

Portfolio

Whani Kim

Contacts

Email: whani.kim405@gmail.com

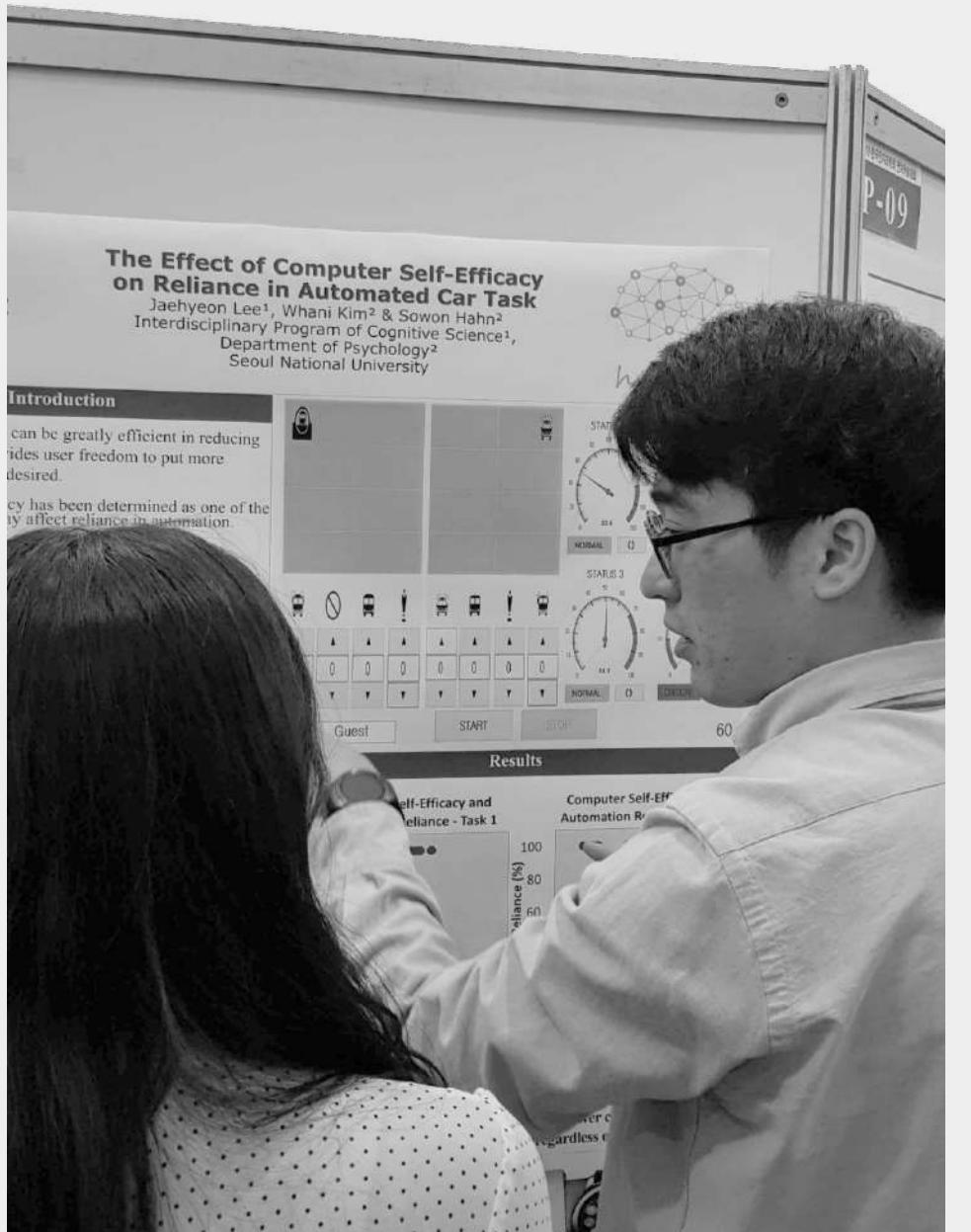
Phone: 82) 010-4051-9155

Web : domeis.github.io



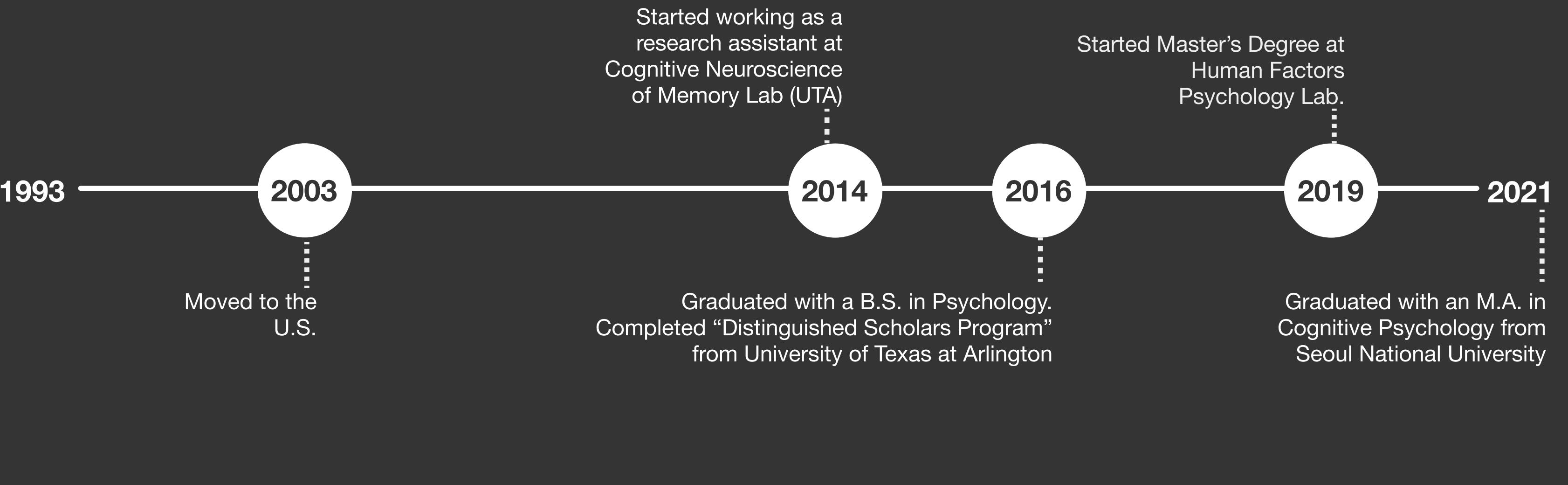
linkedin

Whani Kim



During my academic training, I've learned and utilized variety of methods to conduct qualitative and quantitative research.

My understanding of programming and design helped me successfully work with developers and designers to deliver successful project outcomes.



