ideation, I decided to focus on the keyword "Slow-paced" as it keeps reappearing during the initial research:

Opportunity Space

Provisional Target audience:
First-time foreign travelers in Chengdu
Their problems (validated problems) and **potential solutions**:

Problem	Solution
Tourists do not know how to plan their itinerary prior coming to Chengdu	Different **planned itineraries** the users can choose and follow through
Tourists wish for a more immersive and fun way to explore the city	A reward system to encourage visits to selected authentic attractions
Tourists don't have enough knowledge and information to have an authentic trip	A **review page** that provides all the information about the attractions

User Interview & Synthesis

Focused on our target audience, we conducted user research to:

1. Assess demand for our product, gauging interest in experiencing Chengdu's slow-paced lifestyle.
2. Identify general needs and frustrations of tourists at travel destinations.
3. Understand key behaviors, including preferred activities and transportation methods.

Interviewing 8 individuals, we categorized findings, aiming to generate a high-level concept (HMW statement) for our product.

"How might we assist first-time travelers to travel with ease through gamified tourism experience?"

An **onboarding experience** to let our users know our service content and Chengdu's laid-back culture

A **three days, three themes** approach to ensure that users can have an in-depth trip in Chengdu

A **guiding system** that provides all the information our users need to know regarding their attractions

An **achievement mechanism** to motivate them to visit the essential attractions we selected for them

A **slow-mailing postcard** that records the places our users had been to so they can have a delay of gratification

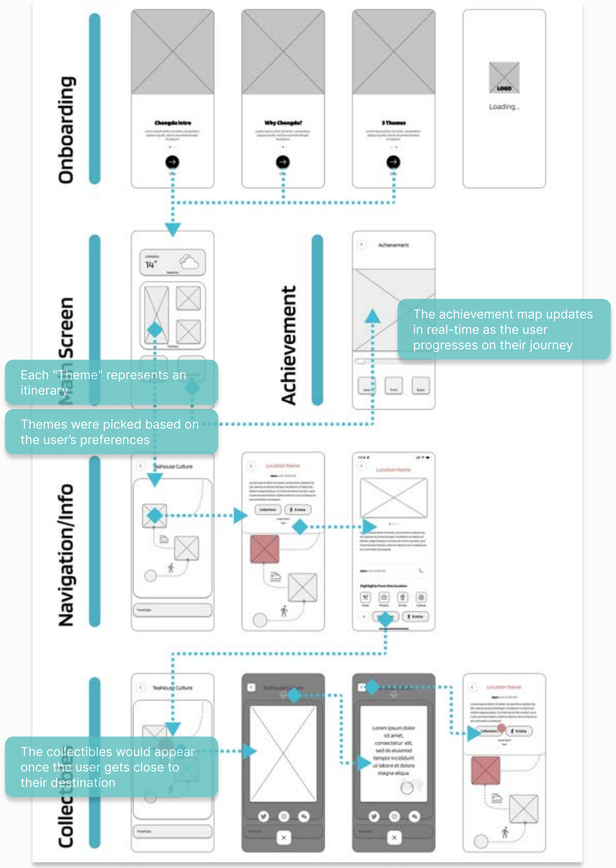
User Storyboard

I crafted a user storyboard to illustrate real-life interactions with our product. This portrayed user pain points and demonstrated how our product could provide solutions, guiding us in envisioning specific features for implementation.

Itinerary Design

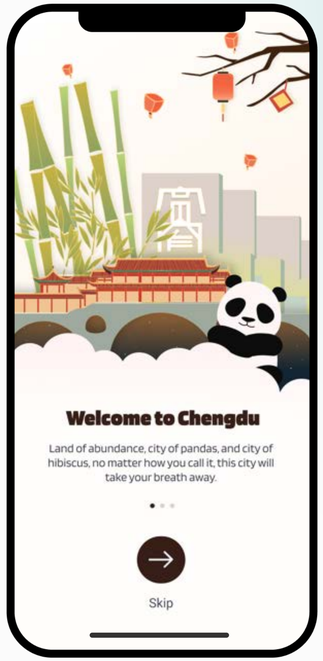
Early Development

Low-Fi Wireframes



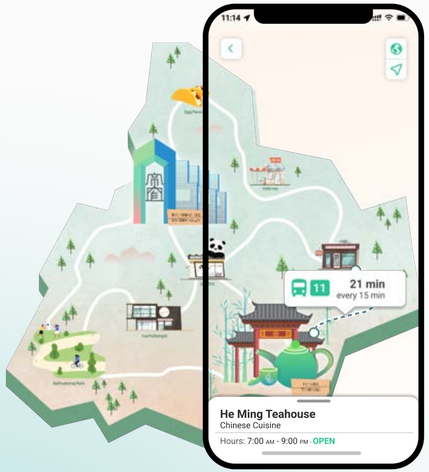
Welcome to Chengdu

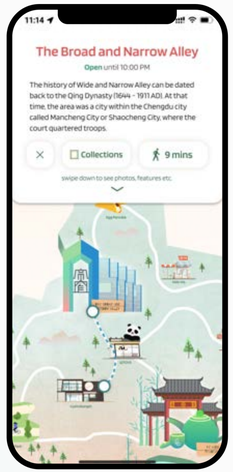
With our onboarding experience, users can have a comprehensive understanding of Chengdu culture and our service content



Itineraries

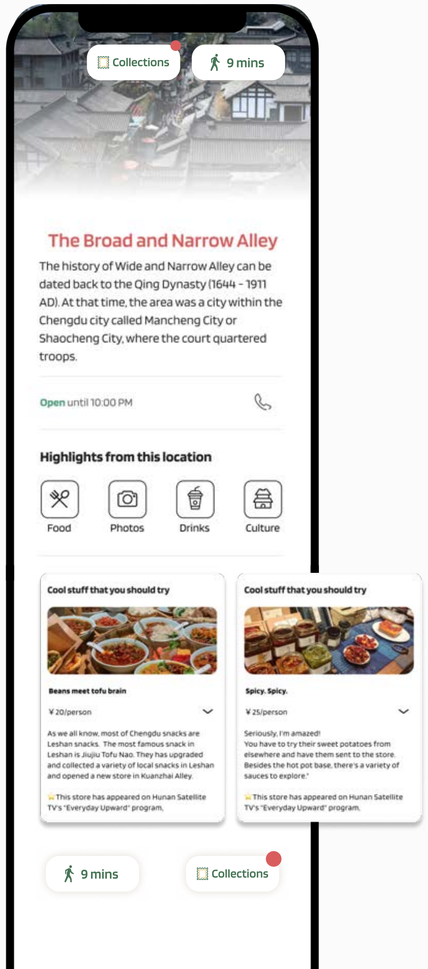
Users can choose from three themed trips. For each trip, we provide them with essential attractions suggestions and optimal transportation plans



