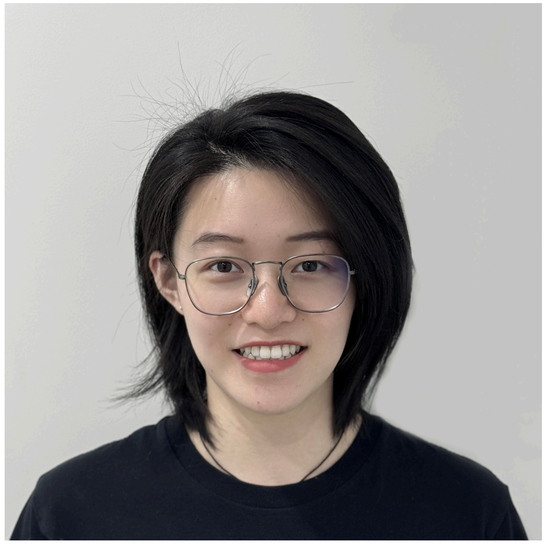
industrial design 2025

PORTFOLIO

zihan eleanor tang

Hello,

I'm Zihan Eleanor TANG.



I am a highly motivated and enthusiastic Industrial Designer with a keen interest in exploring various facets of design. Excited to bring the passion for hands-on creativity. My background in industrial design equips me with a unique perspective and sufficient skills for designing.

Education

02/2024 - 12/2024

Bachelor of Industrial Design (Honours)

University of New South Wales, Sydney, NSW

09/2020 - 08/2023

Bachelor of Industrial Design

University of New South Wales, Sydney, NSW

Experience

02/2024 -

Junior Industrial Designer

POP This!, Sydney, NSW

05/2022 - 08/2022

Product Designer Intern

Nestle Purina PetCare, Sydney, NSW

Awards

- **Nominated for the 2025 Graduate of the Year Awards (GOTYA)**, Design Institute of Australia
- **Certificate of Merit** – 2023 Australasian Packaging Innovation & Design Awards: Accessible & Inclusive Design (Student category)
- **Winner of UNSW Student Design Award** - Randwick City Architecture & Urban Design Awards 2023

Digital Skills

- Figma
- SOLIDWORKS
- Keyshot
- Adobe Indesign
- Adobe Illustrator
- Adobe Photograph
- Adobe XD

Analogue

- Sketching
- Digital Sketching
- 3D Modelling
- Model Making
- Wood Making
- Laser Cut

Contact

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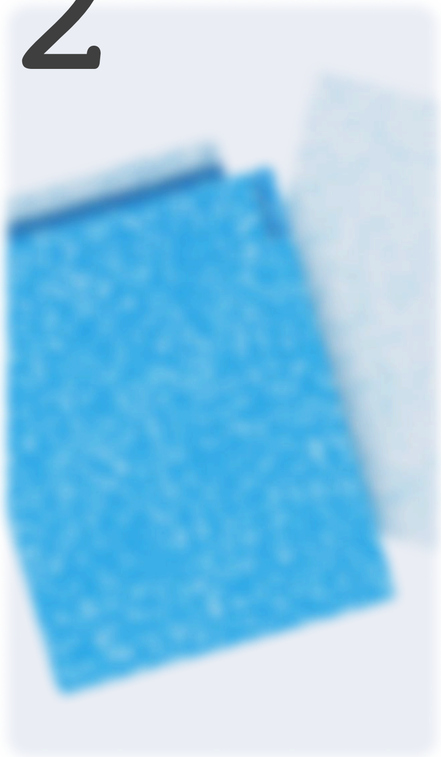

03 MeCube.

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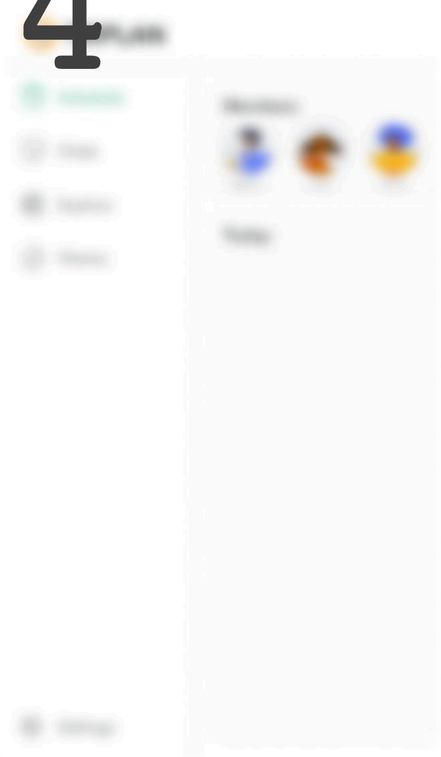


01

AMIKO.

A smart companion designed to support older adults with dementia and their families. With warm interactions and advanced safety monitoring, AMIKO helps bridge the gap between caregiving and meaningful connections.

Hi, I’m AMIKO.
How are you?

More than a device,

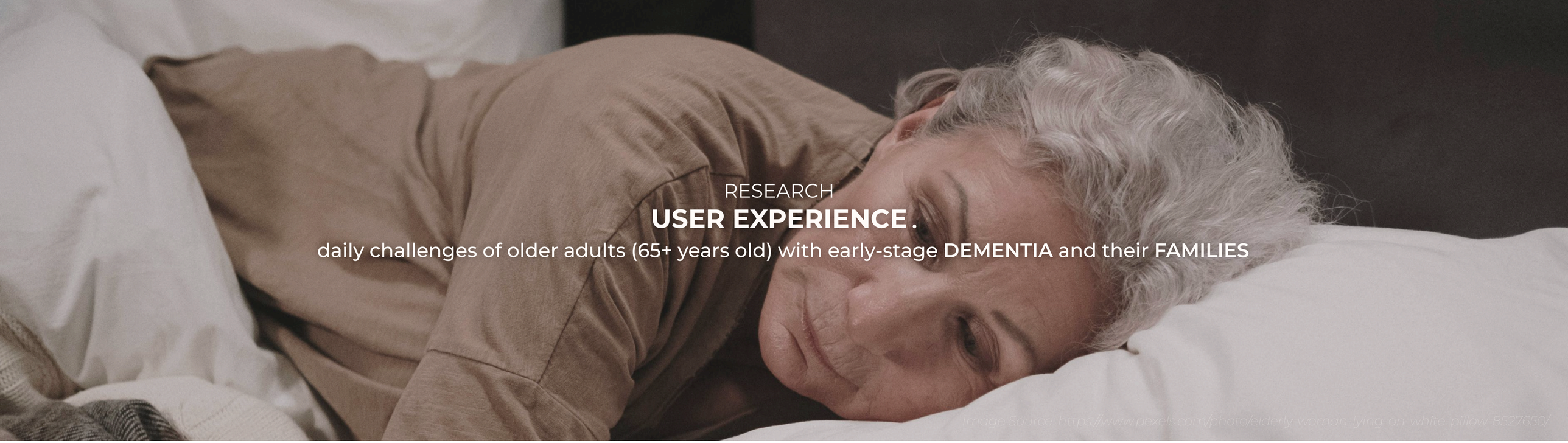
a FRIEND who cares.

DEMENTIA...

55+

million people worldwide

Image source: https://www.pexels.com/photo/pensive-elderly-woman-in-eyeglasses-and-trendy-bomber-3867213/



RESEARCH

USER EXPERIENCE.

daily challenges of older adults (65+ years old) with early-stage **DEMENTIA** and their **FAMILIES**

Image Source: https://www.pexels.com/photo/elderly-woman-lying-on-white-pillow-8527650/

Emotional Loneliness &
Social Isolation

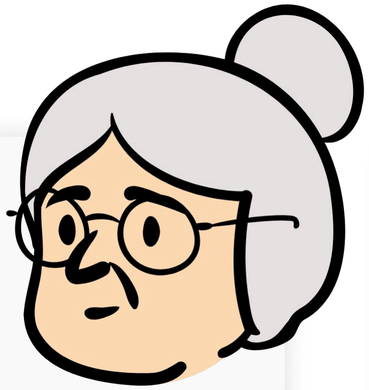
Cognitive Impairment &
Memory Loss

Physical Impairment &
Safety Risks

Caring Stress &
Emotional Burden

RESEARCH

TARGET USER.



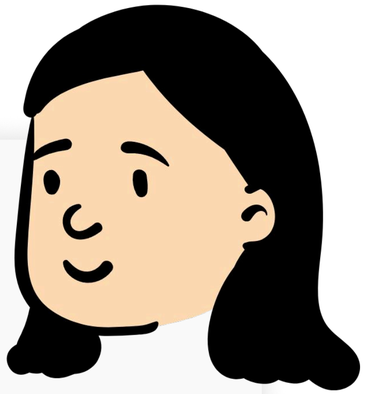
MARY

ABOUT

- 70 years old
- Early Stage of Dementia
- Living with daughter; stay alone at home during the day

NEEDS

- Maintain independence to mitigate feeling of being burden
- Stay safe at home with a non-intrusive way to monitor safety
- Continue engaging in daily routines with minimal disruptions
- Simple, intuitive reminders to assist my with daily tasks
- Emotional support and a sense of companionship



Rita

ABOUT

- 42 years old
- Daughter and Primary Caregiver
- Working in office during the day

NEEDS

- Ensure safety of my mother
- A dependable system that provides peace of mind
- Reduce stress and anxiety related to caregiving responsibilities.
- Make her mother feel more connected and less isolated.
- Alerts and notifications that are straightforward and actionable.

DESIGN

UNIQUE APPROACH.

a **FRIEND** who truly cares, not just a device

Companionship

Emotion Connection

Safety Support

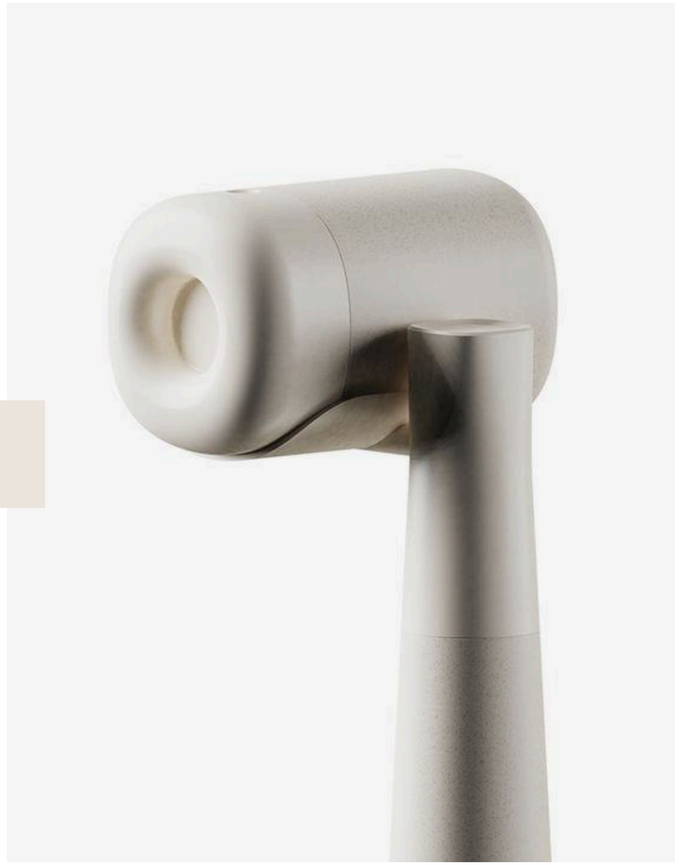
Trusted Care

Intuitive Design

Peace of Mind

DESIGN

CRAFTING A COMPANION . CMF



DESIGN

CRAFTING A COMPANION . lighting

WARM

COOL

SOFT & DYNAMIC

DESIGN

CRAFTING A COMPANION . lighting

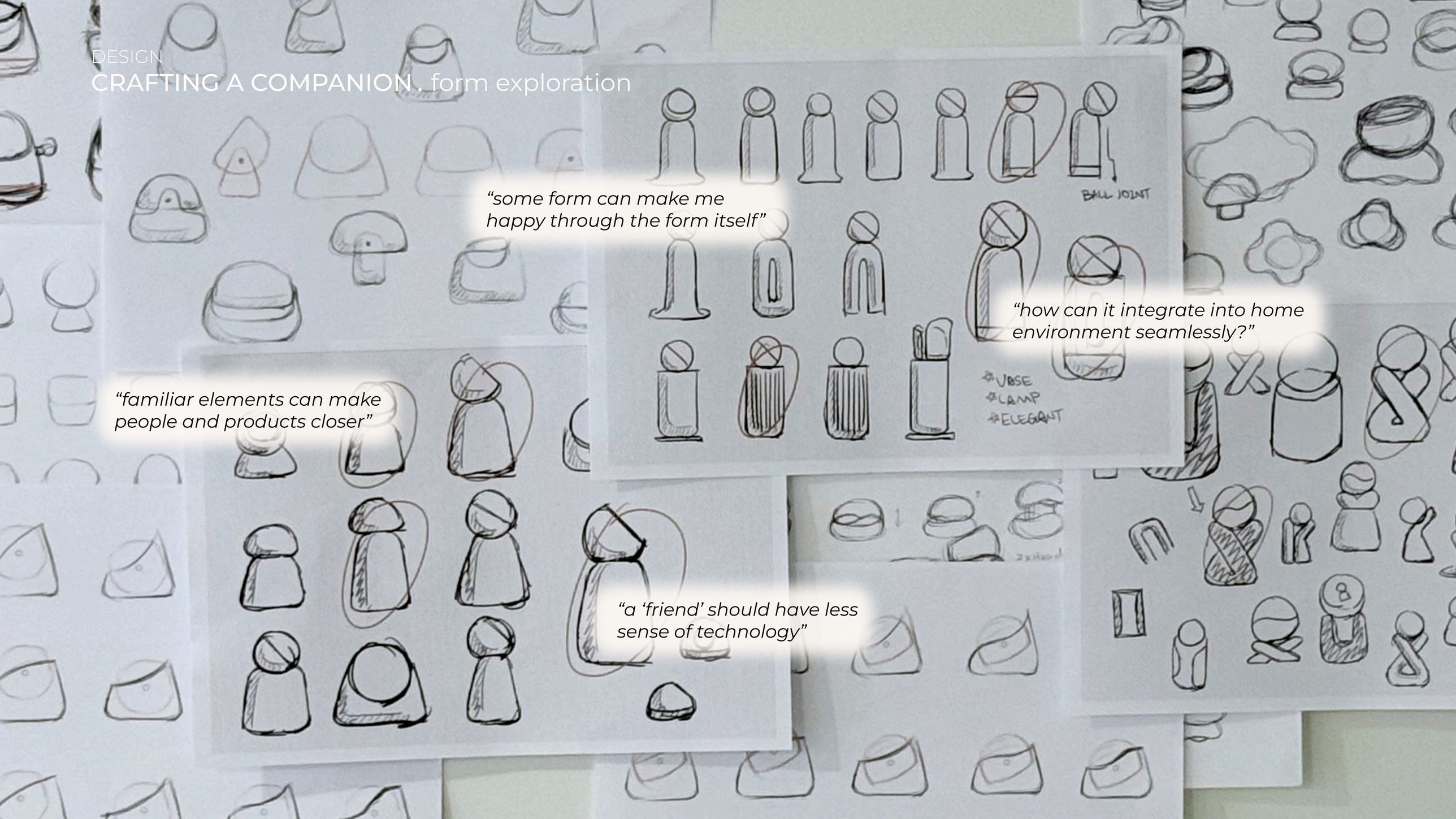
comfort & safety

emotional stability &
mood regulation

companionship &
breathing

DESIGN

CRAFTING A COMPANION . form exploration



“some form can make me happy through the form itself”

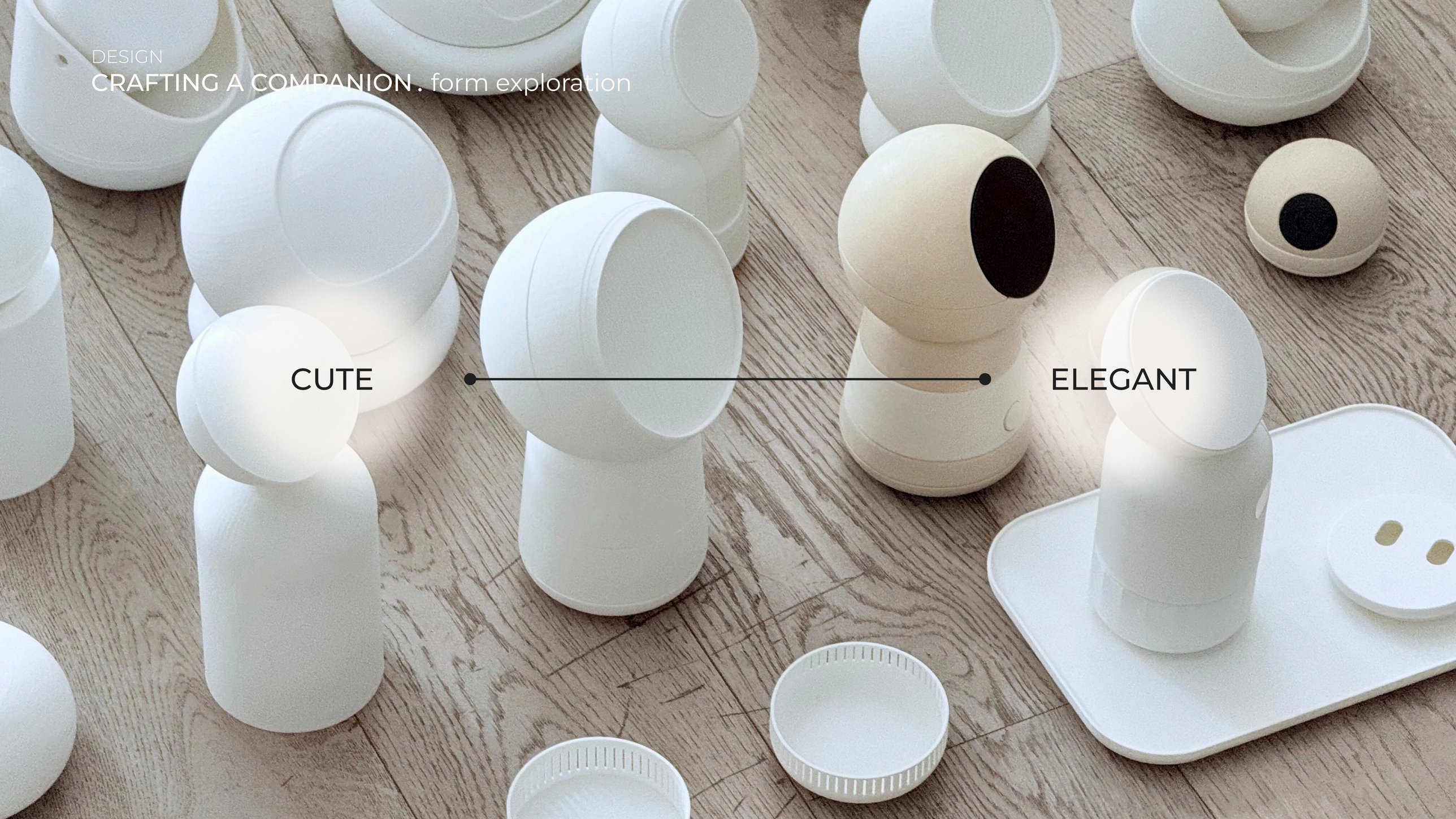
“how can it integrate into home environment seamlessly?”

