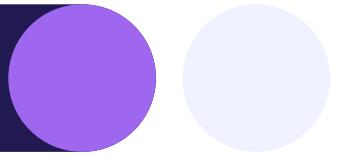


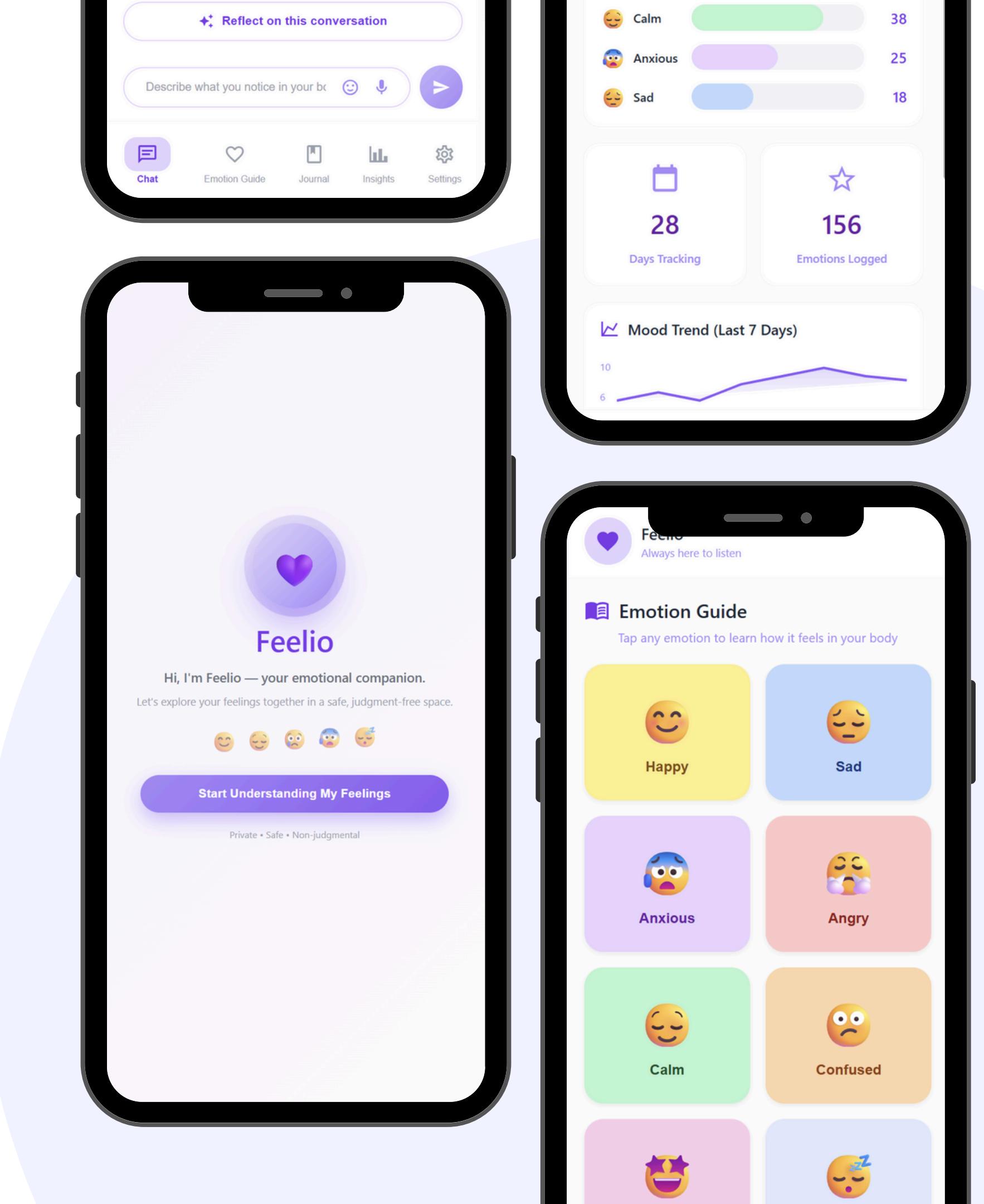


# FEELIO

A CHATBOT FOR  
ALEXYTHEMIA USERS



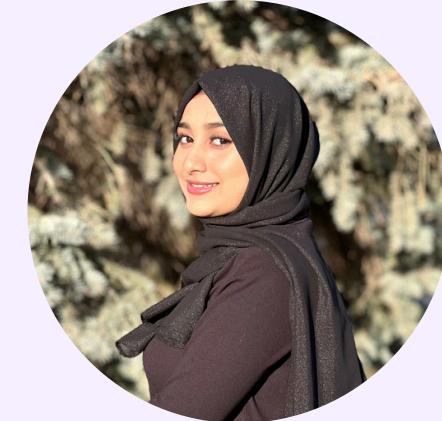
ENGG 519 FINAL PRESENTATION



# LEXIFEEL TEAM



**Maham Jamal**



**Khadiza Binte Ahsan**

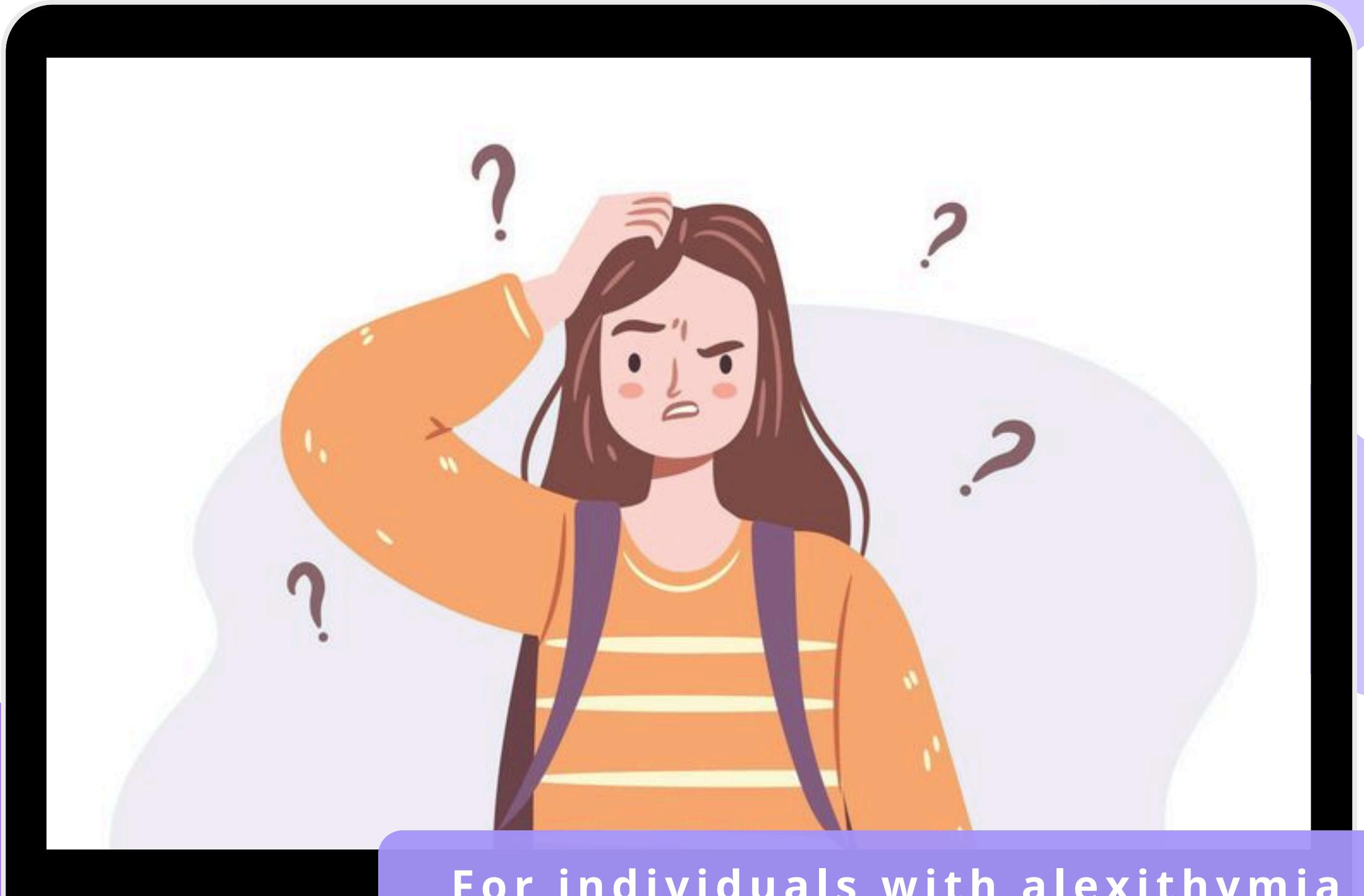


**Chloe Villaranda**



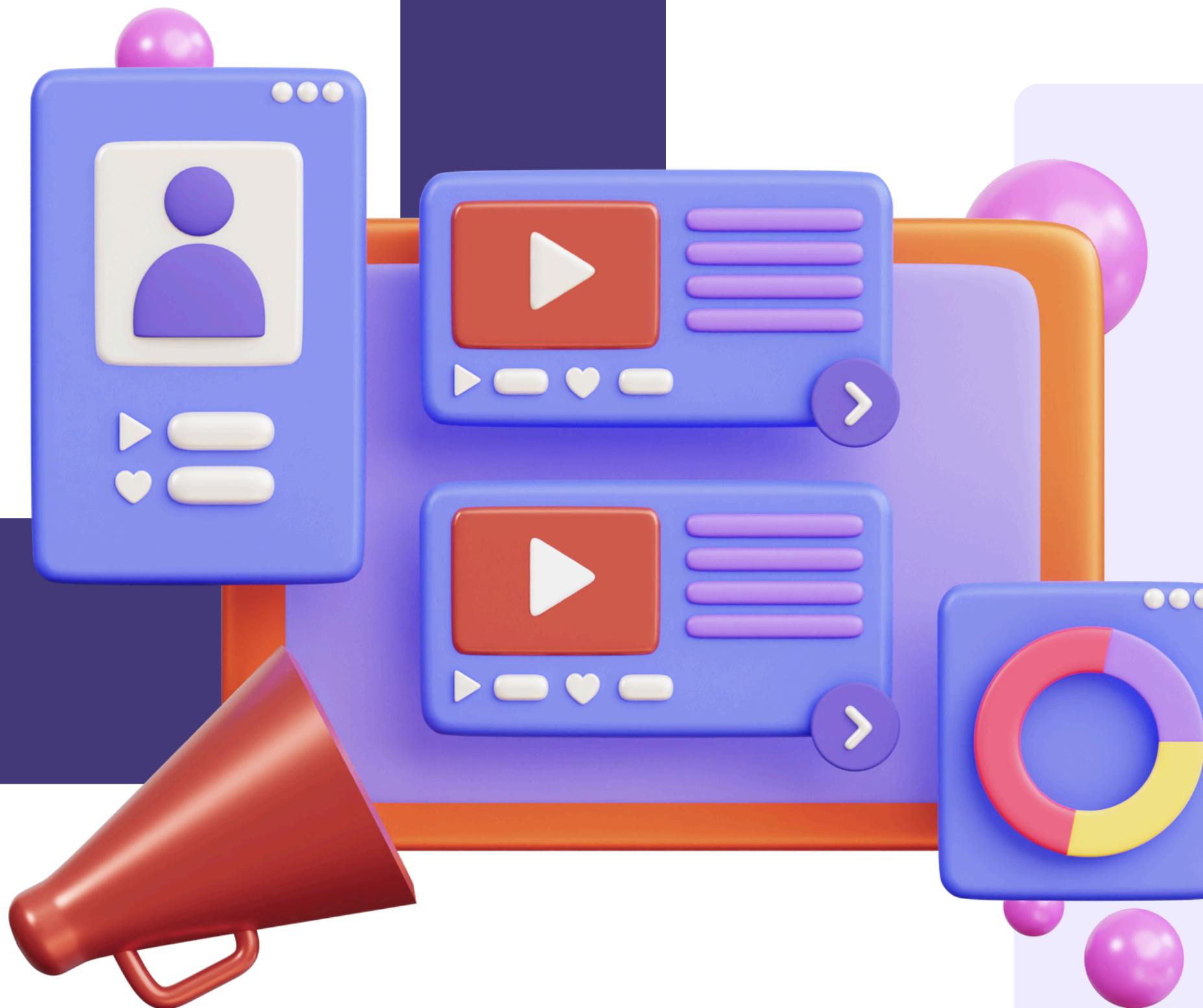
LexiFeel

# THE PROBLEM



For individuals with alexithymia  
it happens every day.