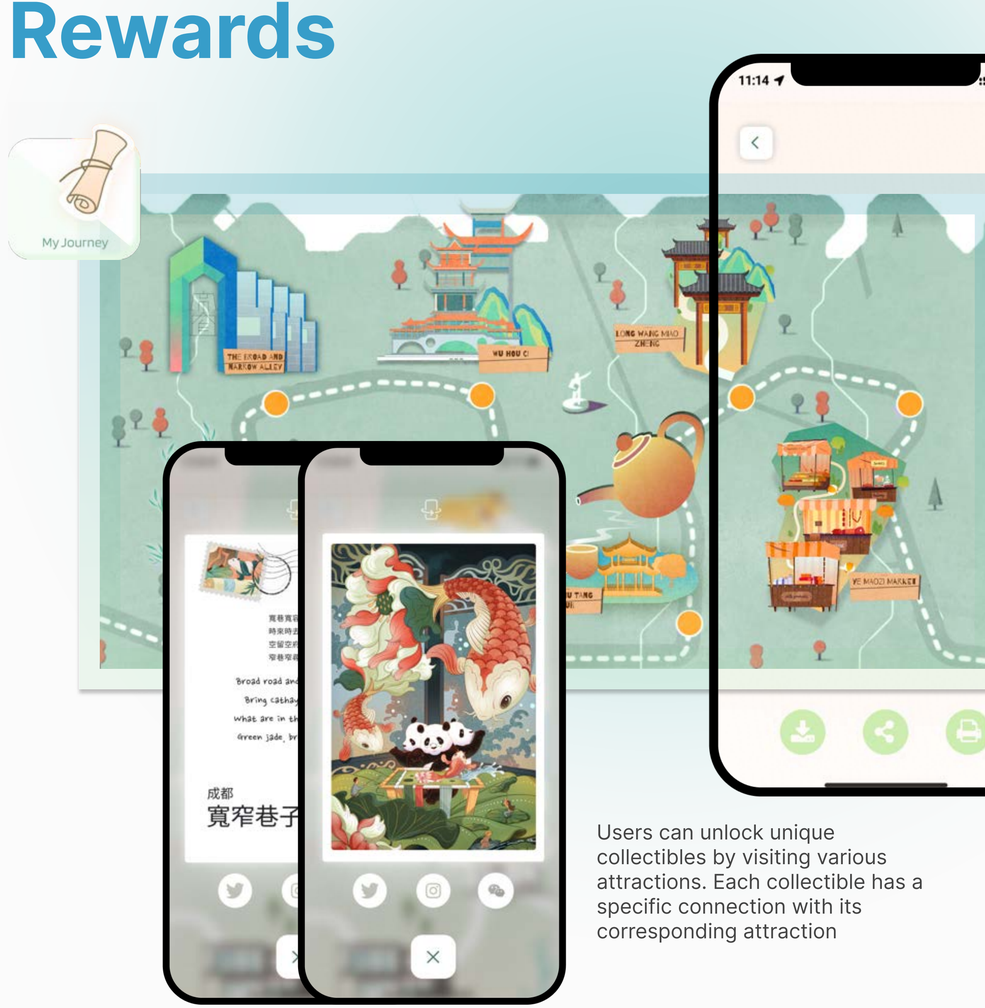


Reviews

We provide our users with the latest information they need to know about one attraction, as well as its local reviews



Rewards



Users can unlock unique collectibles by visiting various attractions. Each collectible has a specific connection with its corresponding attraction

PROJECT 2 - JOHNSON & JOHNSON CO-OP

HEALTH TECH INTERFACE

The project at Johnson & Johnson MedTech focused on advancing the user experience of three surgical devices, aiming to optimize usability and compliance with medical guidelines.

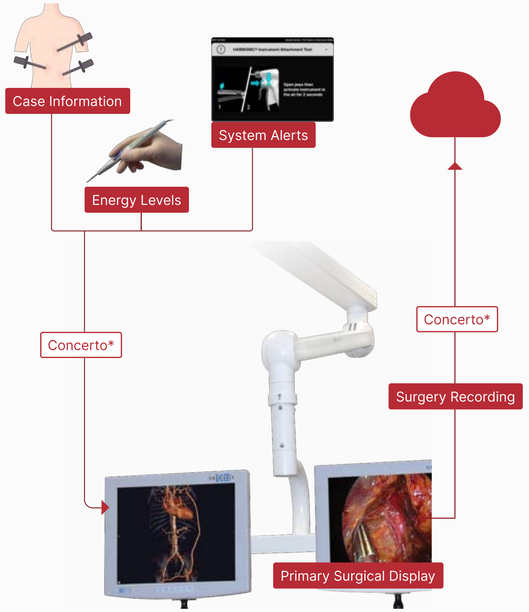
My tasks included ideation, design system design, and usability research to optimize interfaces, ensure compliance with medical guidelines, and improve overall usability during critical stages of development and medical procedures.

Timeline	January - May 2023
My Roles	UI/UX & UX Researcher Co-op
Tools	Figma

The Concerto Project - Early Dev

What is Concerto?

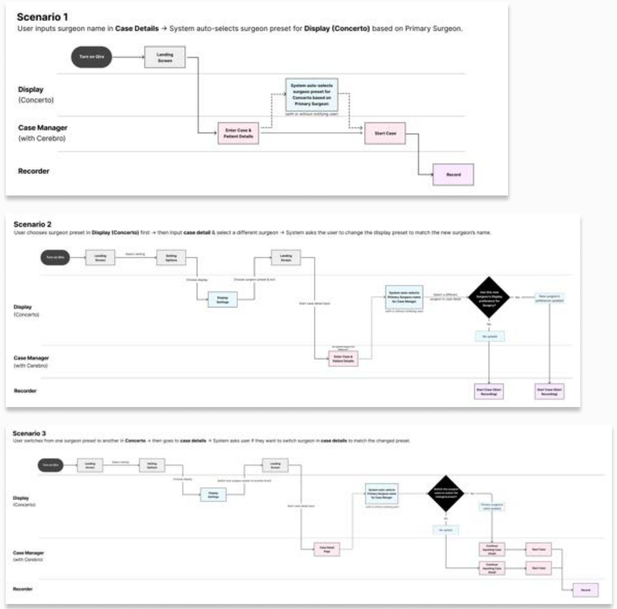
Concerto, an assistive software, **showcases case details, instrument energy levels, and system notifications/alerts** on the PSD (primary surgical display) during laparoscopic surgery. Its another feature is **to record the surgery process.**



Early Development & Wireframing

I played a key role in conceptualizing and crafting wireframes, followed by the design of user interfaces for the 'edit display preferences' workflow.