“familiar elements can make people and products closer”

“a ‘friend’ should have less sense of technology”

DESIGN

CRAFTING A COMPANION . form exploration



SUPPORT SYSTEM

AMIKO FAMILY.

older adults with
early-stage dementia

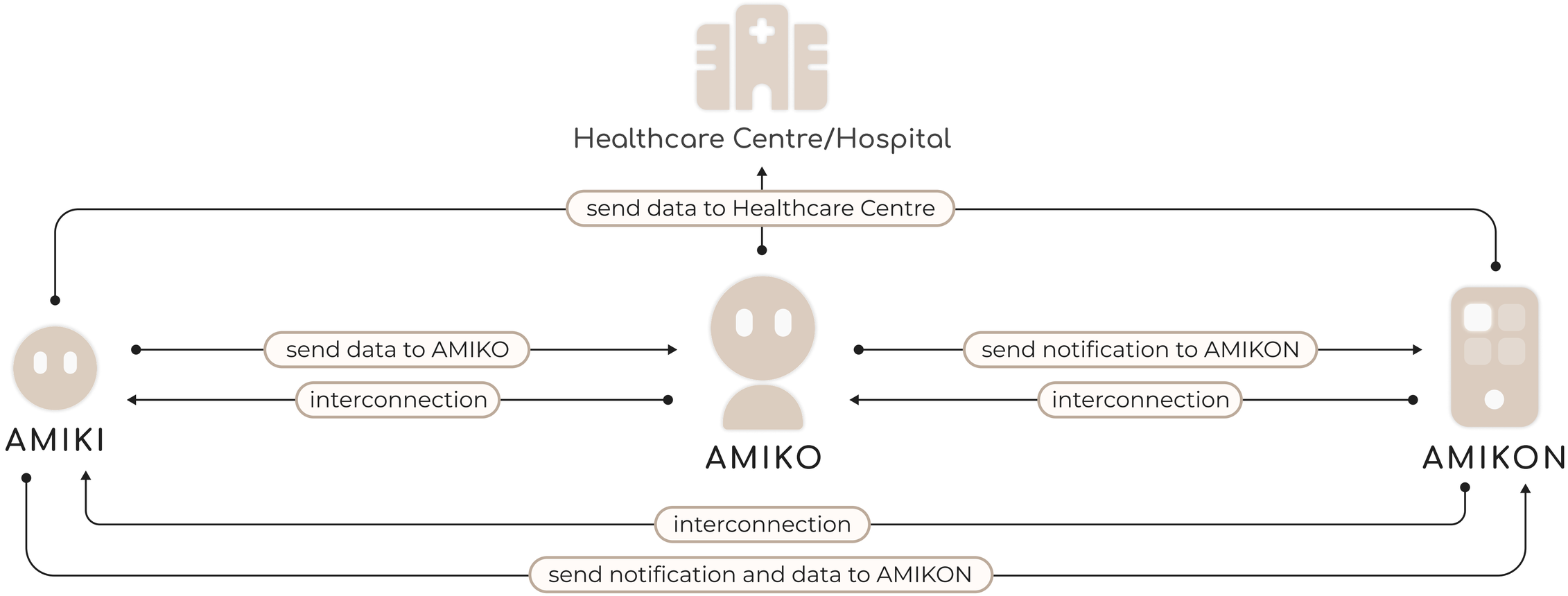
AMIKO
FAMILY

families
or caregivers

healthcare centre
or hospital

SUPPORT SYSTEM

AMIKO FAMILY.



AMIKO FAMILY

EASY SETUP.

All settings managed by family or caregivers through the app - AMIKON

“Hi, I’m AMIKO.
Thanks for waking me up!”

A DAY WITH AMIKO

EMOTIONAL COMPANIONSHIP.

Friendly morning greeting to start the day with companionship

A DAY WITH AMIKO

PERSONALISED SUPPORT.

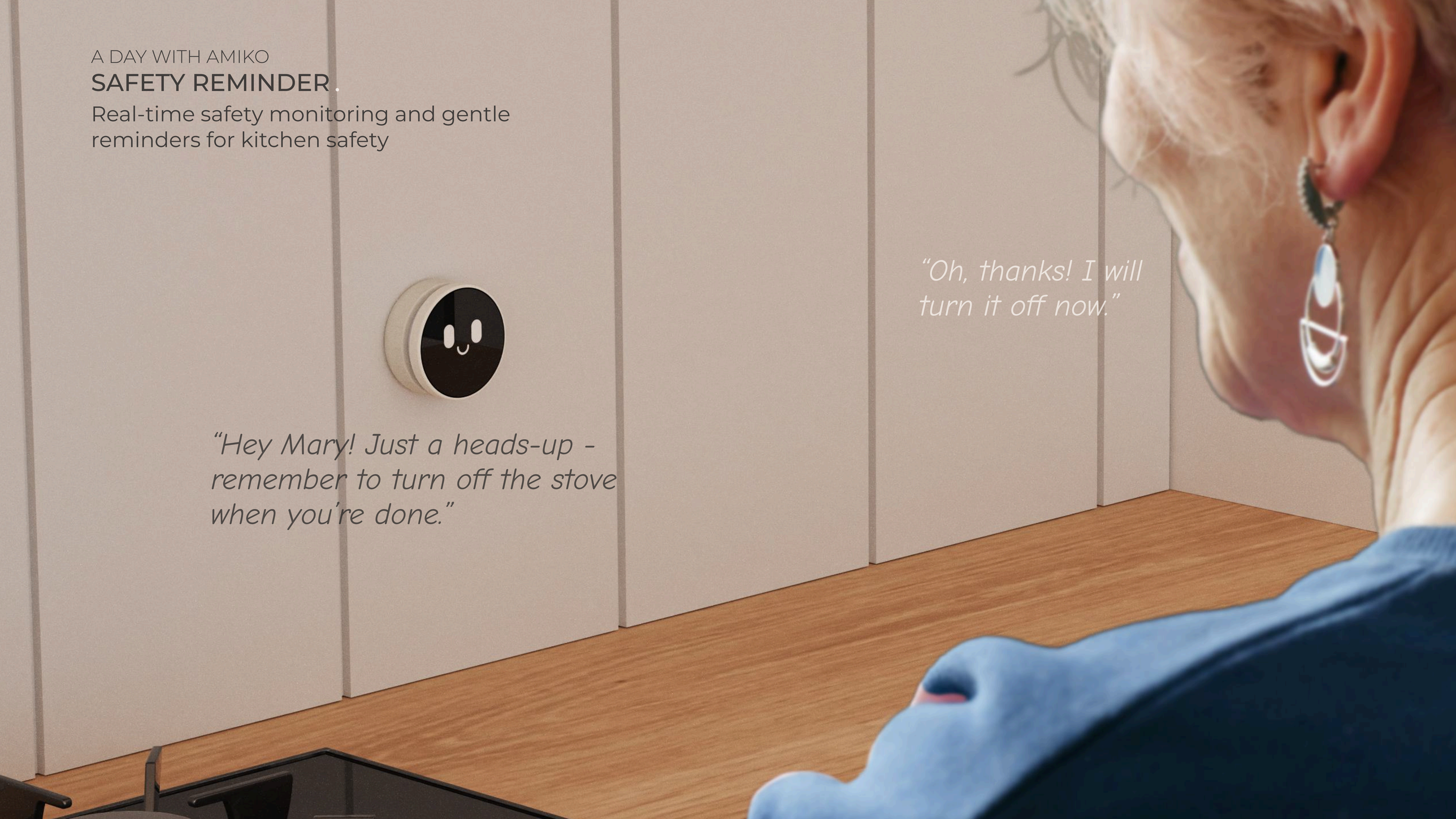
Making reading more enjoyable with mood-based music suggestions

“Hi Mary, would you like me to pick some music for you while you’re reading?”

A DAY WITH AMIKO

SAFETY REMINDER.

Real-time safety monitoring and gentle reminders for kitchen safety



A DAY WITH AMIKO

EMOTIONAL CONNECTION.

Casual conversation for emotional companionship and bonding

"It was so funny. You wouldn't believe it..."

"Haha! That's so hilarious!"

A DAY WITH AMIKO

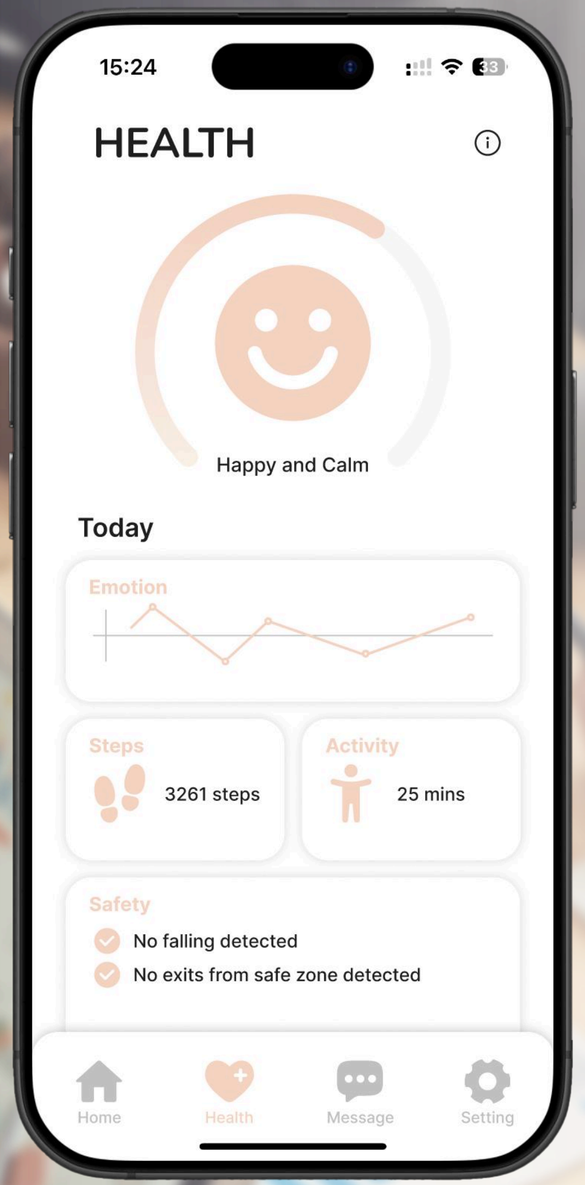
EMOTION RECOGNITION.

Mood detection and gentle encouragement to improve mood

A DAY WITH AMIKO

CAREGIVER CHECK-IN .

Sharing user activity data with caregivers
for peace of mind



A DAY WITH AMIKO

SAFETY ASSISTANCE.

Nighttime safety support with
voice-activated assistance

“Take your time, and just give me a shout if you need anything!”

A DAY WITH AMIKO

RESTING TOGETHER.

AMIKO recharges at night to be ready for tomorrow

TECHNOLOGY

HEART OF AMIKO.

Camera Module

Detects user emotions through facial expressions.

Infrared & Ultrasonic Sensor

Monitors user activity and ensures safety in real time.

Servo Motor

Supports dynamic interactions like head movements.

LED Light

Emotional recognition triggers lighting feedback through LED

TECHNOLOGY

HEART OF AMIKO.

PCB

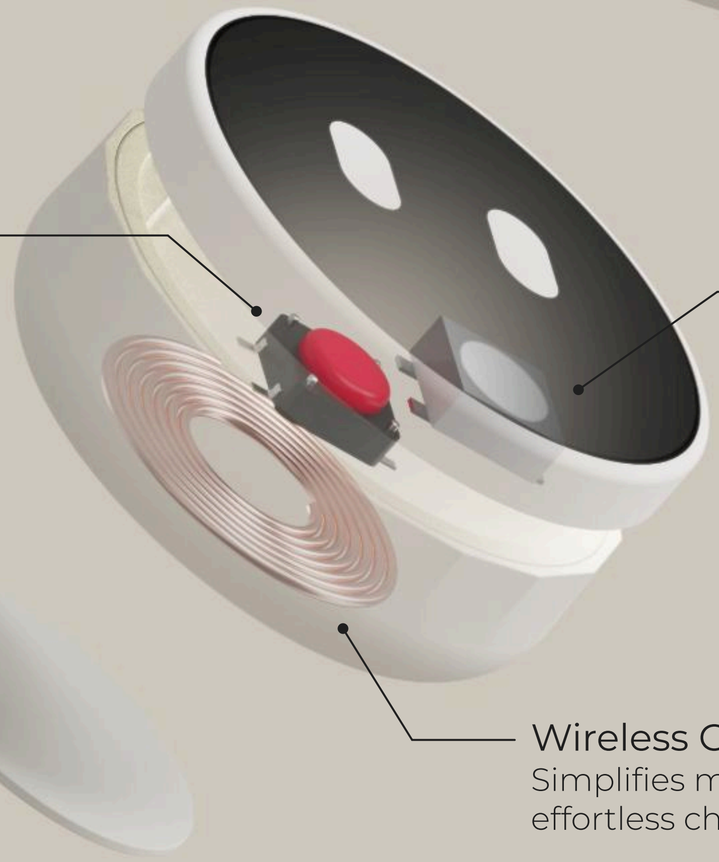
The core system for data processing and communication, including TensorFlow and NLP for emotion recognition algorithm.

Wireless Charging Coil

Ensures easy, hassle-free charging

TECHNOLOGY

HEART OF AMIKO.



Push Button Component
Provides an accessible solution for emergency calls.

Compact LED
Alerts users visually to ensure safety.

Ultrasonic Sensors
Detects user movements and monitors fall risks.

Magnet Panel
Easily mounts AMIKI to walls for flexible placement.

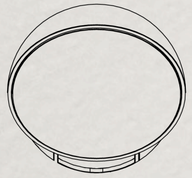
Wireless Charging Coil
Simplifies maintenance with effortless charging.

TECHNOLOGY

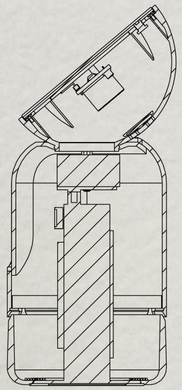
HEART OF AMIKO.

Material for Medical Device Longevity

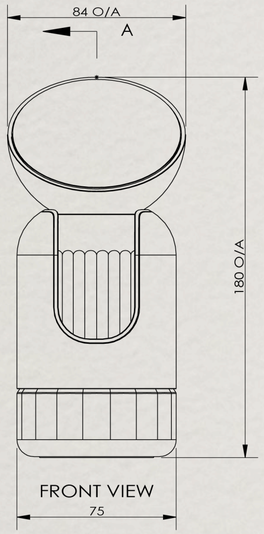
PC 85%/ABS 15% Blend, Medical-grade Silicone



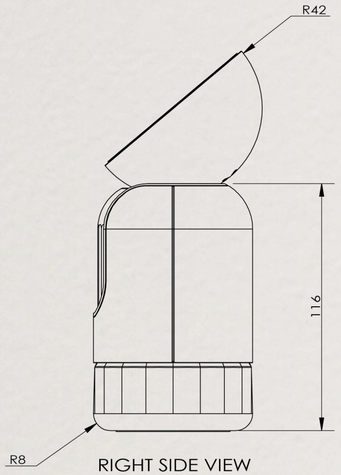
TOP VIEW



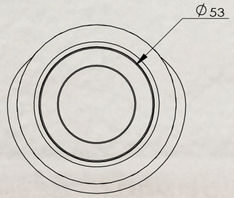
SECTION A-A



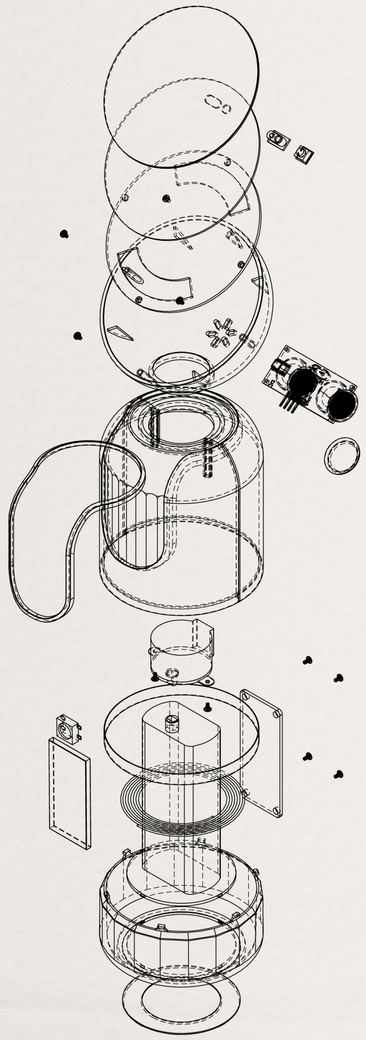
FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW



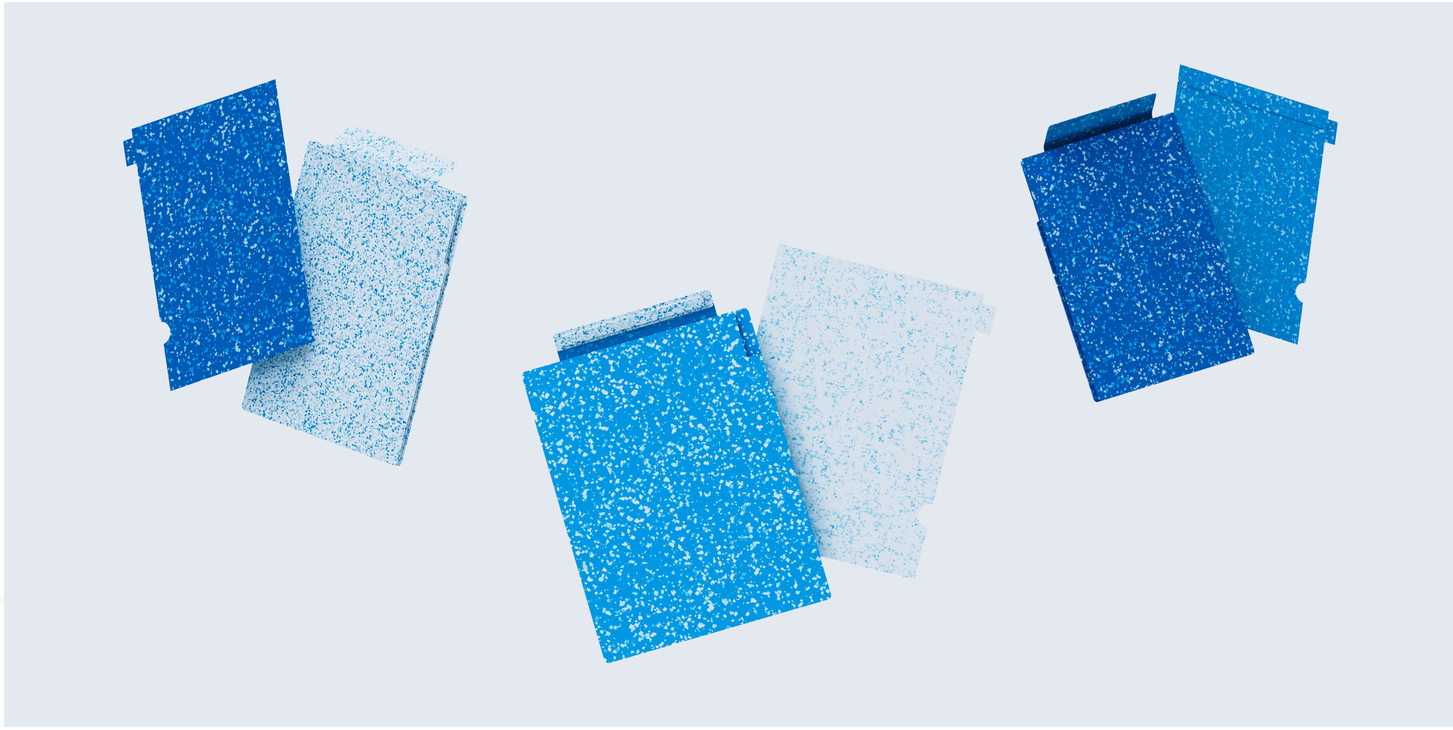
EXPLODED VIEW (NTS)

I’m AMIKO.
I’m your FRIEND who will be always by your side.
Thank You!
CREDITS
Dementia Australia

02

ProCare.