# ALEXITHYMYIA



A personality trait involving difficulties in identifying, describing, and interpreting emotions, often leading individuals to focus more on external events than internal feelings.

First introduced by Nemiah and Sifneos in the 1970s, it is now widely recognised in psychology for its impact on emotional regulation, communication, and overall well-being.



LexiFeel

# PROJECT OBJECTIVE AND NOVELTY

Our company, LexiFeel, created Feelio - an application chatbot for individuals who suffer with Alexithymia to better understand their emotions and how to handle them

● **Designed for an Overlooked Population**

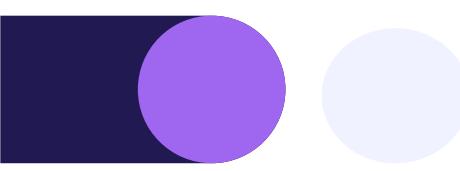
● **Non Clinical and Safety Focused**

● **New Trust Framework: Cognitive Behavioral Reliance Readiness**

No other company like us exists

Our aim is not to diagnose or treat.

Our aim is to give users a structured environment where they can practice naming emotions, exploring patterns, and building confidence in their ability to reflect."



# MARKET ANALYSIS

## CRITERIA

### STRENGTH

### WEAKNESS

## Feelio

- specifically for people with alexithymia
- simplistic and clean design, easy to interface and accessible
- variety of different features

## Woebot

- chatbot for people to use to help with their mental health (therapy chatbot)
- widely used by over 1 million people

## Elomia

- AI mental health chatbot
- sources to improve emotional regulation

- we are in the early stages in prototyping

- not aimed towards people with alexithymia
- shut down July 2025

- not aimed towards people with alexithymia



# COURSE CONCEPTS



**HUMAN AI TEAMING PRINCIPLES**  
(LECTURES 1 AND 2)

**MENTAL MODELS AND THE GULF OF EVALUATION**  
(LECTURE 2)

**COGNITIVE LOAD AND SITUATION AWARENESS**  
(LECTURES 1 AND 3)

**TRUST FORMATION AND APPROPRIATE RELIANCE**  
(LECTURES 3 AND 4)

**SAFETY CRITICAL AI AND BOUNDARY SETTING**  
(LECTURE 10)

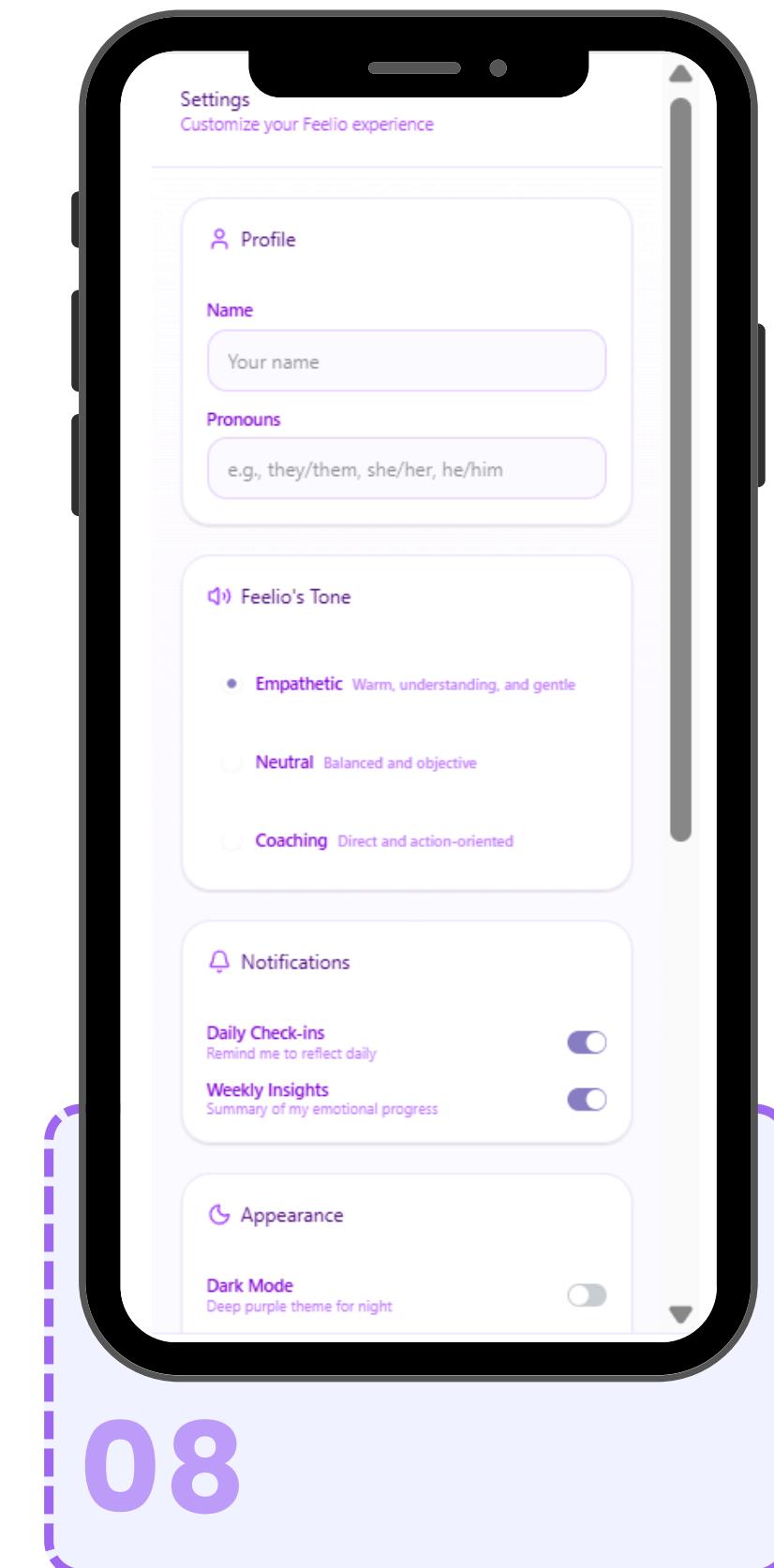
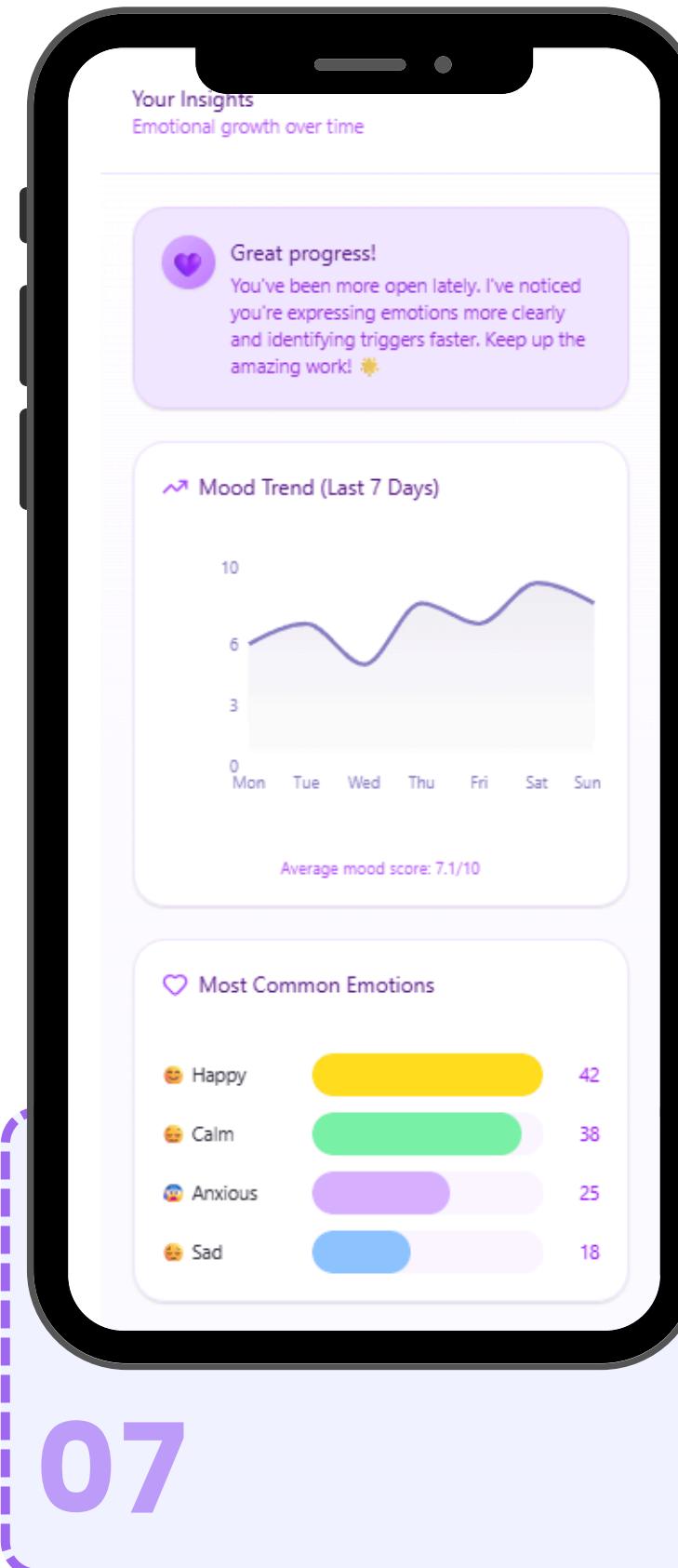
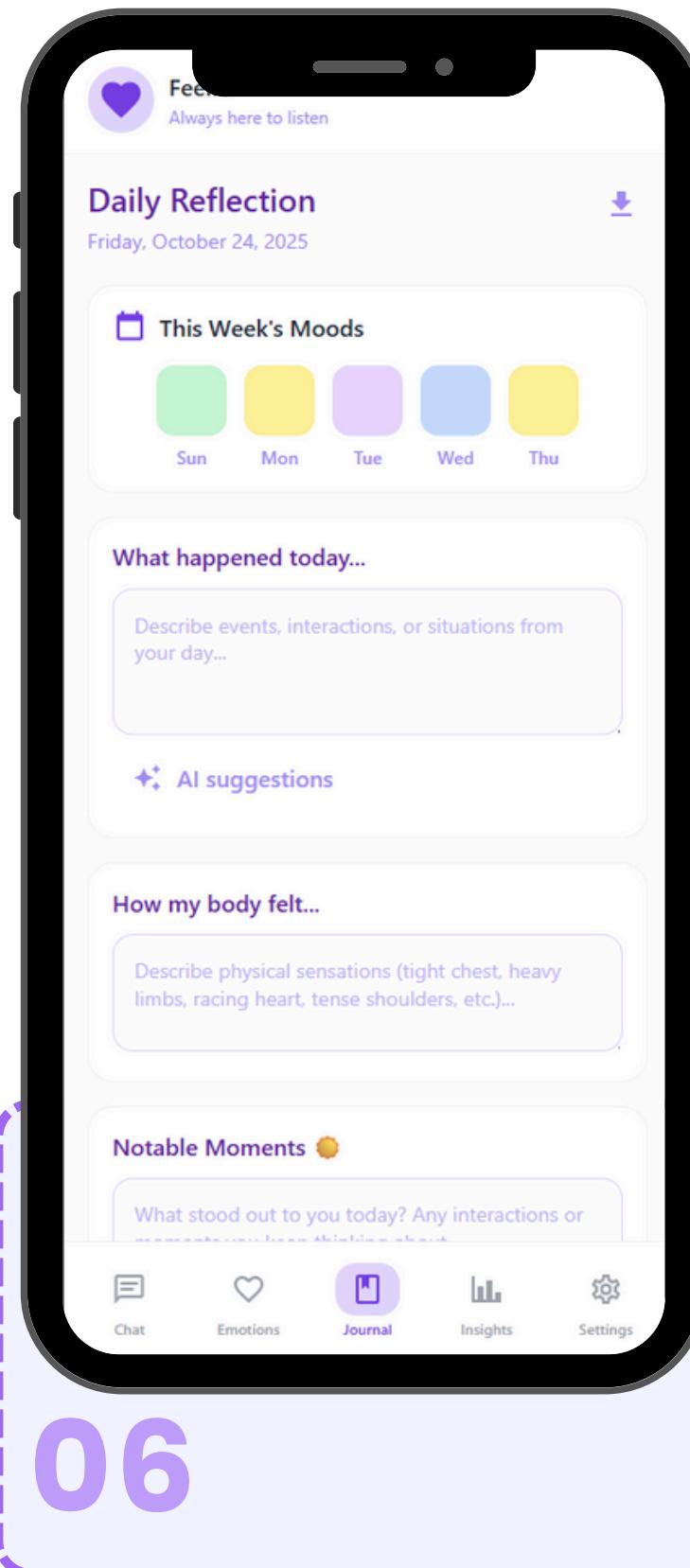
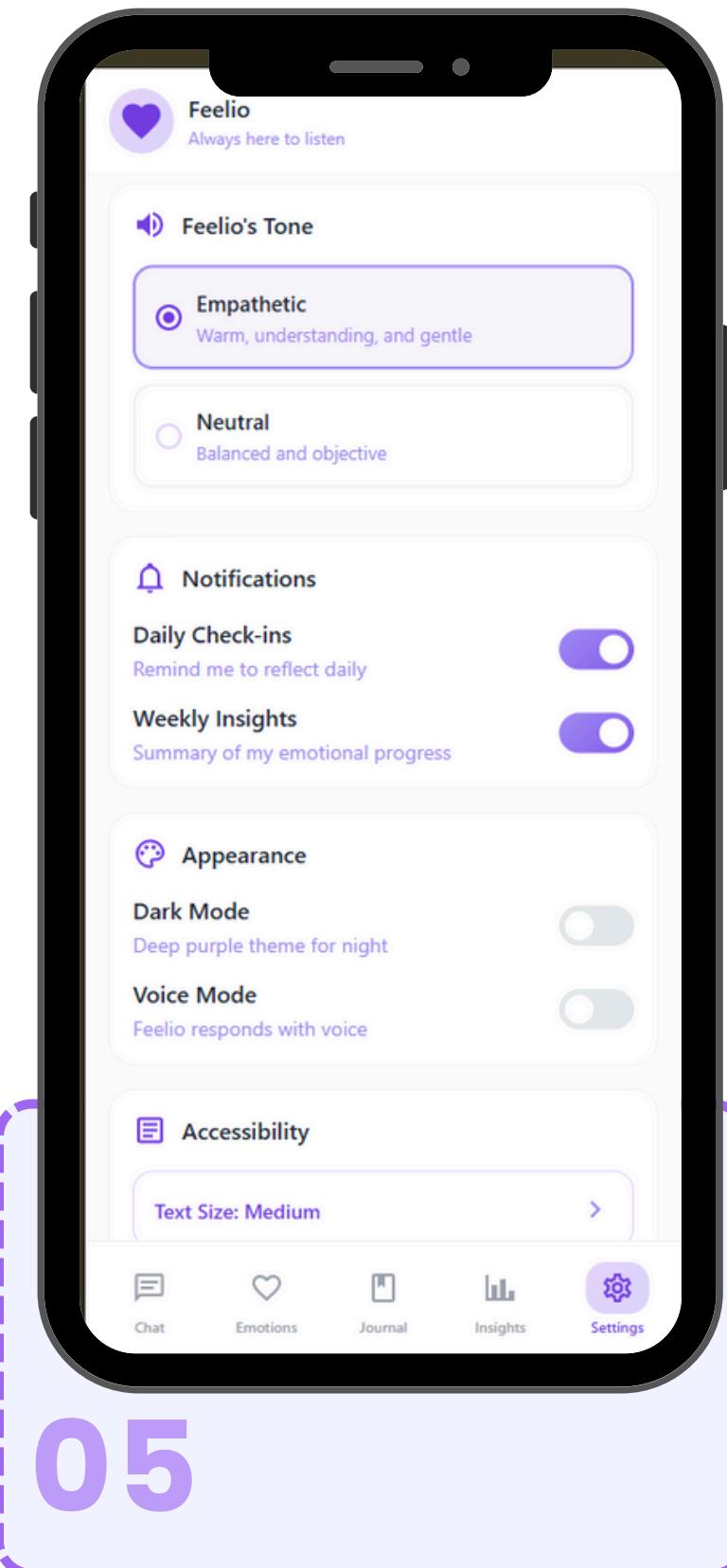
**ETHICAL AND SOCIOTECHNICAL  
CONSIDERATIONS**  
(LECTURES 9 AND 10)