Research Methods

Survey

In-Depth Interviews

A/B Testing

Usability Testing

Programming & Data Analysis

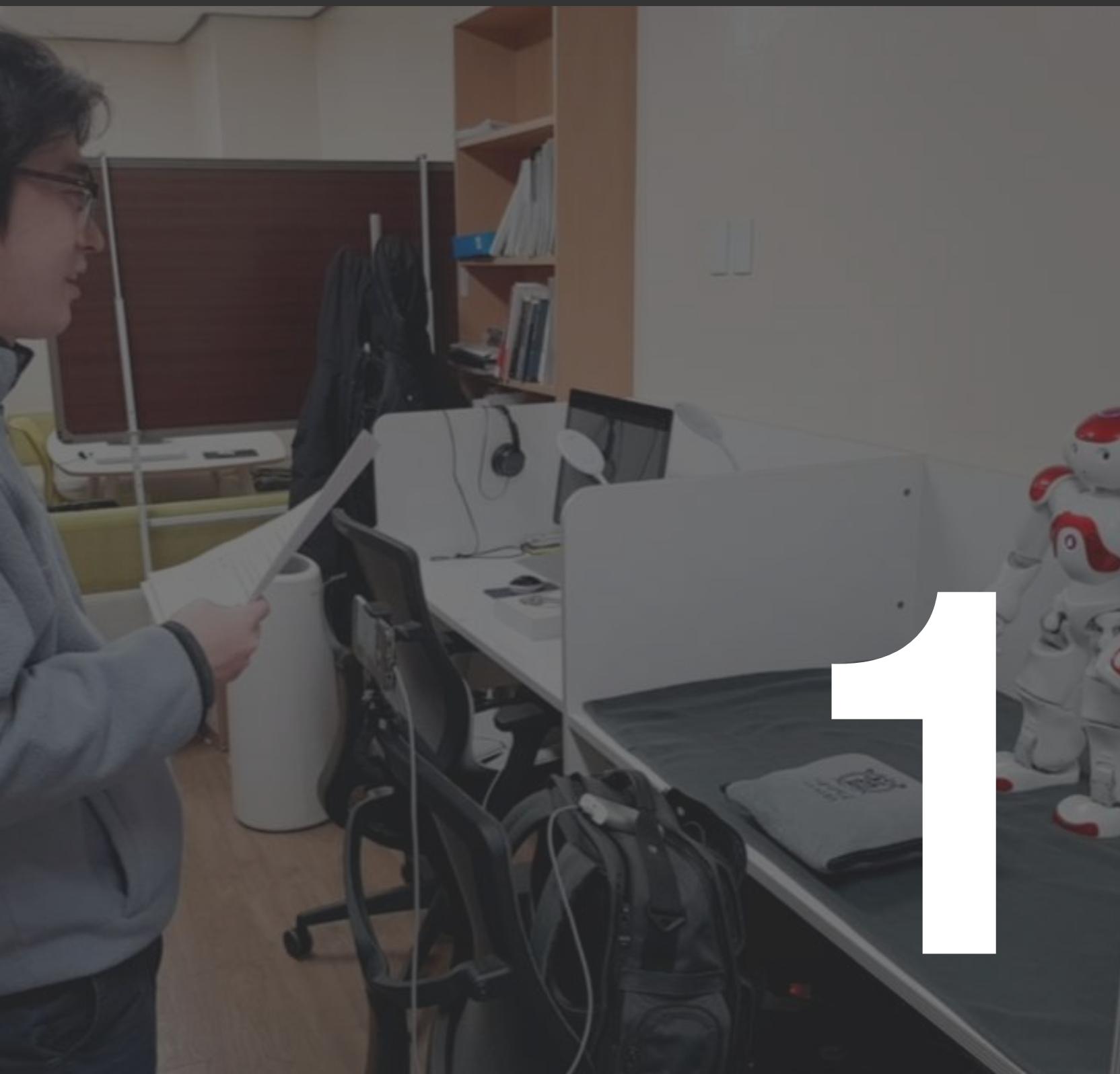


Web Development & Design



Table of Contents

Social Robot



Psychotherapy App



Newspaper Reading



Role of Robot Body Language on Perception of Social Qualities and Human-likeness in Social Robots

Problem

Robots in public spaces today often provide their services while stationary. Making interactions dull.

Role

Principal Investigator

- Research design / proposal
- Stimuli design
- Data analysis / written report

Objective

Apply human body language to make interactions with robots more meaningful.

Methods

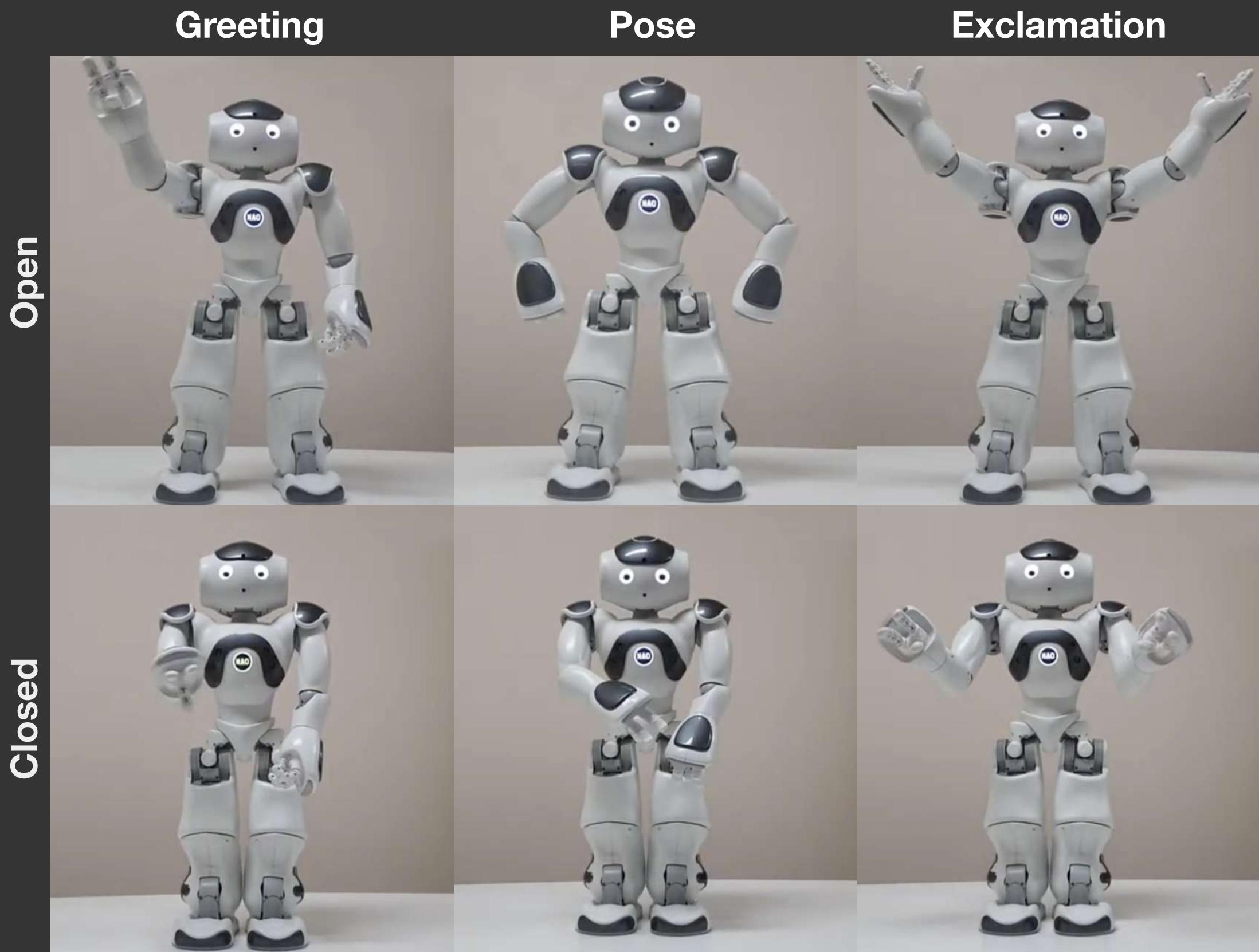
- Survey
- Interview
- Usability Testing
- A/B Testing



Stimuli Design & Usability Testing

Humans use open and closed body language to communicate emotional state. I programmed total of 16 gestures based on these 2 categories.