An upgraded nurse clipboard, designed to innovate daily care routines, prioritising users' needs and sustainability, contributing to a more effective healthcare ecosystem.



52400 tonnes of waste is generated from public **health services** in NSW

Plastics can account for **1/3** of a hospital's general waste

Australia's healthcare system has a **carbon footprint** equivalent to **7%** of the nation's total

40-60% of waste going into the clinical waste streams is **recyclable**

POLYPROPYLENE is valuable recyclable material

- Decrease the waste of healthcare system
- Decline the carbon footprint

- Raise the awareness of recycling
- Encourage hospital staff to sort waste

Properties of Polypropylene.

- High Strength and Durability
- Lightweight
- Recyclability
- Good Transparency
- Cost-Effectiveness
- Safety of Food Contact (non-toxic, odourless)
- Chemical Resistance

Needs from People in Hospital.

Inpatient

- Patients' Comfort
- Safety
- Accessibility
- Emotional Well-being
- Multi-functionality
- Positive Environment

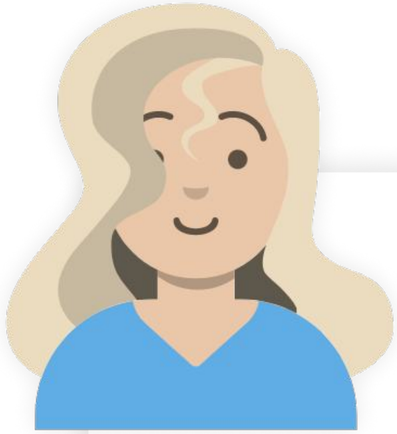
Nurse

- Workflow Efficiency
- Ergonomics
- Comfort and Well-being
- Organisation and Storage
- Mobility and Flexibility
- Durability and Maintenance

Wide Applications

- Disposable Medical Masks and Gloves
- Wound Care Products
- Cabinets and Storage Units
- Medicine Bottles and Caps
- Laboratory Consumables
- Disposable Food Trays and Utensils
- Pill Organisers

lack of ergonomics
bulky and heavy
inefficient clip mechanism
limited storage space



Mary

Hardworking | Organised | Attentive

Age	29
Occupation	Nurse
Location	Sydney, NSW, Australia
Status	Single

Convenience
Utility
Ease of use
Portable
Comfort

I wish the clipboard could provide comfort during multitasking work, enhancing my overall well-being while I'm working.

Goals

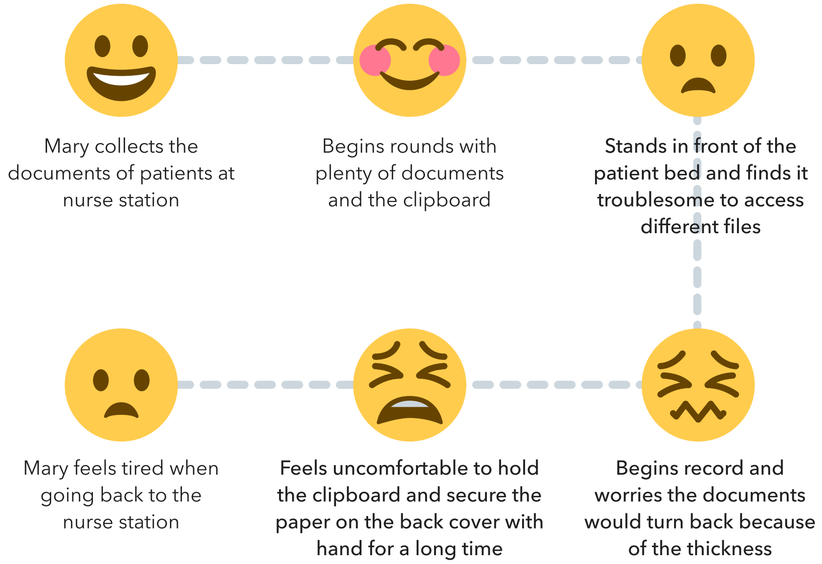
- Make jobs easier
- Reduce physical strain and fatigue
- Provide the best care for her patients

Frustrations

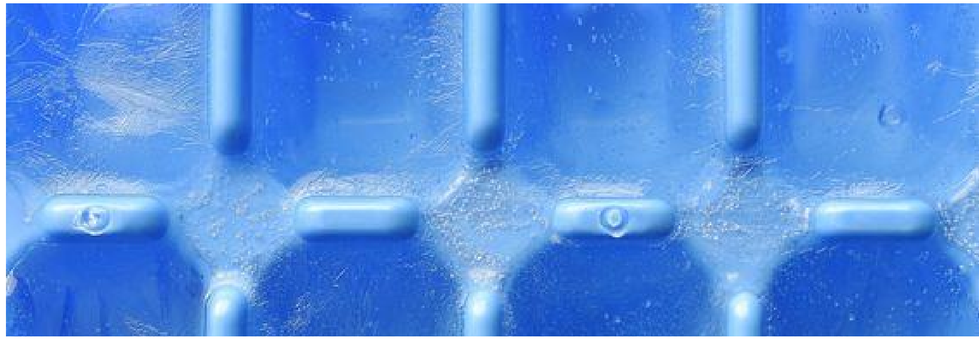
- Hard to access and organise different files
- Difficult to write with the clipboard

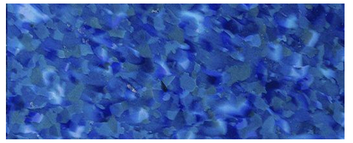
Hopes

- Want the clipboard to have more storage space for items
- Need the clear organisation of files



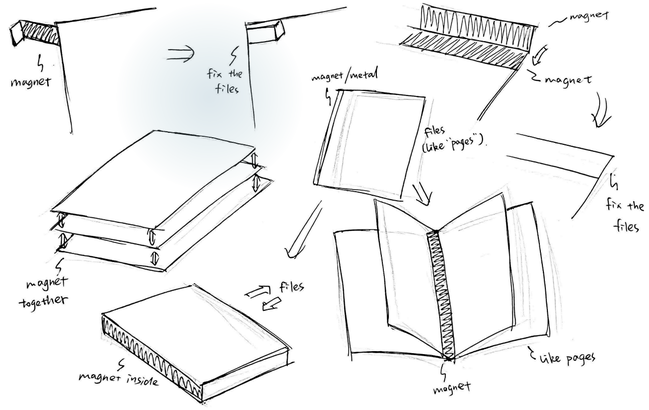
DESIGN LANGUAGE.

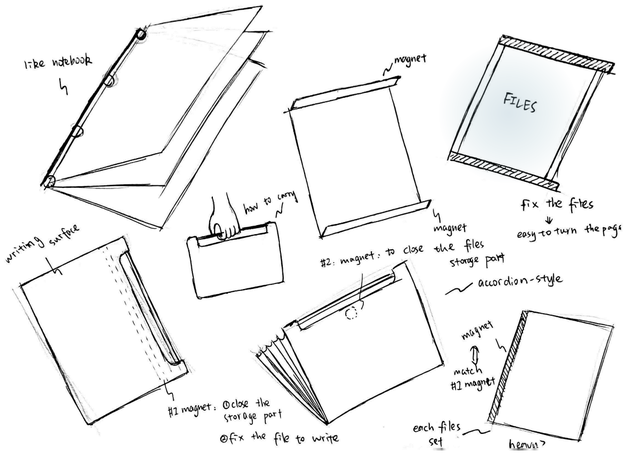


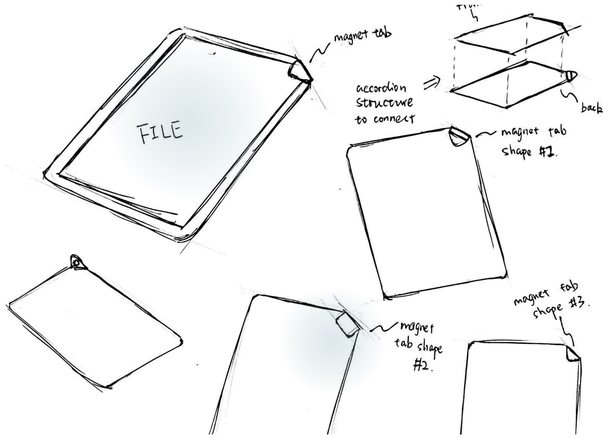


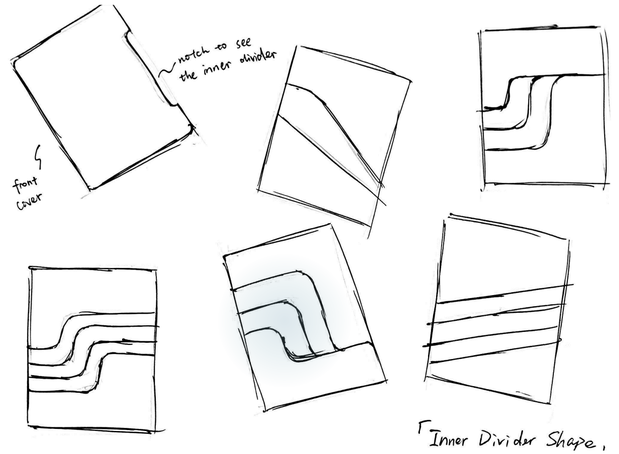
DESIGN PROCESS.

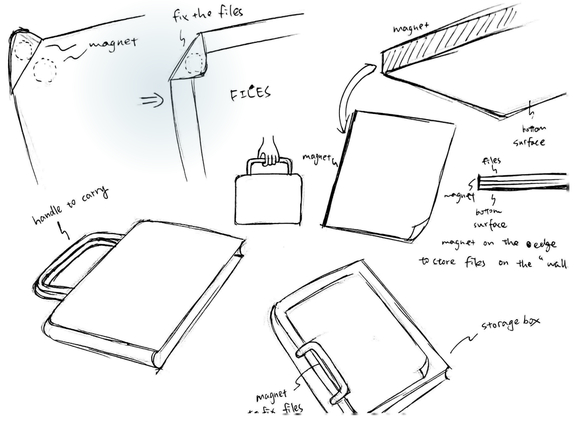
iterated sketch

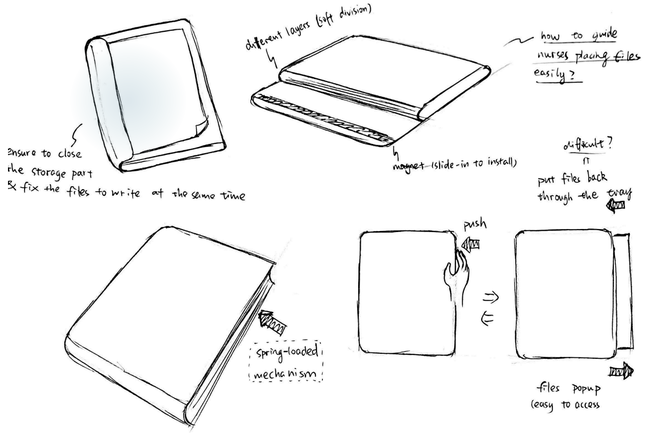


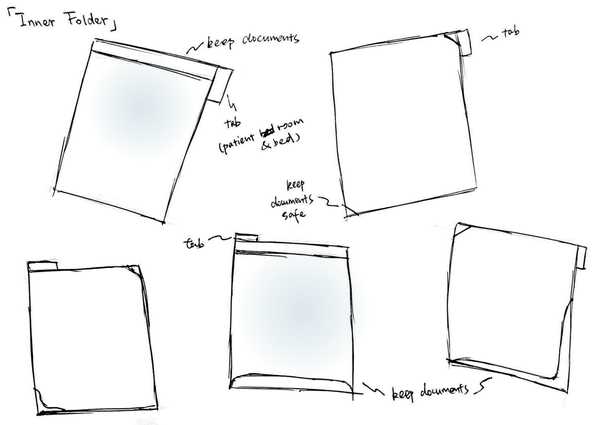


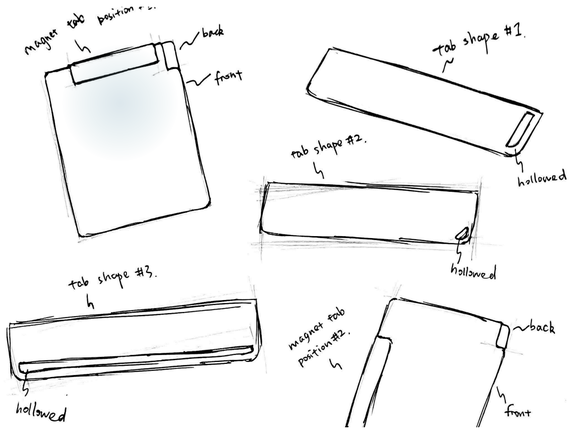












DESIGN PROCESS.

iterated model & user test

"I don't want to change my habits of using clipboard."

"the label is on the right side in most cases."

interviews with medi students.

"the tab needs to be more obvious."

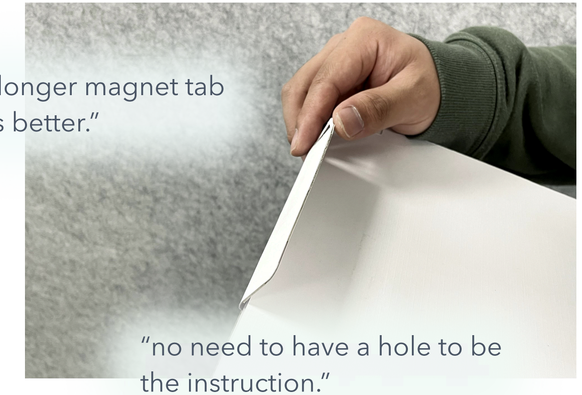
"multi layers are more useful."

"the corner might break documents."

"bigger magnet tab."

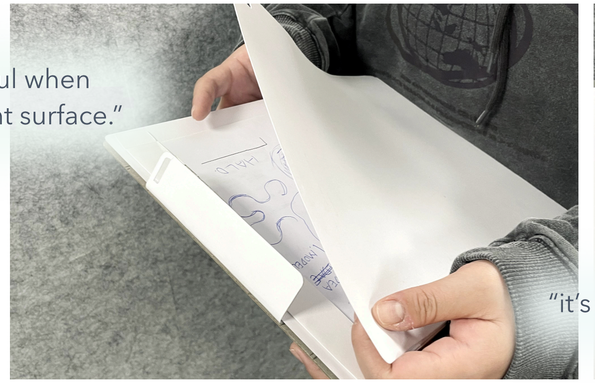
user testing for peer feedback.

"longer magnet tab is better."



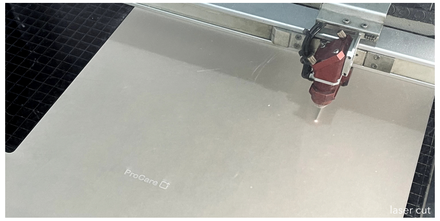
"no need to have a hole to be the instruction."

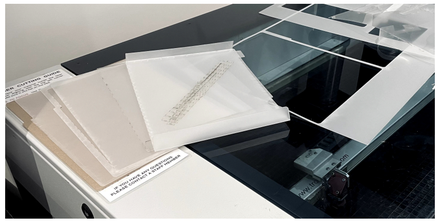
"the notch is helpful when turning up the front surface."

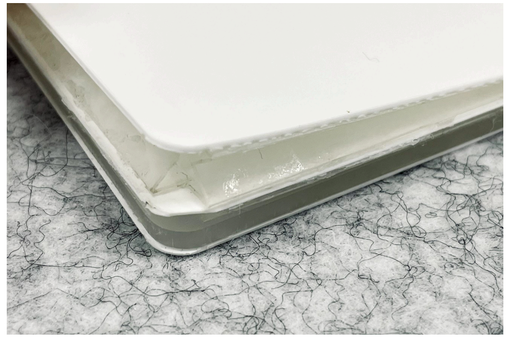


"it's easy to insert the file."

- ProCare with badge
- clipboard & inner folder
- notches on writing surface, inner divider and background
- accordion-style storage space
- secure documents with magnet tab

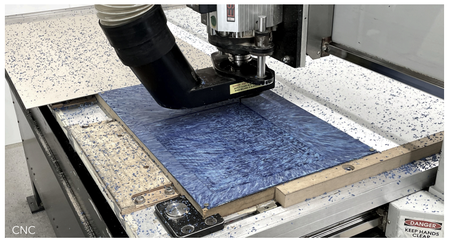


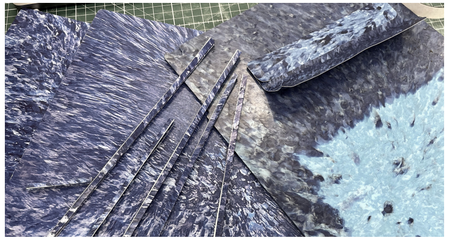


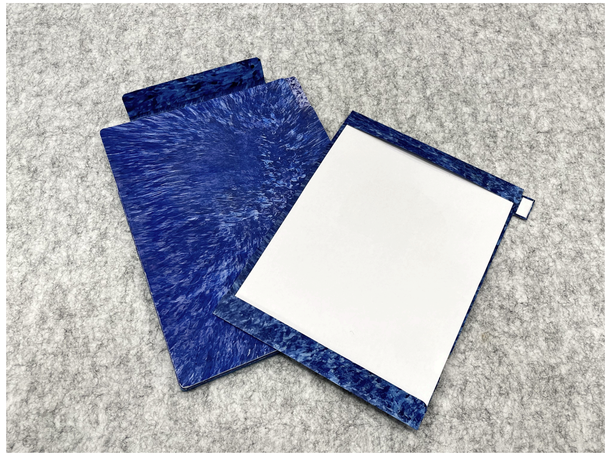


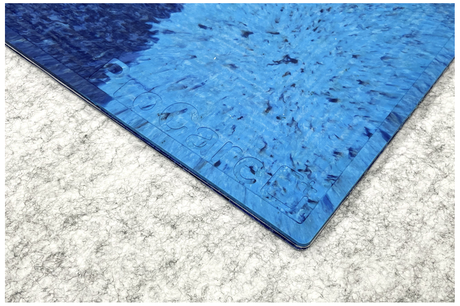
FINAL MODEL.