**HUMAN CENTERED EXPLAINABILITY**  
(LECTURE 7)

# DESIGN PROTOTYPING



# DESIGN PROTOTYPING



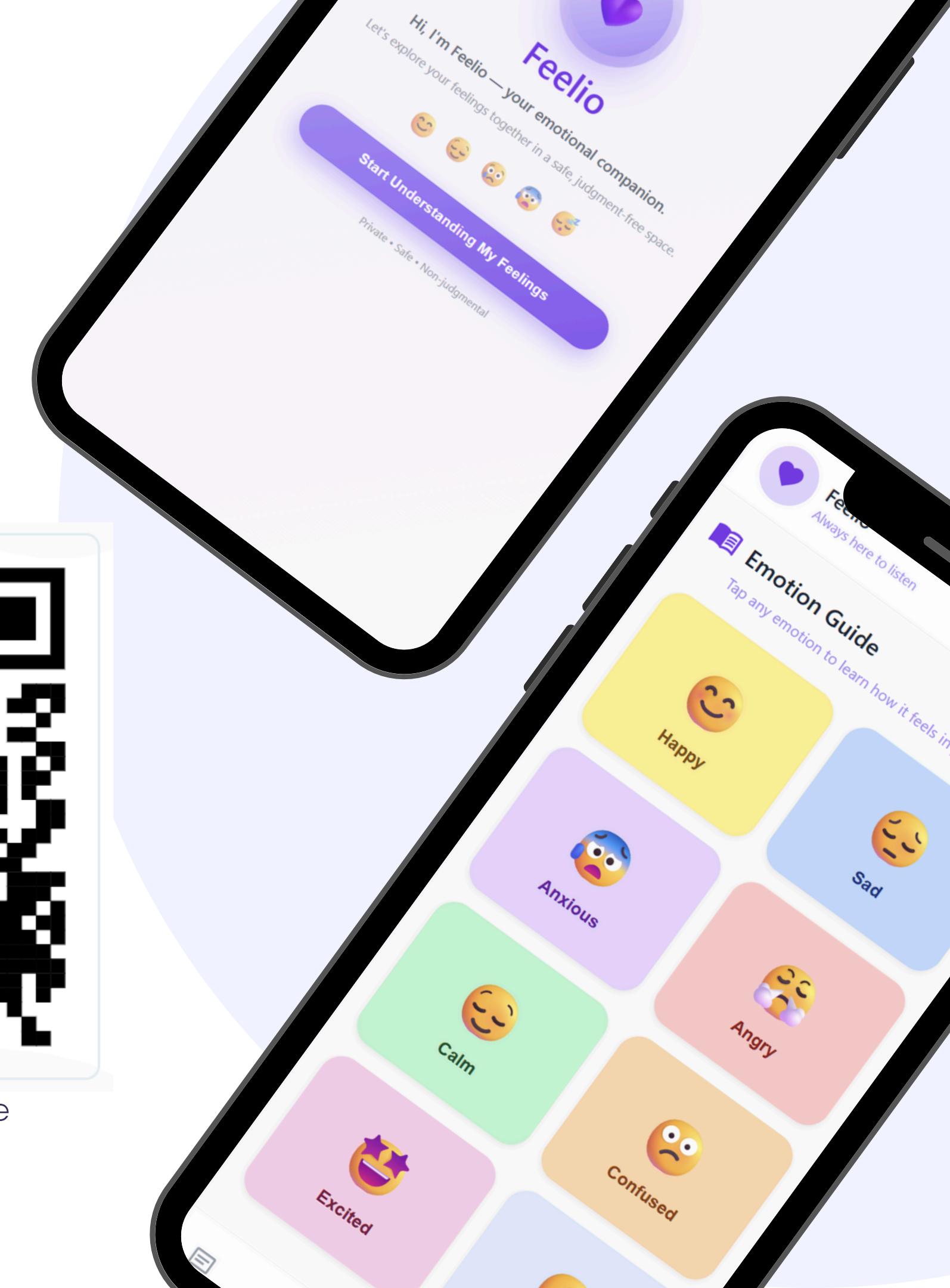


# DEMONSTRATION OF FEELIO

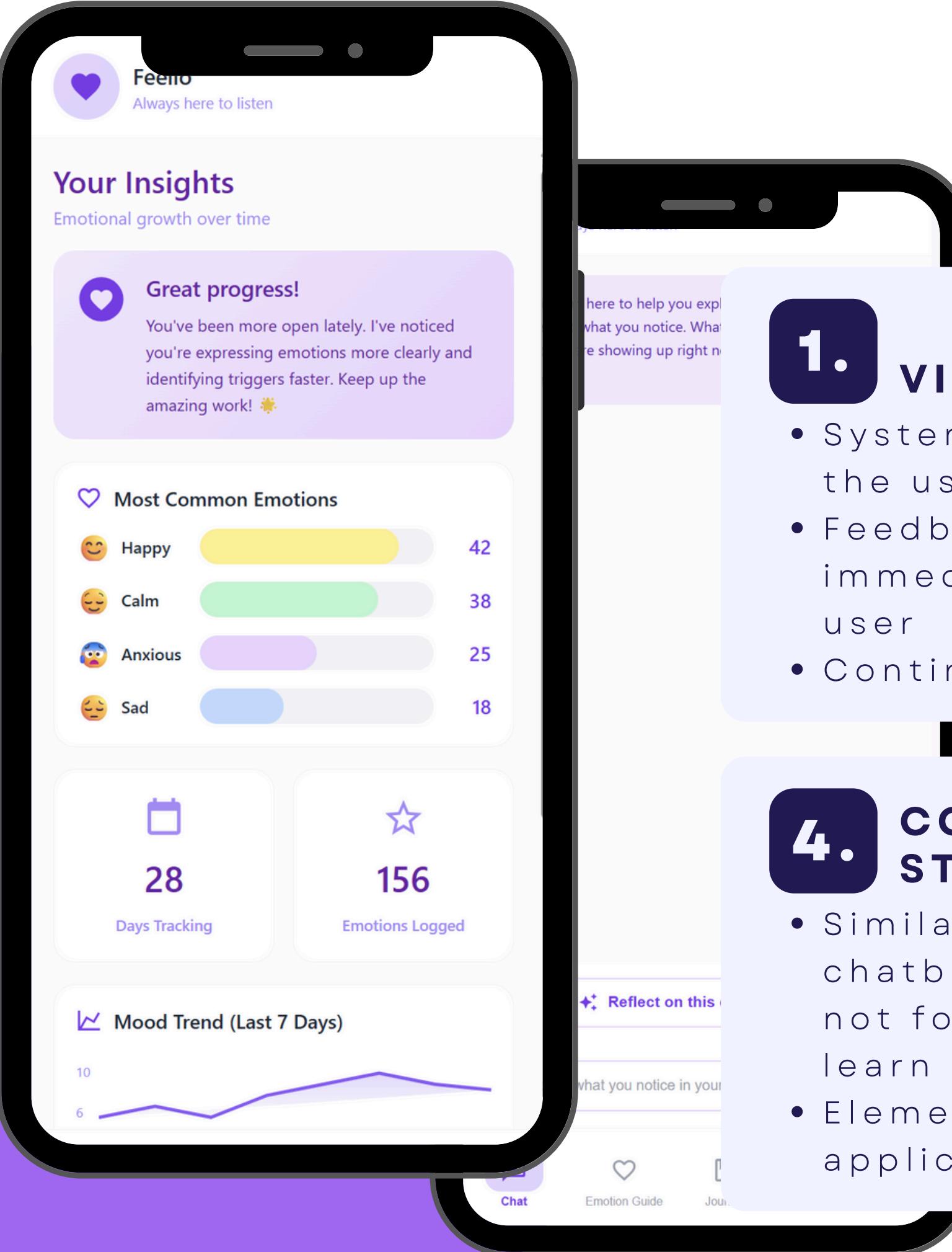
Our application is functional and fully deployed on [lexifeel.vercel.app](https://lexifeel.vercel.app)

Feel free to test it and follow along!

During the demonstration, please note how we took the course concepts and integrated them into our application.



