

# Stress Sense

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Stress Sense is a mobile app with wearable integration that helps students manage stress through real-time detection, guided relaxation, and mental health resources.

# Introduction

Stress Sense is a mobile app integrated with wearable technology, designed to help university students manage stress and anxiety. It provides real-time stress detection, guided relaxation exercises, and access to mental health resources in an intuitive, stigma-free interface.

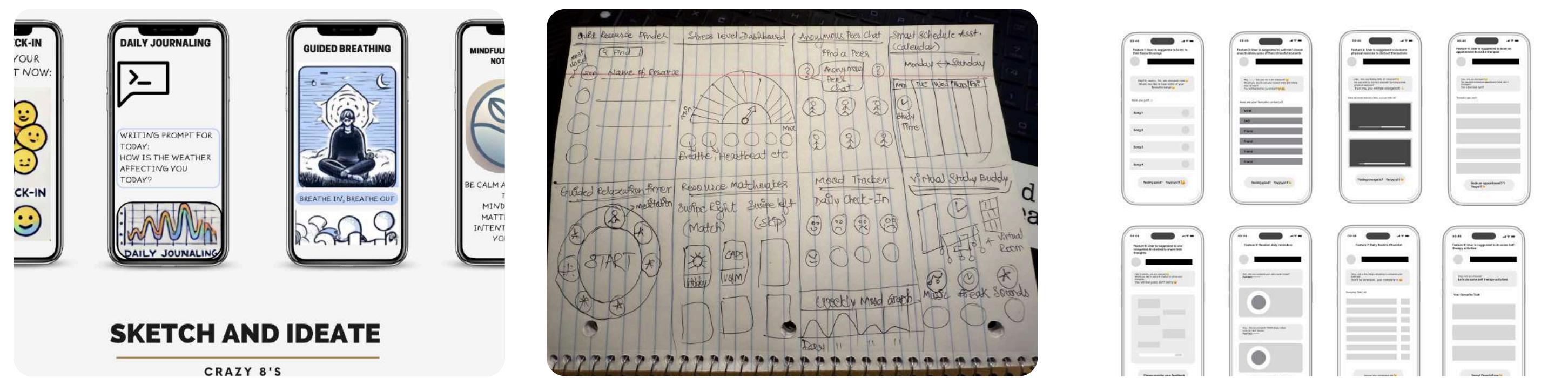
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# Project Recap

The project began with research through surveys, interviews, and secondary analysis, uncovering key challenges students face with mental health: stigma, limited access to resources, lack of awareness, and the need for real-time intervention.

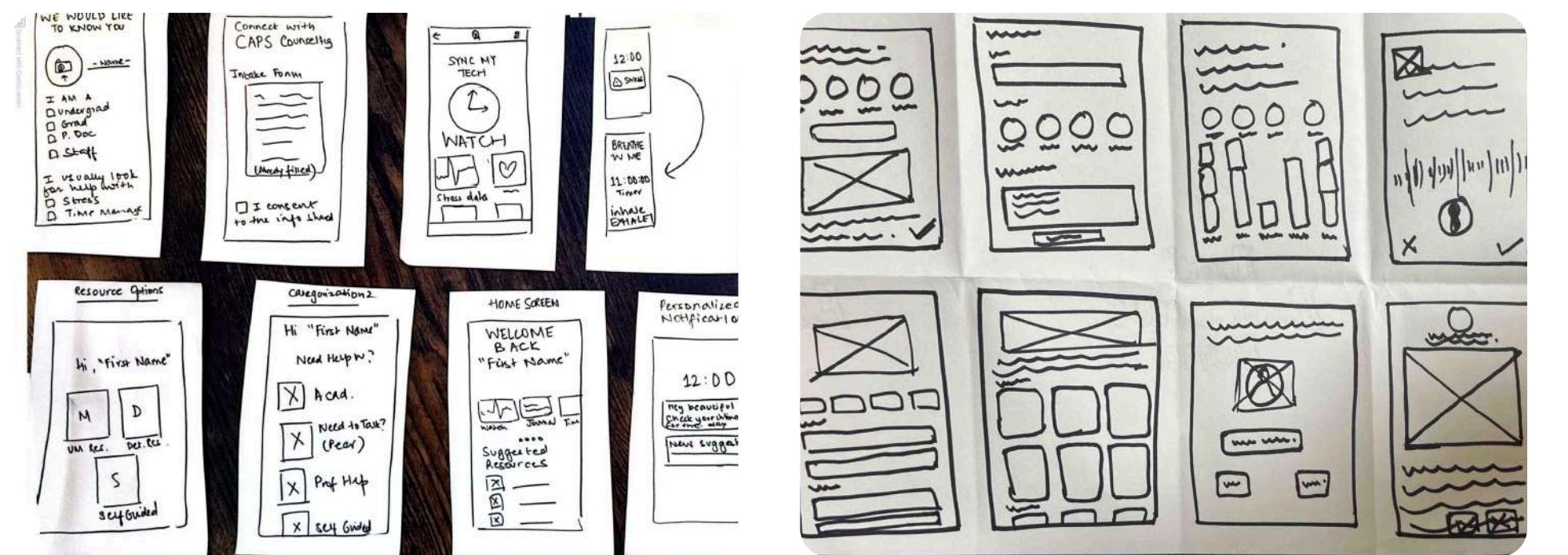
Guided by our primary persona, Andrew Johnson, we framed these insights into actionable design objectives, emphasizing a real-time, accessible, and user-friendly solution to address students' mental health needs.