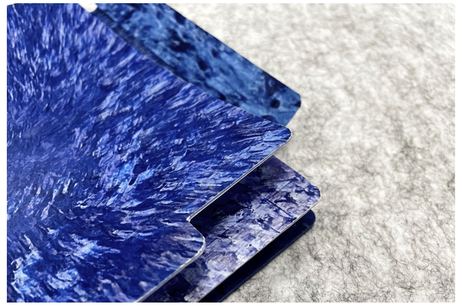
- ProCare with badge
- extrude-out “frame” & sunken logo
- notches on writing surface, inner divider and background
- accordion-style storage space
- easy separation of magnet cover
- customisable label on inner folder

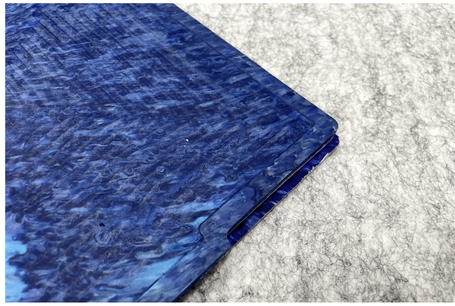


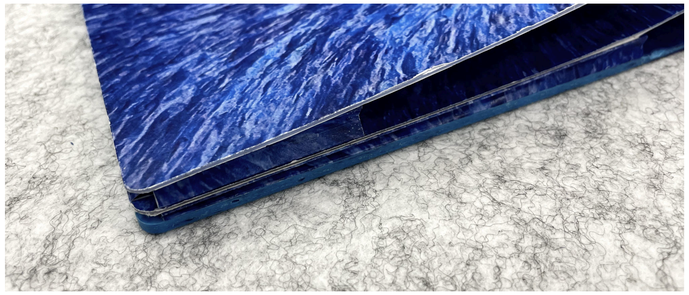


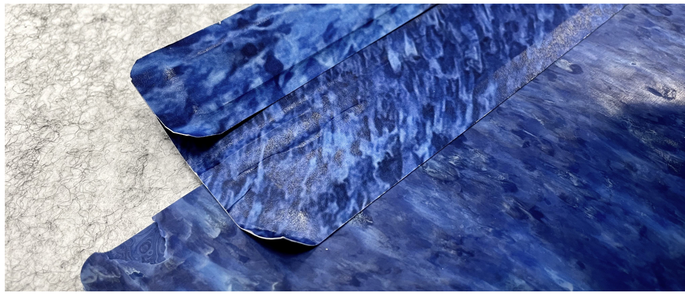


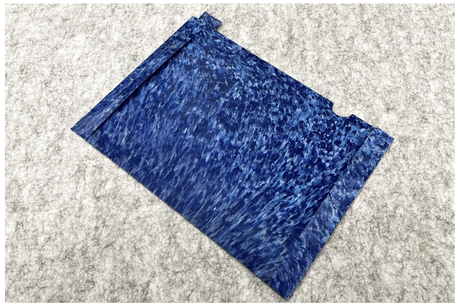


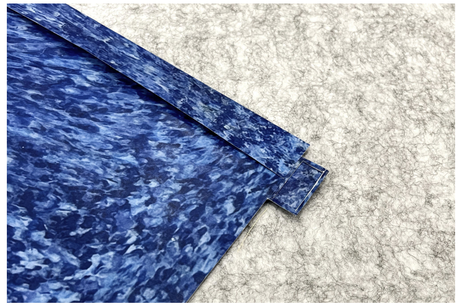


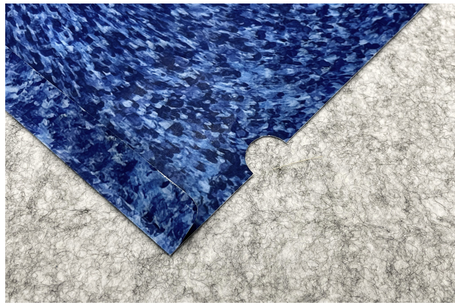






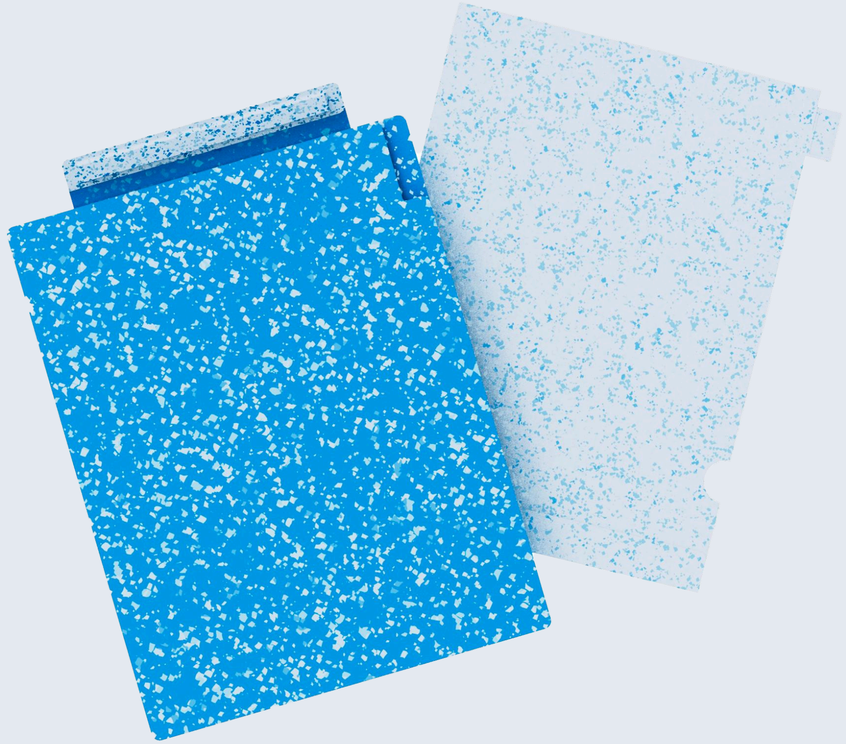


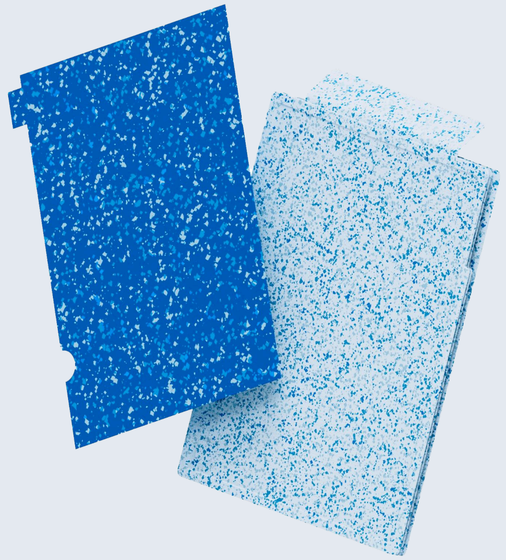


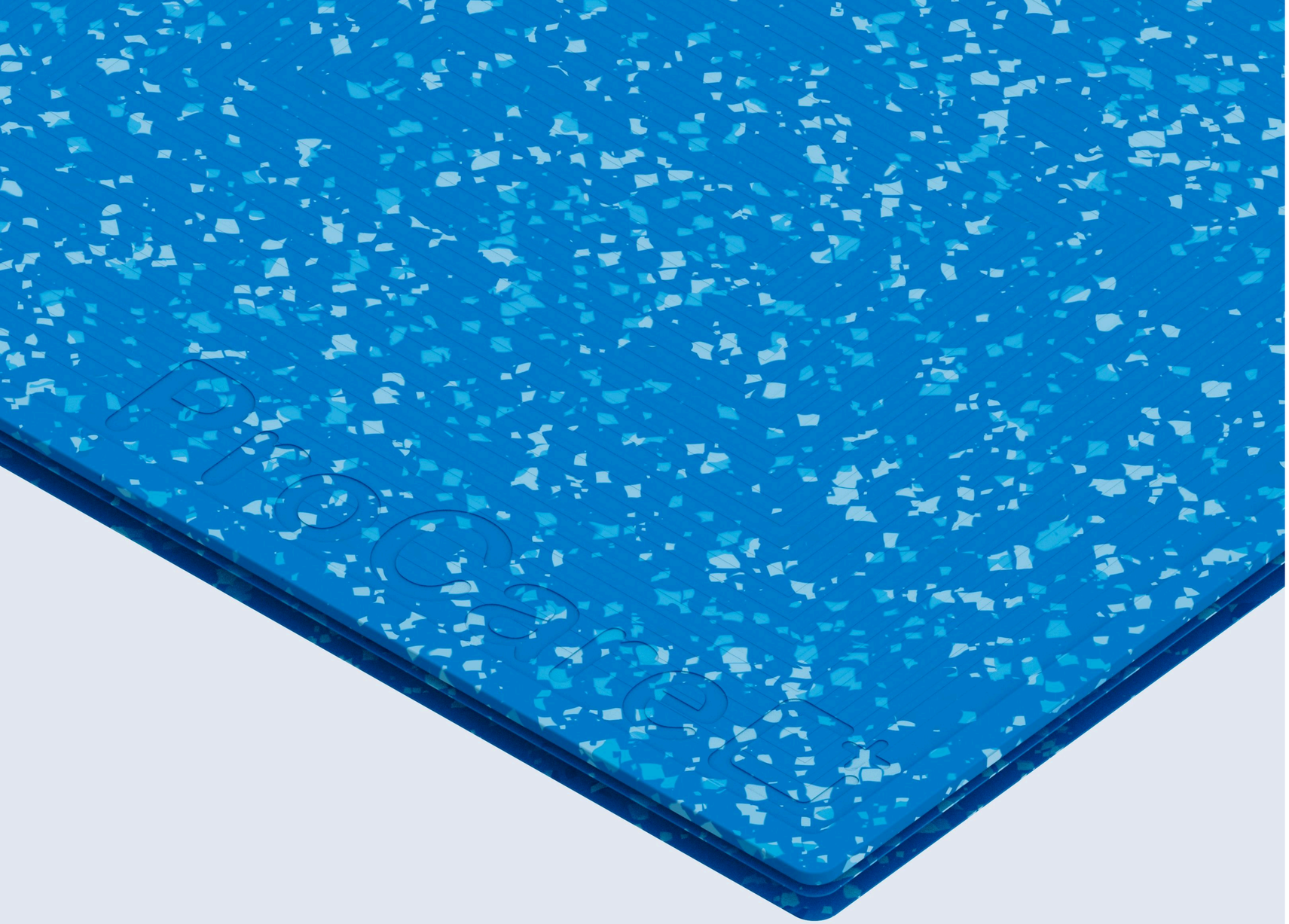


KEY FEATURE.

unique colour - depending on the mixture of healthcare system waste





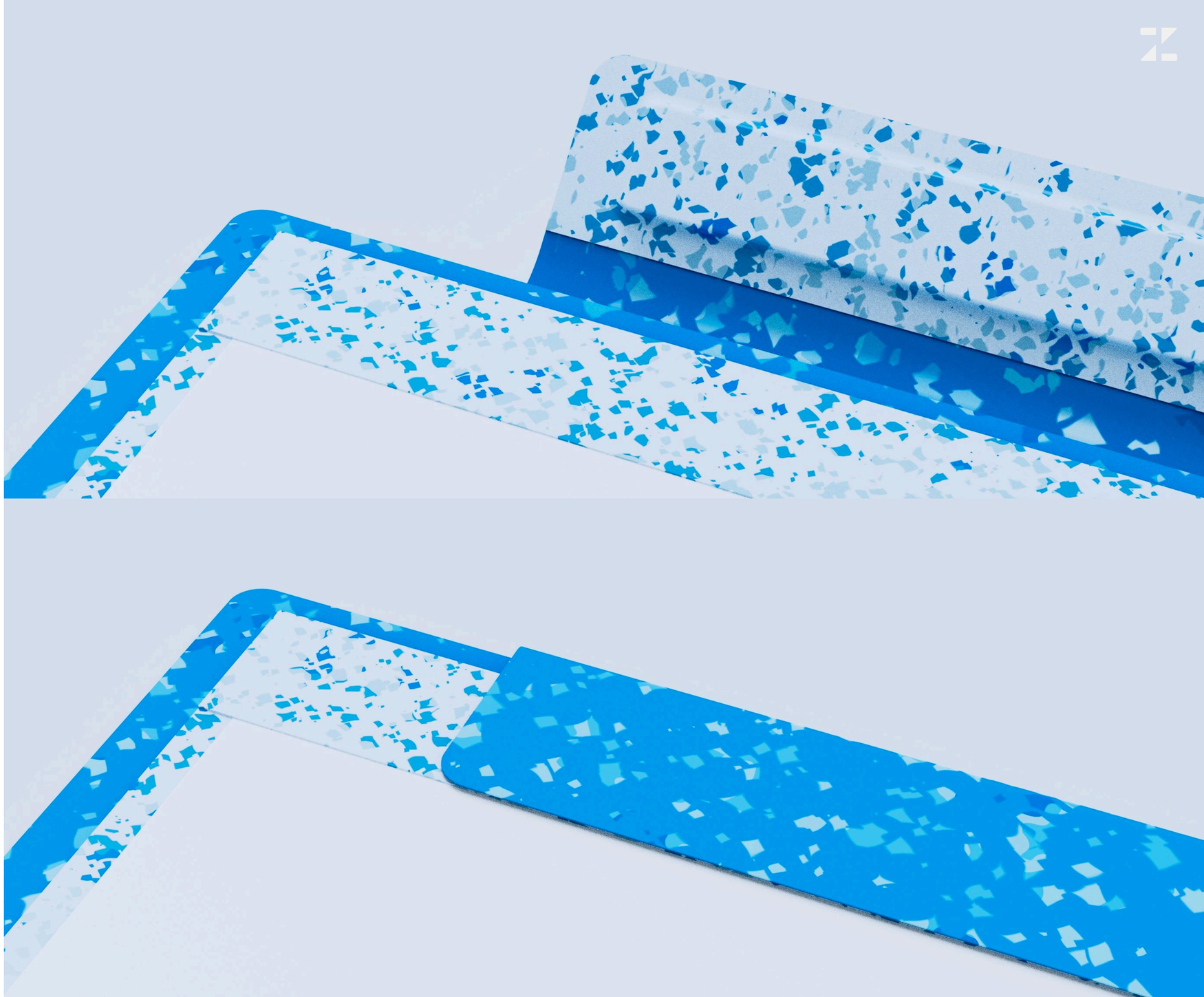


KEY FEATURE.

extruded-out “frame” &
sunk-in brand name and logo on the back surface &
detailed textures to make the surface non-slip

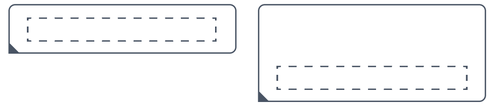
KEY FEATURE.

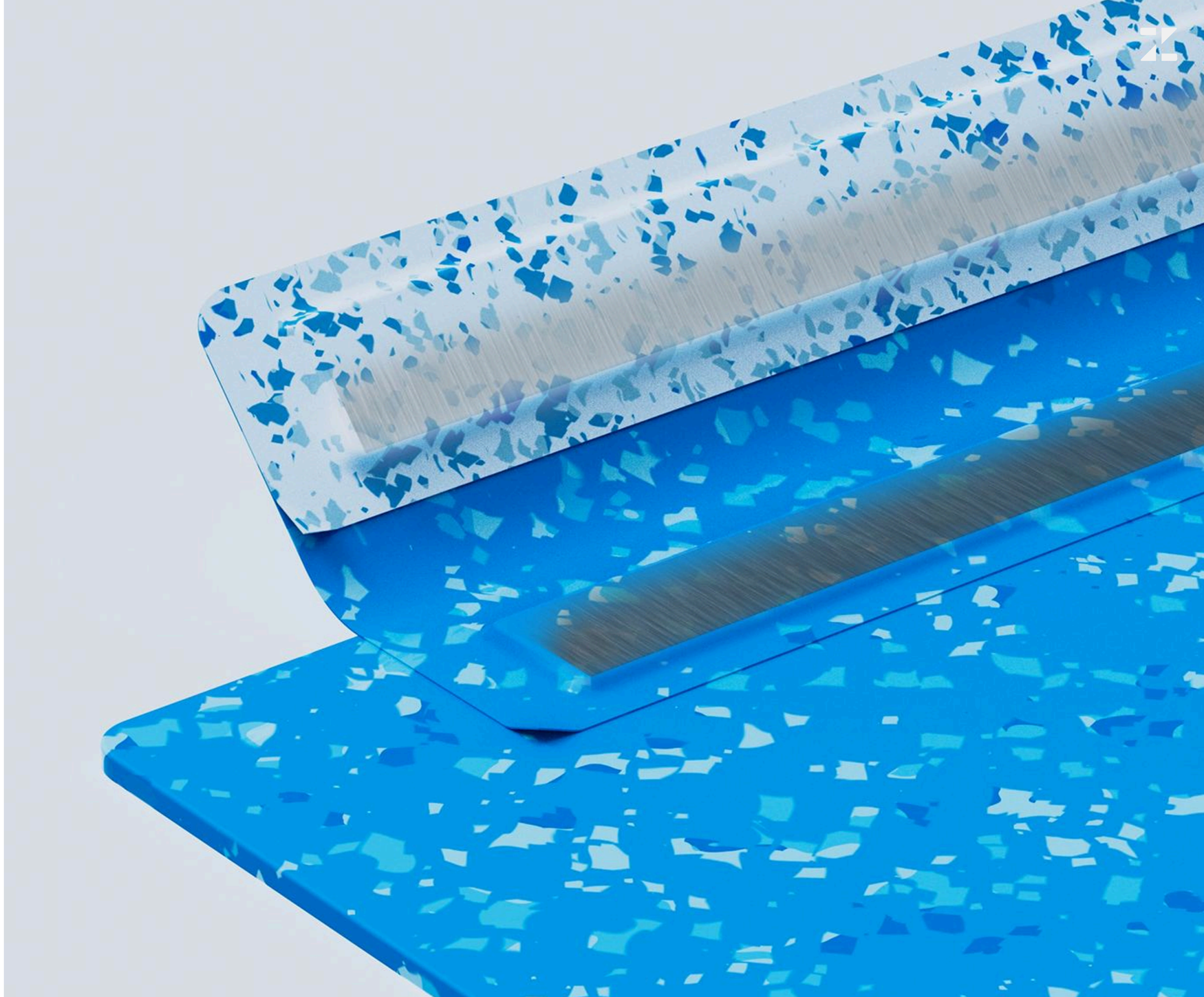
magnet tab to secure documents



KEY FEATURE.