To see if gestures were natural and non-threatening, I examined how fast the gestures felt and how fast the verbal responses felt through a usability testing.



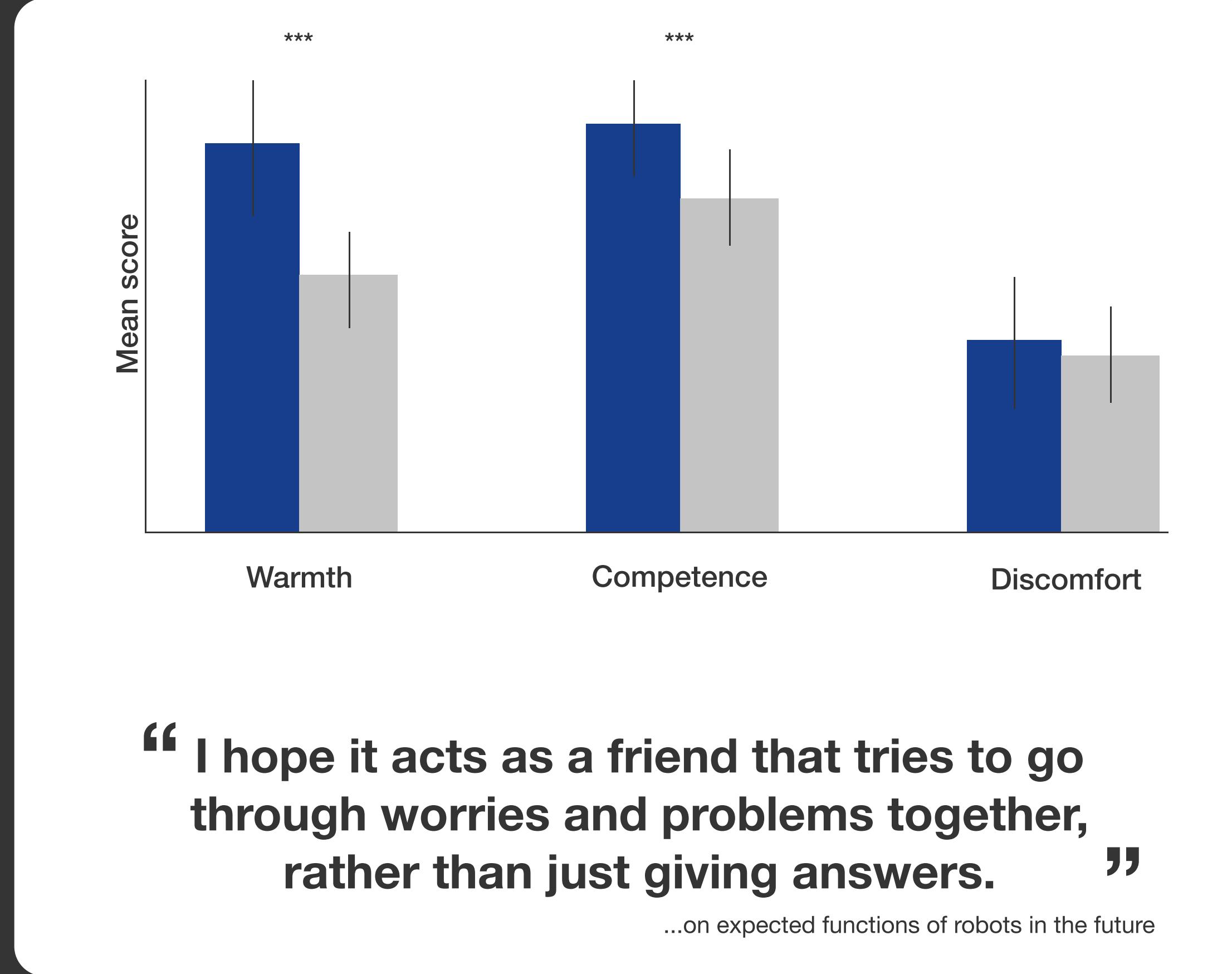
<Stimuli used in experiment>

Human-Centered approach to HRI

Through socially appropriate body language, robots can form more meaningful relationships with humans.

For example, robots with open gestures, perceived as more warm and competent, can provide public services.

When humans talk about their worries, robots can show concern and empathy through closed body language.



<Quantitative and qualitative results example>

User Persona & Journey Map

A user persona and user journey map were created based on the data collected.



Bio

Ana is a psychology major student living in Seoul alone. She spends most of her days studying in the library and running part-time jobs. After a long day, she listens to music and watches movies until she falls asleep to work towards her dream of being a counselor.

Wants & Needs

- To relax at home and chat with somebody about everyday life.
- Have somebody to do her occasional chores when she is too tired.
- Give her updates on the news, weather, and her upcoming schedule.

Frustrations

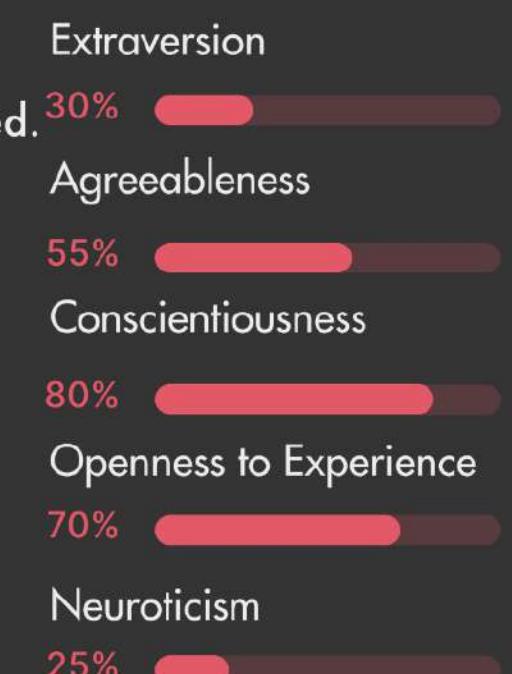
- Current robots do not actively engage in conversations.
- AI speakers cannot provide more than basic information and cannot physically interact with the real world.

Ana Kim

26, Student
Seoul, South Korea

"I want robots to comfort and sympathize with me when I talk about my hardships."

Personality



Ana Kim

26, Student
Seoul, South Korea

She spends most of her days studying in the library and running part-time jobs. After a long day, she listens to music and watches movies until she falls asleep to work towards her dream of being a counselor.



Development of AI-based Service Platform for Psychological Diagnosis and Management

Funded by Ministry of SMEs and Startups

Problem

Getting psychotherapy can be a difficult process and often comes with a bad stigma in Korea.

Role

Fiscal Manager & Researcher

- Budget management
- Developing psychological models and questionnaire
- Making UX deliverables

Objective

“Make psychotherapy easily accessible to anyone” with a smartphone application.

Methods

- Survey design
- Desk research
- User persona
- Wireframing



User Persona & Journey Map

A general user persona and user journey map was created based on previous literature.



Bio

Eugene is a software engineer at tech company based in Incheon. He spends his days at the office programming. He is often burnt-out and sometimes has trouble with his boss due to opinion conflicts. At his leisure time, he goes out to drink with his colleagues and friends.