# Prototype



## SKETCH AND IDEATE

CRAZY 8'S



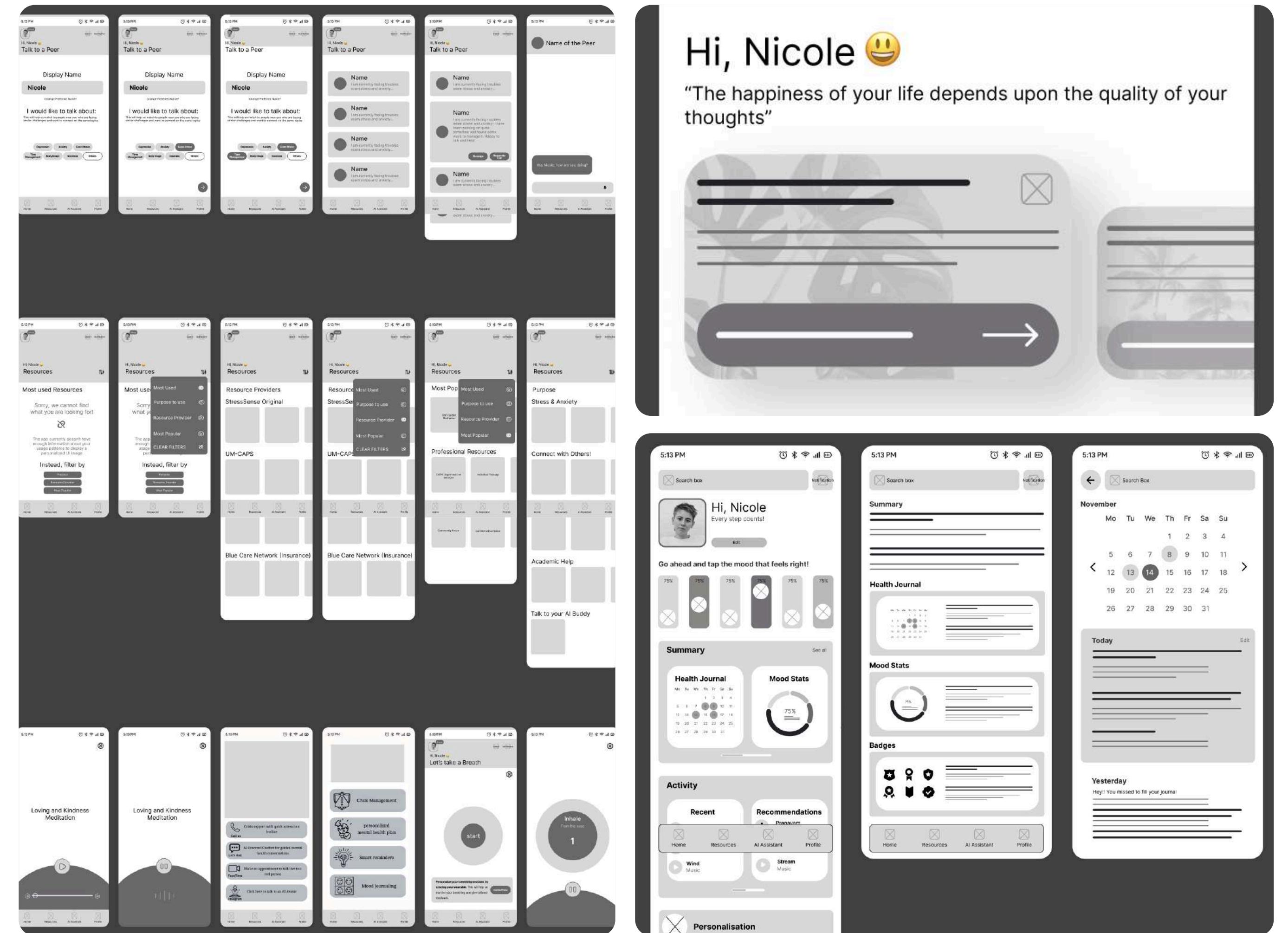
## Lo-Fi Designs (Sketches)

To address user pain points, we conducted a sketching activity, Crazy 8s. In this activity, we expanded on the app concept, brainstorming and voting on features such as guided meditation, mood trackers, and campus resource integration. Pencil sketches were then created to visualize the app's organization, layout, and overall look and feel. The focus on this activity is to pave the pathway to understand the visual appearance and information organization of the application.