User Experience Swimlanes

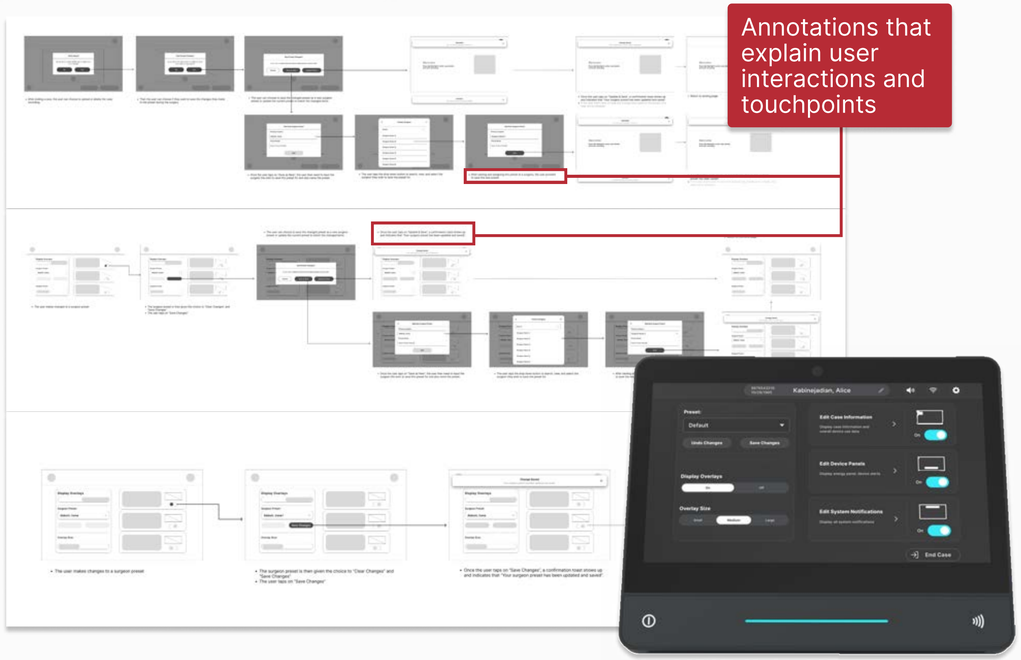


Core Features

Taking into account the product value, we chose to present project owners with three 'happy paths' outlining Concerto's core features: editing display preferences, switching between surgeons' preferences, and auto-correcting preferences based on the primary surgeon's name input in the case details.

I leveraged UX swim lanes to visualize various user interactions with Concerto. Then, I began crafting low-fi wireframes to deepen my understanding of Concerto's features, optimal placement, and user interactions.

Wireframing/Greyboxing Key Frames



Prototyping & Usability Testing

Why Usability Testing?

To ensure the seamless integration of this product into circulating nurses' existing workflow, we aimed to conduct usability tests on two concepts to **determine the optimal placement for** the "editing display preferences" feature.

Concept A: Concurrent

The first approach indicates that the recorder feature and the "editing display preferences" setting—each holding equal hierarchy in the product's design and appear on the same UI.

Concept B: Nested

This approach suggests that the 'editing display preferences' feature is nested within the recorder app, requiring users to access it through the 'setting menu' and clicking the 'display' button.

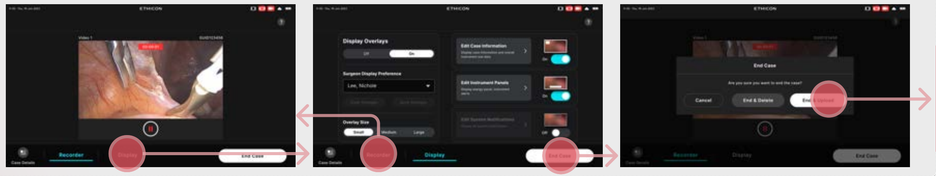
While it may be challenging to access the edit display preferences this way, we believe it represents the most non-interruptive method to seamlessly integrate Concerto into circulating nurses' existing workflow.

Prototyping

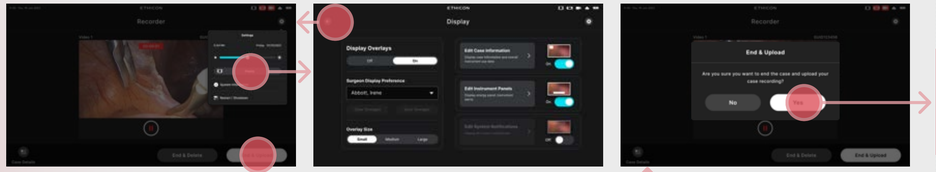
Pre-Op: Enter case details & patient details

Intra-Op: Record surgery and edit display preferences

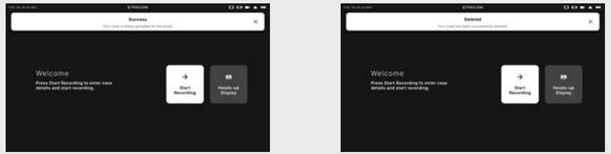
Concept A: Concurrent



Concept B: Nested



Post-Op: Upload or delete surgery recording



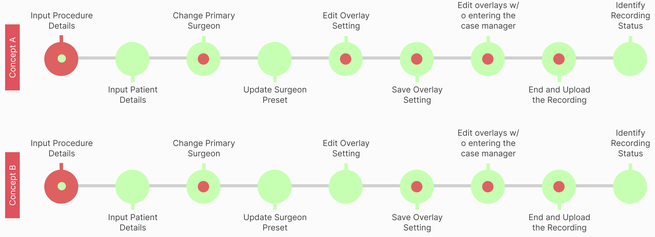
The Concerto Project - Synthesis

Usability Testing Methods

Our team recruited 4 preclinical nurses and 2 R&D staff members for usability testing. To prevent bias stemming from the order of interaction with the prototypes, half of the participants experienced concept A first, while the remaining half began with concept B.

Usability Test Tasks

I established a list of tasks for the participant to complete while I observed the user interaction and documented each tasks' success rate, use errors, and operational difficulties.

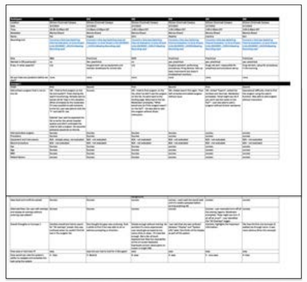


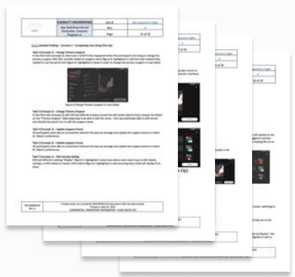
Documentation & Insights

In the usability test, preclinical nurses found the concurrent concept confusing due to excessive clicks for task completion and some of them had problems with the terminology.

"Concept A is a little less intuitive to me. Everything is backwards to what I would've expected."

"Heads-Up Display" meant something else and it doesn't communicate "Edit Display" to me."

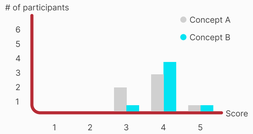




Overall Satisfaction Level

Participants completed both task flows smoothly and expressed overall satisfaction. Regarding integration into their daily workflow, Concept B (nested) received a slightly higher score than Concept A (concurrent).

Concept A scored an average of 3.8, whereas Concept B achieved an average score of 4 in terms of ease of use.

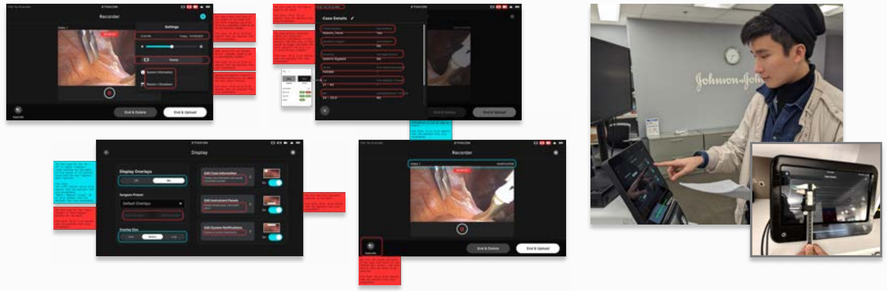


Legibility Assessment & Final Revision

I conducted a legibility test on the Concerto user interfaces, ensuring adherence to the **AAMI (Association for the Advancement of Medical Instrumentation) HE75 guidelines for medical use**. Parameters such as button sizes, touch zones, and text dimensions were meticulously measured and addressed.