Wants & Needs

- Get some advice on how to deal with problems at work.
- Learn how to cope with burn outs.
- Easy accessibility to mental healthcare.

Frustrations

- Doesn't have enough time to go see a counselor.
- Mental healthcare is often too expensive to go on a regular basis.

Eugene Lee

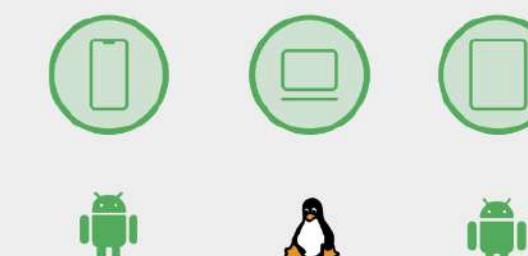
30, Software Engineer
Incheon, South Korea

"I'm just too busy at work to seek advice from counselors on a regular basis."

Motivations

Self-development	70%	<div style="width: 70%;"></div>
Advice Seeking	80%	<div style="width: 80%;"></div>
Learning	50%	<div style="width: 50%;"></div>
Relaxation	65%	<div style="width: 65%;"></div>

Devices



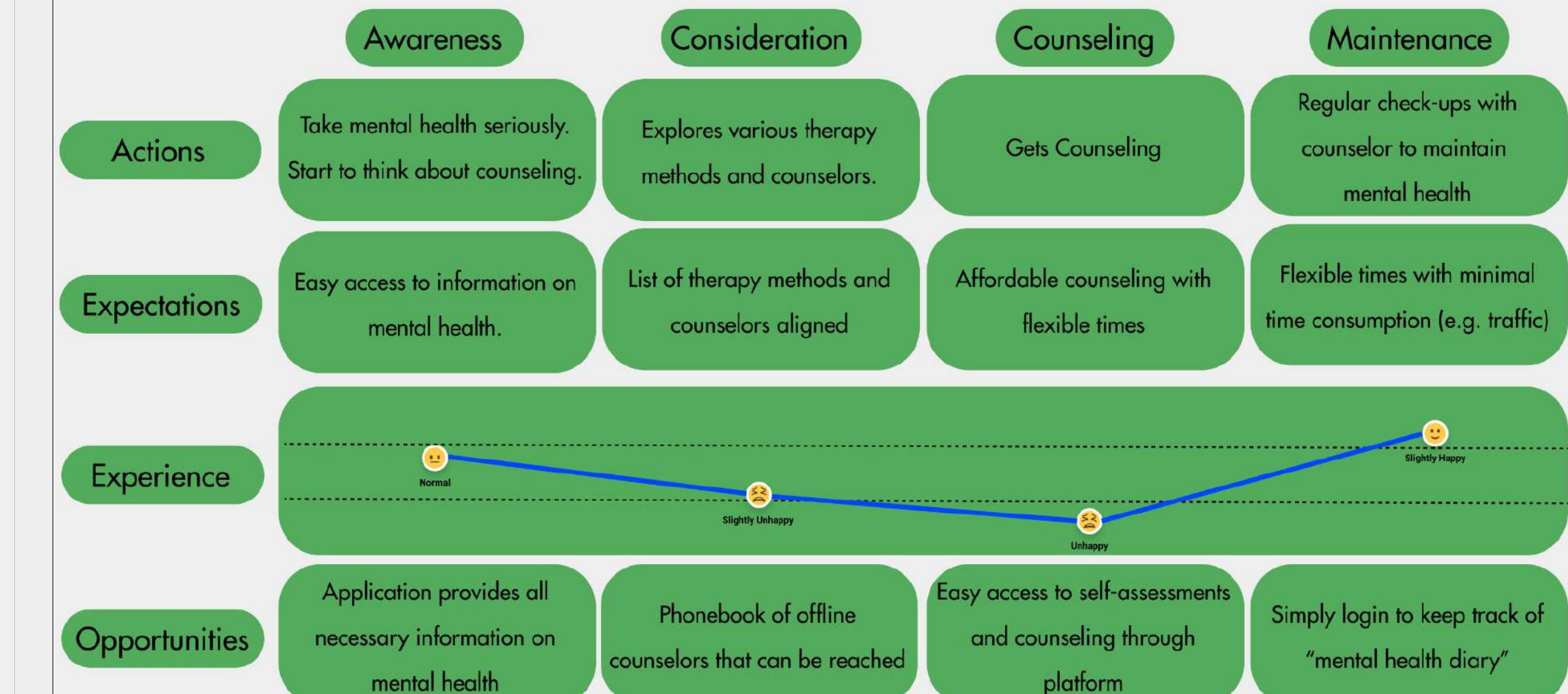
The user persona and journey map states potential users' needs and tracks becoming aware about their mental health to maintaining consistent therapy sessions.