# Mid-fidelity Designs

Our mid-fidelity prototype highlights the app's core features, including real-time stress detection, guided relaxation exercises, and access to mental health resources. The navigation is strategically designed for ease of use, even during high-stress moments, ensuring a seamless user experience.

We chose mid-fidelity designs to provide realistic interactions for users while keeping the designs simple and flexible. This allowed us to gather valuable feedback and make iterations without overcomplicating the design process.



# UserTesting

# Finding the Right Participants for Prototype Testing

To ensure valuable feedback, we focus on recruiting participants who align with our target audience:

- **University Students:** Individuals experiencing stress from academics, work, or personal life.
- **Tech-Savvy Users:** Students familiar with wearable technology or open to exploring tech-based solutions for stress management.
- **Diverse Backgrounds:** A mix of undergraduate and graduate students, domestic and international, to capture varied perspectives.
- **Varying Stress Levels:** Students facing different levels of stress, from occasional to frequent, to evaluate the app's effectiveness across scenarios.

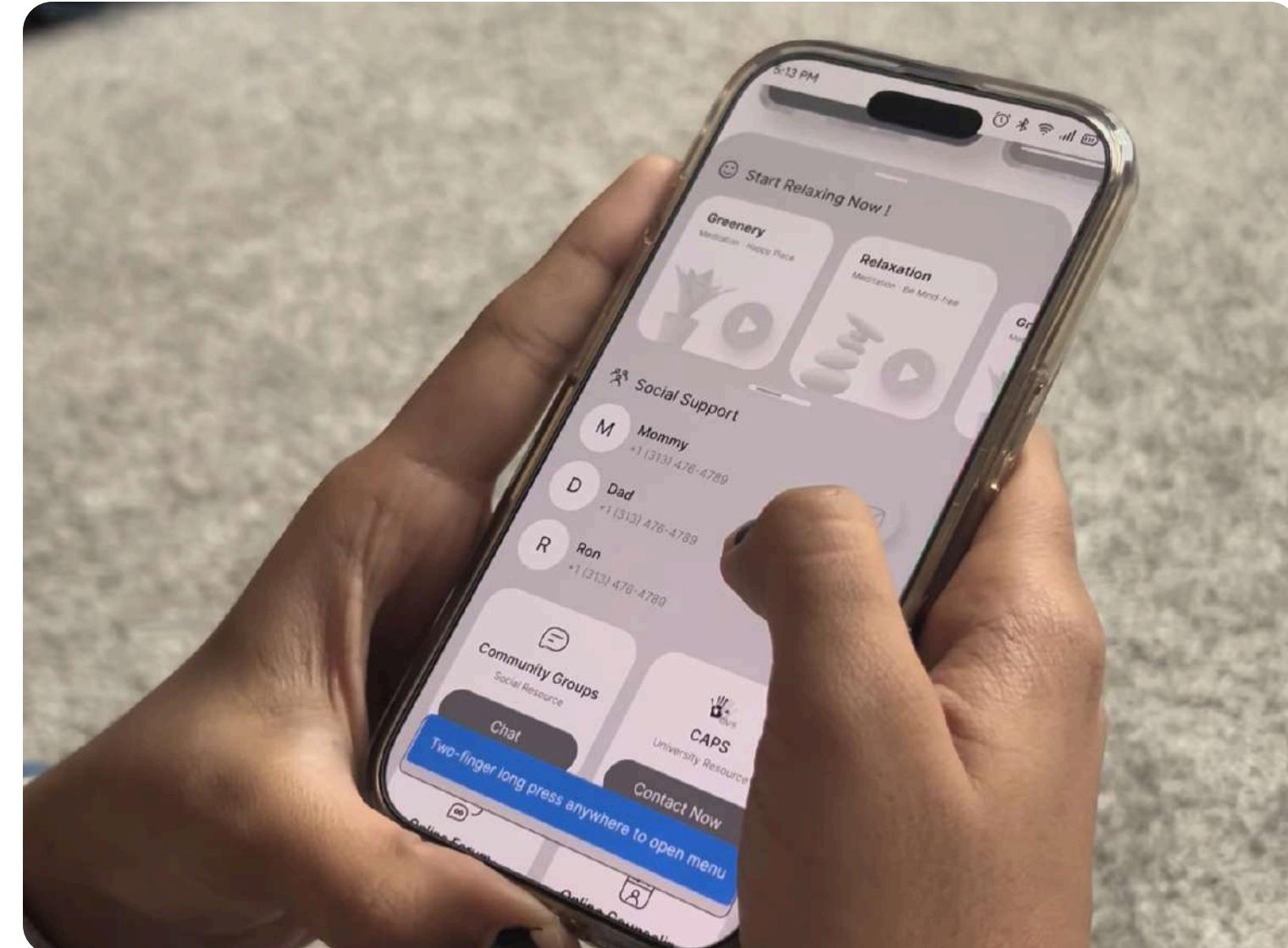
## Test Case 1

A University Student



## Test Case 2

A Tech Savvy Student



## Test Case 3

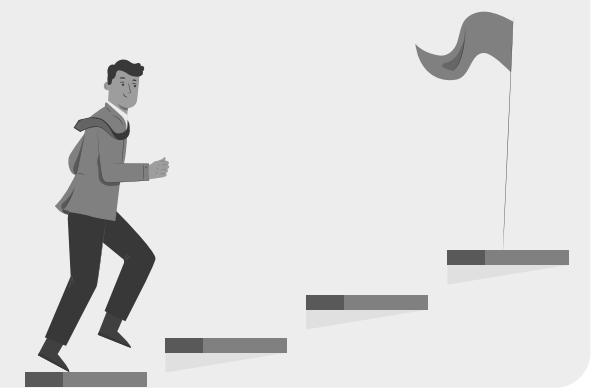
A Working Student



# Usability Test Findings

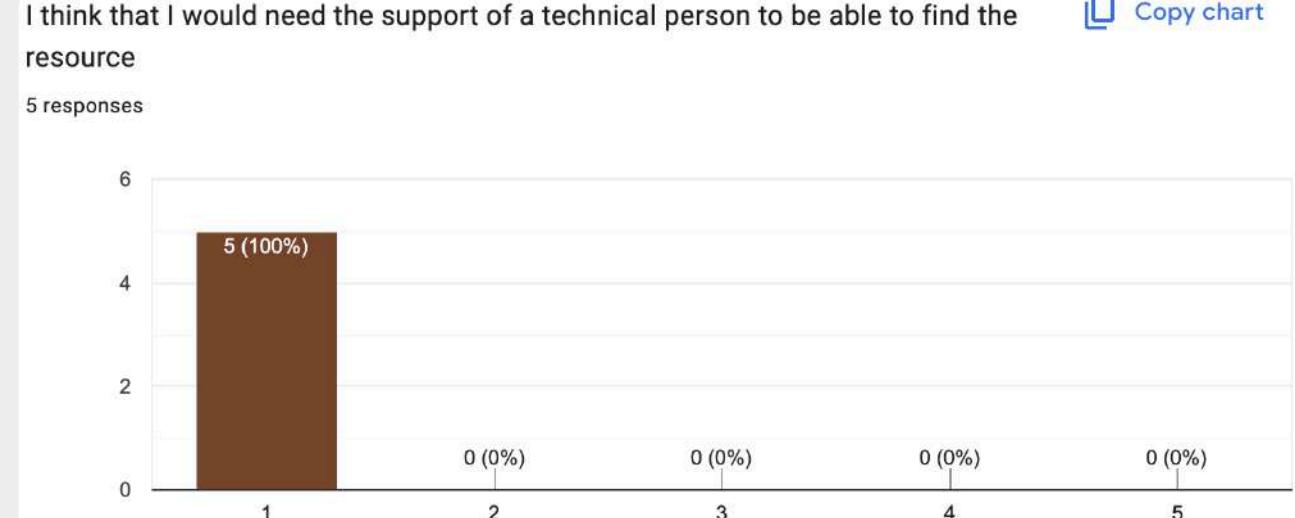
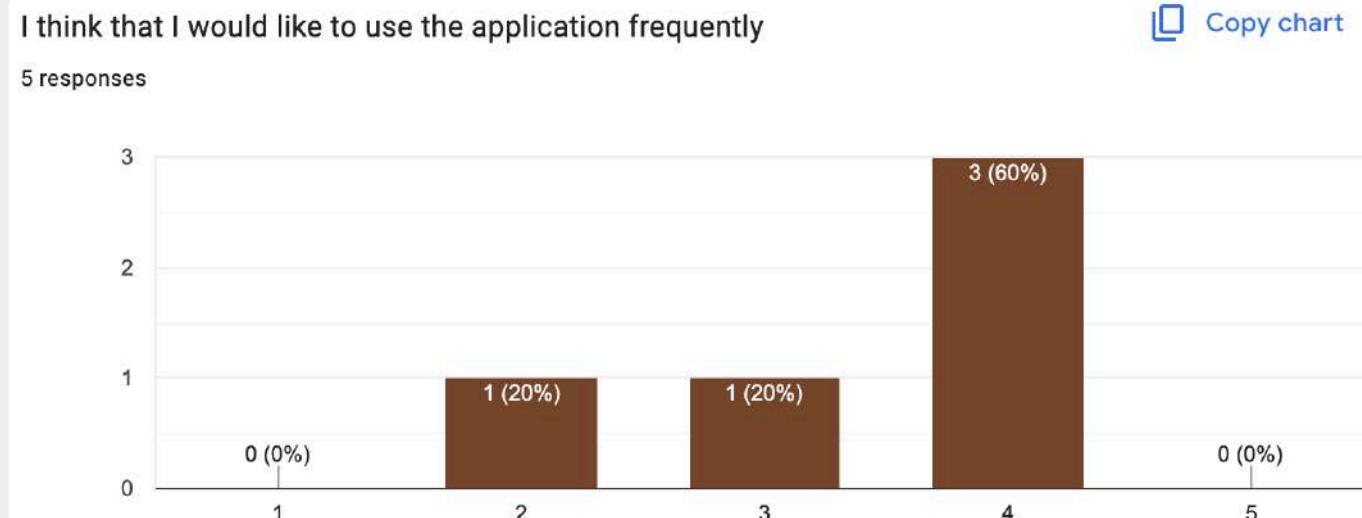
## Progress Tracking