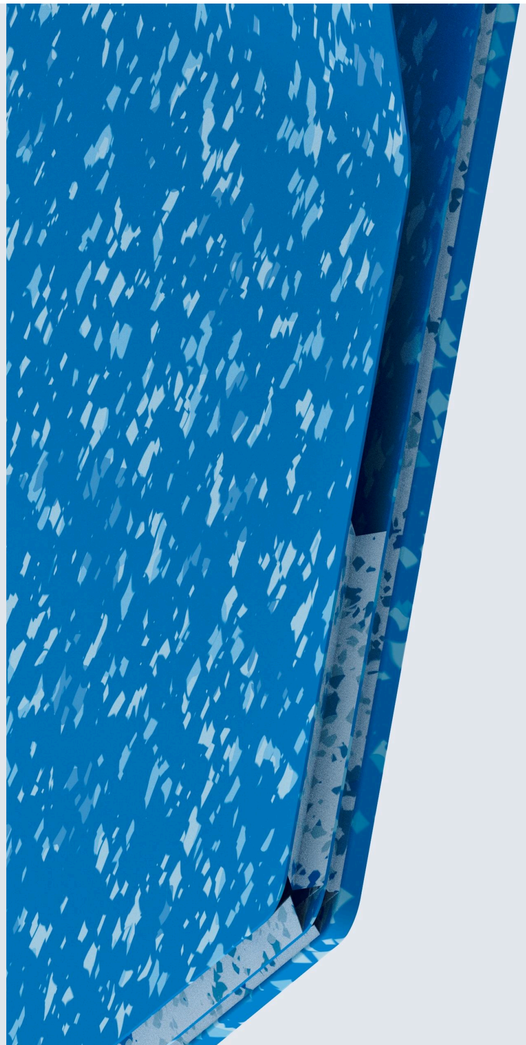
magnet cover can be taken off from the right angle corner - clear instruction & easy separation





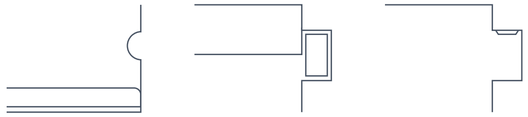
KEY FEATURE.

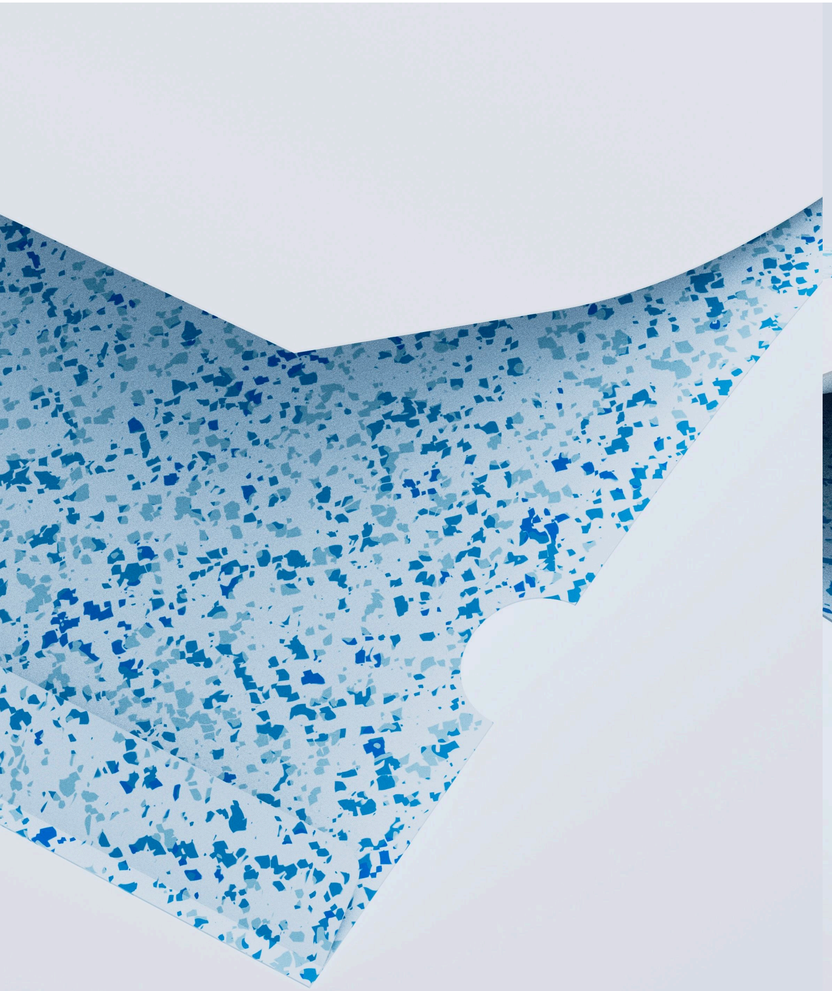
accordion-style to increase storage space &
notch on writing surface for looking for documents conveniently &
notch on back surface for turning up the writing surface easily

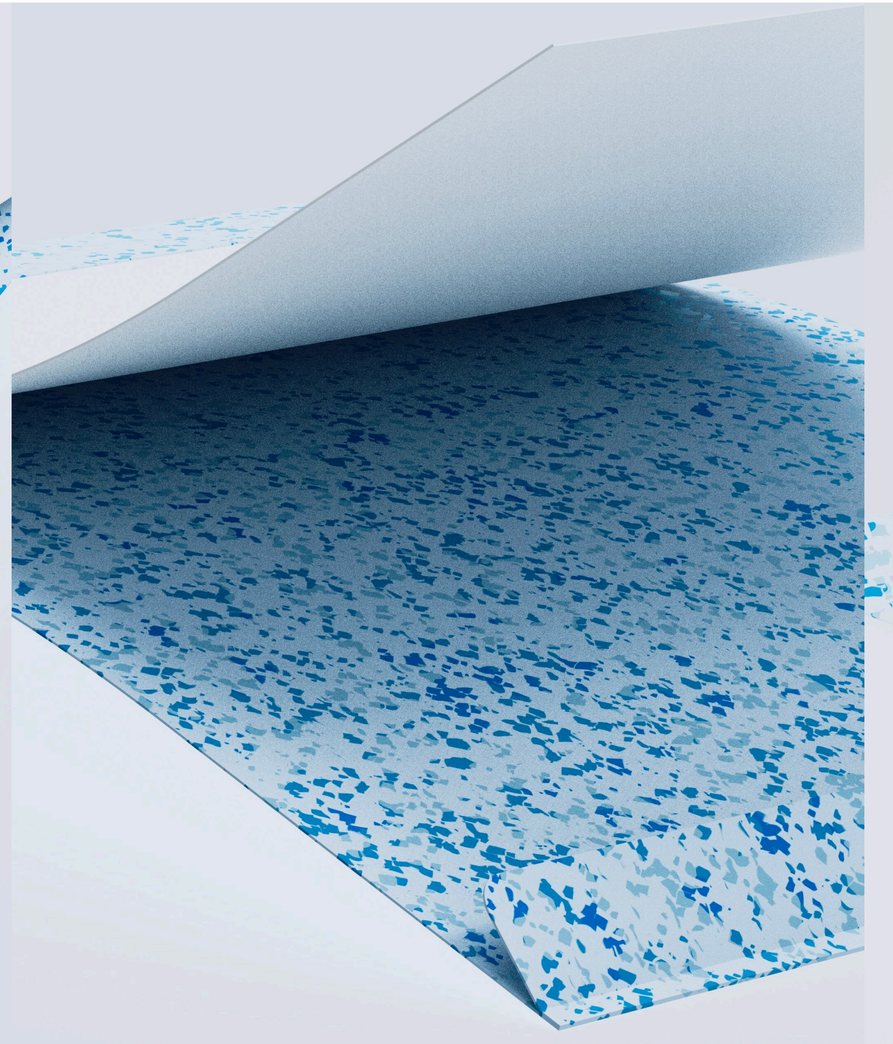


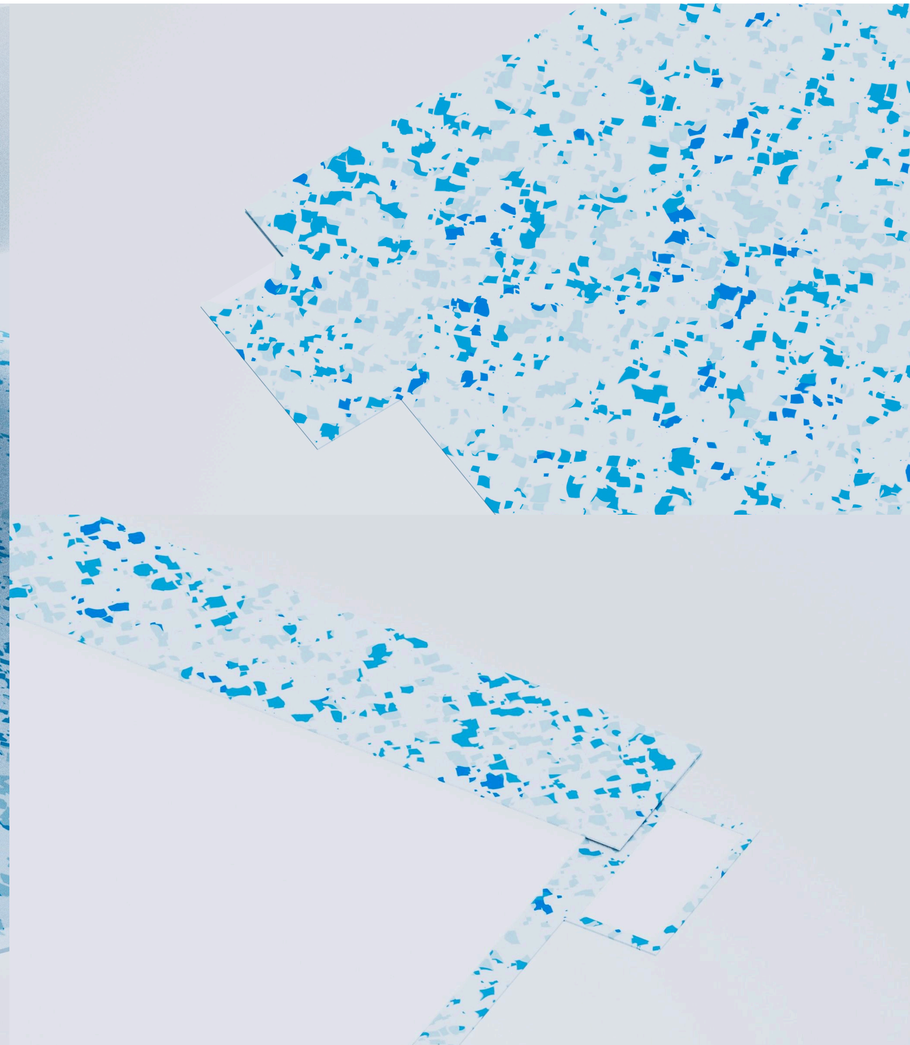
KEY FEATURE.

semi-circle notch for turning pages of documents easily &
customisable tab &
bottom tab to protect documents









03

MeCube.

An innovative medication packaging reduces the need for finger usage compared to traditional methods and extends its benefits to all individuals.

According to Sustainable Packaging Guidelines (APCO)...

By 2050 in Australia...

100% of al packaging will be reusable, recyceable, or compostable

70% of plastic packaging will be recycled or composted

50% average recycled content will be included across all packaging

0% no problematic and unnecessary single-use plastic packaging

According to How accessible is food & drink packaging (Arthritis Australia)...

In consumer reality...

MOST of consumers have difficulty opening packaging EVERYDAY

ALL AGES are currently struggling with opening packaging

the MORE PAIN consumers experienced in their hands, the MORE OFTEN they struggle with packaging

According to Accessible Packaging Survey Results Aug-Dec 2017 (Arthritis NZ)...

Among 204 responses...

82% had ARTHRITIS

50% identified a product which had small pull tabs/seals

2.5 products (on average) that each respondent had difficulty with

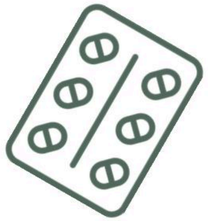
Main factors of difficulty in opening...

65% of the responses were due to the packaging being difficult

31% of the responses identified a reason due to their ARTHRITIS why there were difficult to open

Most difficult medication packaging styles...

Child Proof Cap



Blister Pack

Interview with People

People with arthritis

"It is really troublesome to open A LOT OF packaging to take many kinds of medicine AT ONCE."

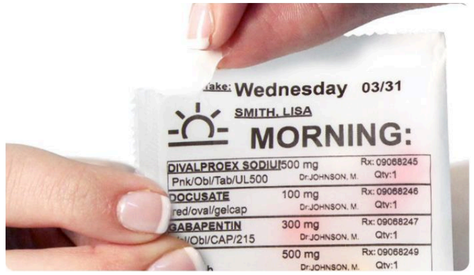
"I really feel ASHAMED if I ask for help to unscrew the caps cuz I am only 20 years old. I want to DO IT BY MYSELF."

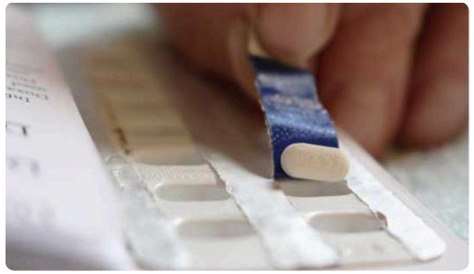
"It always takes LOTS OF TIME to open the packaging of the painkiller when I feel painful."

Caregiver

"I will feel TIRED to help my father who is with arthritis to open different types of packaging, even though I know I need to take care of him."

Existing Packaging



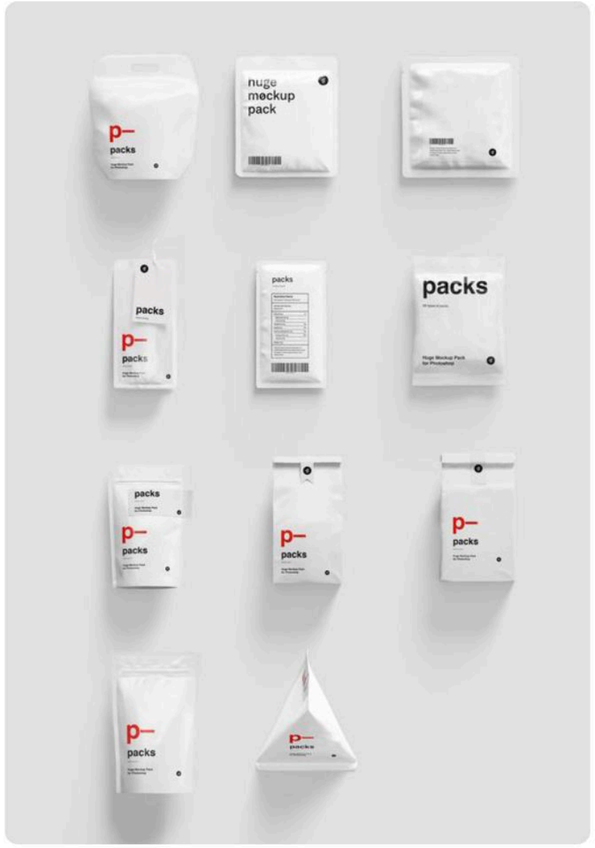


\+ • people can access various medicine at one (only open one packaging)
• clear instruction (about how to take medicine) on the packaging

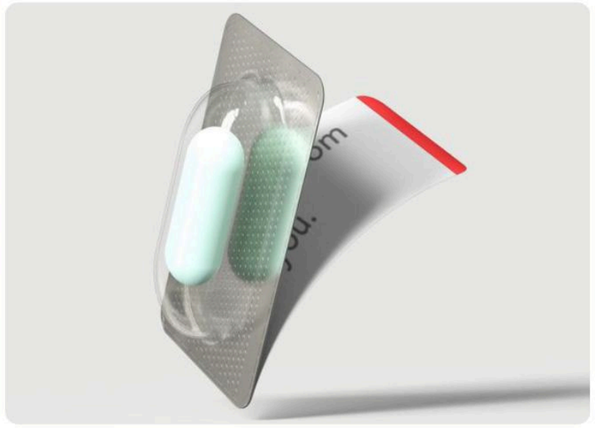
− • people still need to use two hands
• the packaging is made from plastics

\+ • easy to access the medicine

− • how to keep the safety of the medicine


nuge
meckup
pack
packs

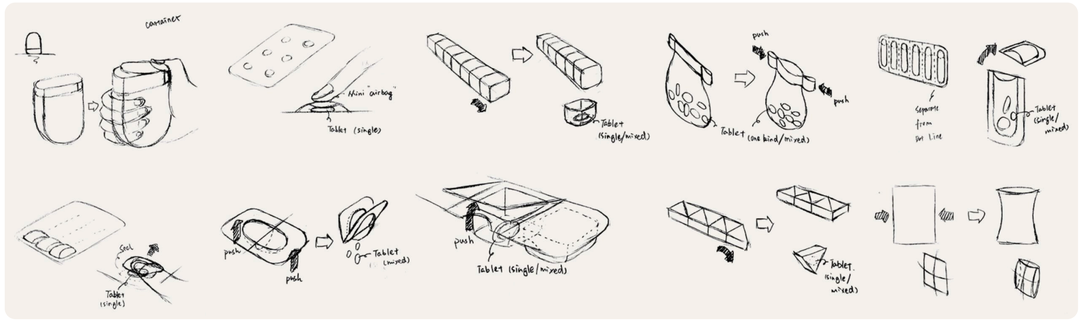
Happy
Egg
01

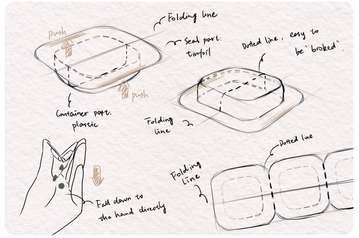


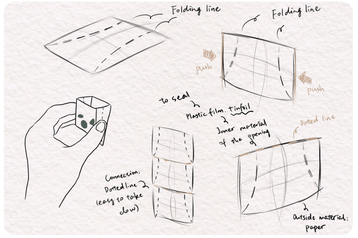
help
I have an
aching body
I have a
headache
I'm hungover
16

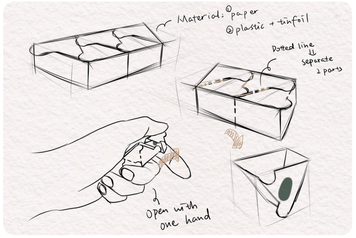
DESIGN PROCESS.