According to the guidelines, Displays should present information at a size that can be read comfortably from the maximum specified viewing distance. For any workstations, the expected viewing distance of information viewed straight on will not exceed an arm's reach (about 20 to 24 inches).

I assessed legibility by **measuring font sizes and button dimensions (≥0.16'') as well as the color contrast ratio,** noting guideline deviations. Annotated the design file for awareness, and with project owner approval, promptly corrected errors.



Mantle & Design System Library

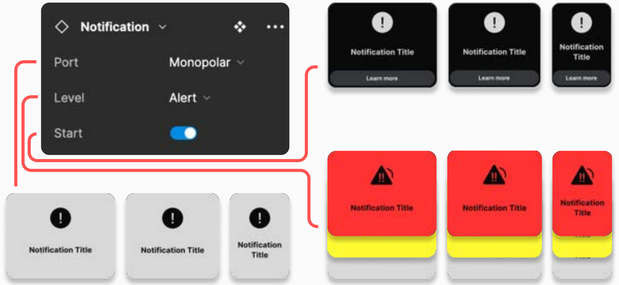
What's Mantle?

Mantle serves as a versatile energy generator, overseeing and regulating various laparoscopic surgical instruments connected to it. In the event of any issues with the instrument, the Mantle interface promptly notifies circulating nurses and surgeons, ensuring a secure surgical environment.

Designing the Design System Library

My responsibilities included updating two sets of UI elements within our design system, specifically focusing on notifications and pagination.

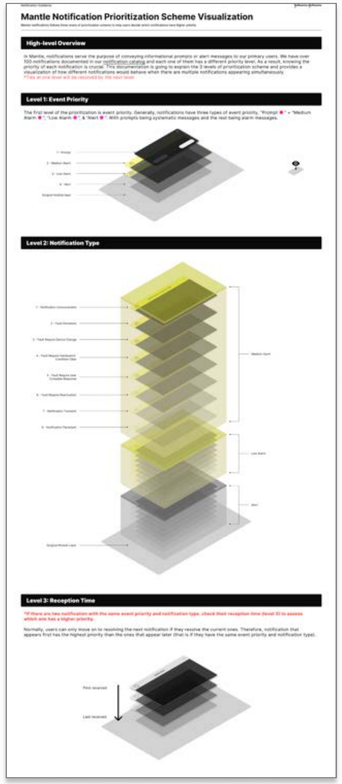
Notification (Minimized)



Notification (Expanded)

Documentation & Prioritization Scheme

On Figma, you can manipulate these UI elements by customizing their interchangeable properties. For instance, you can customize the priority level, buttons, and pagination of the notifications. Additionally, I have developed a notification prioritization scheme to ensure that our developers understand the varying severity each notification card represents



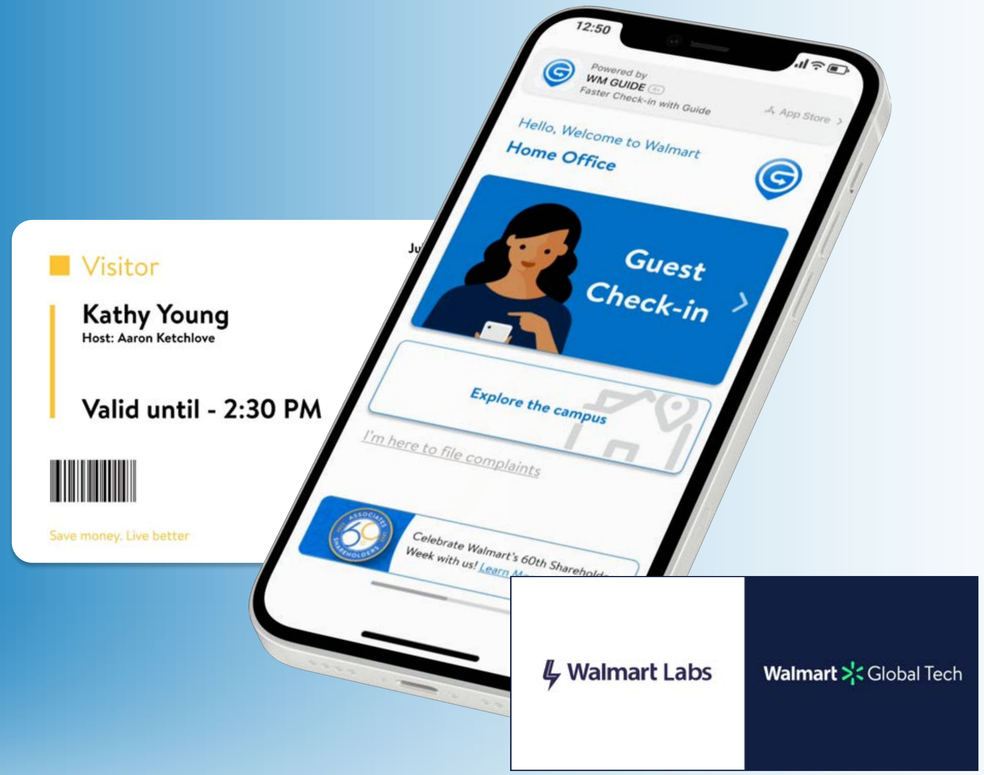
PROJECT 3 - WALMART GLOBAL TECH INTERN

CORPORATE CHECK-IN

The project at Walmart Global Tech aimed to conceptualize, design, and optimize a Visitor Check-In tool. The focus was on minimizing health concerns, streamlining check-in efficiency, and ensuring corporate security.

My key tasks included managing a usability study, implementing design changes, enhancing overall efficiency, and ensuring accessibility compliance through the incorporation of ADA Standards for Accessible Design.

Timeline	May - August 2022 | 4 Design Sprints
My Roles	UI/UX & UX Researcher Intern
Tools	Figma



Problem Scope

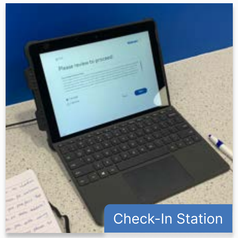
In my initial research, I discovered two primary issues in the guest check-in and check-out system at Walmart campuses: **the absence of a contactless check-in method** and the **necessity to streamline the current check-in process to reduce manual labor**.

How might we find a way to improve Walmart's brand identity by introducing a new campus visiting experience?

Initial Research Takeaway

I want to focus on designing a contactless visitor experience for our fellow non-associates who reside in Arkansas.

Target User	Non-associates (i.e. Vendors)
Touchpoint	Check-in Station Security Desk
Product	**Contactless Checkin Tool**


Check-In Station

User Research

Focused on my target audience, I conducted user research to understand the vendors' and securities' pain-points and the behaviors during the check-in process.