Users expressed a strong preference for an engaging and accessible progress tracker, emphasizing its importance during user testing as a tool to monitor their mental health journey effectively.



## High Usability

The System Usability Scale (SUS) scored 80.5, surpassing the industry benchmark of 68 and reflecting strong user satisfaction. Users appreciated the app's ability to reduce stigma, improve accessibility, and offer effective stress-relief tools, though further testing is needed due to the small sample size.



## Navigation Challenges

During user testing, participants highlighted the need for streamlined navigation, emphasizing that key sections such as insights and tracking should be easy to locate. Simplifying navigation was a top priority for users to ensure a seamless experience, especially during moments of stress when quick access to these features is crucial.



## Enhanced Personalization

User testing revealed a strong preference for enhanced personalization, with participants emphasizing the importance of dynamically tailoring prompts and content to their individual stress levels. This feature was seen as essential for creating a more relevant and supportive experience, allowing users to feel that the app understands and addresses their unique needs in real time.



## Real-Time Feedback

Users wanted real-time feedback, with immediate, actionable insights on their stress levels.



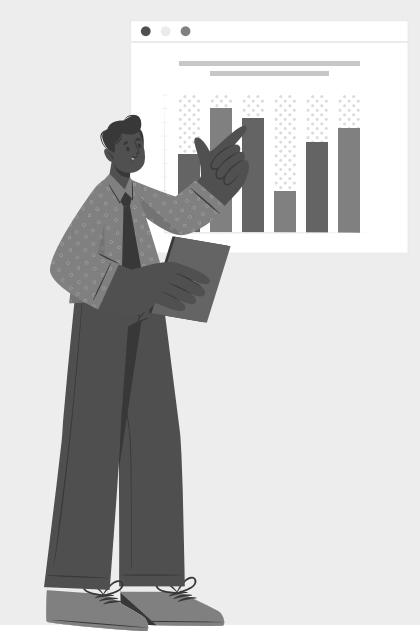
## Customizable Notifications

Users wanted customizable notifications, allowing them to adjust timing and frequency to suit their preferences.



## Statistical Significance

The one-sample t-test showed a statistically significant SUS score difference ( $t = 3.27, p = 0.031$ ), highlighting strong usability.