Eugene Lee

30, SW Engineer
Incheon, South Korea

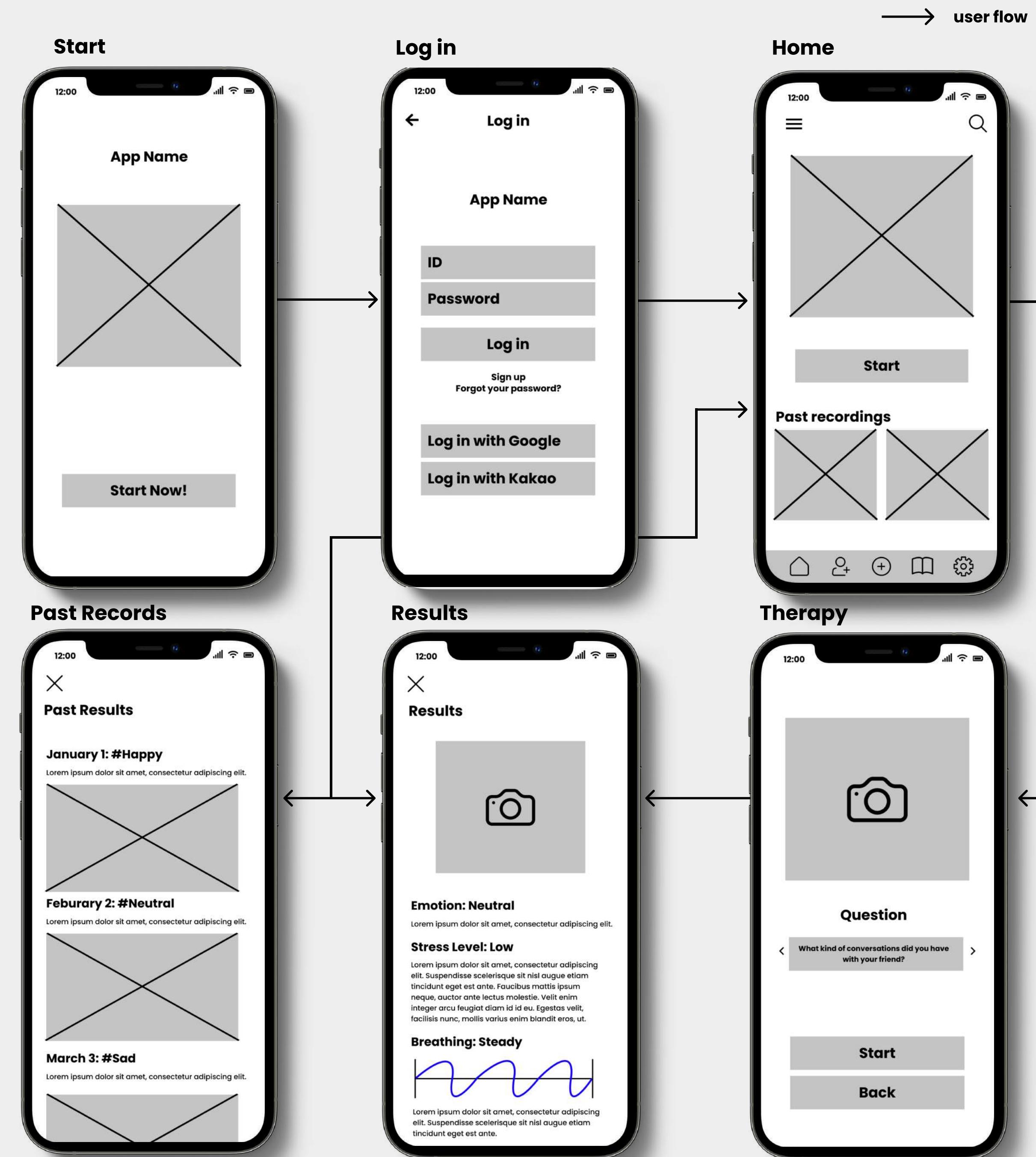
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