# NIELSEN'S 10 HEURISTICS



## 1. VISIBILITY

- System state is shown to the user
- Feedback is presented immediately back to the user
- Continuous Communication

## 4. CONSISTENCY & STANDARDS

- Similarities to other chatbot applications to not force the user to learn something new
- Elements from other applications present

## 3. USER CONTROL & FREEDOM

- The user can navigate to any page and input anything in the chatbot
- TrustBand Override

## 8. AESTHETIC & MINIMALIST DESIGN

- Simplified interface to reduce extraneous cognitive load
- Colour scheme is logical and consistent

# A NEW TRUST MODEL

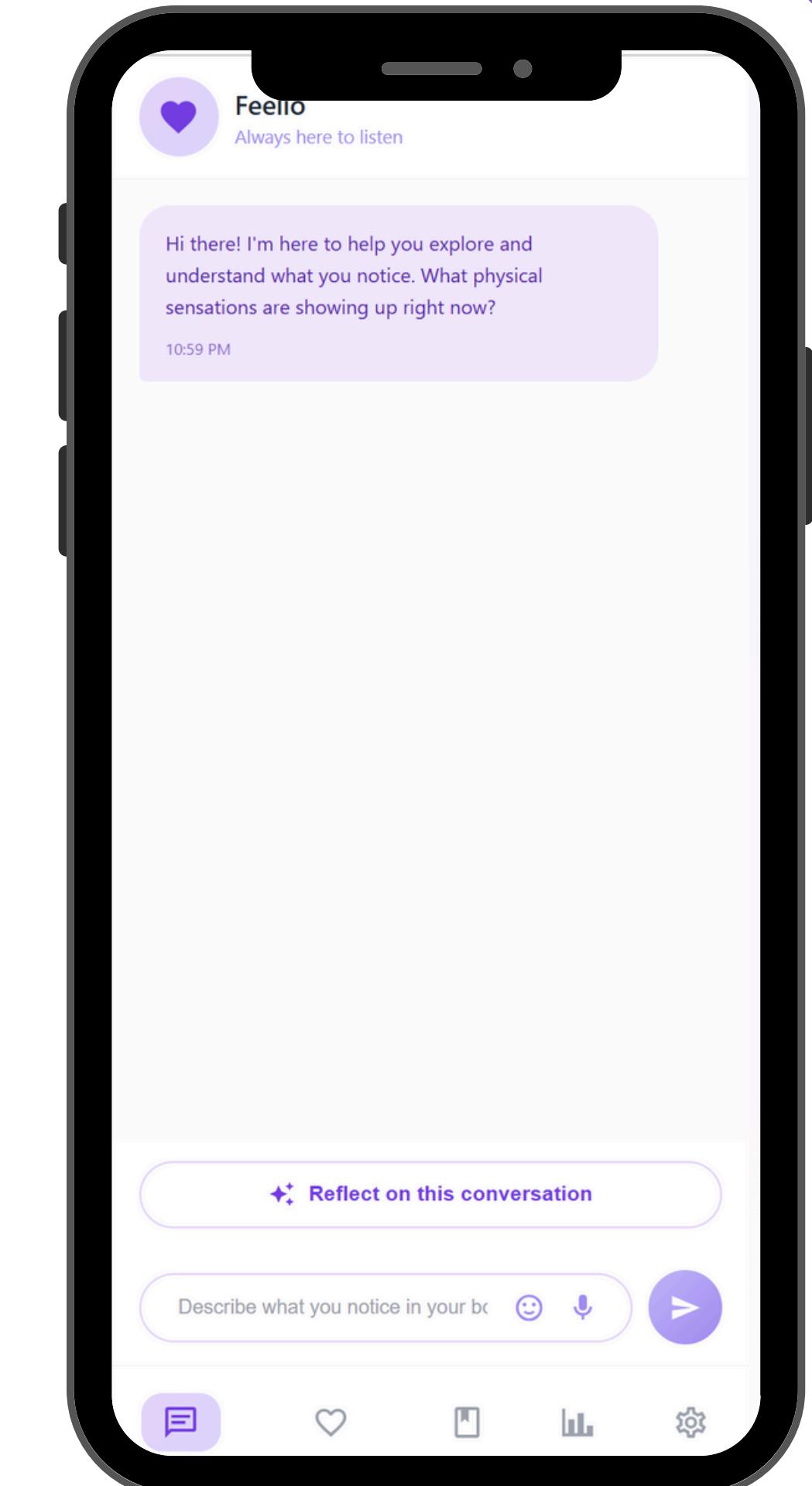
## 1. CURRENT TRUST MODELS

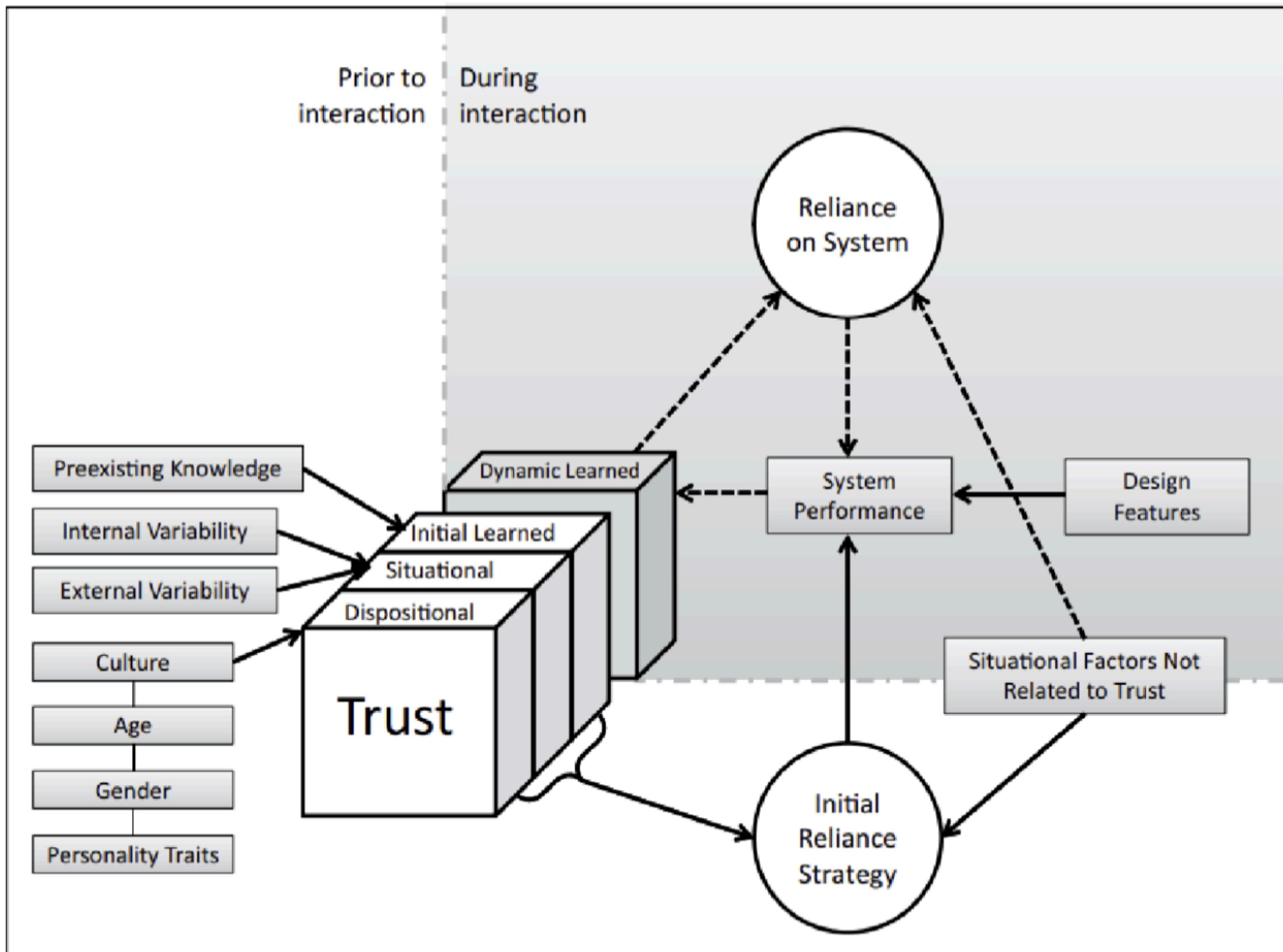
Assume the user knows how they feel about a system