- 85% — **Vendors** wish the process can be more straightforward
- 71% — **Vendors** wish they can check in on their personal devices
- 57% — **Vendors** wish they can check out automatically once they leave
- 66% — **Securities** had experience dealing with severe technical issues
- 66% — **Securities** takes the most time to help visitors acquire the right credential
- 83% — **Securities** complains that the visitors often forget to check out

Synthesis

Based on the user research findings, I concluded the following pain-points and synthesized a HMW statement to guide my design vision:

There is **avoidable manual labor** in the check-in process

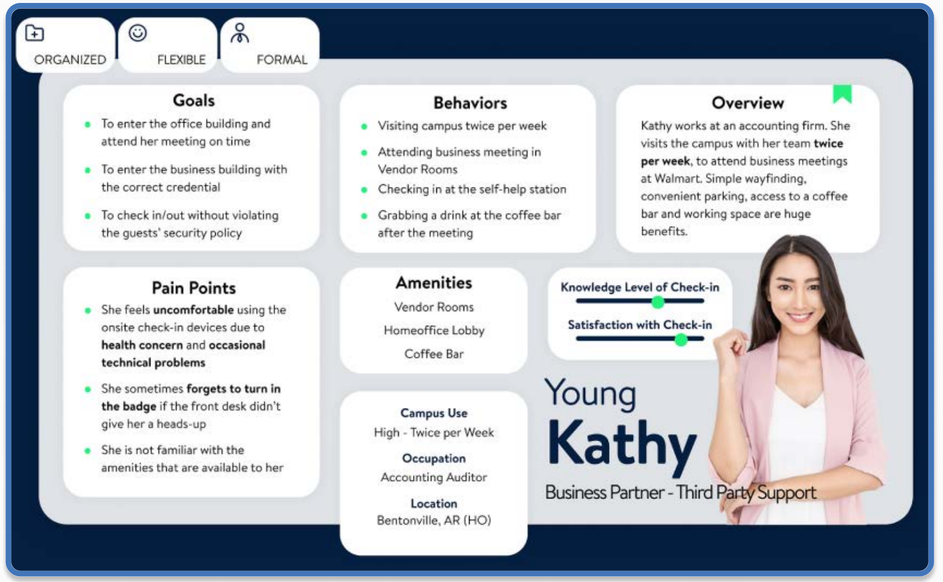
Both security and guests often **have trouble checking out**

Some guests have **health concerns** with using onsite check-in tablets

"How can we revamp the corporate check-in process to assist Walmart vendors and security personnel in addressing health concerns, reducing manual labor, and enhancing task efficiency?"

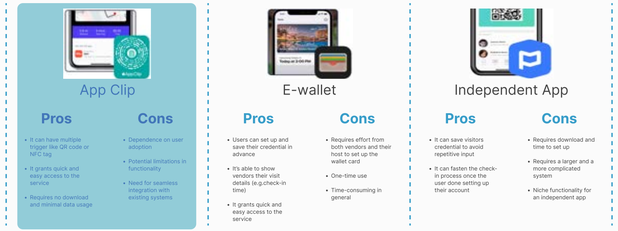
Personas

By synthesizing my key insights, I developed three validated personas as my user archetypes. Some of their key pain points are **feeling uncomfortable when using onsite check-in tablets, dealing with occasional technical issues, and having trouble locating available amenities open to the public.**

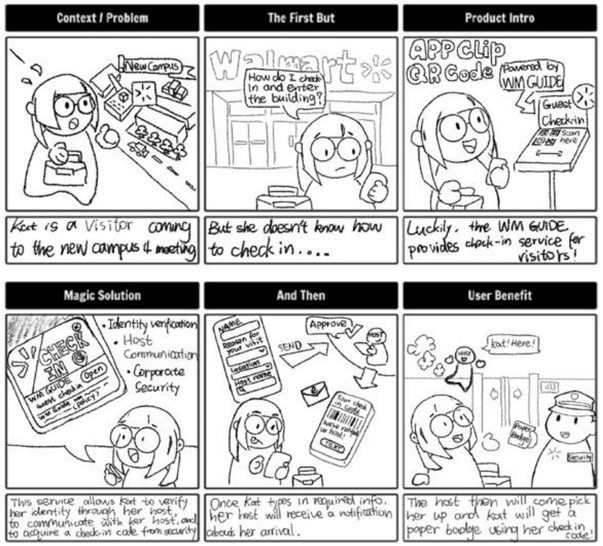


Solution Ideation

After figuring out the pain points I wish to tackle, I started to look at some existing products and investigate their value proposition. In the end, I chose the app clip as my main focus.



User Storyboard

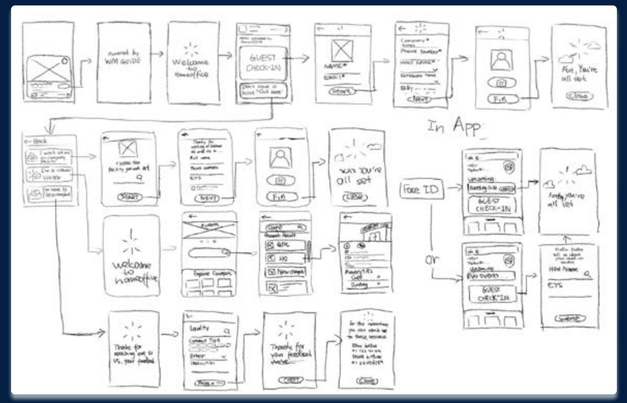


Early Development

User Flow

I divided my features into three main user flows so I could design my UIs and interaction accordingly:

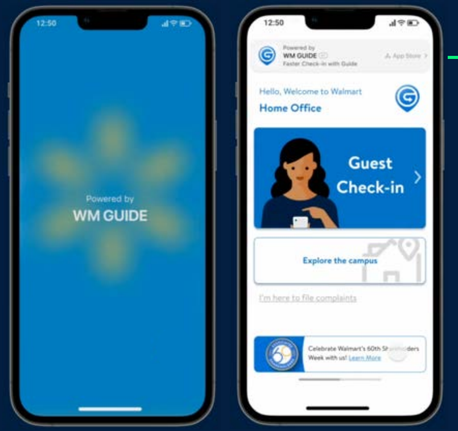
UI Sketch



Check-in App Clip

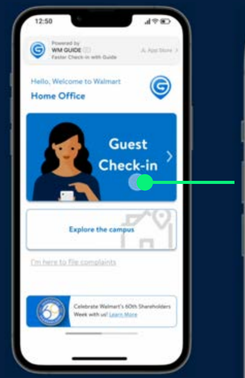
Multi-trigger App Clip

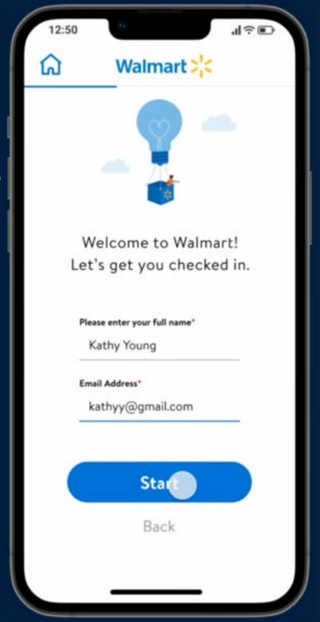
Activate the check-in app clip using QR codes, NFC tags, or links, enabling check-in anywhere without being restricted to physical stations.