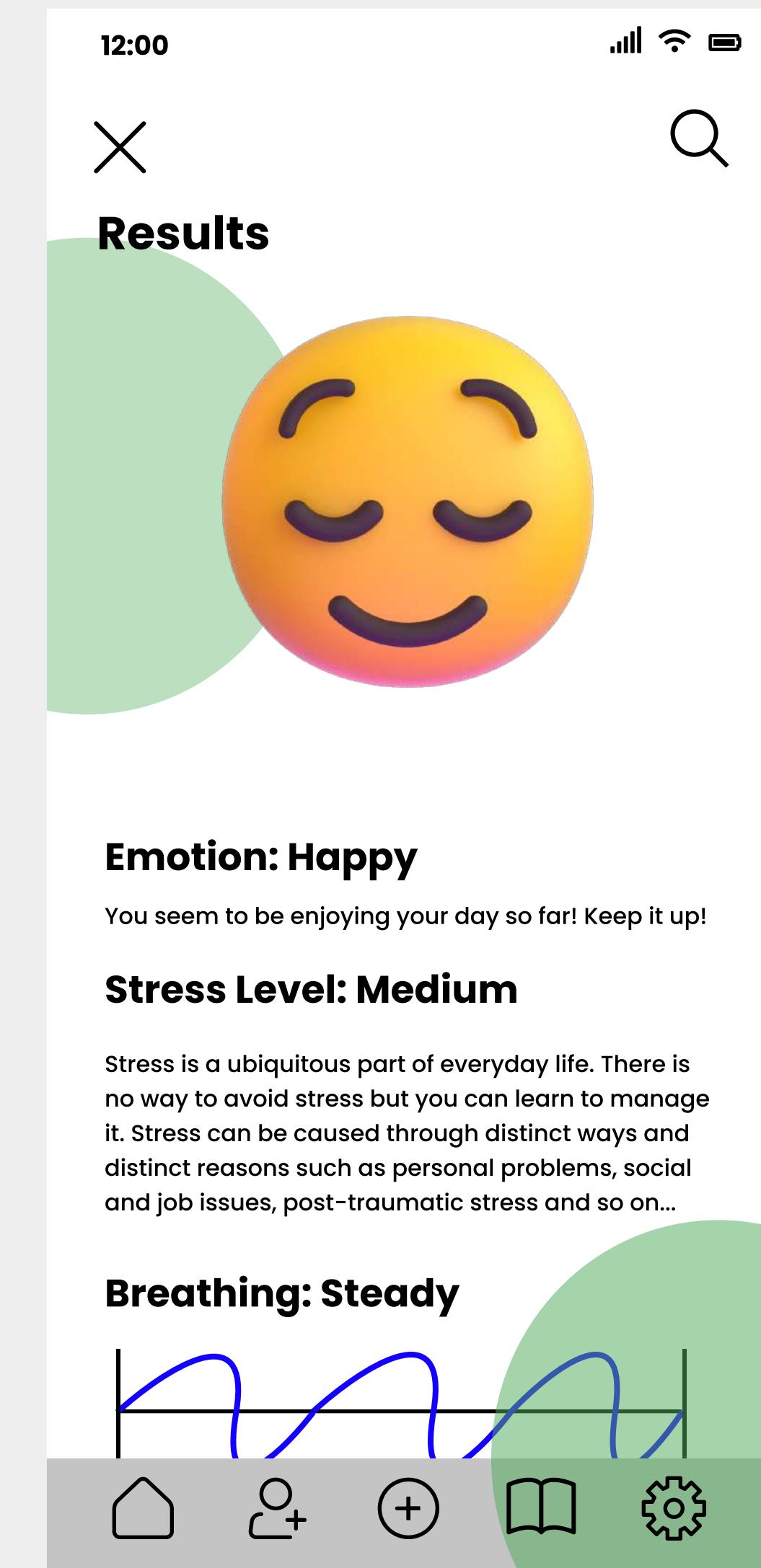
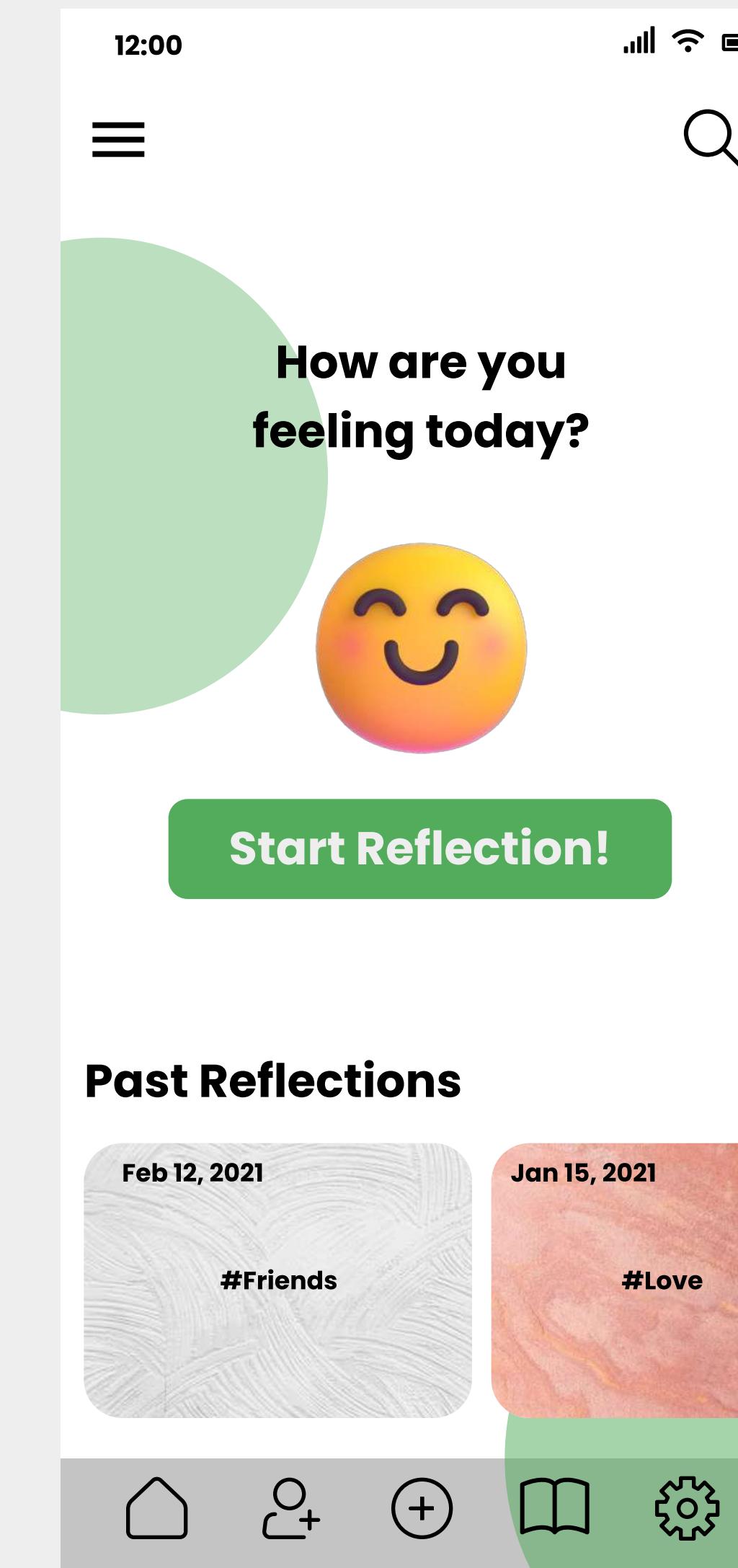
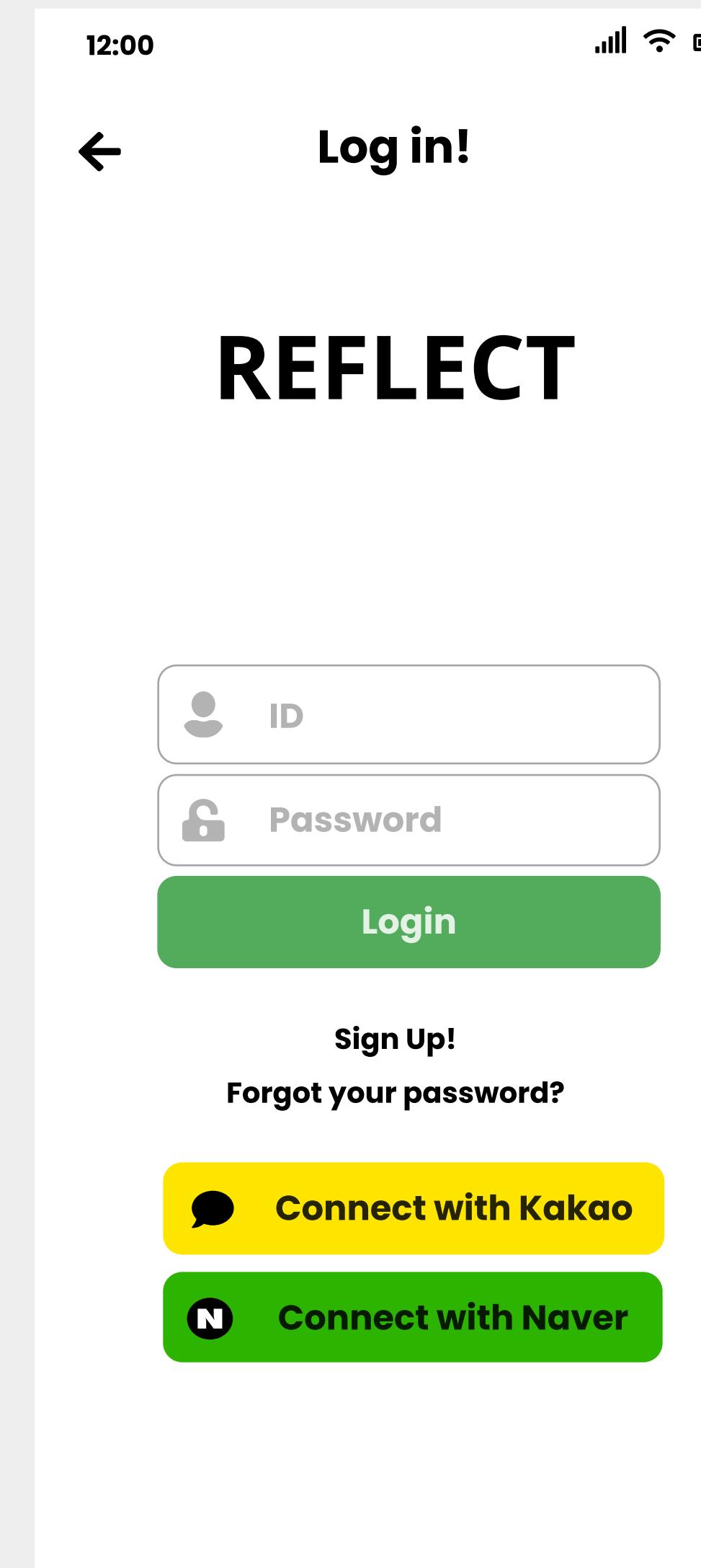
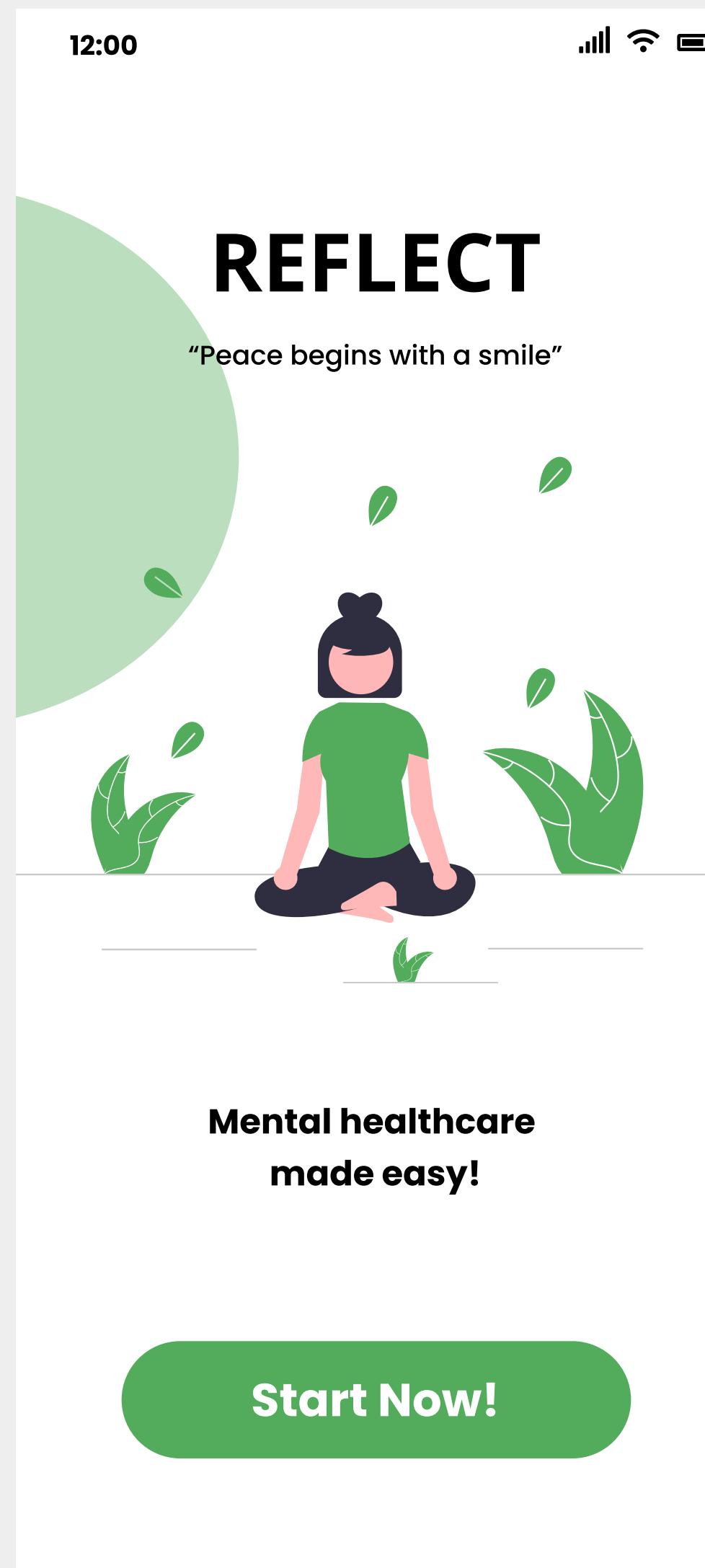