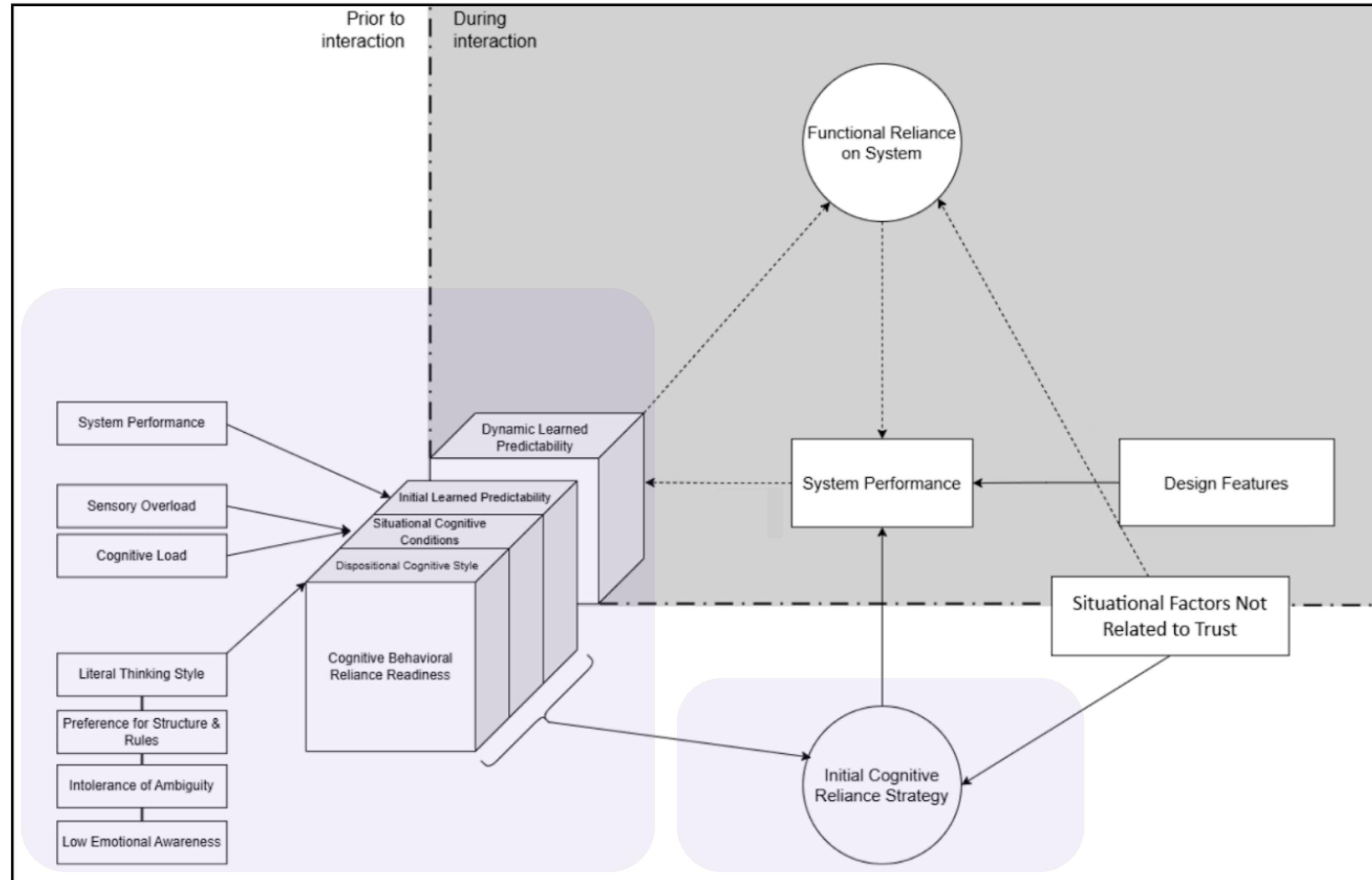
## 2. ALEXITHYMYIA

Identifying emotions is difficult, we need to view trust through behavior

## 3. COGNITIVE BEHAVIOR RELIANCE READINESS MODEL (CBRR)

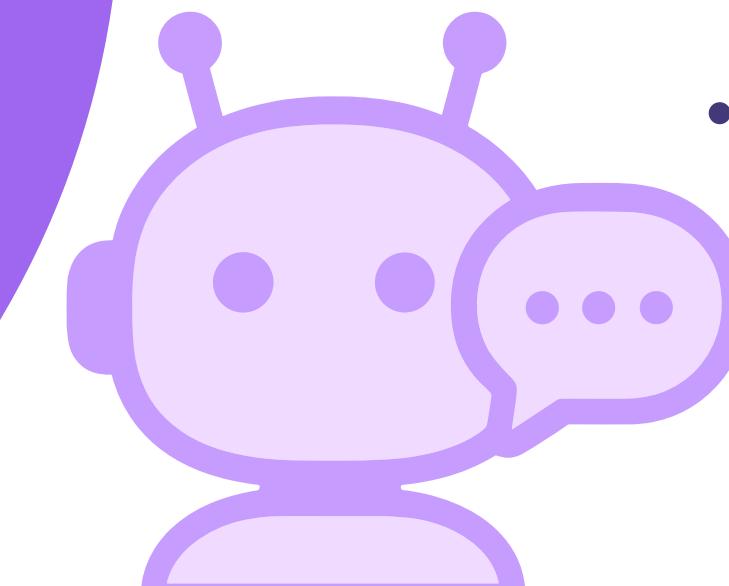
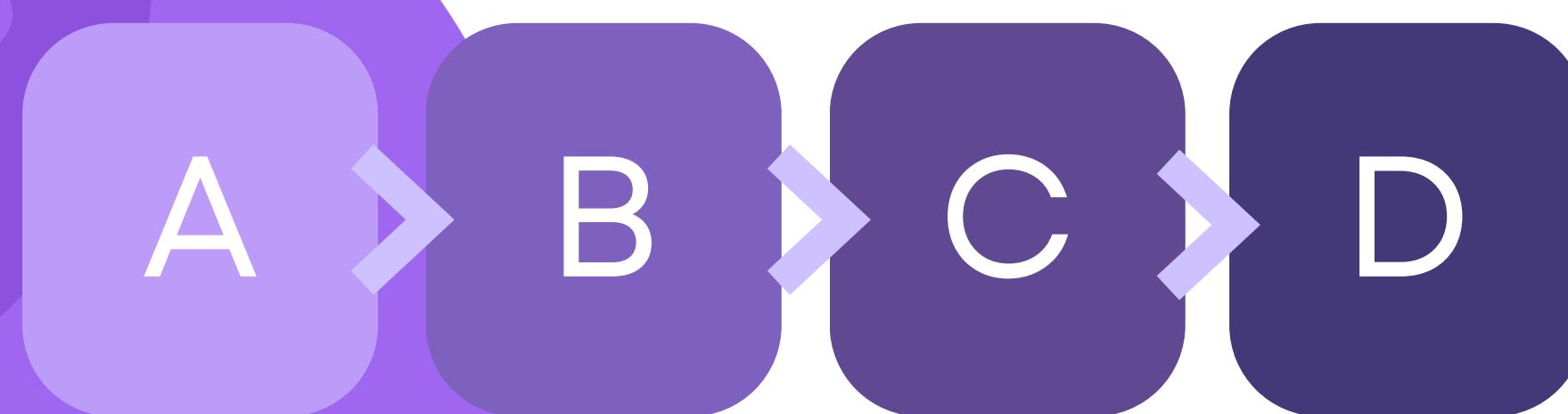




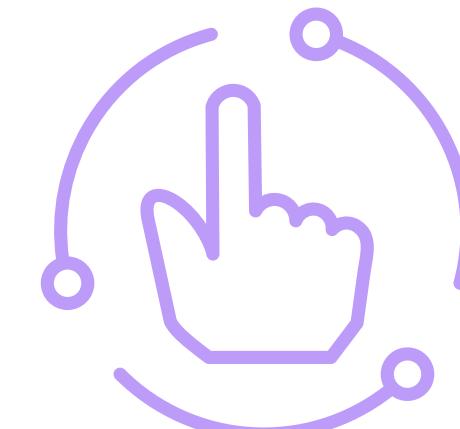


# CHATBOT + CBRR?

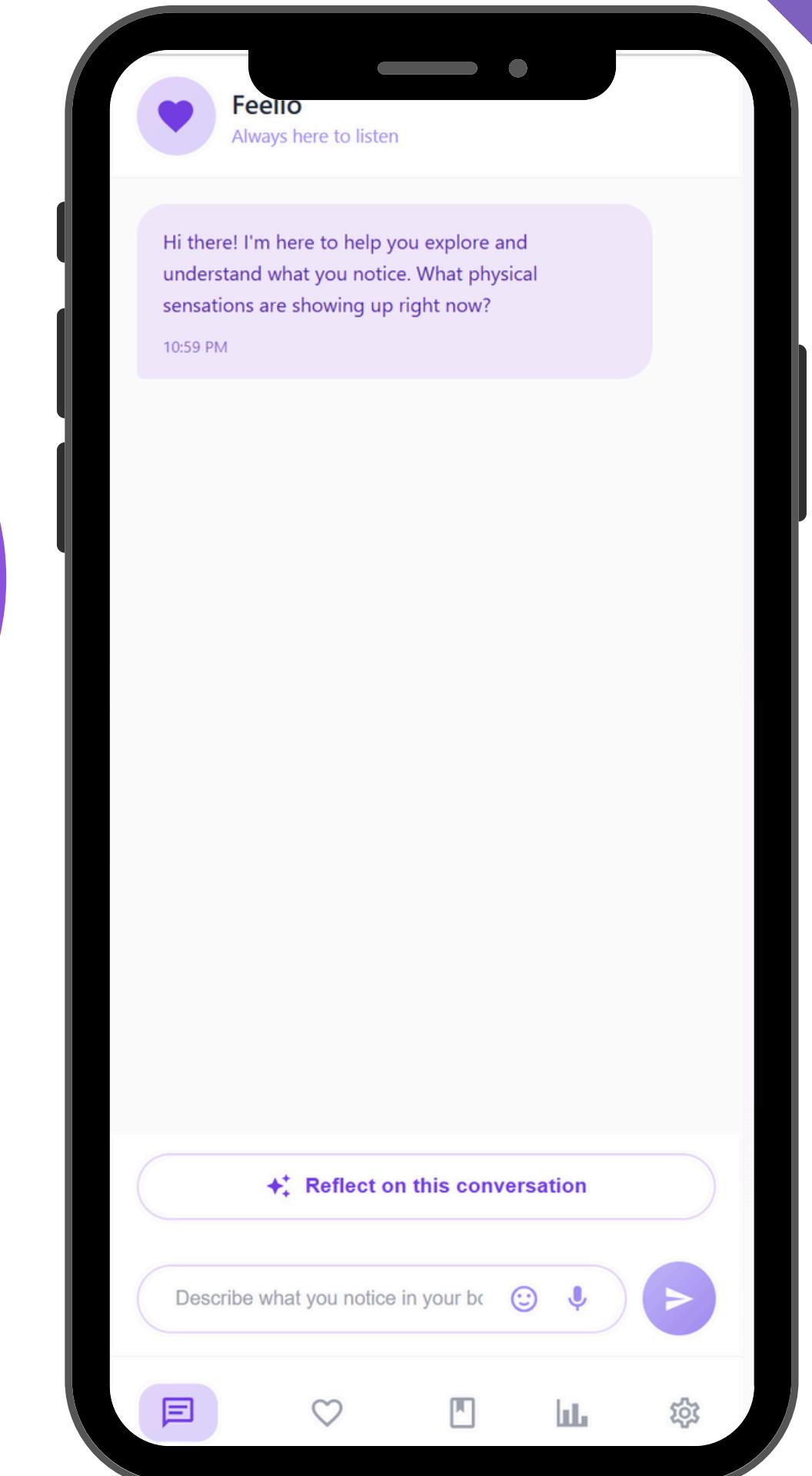
TRUST BAND



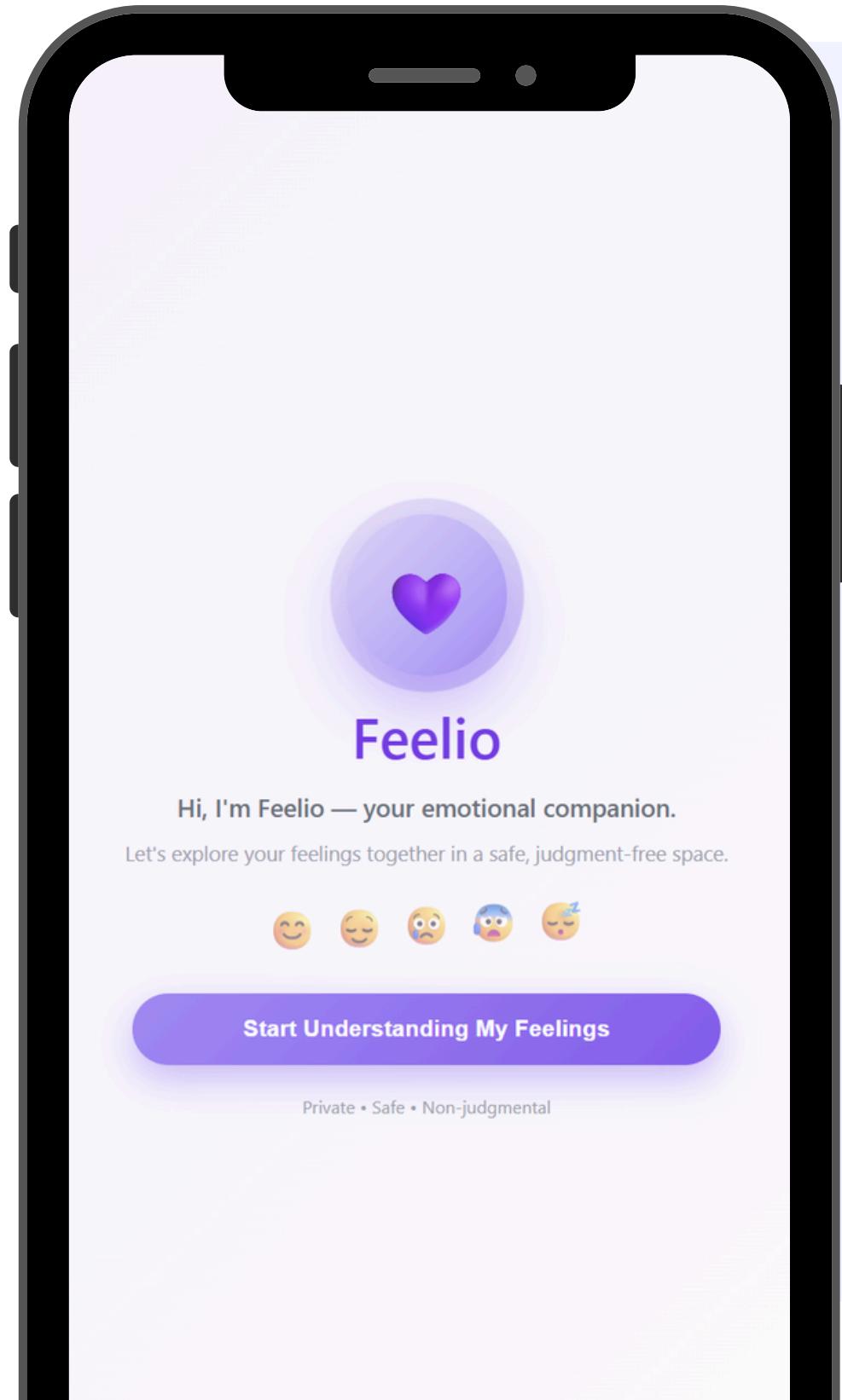
- *ADJUSTS RESPONSE*



- *MESSAGE LENGTH*
- *SELF DISCLOSURE*
- *REPAIR SUCCESS*
- *NUMBER OF SESSIONS*



# TESTING



## 3 STAGES

### 1. MANUAL OVERRIDE

HIGHEST VS LOWEST TRUST BAND- IS THERE A DIFFERENCE?