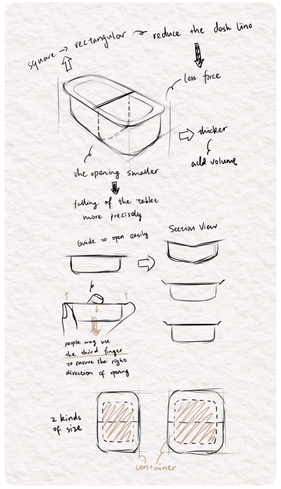
iterated sketch & model

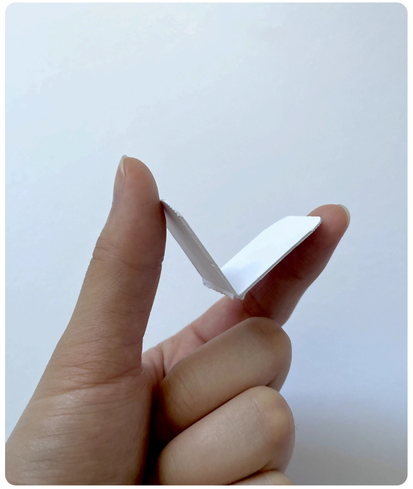


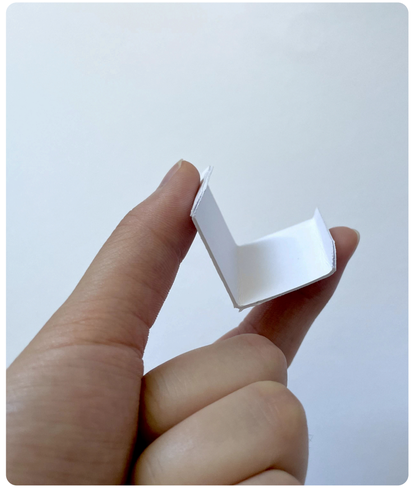


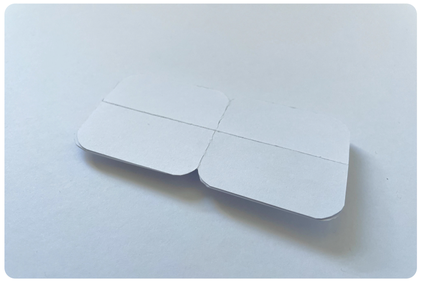


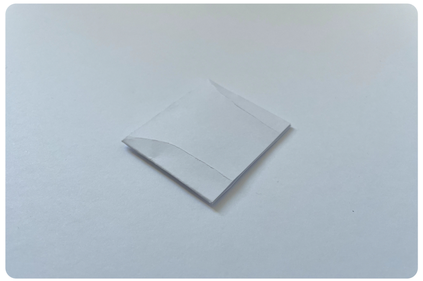


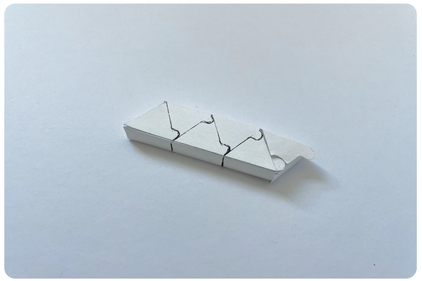


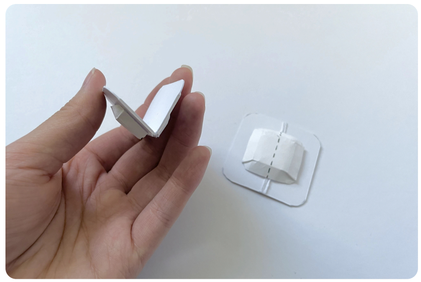


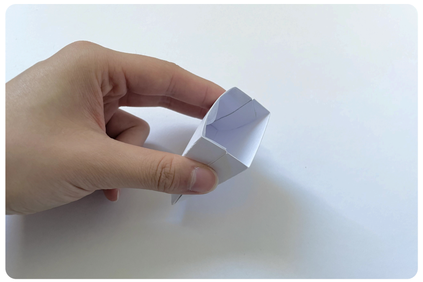


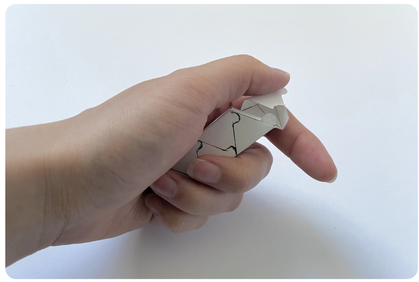












FINAL MODEL.

KEY FEATURES.

How it works...

People could only use their two fingers to push the tab side and its opposite side to open the packaging, and the tablets or pills will fall down to people's hands directly (also, they can fall down to people's mouths directly). The connection between two parts is greatly thin, so it is easy for people to open. The tab can show the categories (morning, noon, evening) through the colours when the MeCubes are stored in a box, and it is also used to separate the lid and the container to achieve sustainability because the lid can be recycled but the container cannot.

Guideline 2
Sufficient area for applying force

Principle 9
Design for accessibility

Guideline 5
Do not require tools

Principle 4
Eliminate hazardous materials

Principle 5
Use recycled materials

Guideline 7
Minimise the number of required actions

Guideline 19
Distinct formatting of expiry dates

Principle 10
Consumer info of sustainability

Guideline 16
Clearly evident opening method

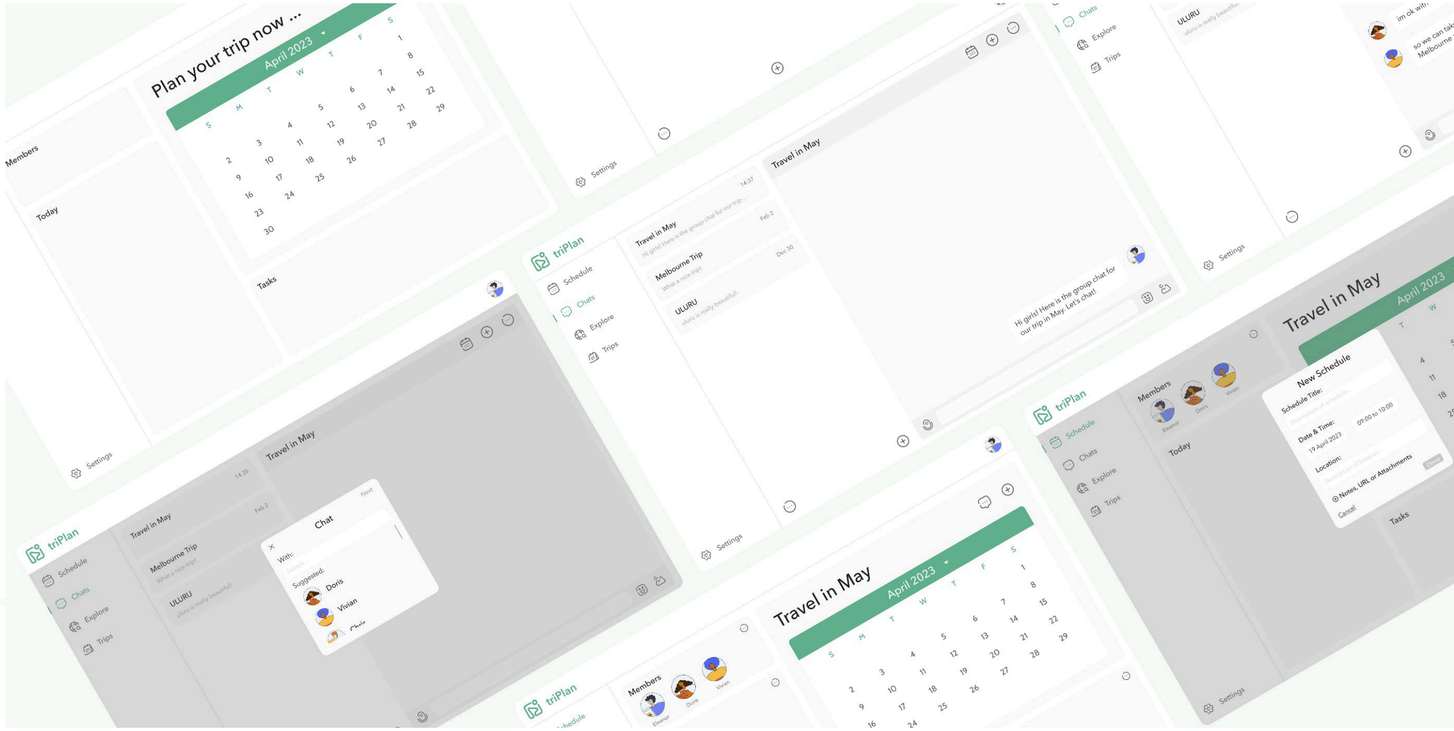
Guideline 17
Outlined warnings and instructions

According to Guidelines of Accessible Design and Principles of Sustainable Design

04

triPlan.

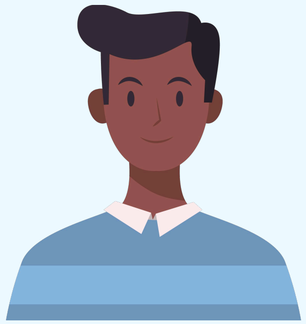
A software can streamline the trip planning process, enhance the convenience and efficiency of coordinating communication with friends, and edit schedules with friends together.



Plan A Trip with Friends

Google Drive

Instagram



Yudong Zou

AGE: 24

STATUS: Married

LOCATION: Sydney

ARCHETYPE: International Student

Independent | Organised | Reliable

GOALS:

- A clear allocation when working with others
- Efficient chat with friends about the details together
- Clear information about time, location and budget

FRUSTRATIONS:

- Opinions diverge from each other
- Cannot have communication in time when working with others

Hongjun Qian

AGE: 22

STATUS: Single

LOCATION: Sydney

ARCHETYPE: International Student

Casual | Creative | Hardworking

GOALS:

- Achieve a neutral agreement with friends when discussing
- Timely communication with friends about the time availability and affordability

FRUSTRATIONS:

- Complex and annoying process of researching
- Take a long time to wait for the reply from tourism companies

SAY

"I am used to editing files with friends through Word."

"I like to send text messages when chatting."

"I hardly ever completed a detailed travel plan."

"Actually, I want someone to plan the trip for me."

DO

searches for detailed information of destinations

creates a travel itinerary alone and send to friends

searches for some top attractions

has phone calls with the tourism centre

has voice phone calls to chat with friends

shares interesting post with friends

works on the travel itinerary with friends together

Yudong Zou

Hongjun Qian

FEEL

impatient after working on the itinerary for a long time

unfamiliar with various functions

more casual trip would bring more fun

complex process like logging in some apps and websites

difficult to choose a suitable platform to plan a trip

THINK

thinks the process of sharing files can be easier

functions are similar between different social media

hopes there is a platform including all planning tools

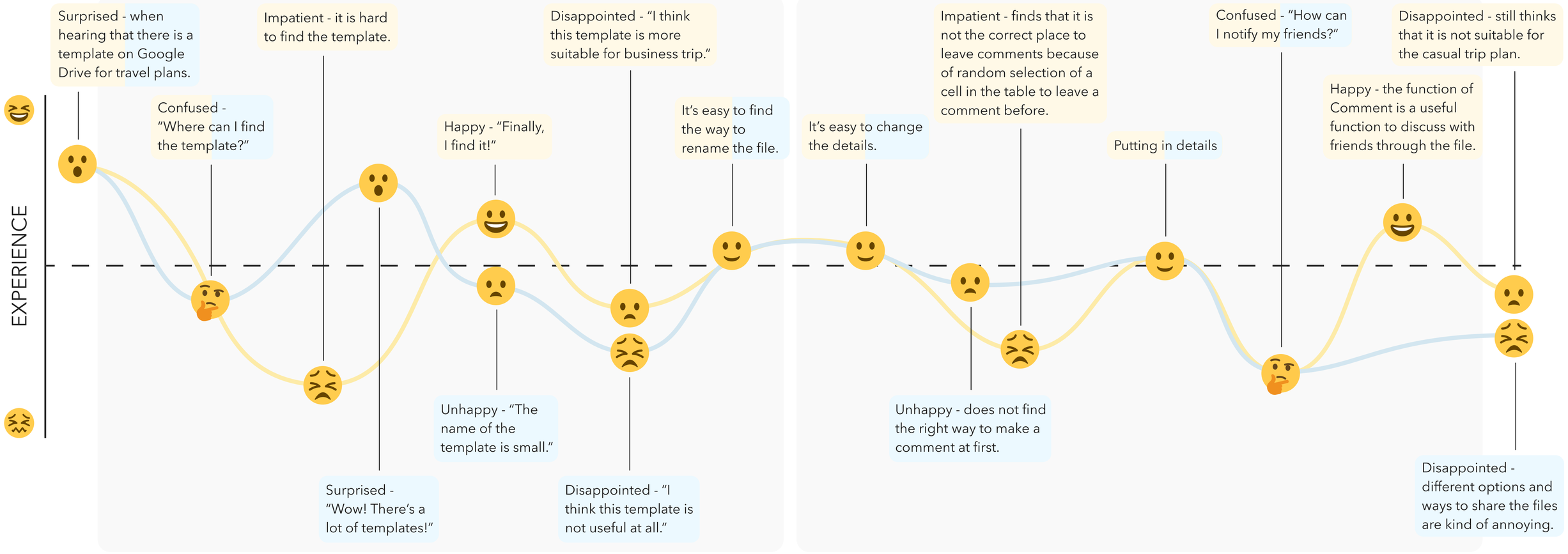
Google Drive

Yudong Zou

Hongjun Qian

Task 1
Create a shared travel planner file

Task 2
Put in the information and make a comment



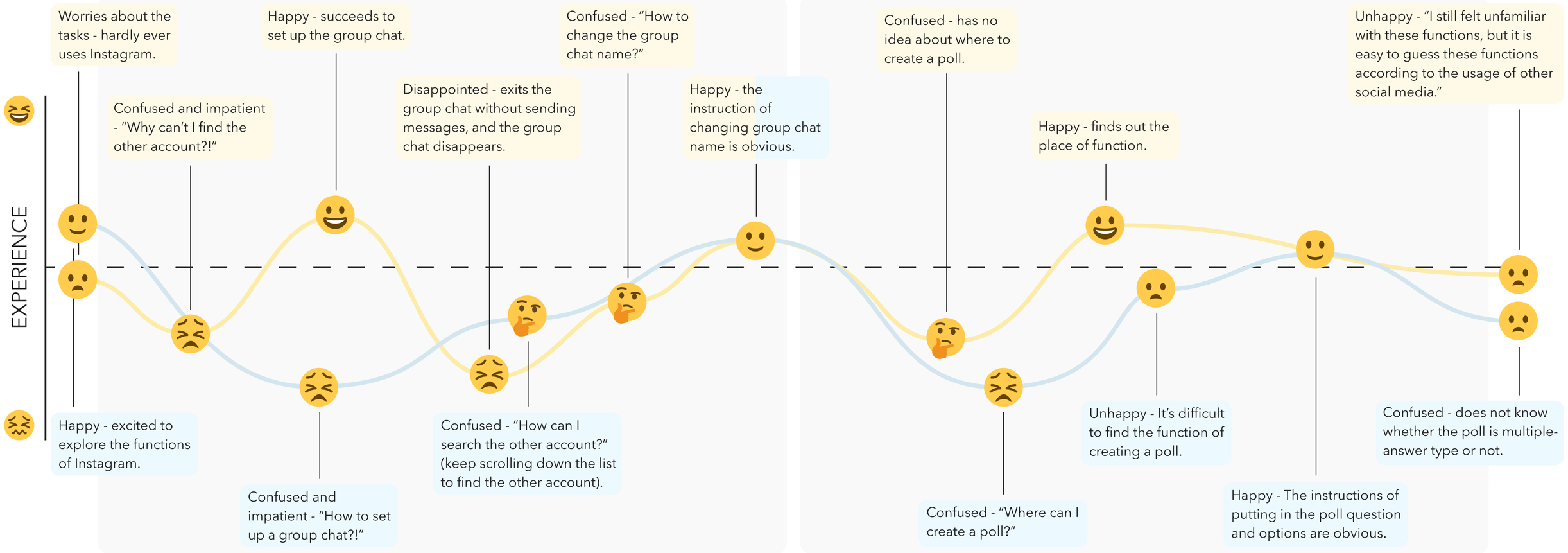
Instagram

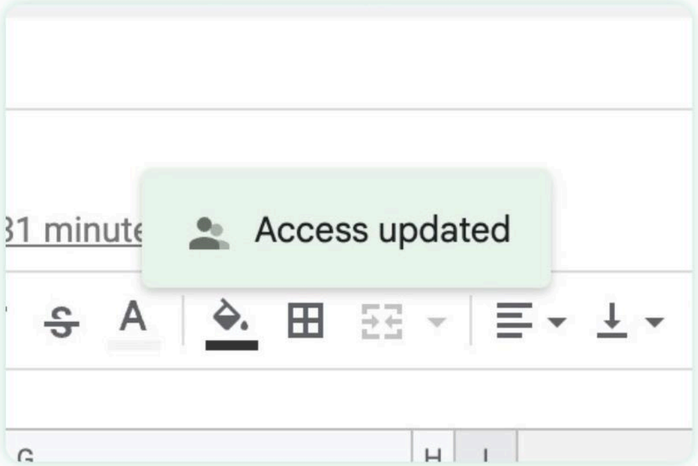
Yudong Zou

Hongjun Qian

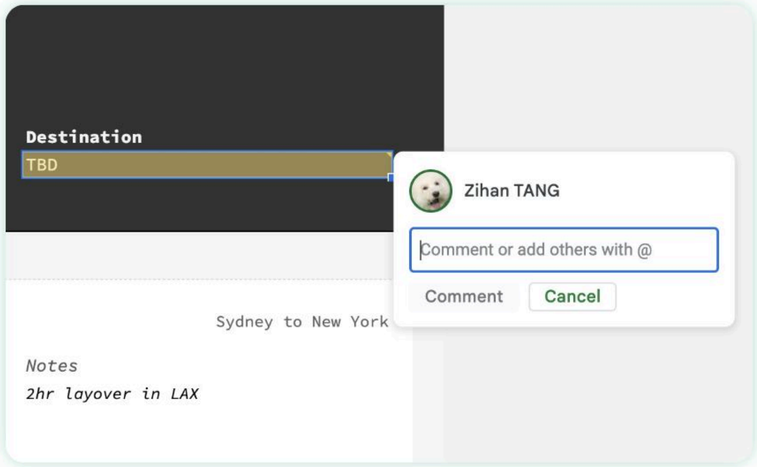
Task 1
Set up a group chat and change the group information

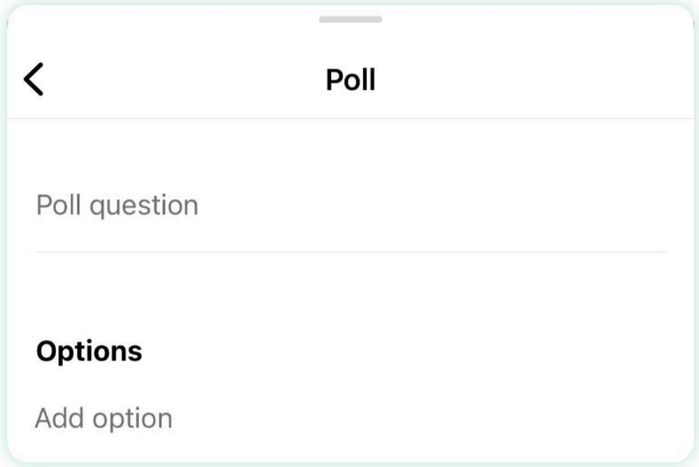
Task 2
Create a poll





Visibility of system status gives users strong feedback and interaction.