Wireframe

Wireframes of the application was created guide the initial application ideation.

Setting the tone on how the application should interact with the user.

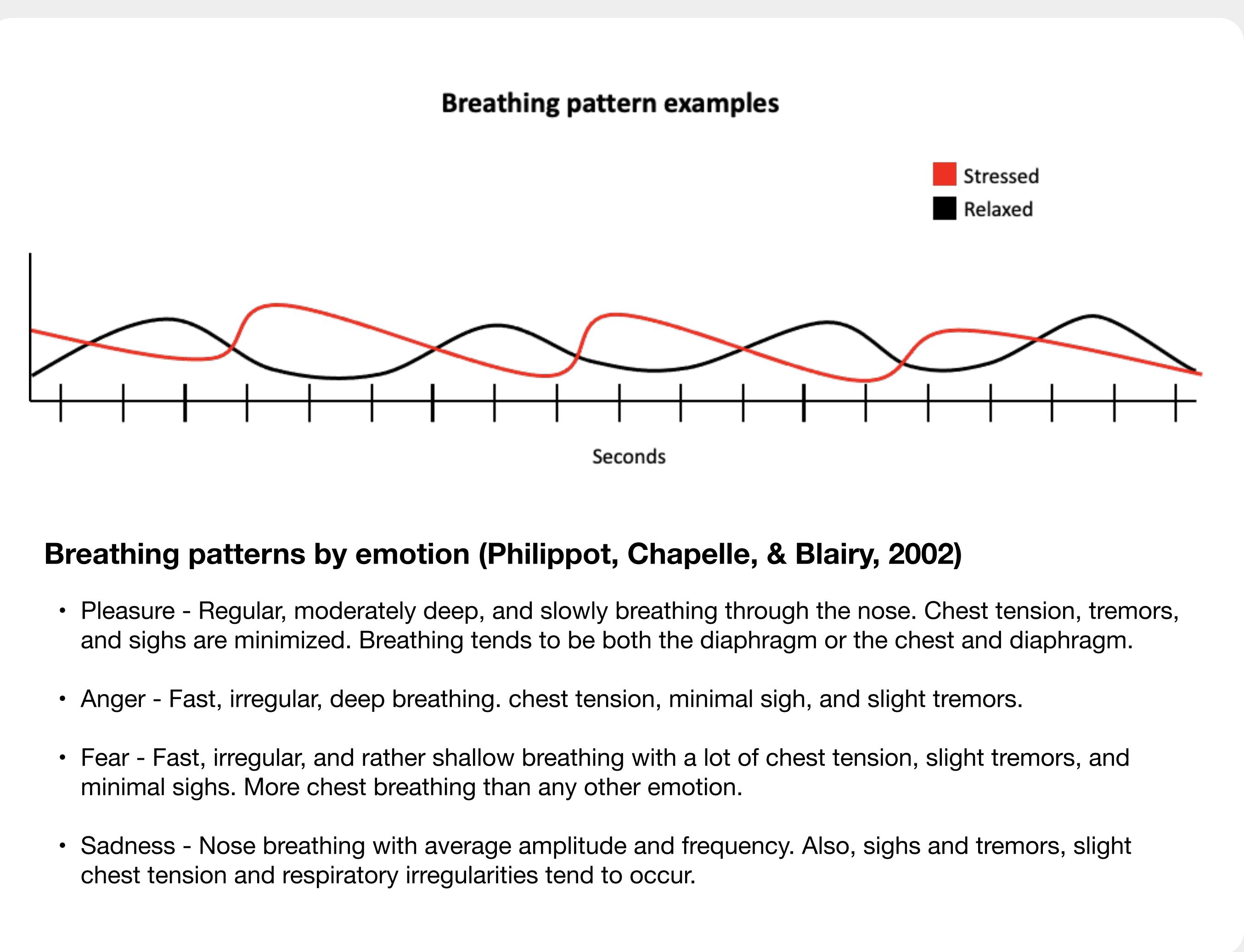




Developing psychological models

We developed several psychological models of emotion and a 6 item “Psychological Resilience” questionnaire.

I, specifically, created a model based on breathing patterns and surveyed existing stress related questionnaires.



<Desk research on breathing patterns>

Effect of Newspaper Reading on Cognitive Processes of the Brain using EEG

Funded by Korean Newspaper Association

Problem

Increasing digital content consumption led to less reading overall, especially printed materials.

Role

Project Manager

- Research proposal / report
- Participant management
- Developing tasks

Objective

Highlight the effects of reading newspaper on executive functions and social cognition.