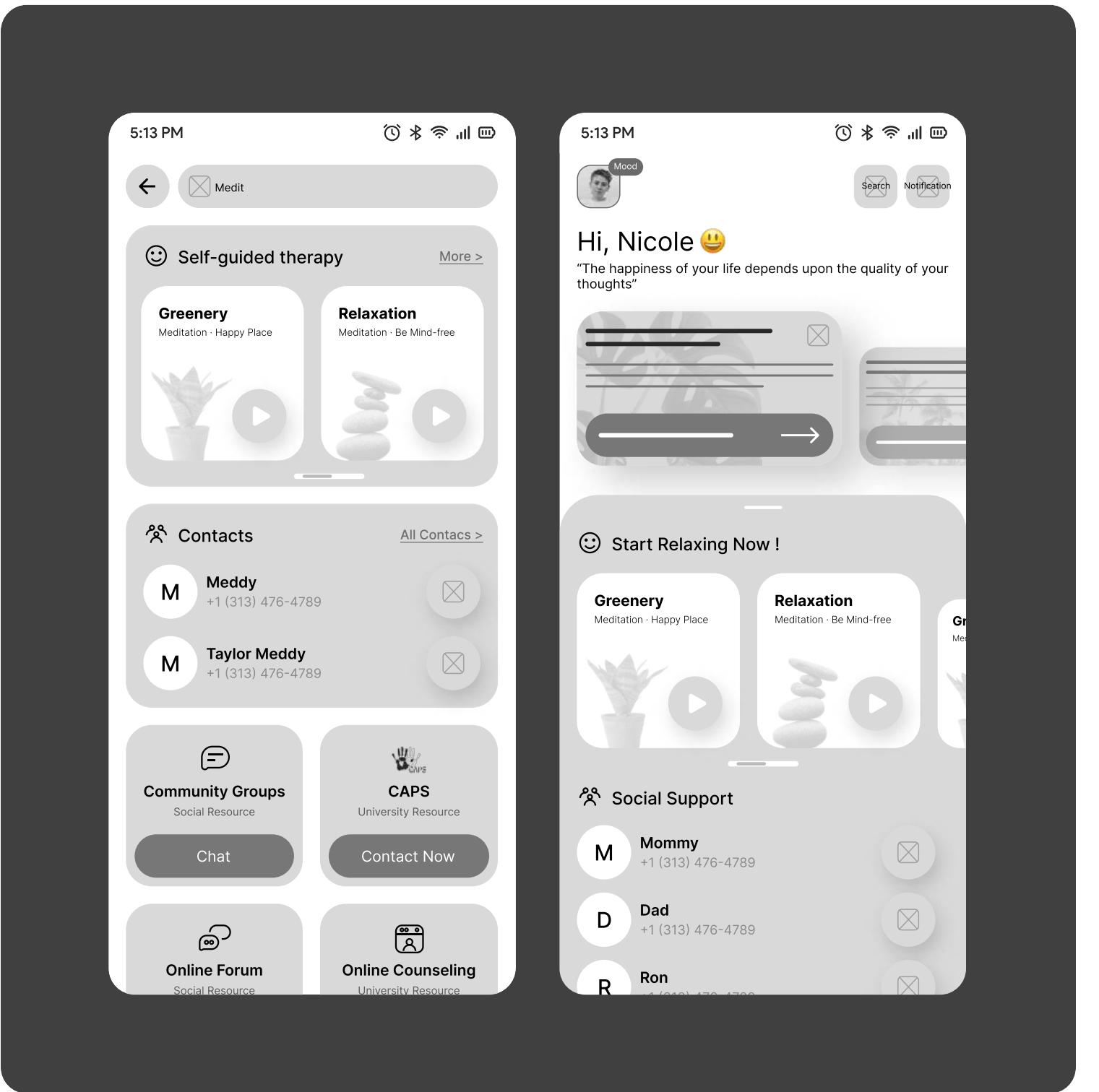


# Design Iteration

& Improvements

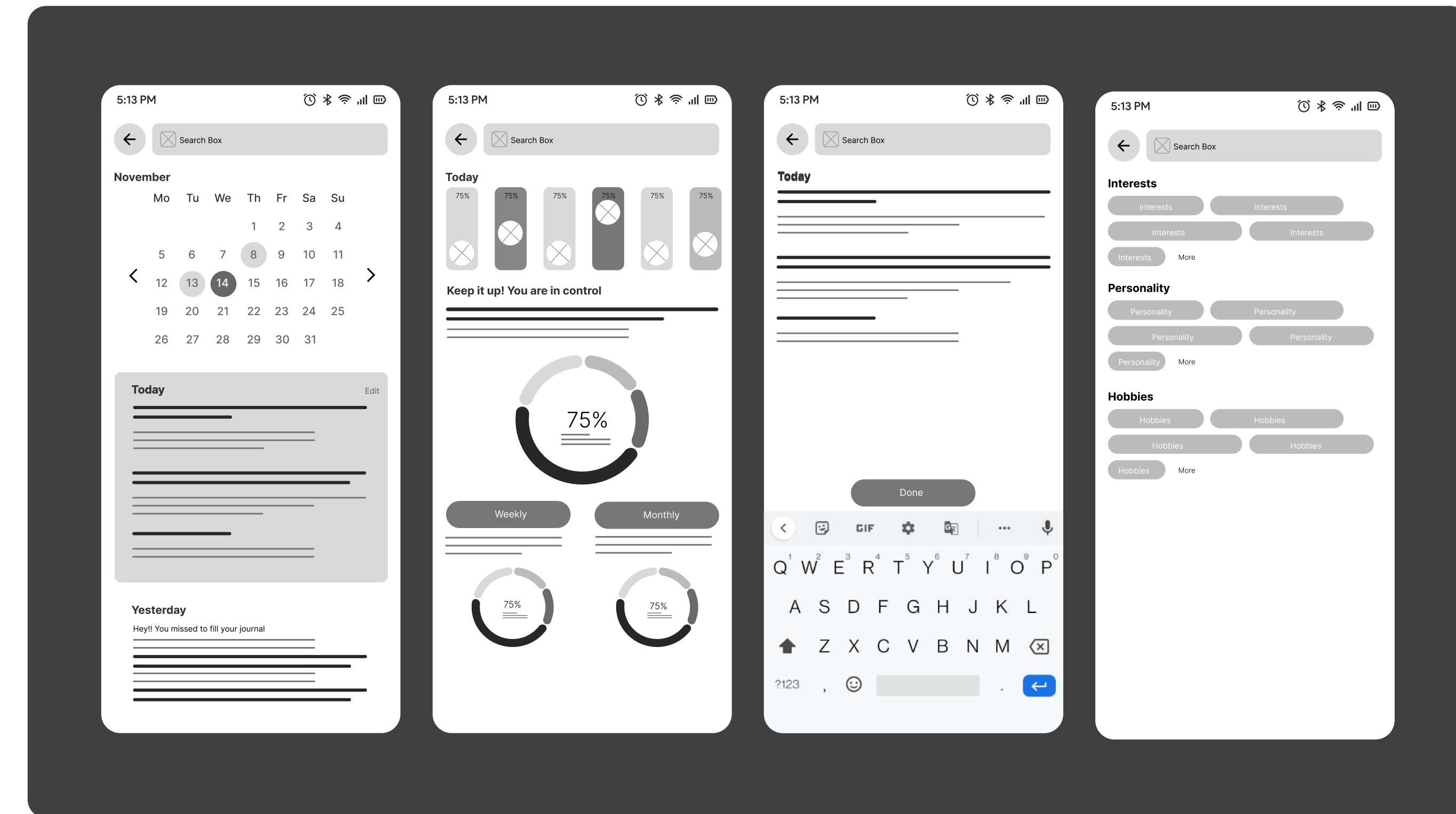
# Design Iteration: Improved Accessibility with Enhanced Tap Areas

The interaction points have been optimized with larger tap areas