This app clip directs users to the check-in service that is embed in the official Walmart campus app, known as Walmart Guide

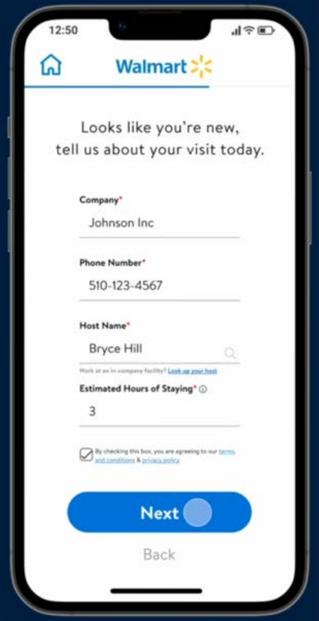
Fast & Easy Check-in

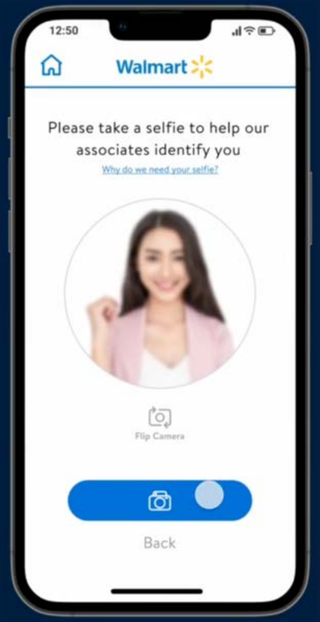




Step 1:
Fill in your name and email address to start the authentication process.

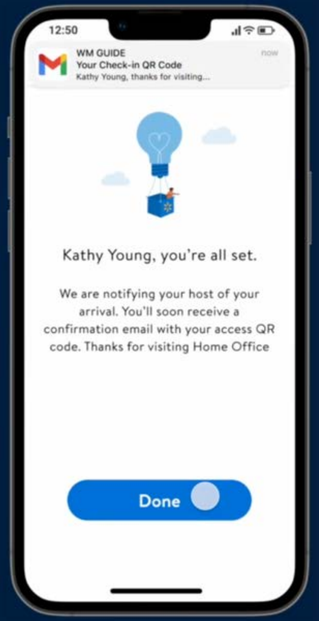
Step 2:
Complete your visit details, including company name, phone number, and host's name.



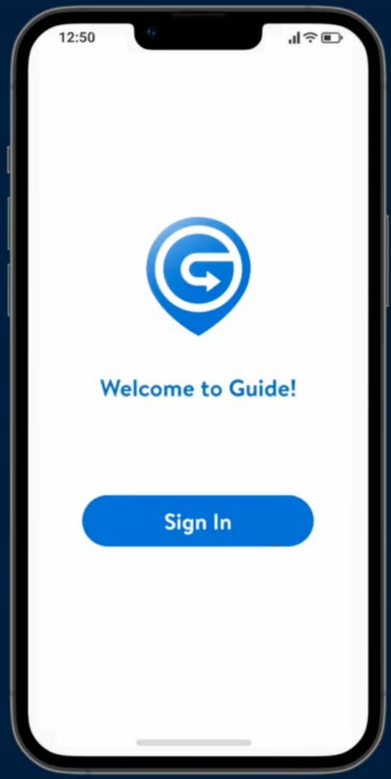


Step 3:
Take a photo of yourself to let your host know it is really you!

Step 4:
Once your host confirmed your visit, you will receive an email with your badge and your visit credential.

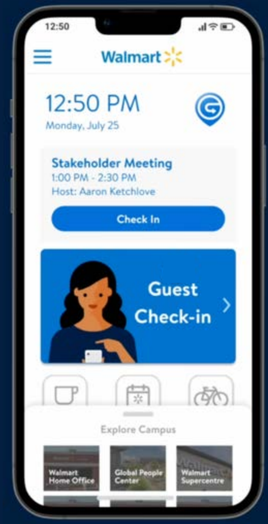


In-app Check-in

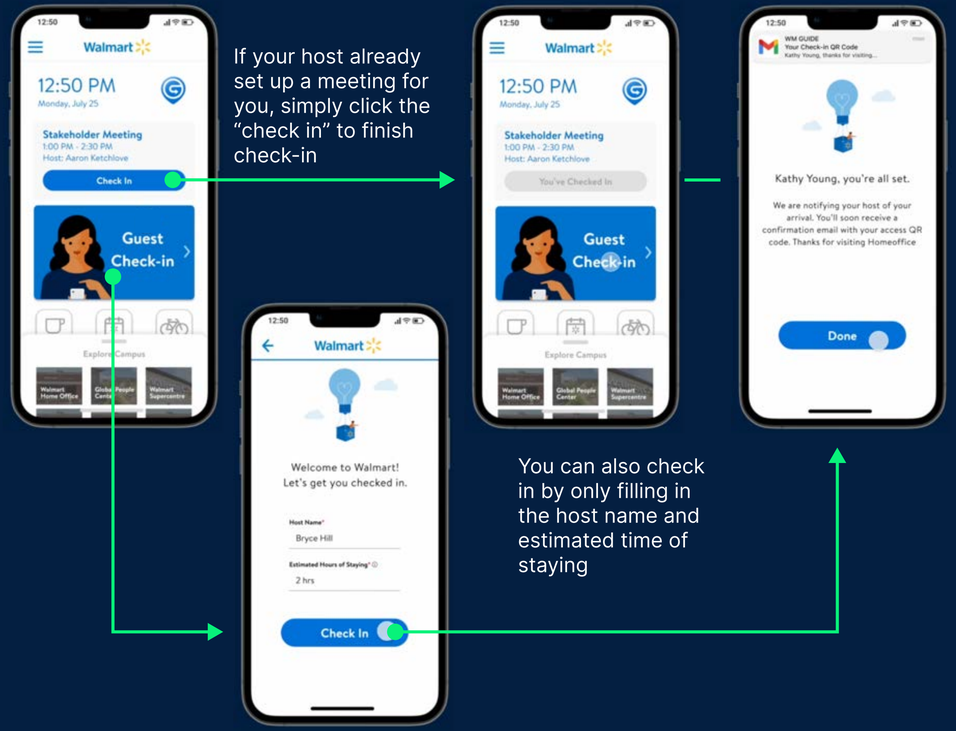


If you're a frequent visitor with the Walmart Guide app, your check-in will be much faster.

We linked your personal information to your account, so you only need to verify your host info.