Methods

- EEG
- Survey
- Diary study
- Task design

사회 미디어

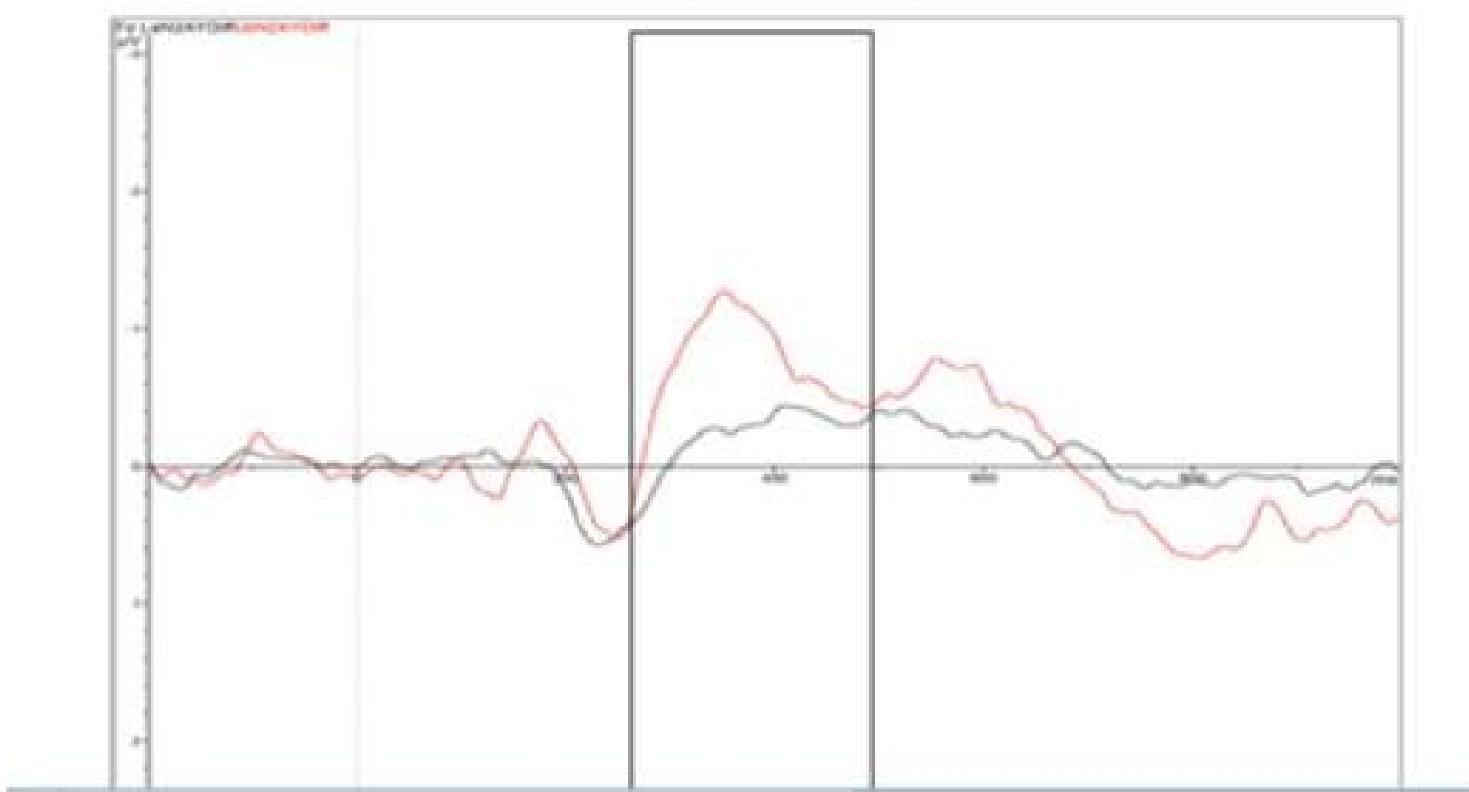
“신문 꾸준히 읽으면 주의력 높아진다”



+ -

한소원 서울대 교수팀 '뇌 활성화 상관관계 분석'
신문협회, 신문의 날 맞아 신문 읽기 효과 공개

실험집단의 신문읽기 전(검은색)과 후(빨간색)의 뇌파 변화



신문협회 제공

신문을 매일 꾸준히 읽으면 주의·집중력이 향상된다는 사실을 뇌과학적으로 증명하는 연구 결과가 나왔다.

<News Article Published on the Project>

Study Design

A repeated measures experiment was designed to observe the changes in executive function and social cognition abilities.

Participants in the experimental group completed a short survey and kept track of what they read everyday.



<Study Design>

Taking Culture into Consideration

Original version of the “Reading the Mind in the Eyes” task consisted of outdated pictures with only Western stimuli.

Taking culture into consideration, we created a Korean version of the RMET using PsychoPy.

We also translated Faux Pas Recognition task and changed scenarios to be more culturally fitting.



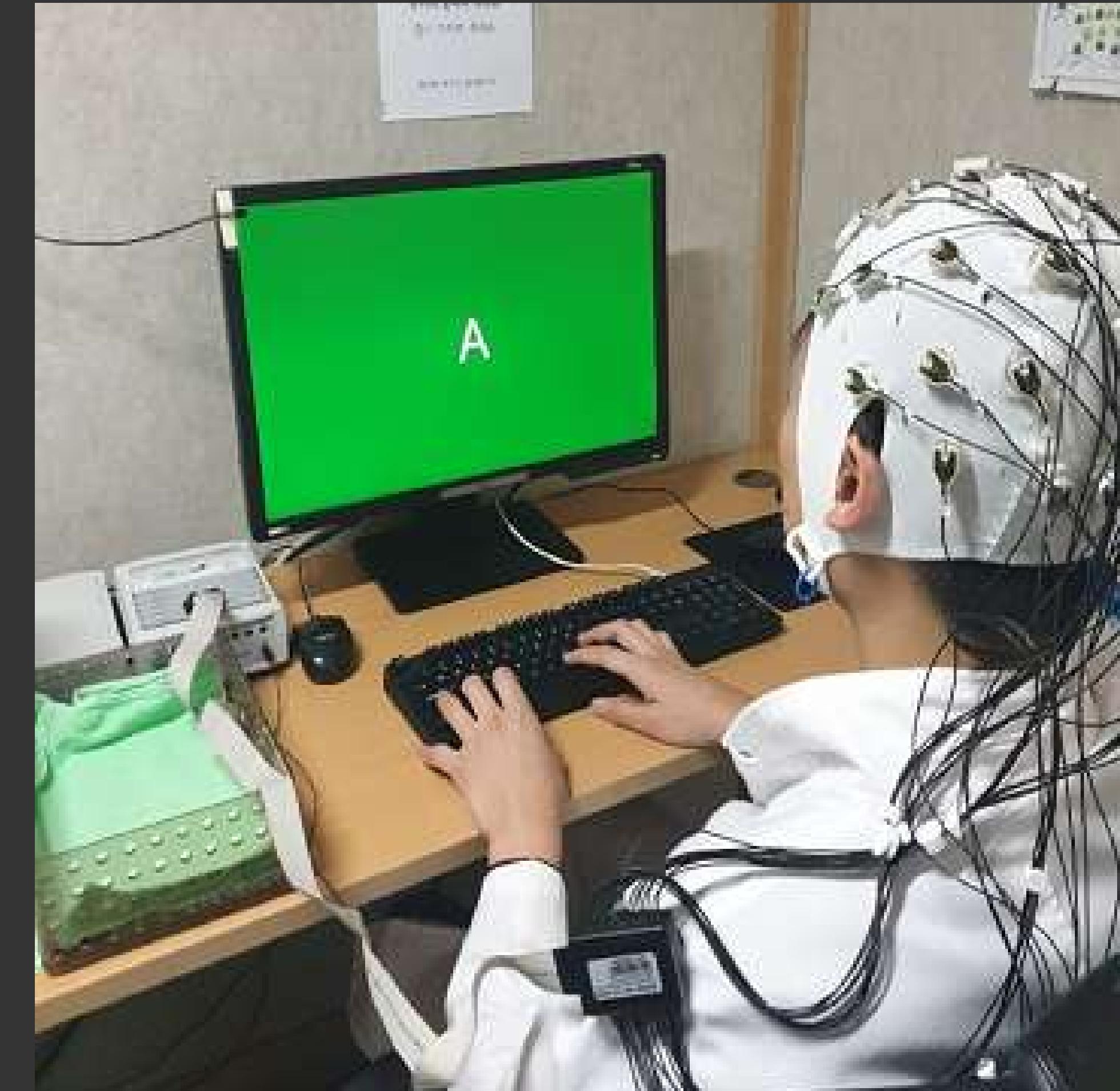
<Reading the Mind in the Eyes Task>

Experiment Experience

After experiments, we inquired on how the participants felt about the experiment.

We found that participants were getting fatigued during the EEG session due to performing a repetitive task with uncomfortable equipment on.

We eliminated unnecessary trials which reduced the EEG session down to 30 minutes and reduced participant fatigue.



<Participant performing EEG task>

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