to enhance accessibility and facilitate easier navigation. This adjustment ensures a more intuitive and user-friendly experience for all users.



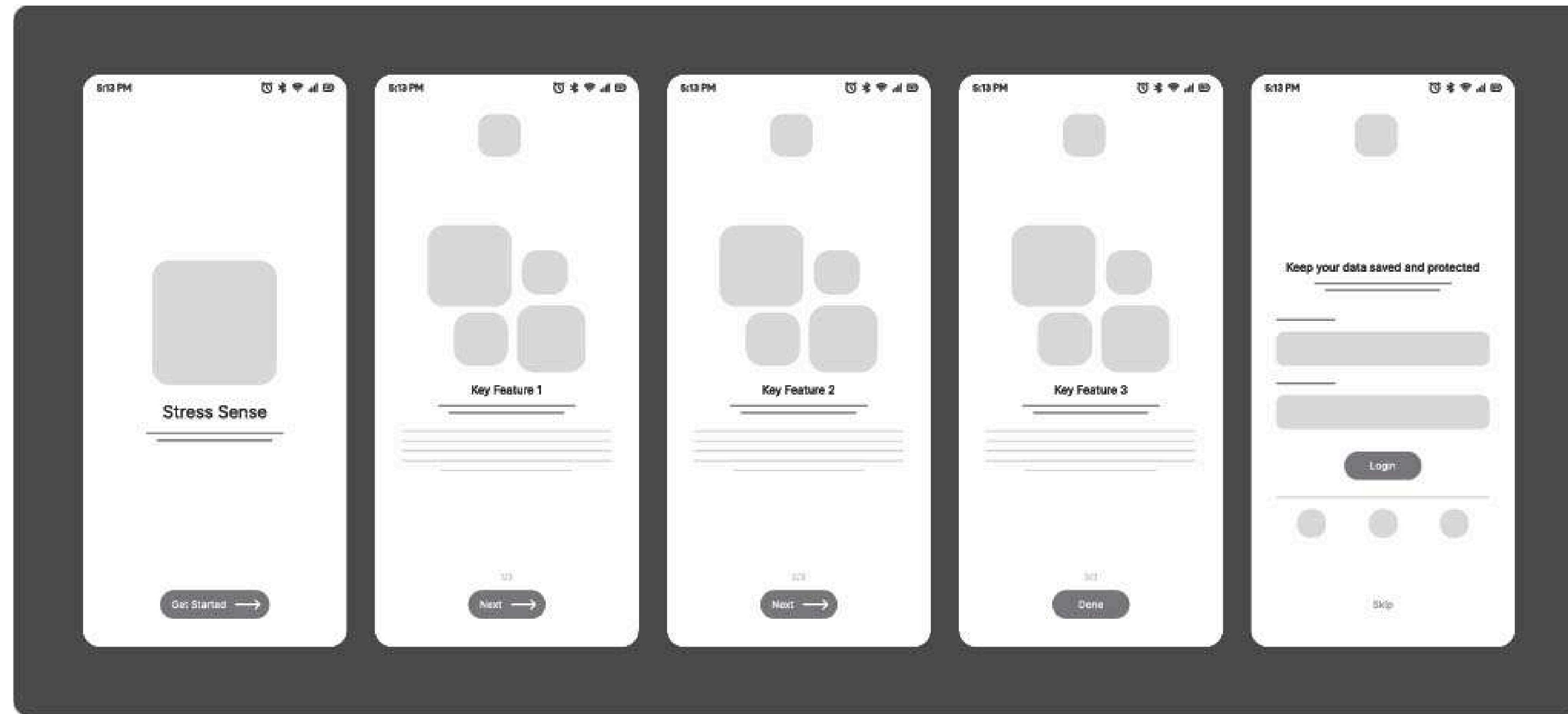
# Design Iteration: Optimized Navigation Through Smart Search