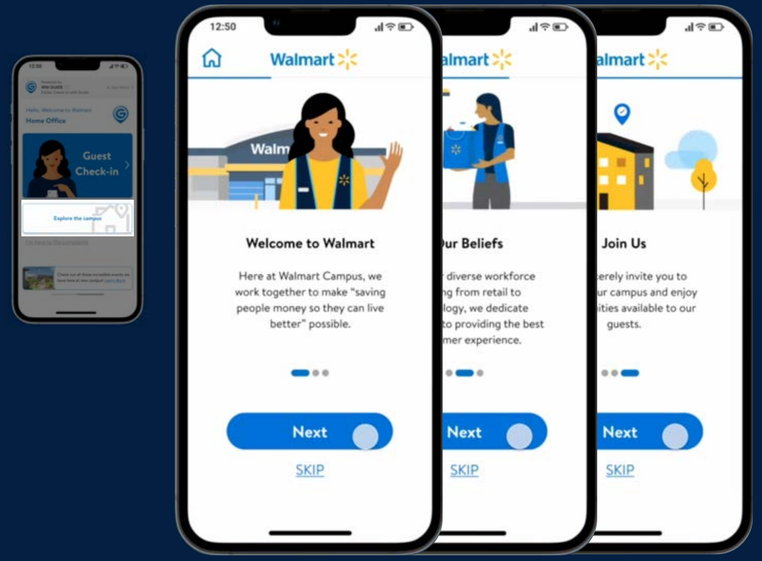


Faster & Easier Check-in

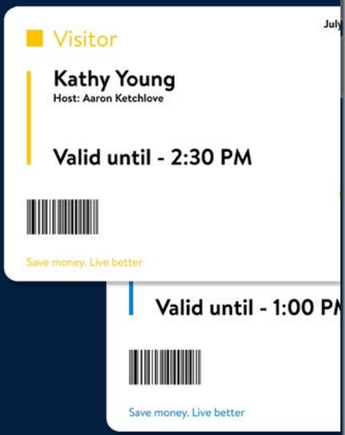


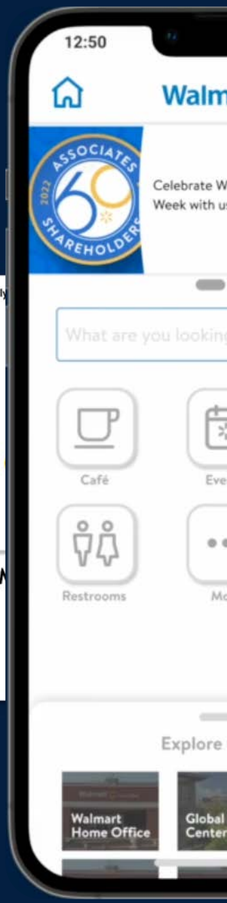
Campus Exploration

The Campus Exploration feature empowers Walmart Campus Visitors by providing insights into Walmart's values and vision, enabling them to search for available amenities and stay informed about external events, such as Walmart Shareholders Week.



Don’t forget your paper badge :)





The Campus Exploration feature not only enhances the visitor experience at Walmart Campus but also fosters a deeper connection with Walmart's values and vision. It offers convenient access to information about available amenities, ensuring visitors can make the most of their time on campus.

PROJECT 4 - AI Meeting Assistant

AI Meeting Assistant Knowvo

Lenovo's Smart AI Meeting Assistant project aims to transform the smart workplace by creating an innovative digital experience that turns real meeting content into decision-making insights, involving research, design, and testing.

The goals include leading a diverse team to design a user-centered Smart AI Meeting Assistant, developing and testing a prototype, and crafting a persuasive pitch for concepts that boost efficiency in corporate meetings

Timeline	September - December 2022
My Roles	UX Designer & UX Researcher
Tools	Figma / Zoom

Problem Scope

Decision-making becomes challenging, particularly in lengthy project cycles with diverse stakeholder collaboration, where capturing every meeting outcome proves difficult in a fast-paced environment.

This issue is particularly pertinent for project managers, industrial sample manufacturers, interior designers, and UX designers.

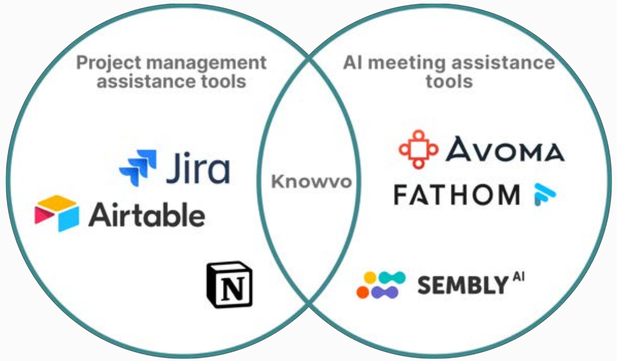
User Research

We conducted interviews with an industrial designer, an interior designer, and a garment manufacturing manager to explore challenges encountered when discussing physical objects in an online meeting environment.

Industrial Designer	• Build something to help keep track of everyone's needs during meetings, so discussions stay on track. • Have a tool that **shows past meetings** in a more interesting way, so people stay interested and engaged.	"Everyone voices different needs during meetings, it's hard to keep track"
Interior Designer	• Establish a way that makes it easy to track project progress by aligning it with how we naturally work. • Develop a solution to easily **retrieve updates in an interior design plan**, making the process more efficient.	"Many updates go into one interior design plan, and it's tough to retrieve all"
Garment Manufacturer	• Develop a way that ensures everyone, including onsite stakeholders and those in different time zones, can easily access and stay updated on crucial meeting information. • Highlight crucial meeting moments for those who miss it.	"Onsite stakeholders struggle to keep up with the latest updates."

Market Positioning

Lenovo would be one of the first technology companies that has a hardware that empowers **digital transformation** in co-working, remote working, onsite working, and mid-scale meeting environment.

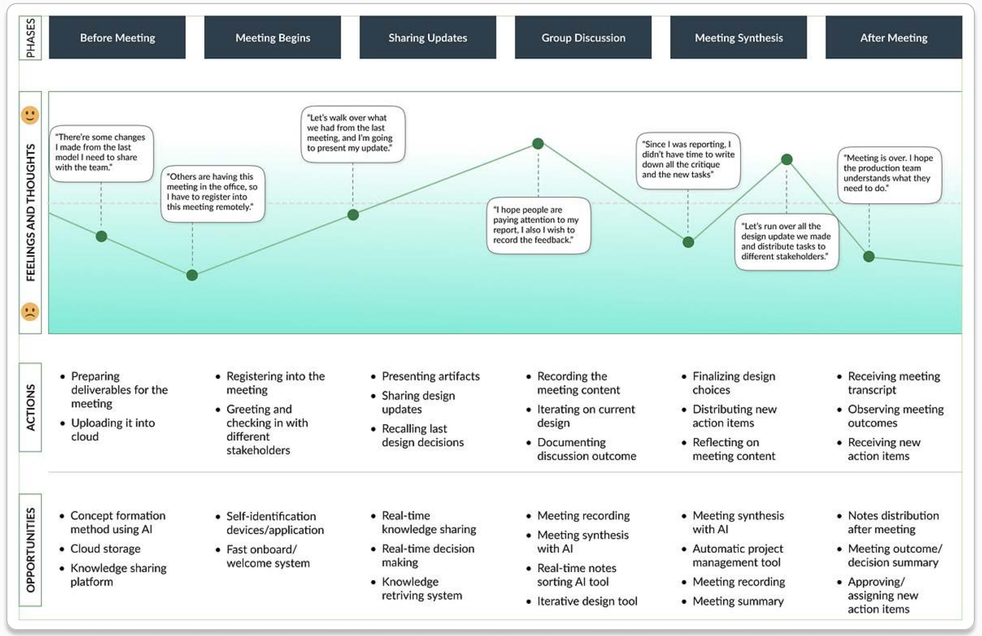


Knwovo will be a bridging tool that assists both remote and onsite meeting environment. While other AI meeting tools only capture verbal cues, chat history, and voice transcript.