Help and documentation can make functions clearer.

ISSUES:

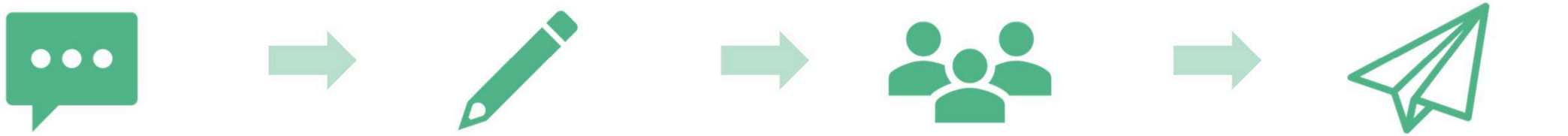
- How to simplify the process of using different software at the same time to plan a trip with friends?
- How to share information about tourism spot effectively?
- How to make everyone get involved in the planning process?
- How to make the trip schedule clear for everyone?

SOLUTIONS:

- Combine the functions together, especially the EDITTING SCHEDULE and CHATTING function.
- Use the ‘Assign’ function to make sure everyone in the group get involved.
- Have a clear page for the schedule with calendar.

"

Add a schedule in the calendar after chatting in the group chat and share with friends in the group chat.



1. start a new group chat

2. put in the group chat name

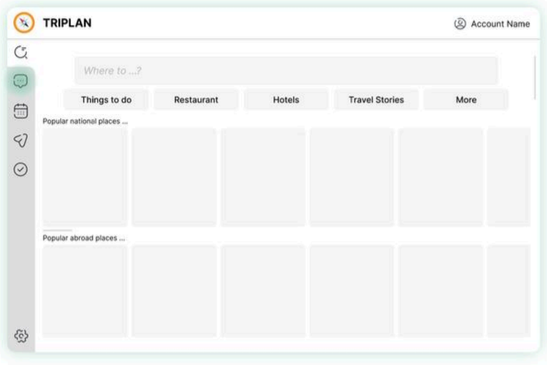
3. select friends to invite

4. send invitation to friends

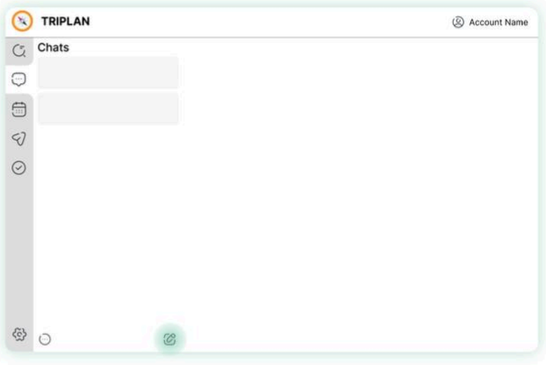
5. chat to confirm the detailed information about a schedule

6. add the schedule in the calendar

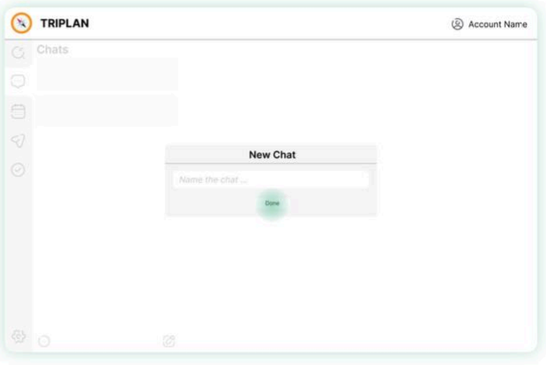
7. share the schedule with friends in the group chat to notify



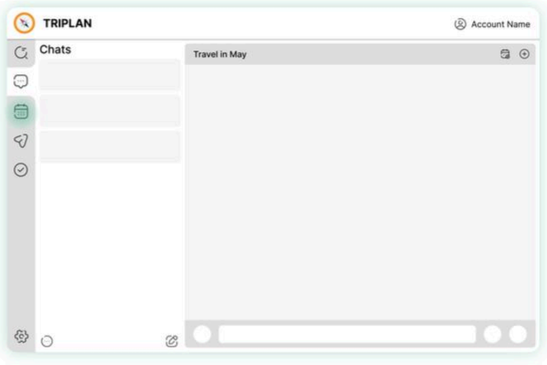
1. Begin at the EXPLORING interface and go to the CHATS interface



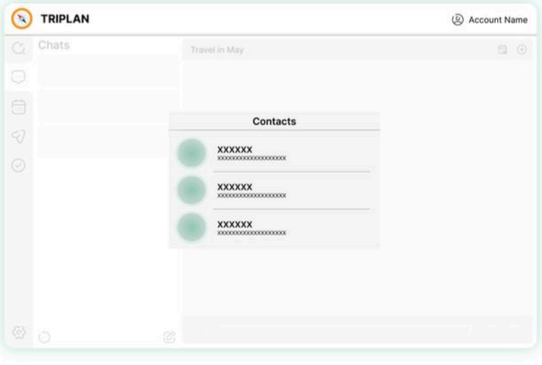
2. Start a new chat



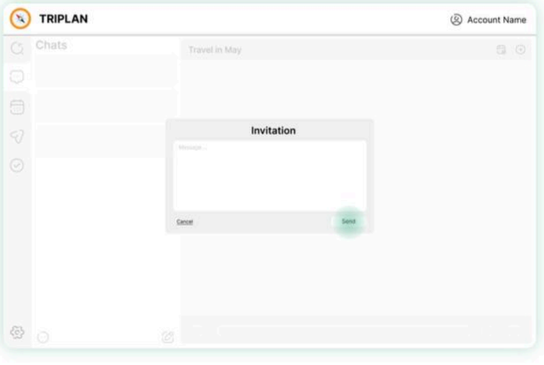
3. Name the new chat



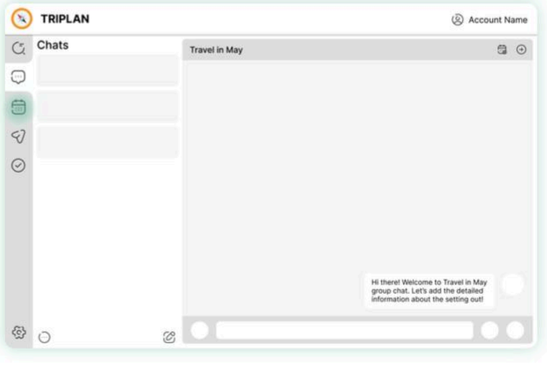
4. New chat interface and go to the CALENDAR interface



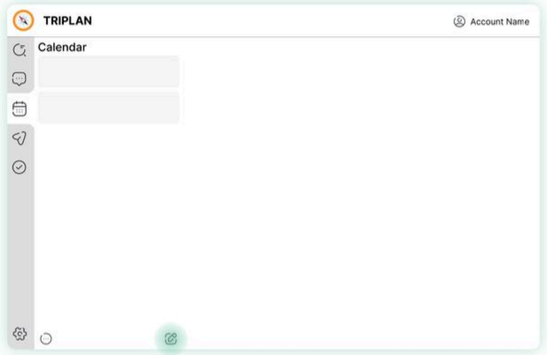
5. Select friends to invite



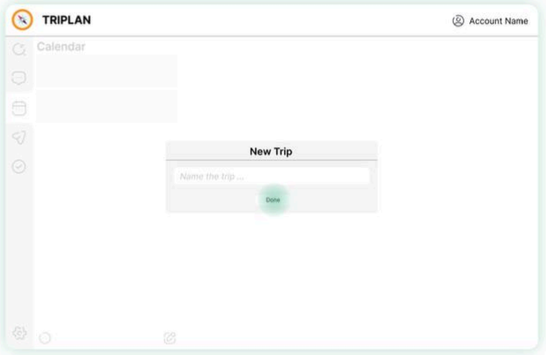
6. Put in the invitation message and send the invitation



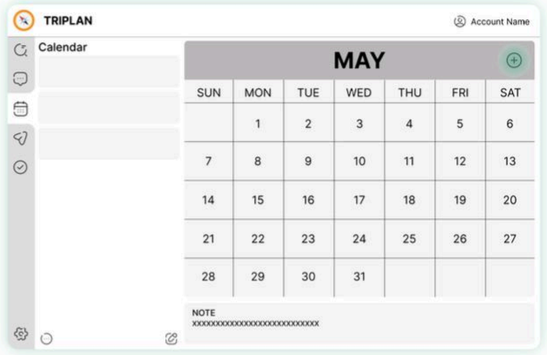
7. Invitation is sent in the group chat and go to the CALENDAR interface



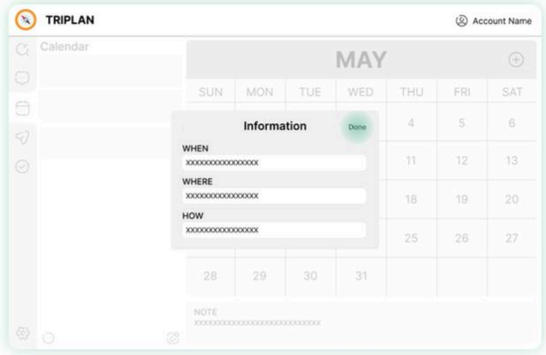
8. Add a new trip



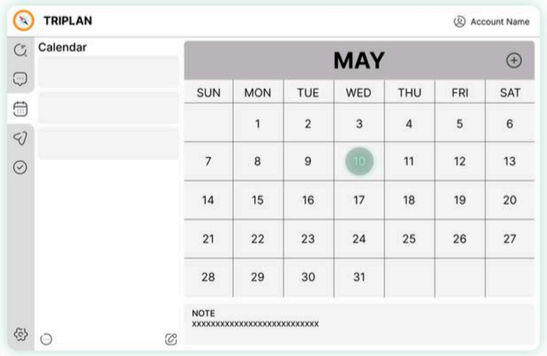
9. Name the new trip



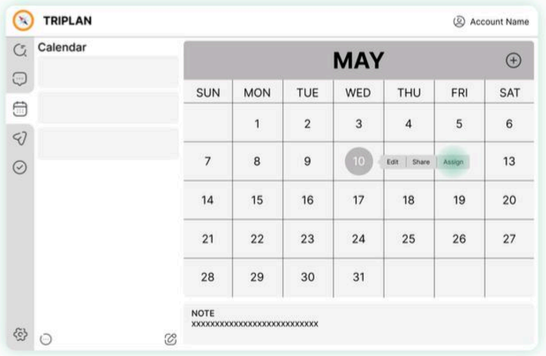
10. A calendar shows up and add schedule in the calendar



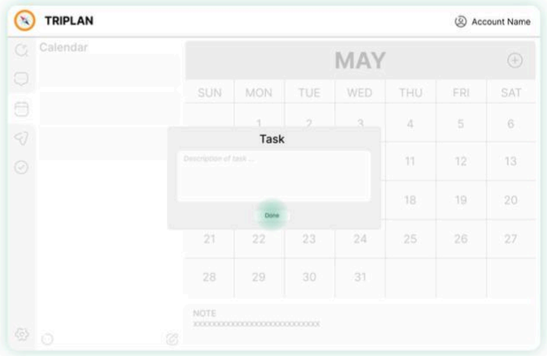
11. Put in the information



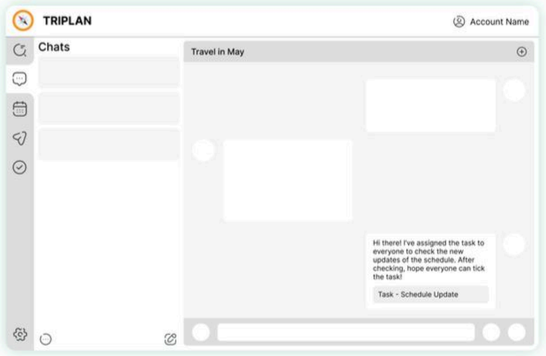
12. The date is highlighted after being added the schedule



13. Click the date and click ‘Assign’



14. Put in the description of the task



15. Task is sent to the group chat

Self-directed Analysis

- Help and documentation: insufficient instructions for some unfamiliar functions.

- Visibility of system status: pop-up window can tell people the invitation has been sent.

- Affordance: the functions on HOME page; functions on SCHEDULE page.

User Testing – quotes

USER 1 – Hongjun Qian

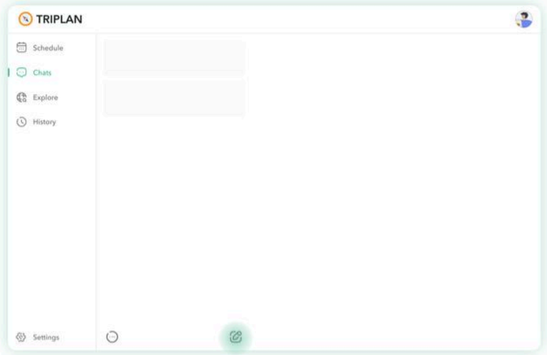
- "The (pop-up) window (for set up the group chat name) looks wide."
- "The map function is not necessary for me, and I would prefer to trust the navigation software."

USER 2 – Yudong Zou

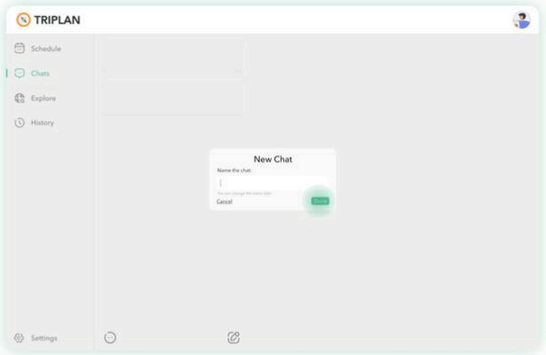
- "The icon of starting a new chat is too close to the bottom."
- "Why do I need the previous trips shown here?"

USER 3 – Yihe Liu

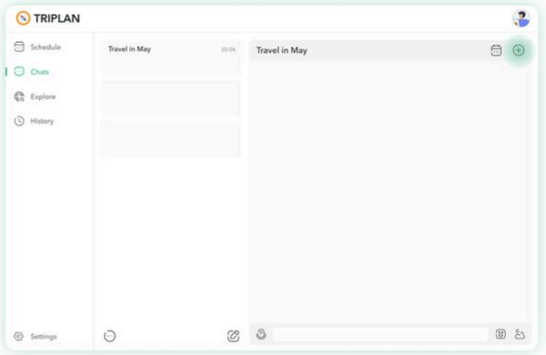
- "What do these icons (icons of the left menu part) mean?"
- "The note part under calendar can be included in the pop-up window that shows the details of schedule."



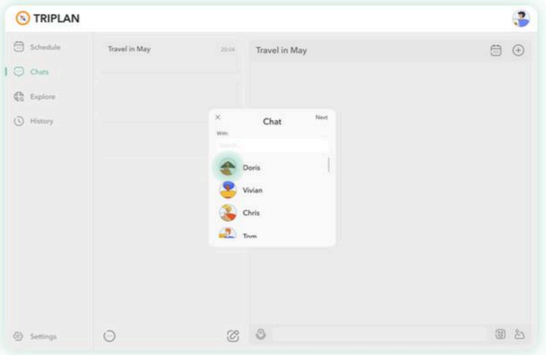
1. Start a new chat in the CHAT interface



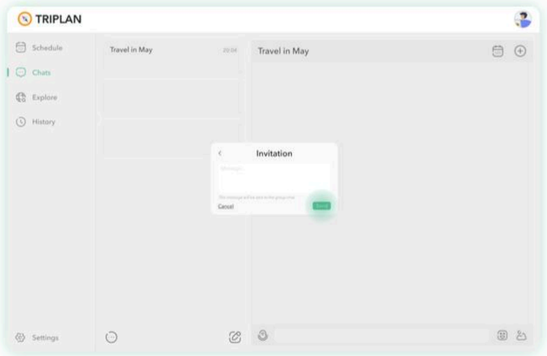
2. Name the new chat



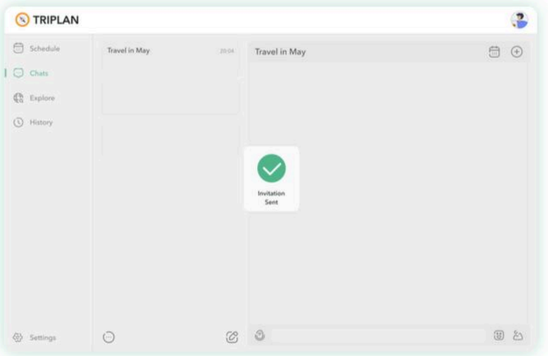
3. Invite friends to chat



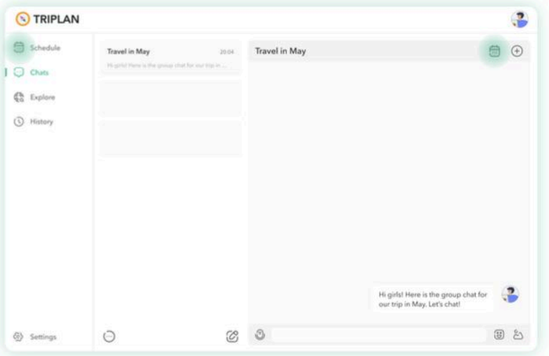
4. Select friends



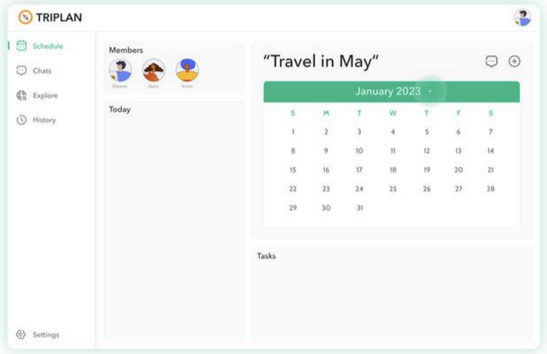
5. Write the invitation



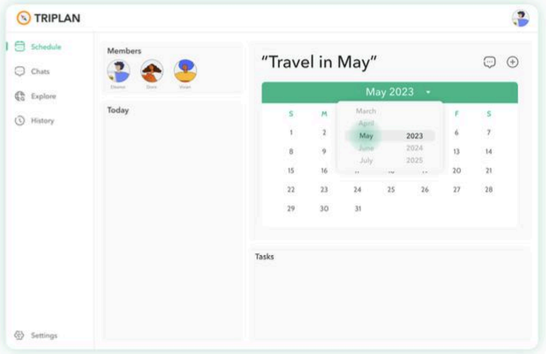
6. Feedback for users that the invitation has been sent