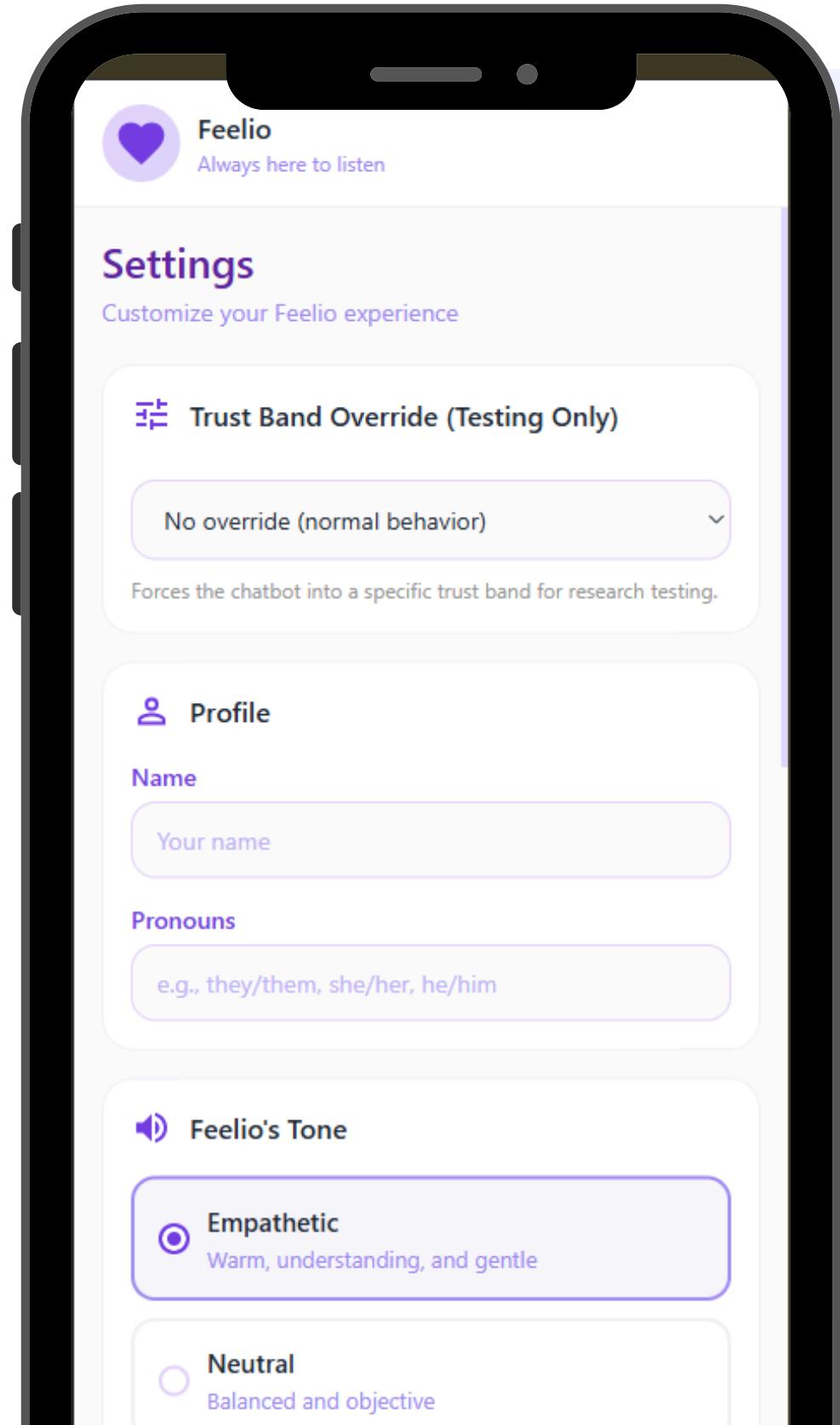
### 2. TRUST BUILDING

DOES THE BOT BUILD TRUST?

### 3. PERSONA TESTING

SIMULATED USER RESPONSE TESTING.  
DOES THE BOT ADAPT TO DIFFERENT PERSONALITIES?

# STAGE 1



## MANUAL OVERRIDE

**FORCED TO LOWEST AND HIGHEST  
BAND, MANUAL OVERRIDE**

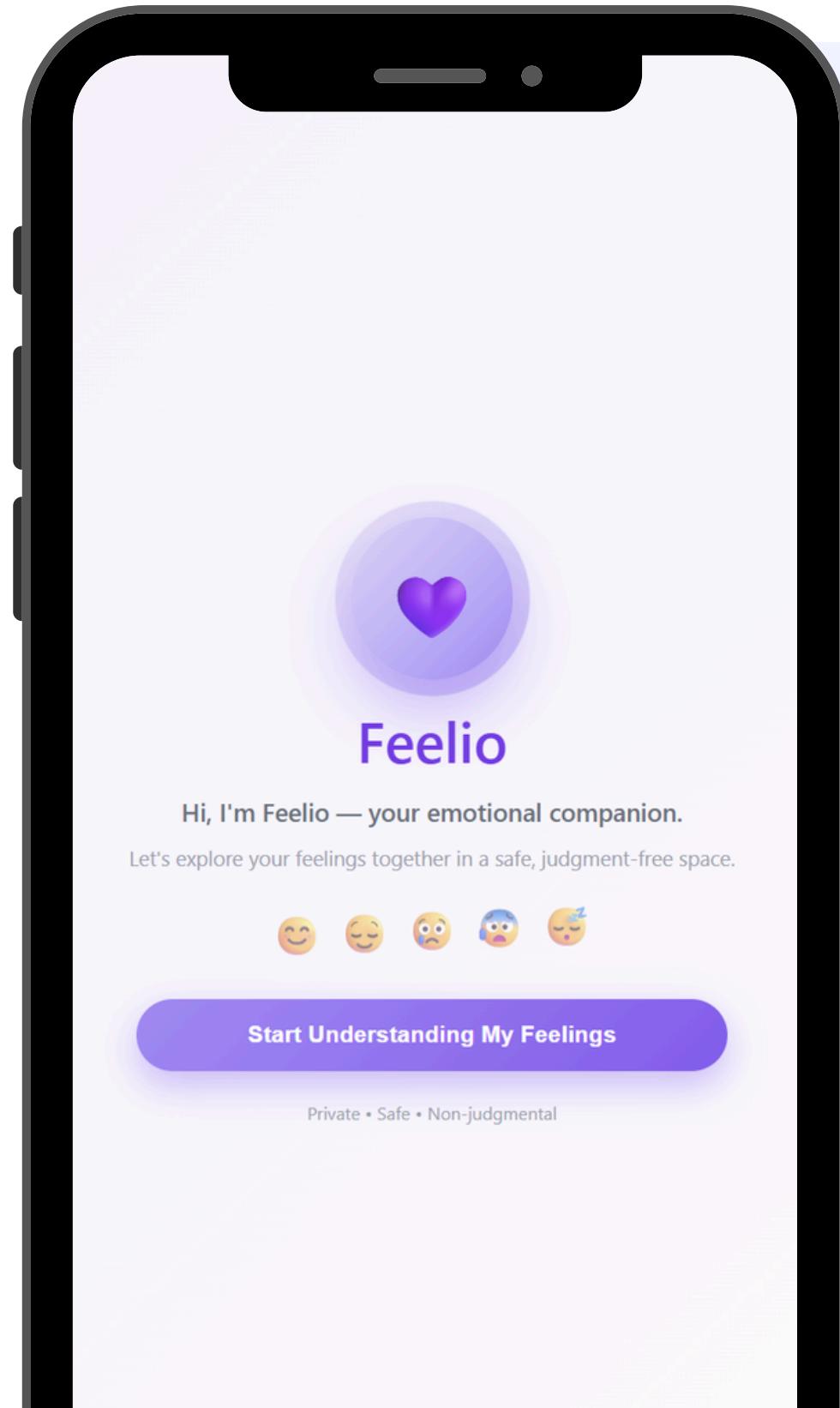
Conversation started with the same prompt.

Following messages adapted to bot responses.

# STAGE 1 - RESULTS



# STAGE 2



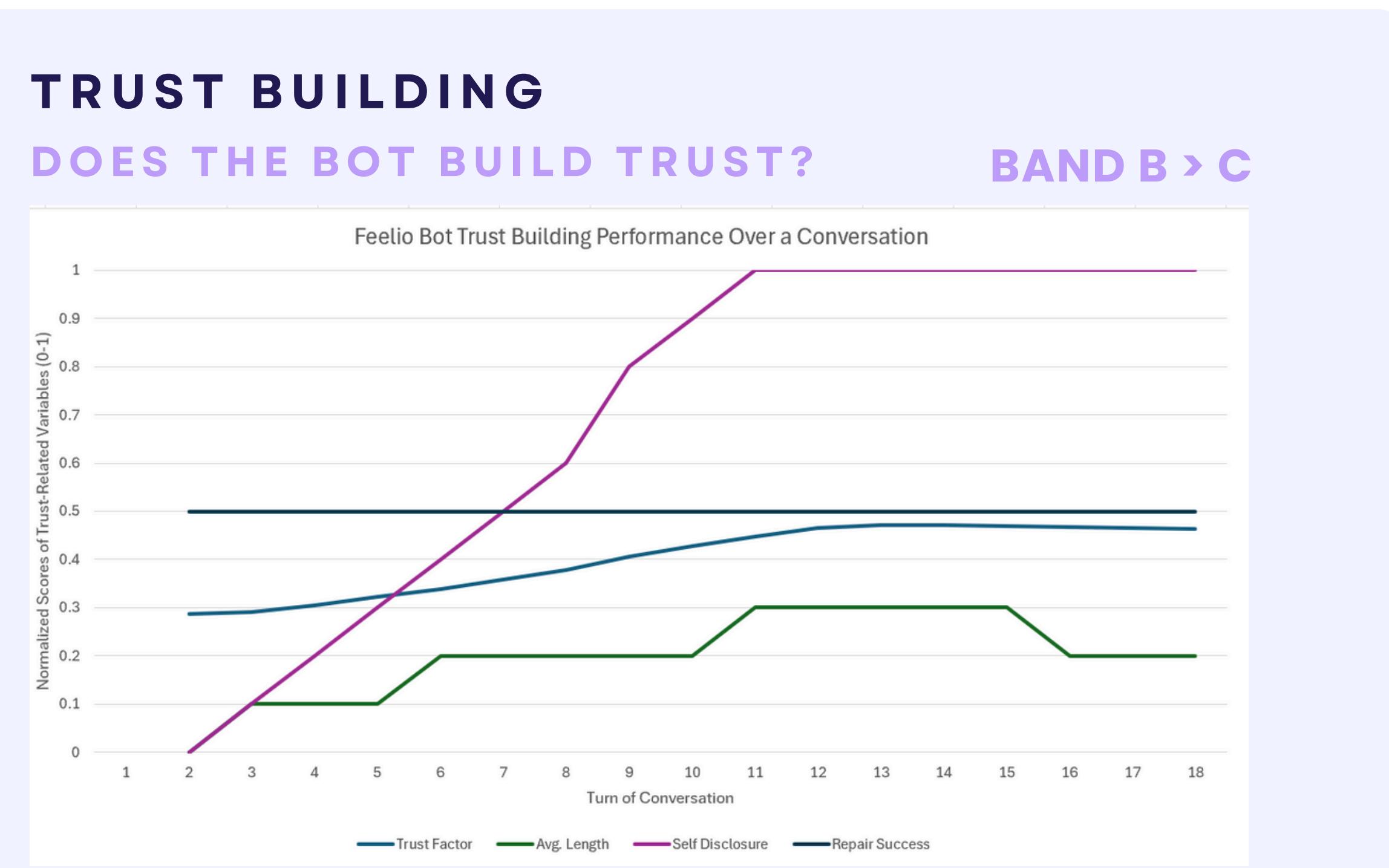
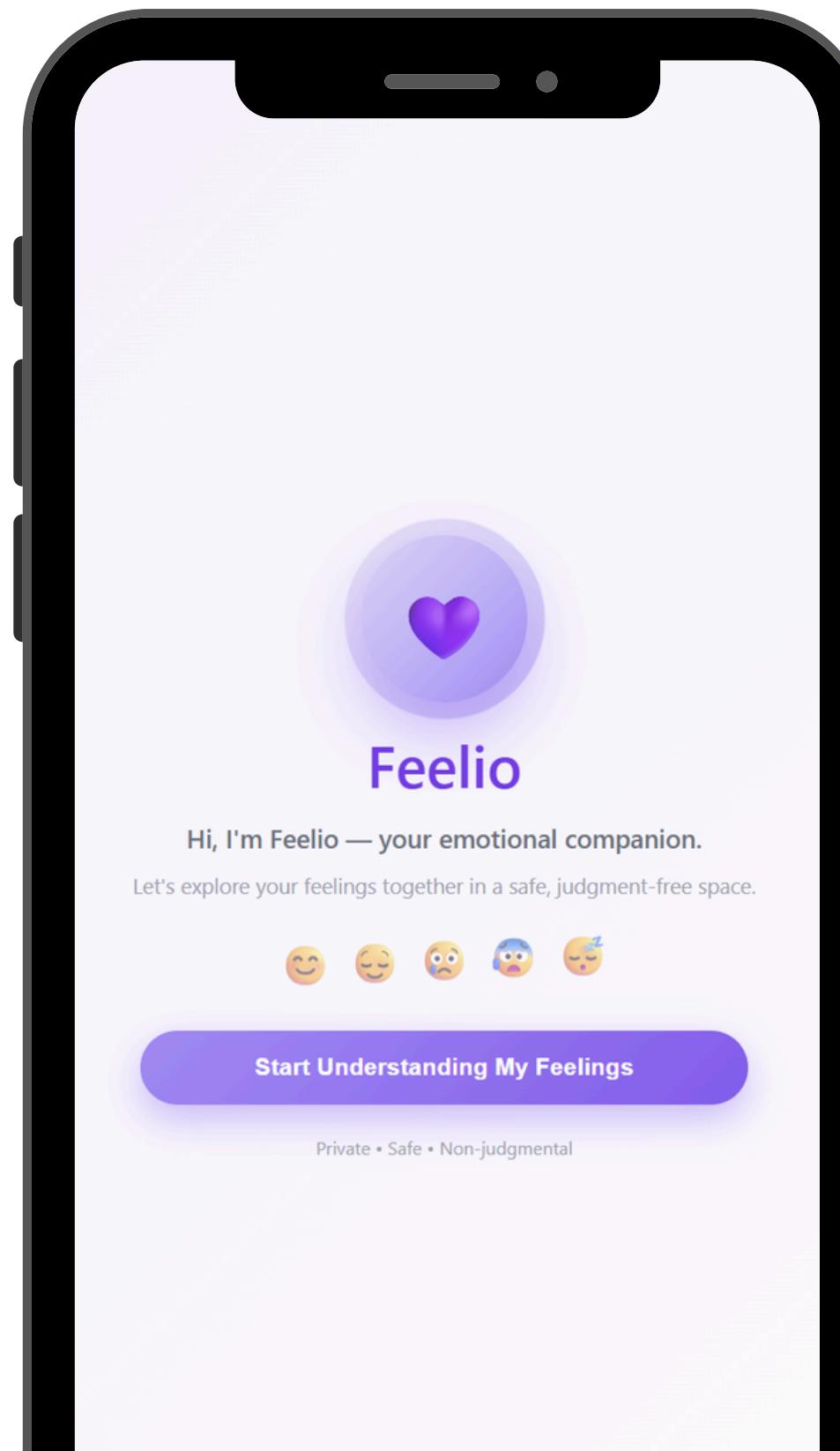
## TRUST BUILDING