Research Synthesis

By synthesizing our key insights, we developed a validated persona as our user archetype. Some of their key pain points are not knowing how to make sure other stakeholders can remember the deliverables or not being able to capture the important notes during the meetings.

We explored potential product opportunities by creating a journey map and examining obstacles encountered at each phase of online meetings.



Hardware + Software

For the ultimate design, we believe integrating hardware with software would elevate the meeting experience, facilitating seamless collaboration for both online and onsite workers on meeting content.

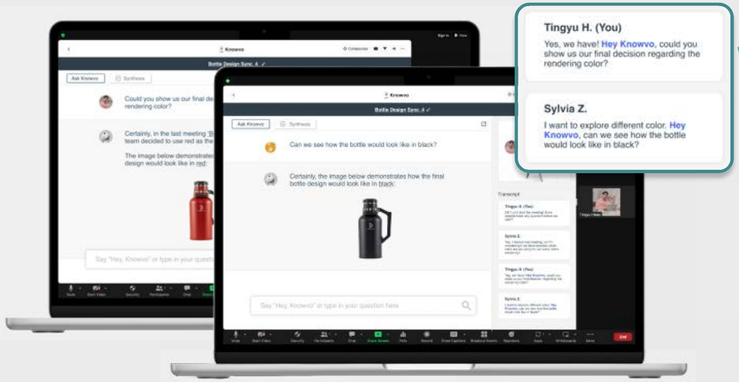
Hardware Ideation Sketch

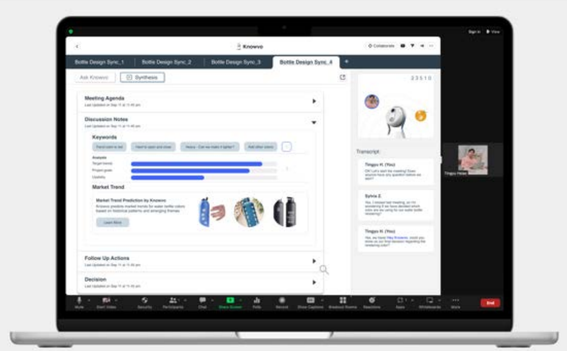
The hardware should be versatile for any meeting scenario, whether at home, in the office, or during workshops. It should support **audio recording**, **video recording**, and **audio player**.

Software Ideation Sketch

The software combines project management and meeting assistant, should have voice-control feature and seamless integration with users' preferred meeting software.

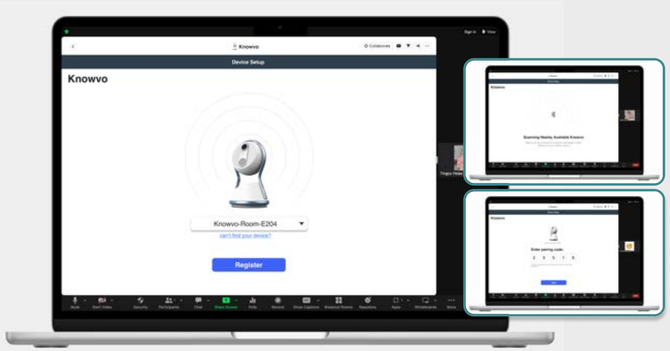
During the meeting, ask Knowvo to do tasks such as retrieving meeting decisions or generating images!





After the meeting, everyone can review the notes generated by Knowvo to refresh your memory and stay updated!

Empower your meeting experience by connecting the Knowvo device to your favorite meeting software



OTHER PROJECTS

The first section involves Arduino prototyping for a remote communication product, utilizing Arduino MKR Wifi 1010 and Arduino Circuit Playground for wireless communication.

The second section is a compilation of 2D projects I created throughout my academic journey. This collection encompasses paintings, poster designs, pencil sketches, and more!

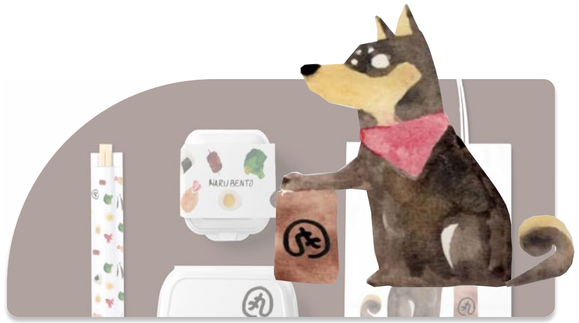
ARDUINO / ART & DESIGN

Teddigram

A project uniting two teddy bears with some tech magic. These bears, designed for long-distance couples, feature motion-triggered actions to send songs to each other.

Paired it with an app, Teddigram provides an delightful way for couples to connect and share experiences.

Arduino | Wifi-communication | Hardware Design | Comfort Companion



ART & DESIGN

In the second section, you'll find a mix of my creations such as paintings, posters, pencil sketches, and other creative stuff.

Each piece represent a unique facet of my artistic exploration and growth, showcasing the skills and styles I developed over the course of my life.

Paintings | Posters | Pencil Sketches | Package Design

Teddigram

Let's face it, communication is something a lot of other people struggle with. Communicating your feelings while in a long-distance relationship can be even harder, especially during a pandemic. With Teddigram, you can share your joy, your sadness, your loneliness, and even your anger with your partner.

https://www.youtube.com/watch?v=ARLNKOFAn4w

Press the left paw to play a happy song

Press the left paw to play a sad song

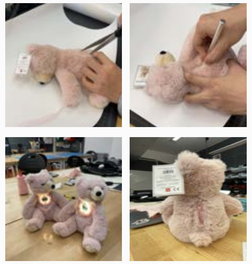
Face down to play a random song

Shake the bear to show an emphatic feeling

Code

We coded this prototype in AdaFruit's **MakeCode** software. We made it so that after the user set off certain triggers the circuit playground would light up and a song would play. Code Link

Build-A-Bear

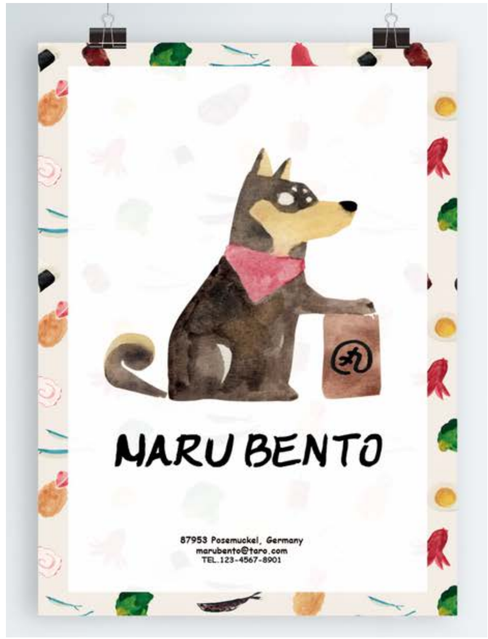


We cut open the dolls to sew the circuit playground on their tummies and place the batteries, buttons, and wires inside.

Name: Still Life Sketch
Size:297mm*420mm
Media: Pencil

Name: Still Life Sketch
Size:297mm*420mm
Media: Pencil and ink Pen

Name: Tea Pots
Size: 297mm*420mm
Media: Pencil



Name: Seeking
Size: 310mm*435mm
Media: Oil paintingy

Art & Design