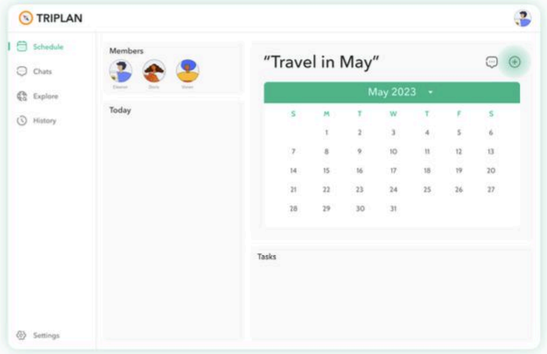
7. Invitation is sent to the group chat and go to CALENDAR interface



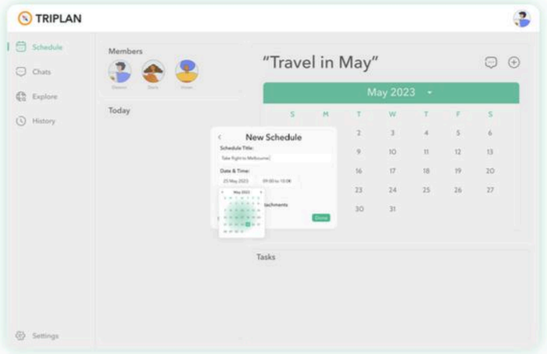
8. A calendar that connects to the group chat shows up



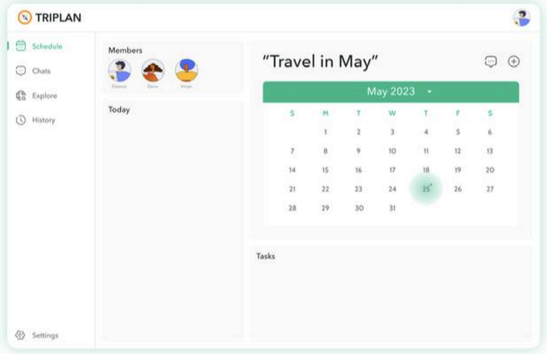
9. Select the month and year



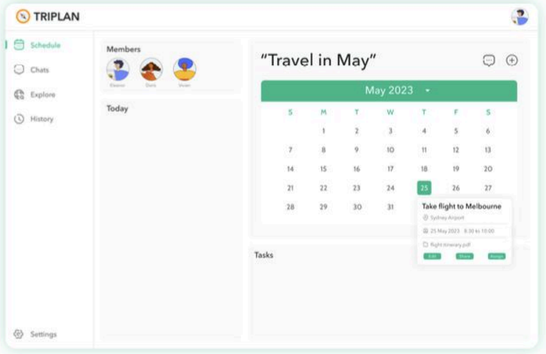
10. Add the new schedule in the calendar



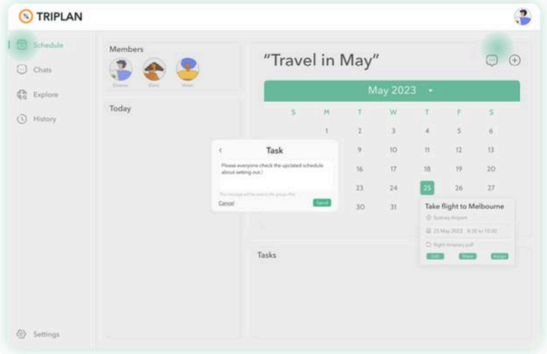
11. Complete the information about the schedule



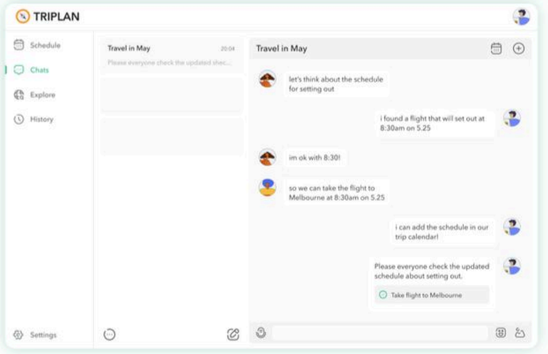
12. The date that has been added the schedule is highlighted



13. Click the date and click 'Assign'



14. Put in the description of the task



15. The task is sent to the group chat

Self-directed Analysis

- Error prevention: the colour of the DONE button should not be highlighted when it cannot be clicked.
- Clarity: more positive feedback and instructions in the empty parts.
- Promote a pleasurable and positive user experience: make the instructions warmer.

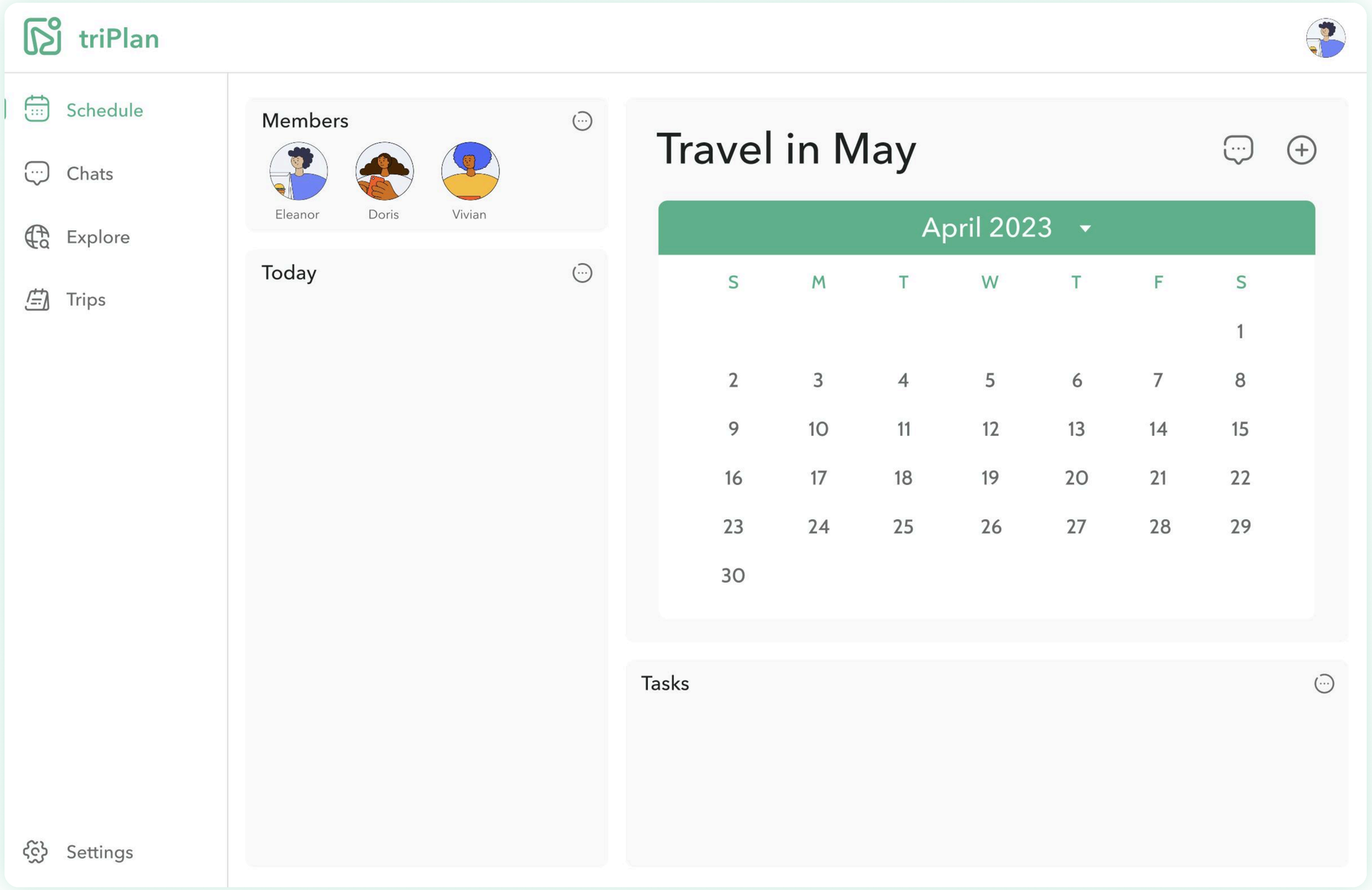
Tutor Feedback & Peer Feedback

Tutor Feedback

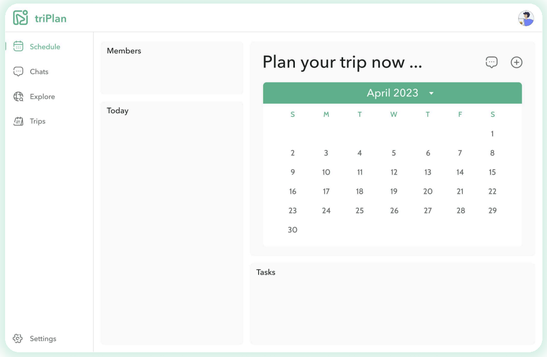
- Make the background darker when the pop-up windows show up.
- Make every main function at the centre of the interface as the HOME page.

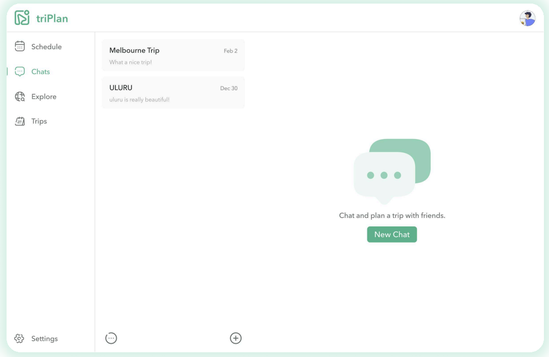
Peer Feedback

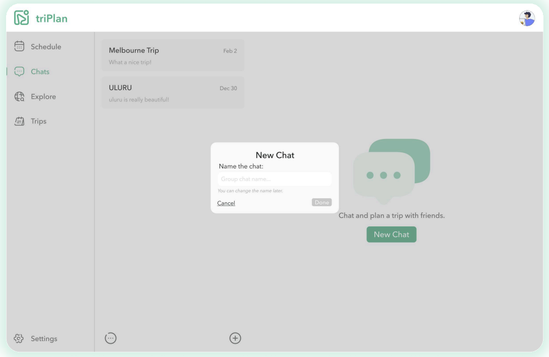
- Icon of starting a new chat is confusing.
- The empty interface can show the button for new chat.
- All the pop-up windows and the texts in pop-up windows are small.
- The highlight in calendar should be more obvious

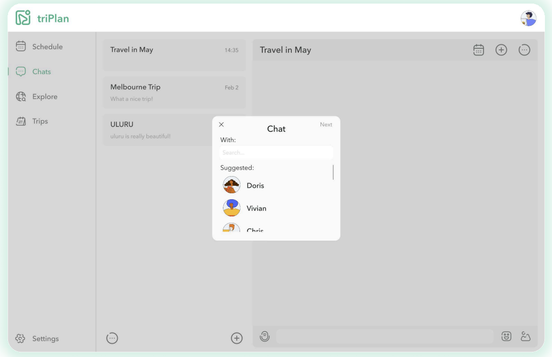


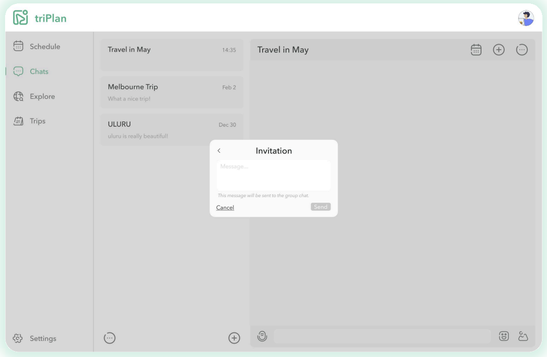
triPlan 3.0 User Scenario Walkthrough: https://youtu.be/laHjrR-2838

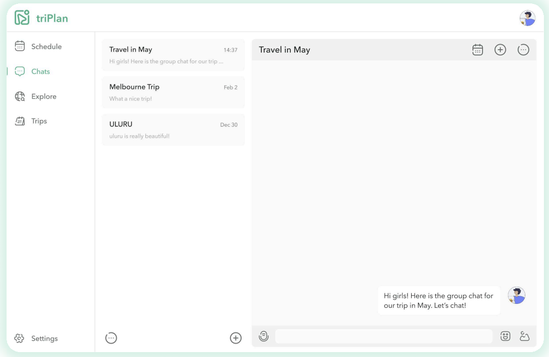

triPlan
Schedule
Chats
Explore
Trips
Settings
Members
Today
Plan your trip now ...
April 2023
Tasks

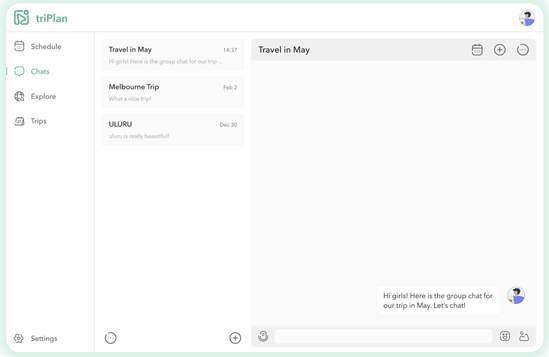

triPlan
Schedule
Chats
Explore
Trips
Settings
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Dec 30
Chat and plan a trip with friends.
New Chat

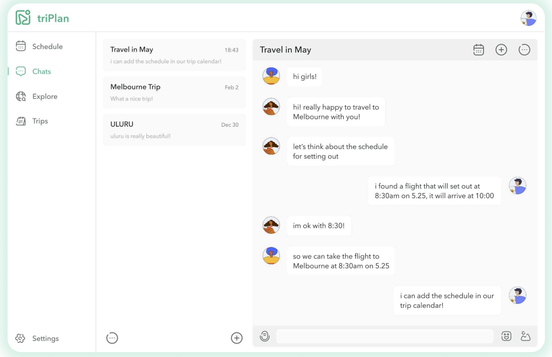

triPlan
Schedule
Chats
Explore
Trips
Settings
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Dec 30
New Chat
Name the chat:
Cancel
Done
Chat and plan a trip with friends.
New Chat

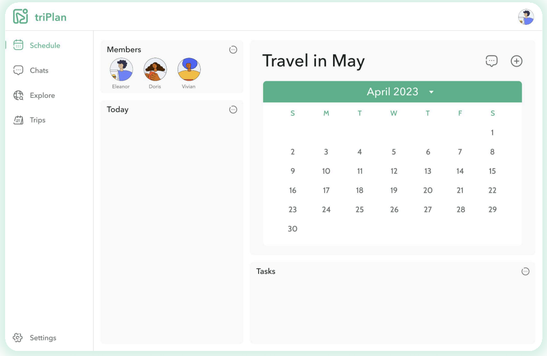

triPlan
Schedule
Chats
Explore
Trips
Settings
Travel in May
14:35
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Chat
Next
With:
Suggested:
Doris
Vivian

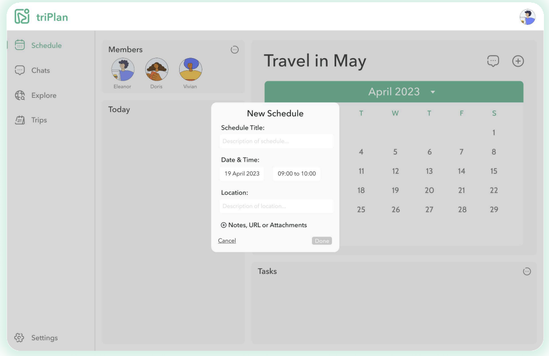

triPlan
Schedule
Chats
Explore
Trips
Settings
Travel in May
14:35
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Dec 30
Invitation
Cancel
Send

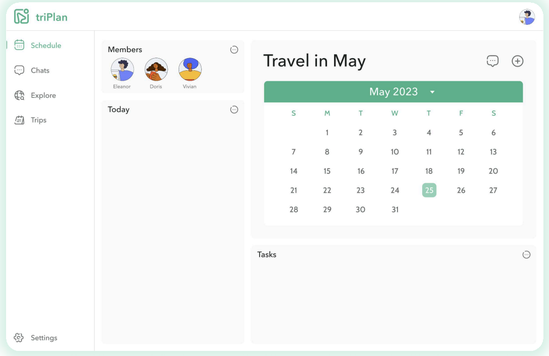

triPlan
Schedule
Chats
Explore
Trips
Settings
Travel in May
14:37
Hi girls! Here is the group chat for our trip ...
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Dec 30
Hi girls! Here is the group chat for our trip in May. Let's chat!

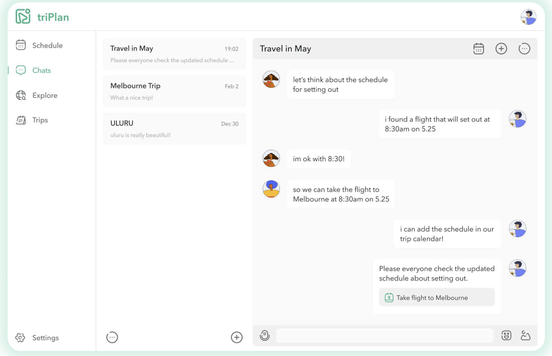

triPlan
Schedule
Chats
Explore
Trips
Settings
Travel in May
14:37
Hi girls! Here is the group chat for our trip ...
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Dec 30
Hi girls! Here is the group chat for our trip in May. Let's chat!


triPlan
Schedule
Chats
Explore
Trips
Settings
Travel in May
18:43
i can add the schedule in our trip calendar!
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Dec 30
hi girls!
hi! really happy to travel to Melbourne with you!
let's think about the schedule for setting out
i found a flight that will set out at 8:30am on 5.25, it will arrive at 10:00
im ok with 8:30!
so we can take the flight to Melbourne at 8:30am on 5.25
i can add the schedule in our trip calendar!


triPlan
Schedule
Chats
Explore
Trips
Settings
Members
Eleanor
Doris
Vivian
Today
Travel in May
April 2023
Tasks


triPlan
Schedule
Chats
Explore
Trips
Settings
Members
Eleanor
Doris
Vivian
Today
Travel in May
April 2023
New Schedule
Schedule Title:
Date & Time:
19 April 2023
09:00 to 10:00
Location:
Notes, URL or Attachments
Cancel
Done
Tasks


triPlan
Schedule
Chats
Explore
Trips
Settings
Members
Eleanor
Doris
Vivian
Today
Travel in May
May 2023
Tasks


triPlan
Schedule
Chats
Explore
Trips
Settings
Travel in May
19:02
Please everyone check the updated schedule ...
Melbourne Trip
What a nice trip!
Feb 2
ULURU
uluru is really beautiful!
Dec 30
let's think about the schedule for setting out
i found a flight that will set out at 8:30am on 5.25
im ok with 8:30!
so we can take the flight to Melbourne at 8:30am on 5.25
i can add the schedule in our trip calendar!
Please everyone check the updated schedule about setting out.
Take flight to Melbourne

THANKS