### DOES THE BOT BUILD TRUST?

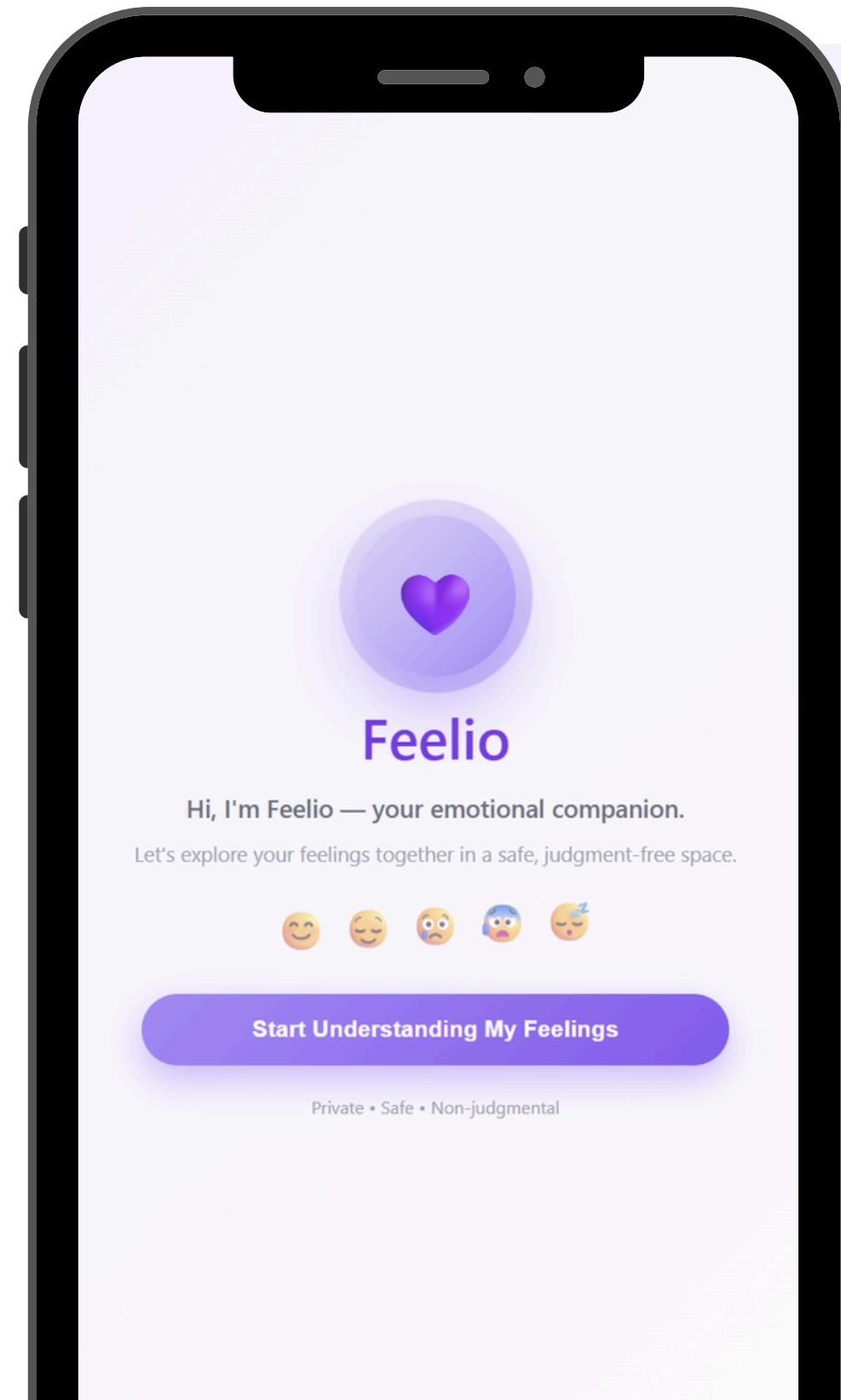
Conversation with a bot in a regular manner.

Trust factor and band changes observed.

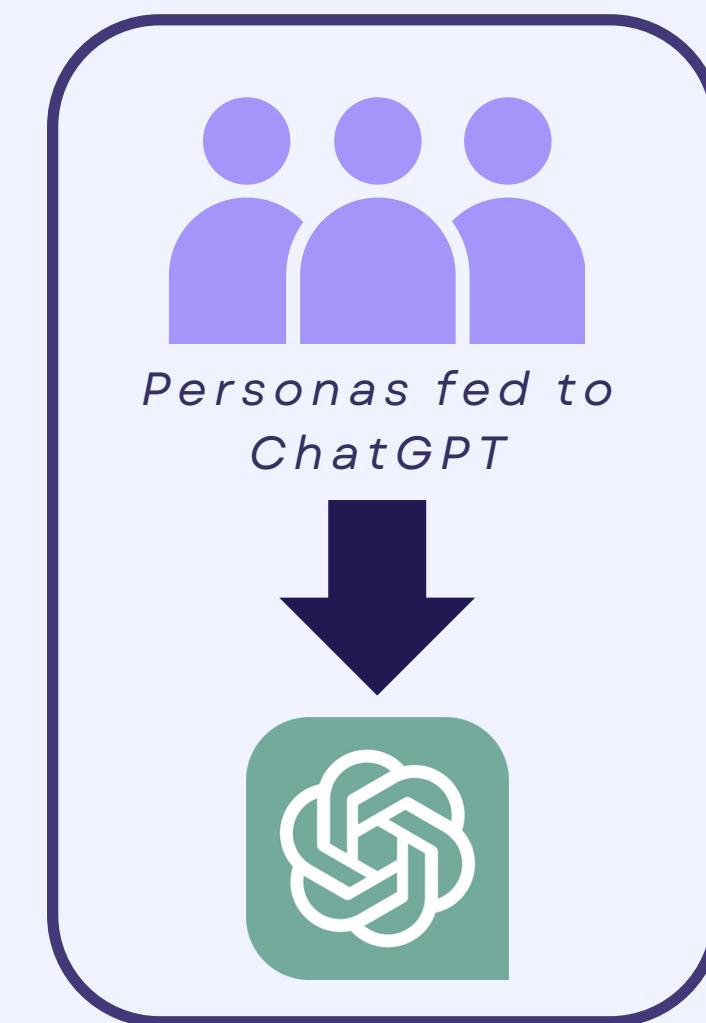
# STAGE 2 - RESULTS



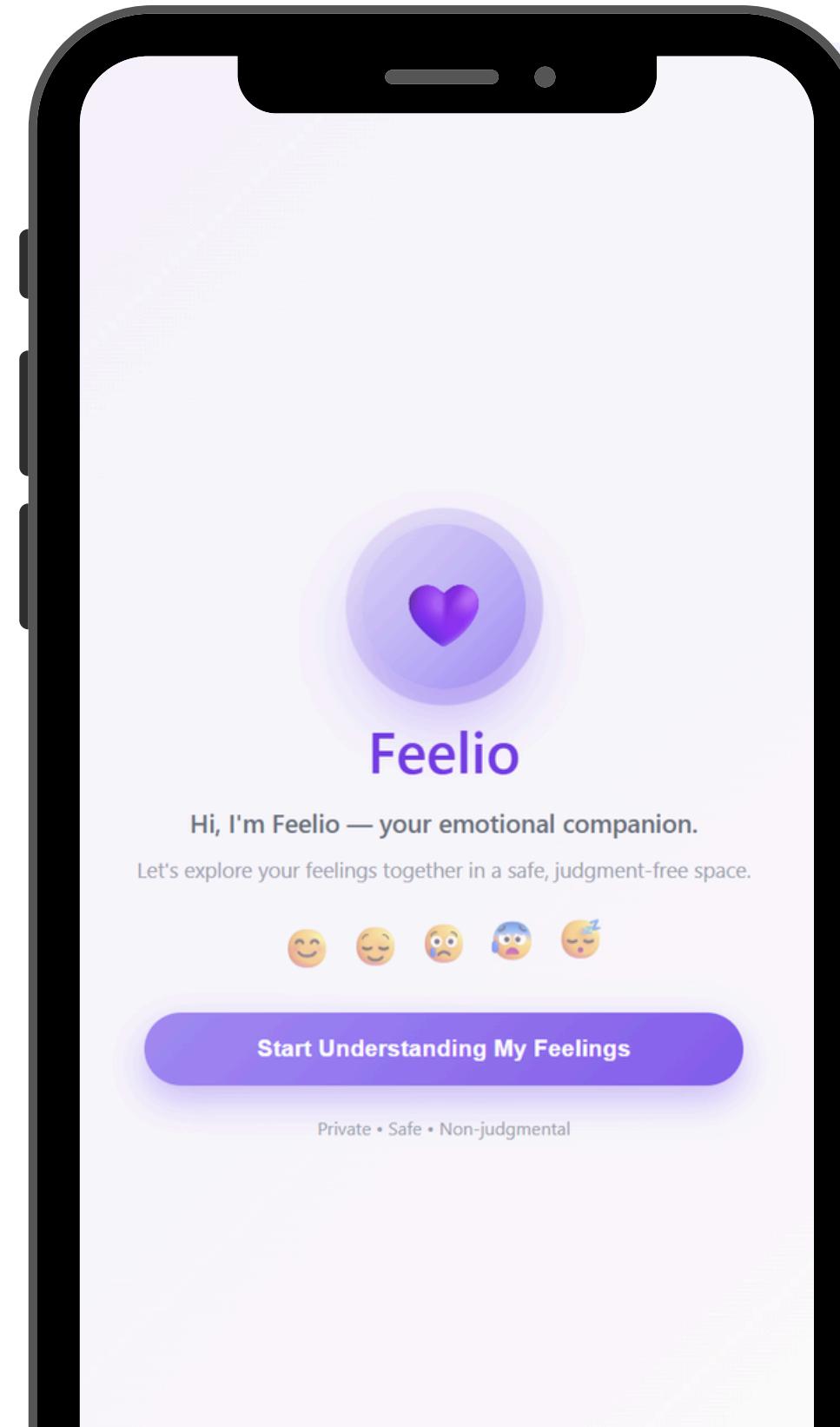
# STAGE 3



## PERSONA TESTING ADAPTS RESPONSE TO DIFFERENT PERSONALITIES?



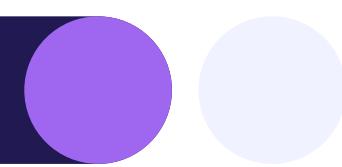
# STAGE 3 - RESULTS



## PERSONA TESTING ADAPTS RESPONSE TO DIFFERENT PERSONALITIES?

Persona	SUS Score	Trust Band Progression	Trust Factor (Min-Max)	Avg. Message Length (0-1)	Self-Disclosure (0-1)
A	77.5	B - C	0.340-0.417	0.5-0.6	0.10-0.40
B	78	B - C	0.417-0.525	0.6-0.7	0.40-0.90
C	65	B - C	0.333-0.469	0.4-0.5	0.10-0.90
D	80	B - C	0.340-0.417	0.5-0.6	0.10-0.40
E	76	B - C	0.346-0.430	0.5-0.6	0.20-0.70

**MEAN SUS SCORE = 75.3 (SD = 5.76)**



# ETHICAL CONCERN

## Patient Safety & Hallucinations

### Risk

- If AI hallucinates, the patient may be unable to detect error
- Weak error-checking creates unsafe reliance

---

## Bias in Emotional Interpretation

### Risk

- Demographic or cultural bias in training data can misread emotional cues.
- Users may not recognize or articulate that the AI's outputs are biased

## Over-Reliance & Automation Bias

### Risk

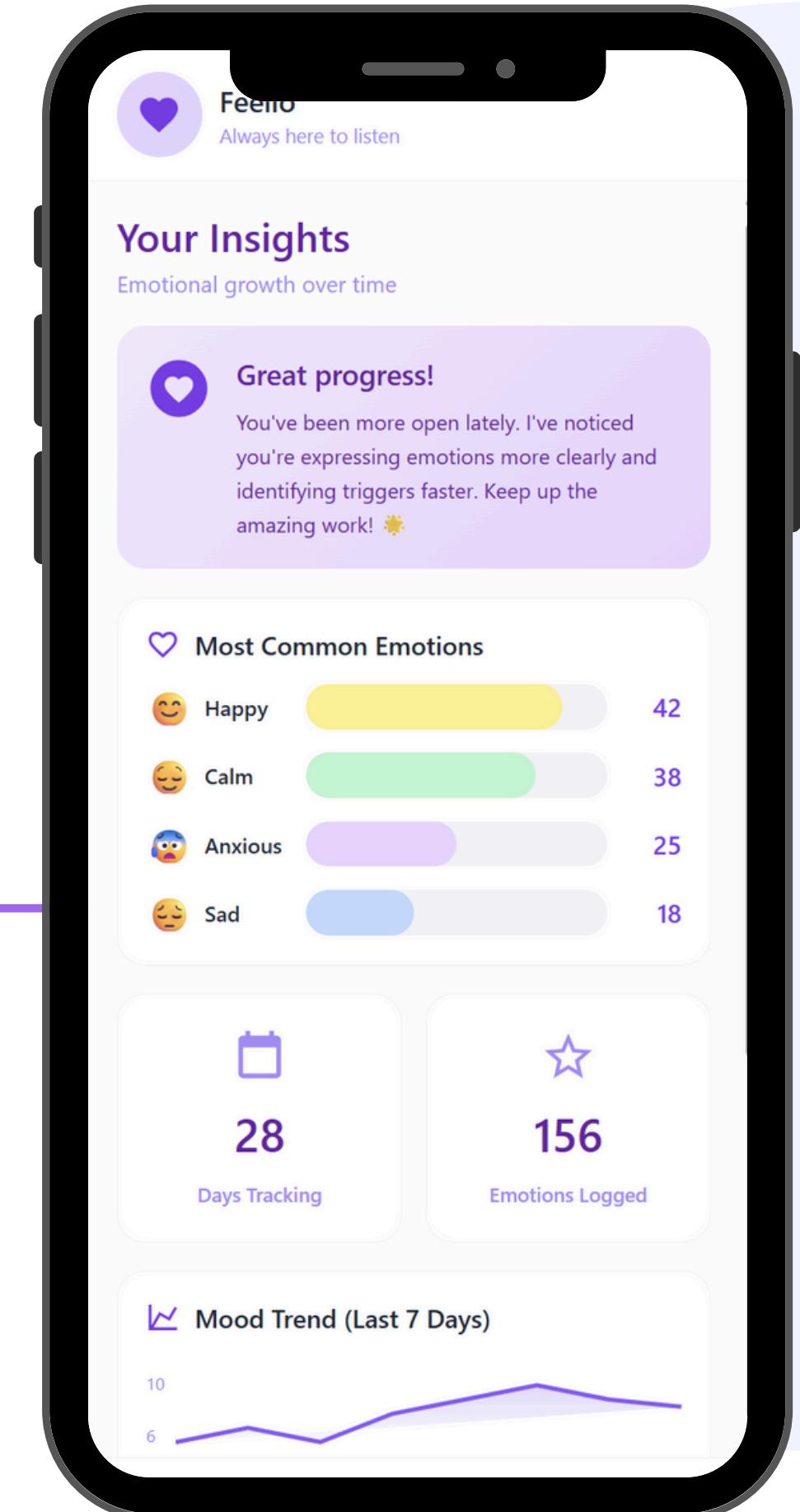
- Alexithymia users suffer with emotional perception and comprehension.
- May treat the chatbot's label as objective truth.

---

## Pseudo-Therapeutic Dependence

### Risk

- Simulated empathy may feel real, creating dependence.
- Users may substitute the chatbot for actual professional care.





LexiFeel

# NEXT STEPS

Some of the next steps we at LexiFeel will take to improve our application

## STEP 1 - RAG

Implement Retrieval-Augmented Generation to reduce hallucinations

## STEP 2 - INTEGRATE XAI

Make the chatbot show *why* it gives its answers.

## STEP 3 - REDUCE COGNITIVE LOAD

Minimize more of the user's extraneous cognitive load

## STEP 4 - ITERATIVE LEARNING

Let the system learn from corrections over time using HITL

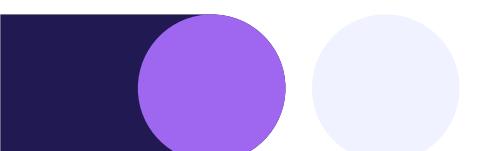
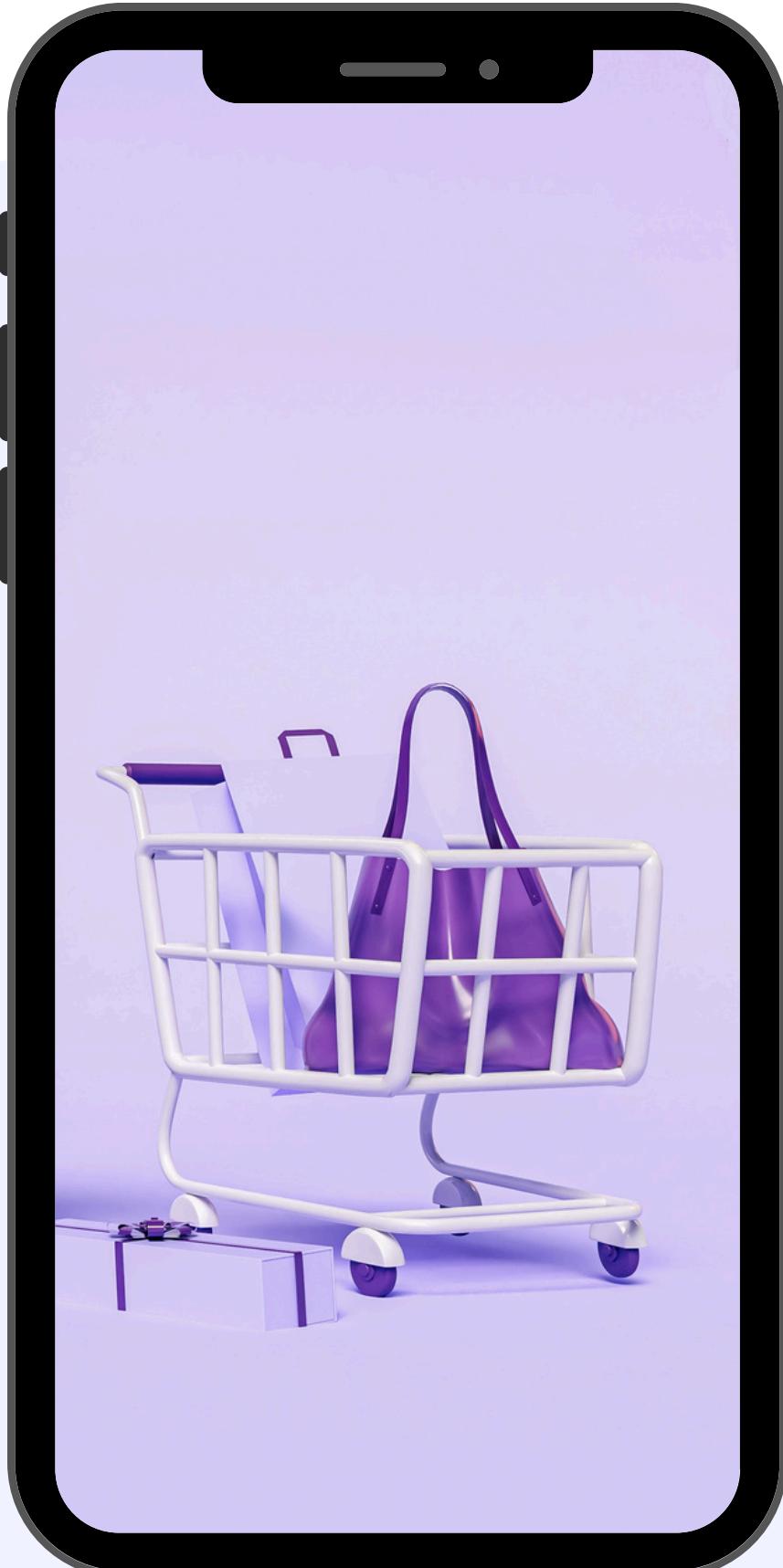
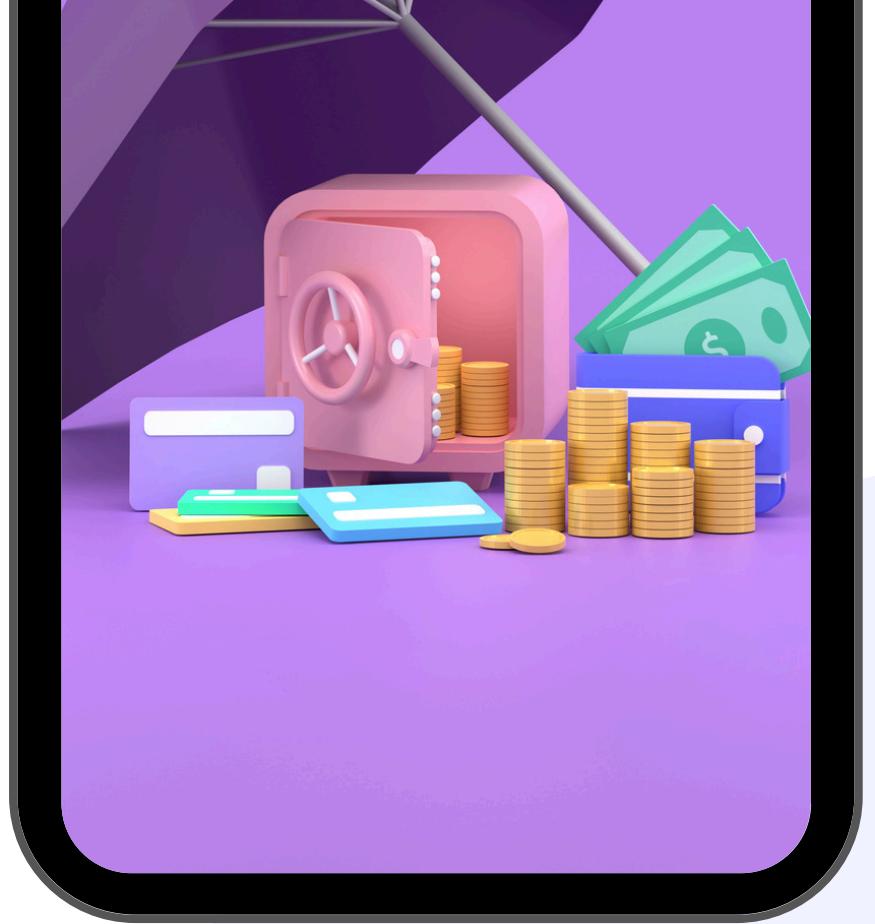


**LexiFeel**

# CONCLUSION

Feelio is our magnum opus and covers a good chunk of the course content that we learned in ENGG 519.

We hope to scale Feelio to be used by stakeholders in the real world.





**LexiFeel**

# THANK YOU

Presented by: LexiFeel Team

## QUESTIONS?



**Website**

[lexifeel.vercel.app](https://lexifeel.vercel.app)