A search bar has been implemented across essential screens to enhance navigation throughout the app. Search results are context-sensitive, prioritizing content relevance within specific sections while also supporting app-wide searches.



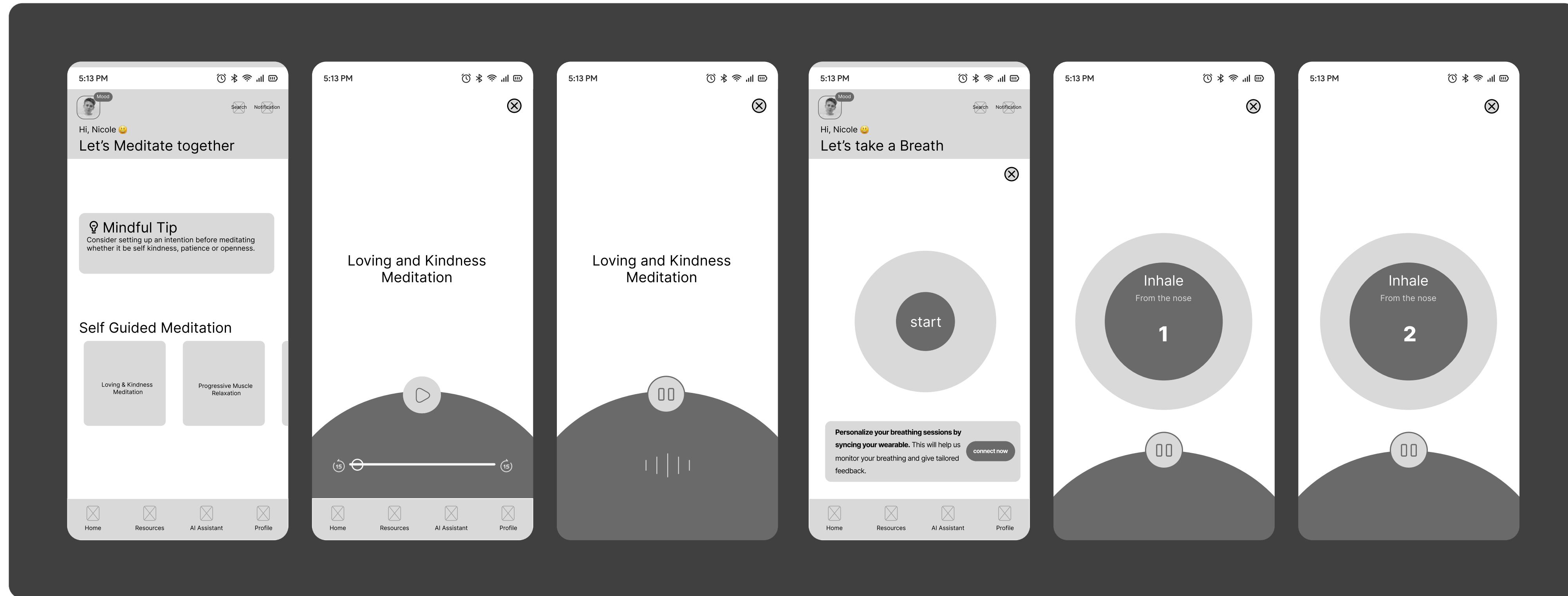
# Design Iteration: Improved Onboarding with Key Feature Introduction

An onboarding screen has been introduced prior to sign-up or log-in to educate users about the application's key features and capabilities. This screen includes a brief 3-4 second animation to enhance user understanding of these features.



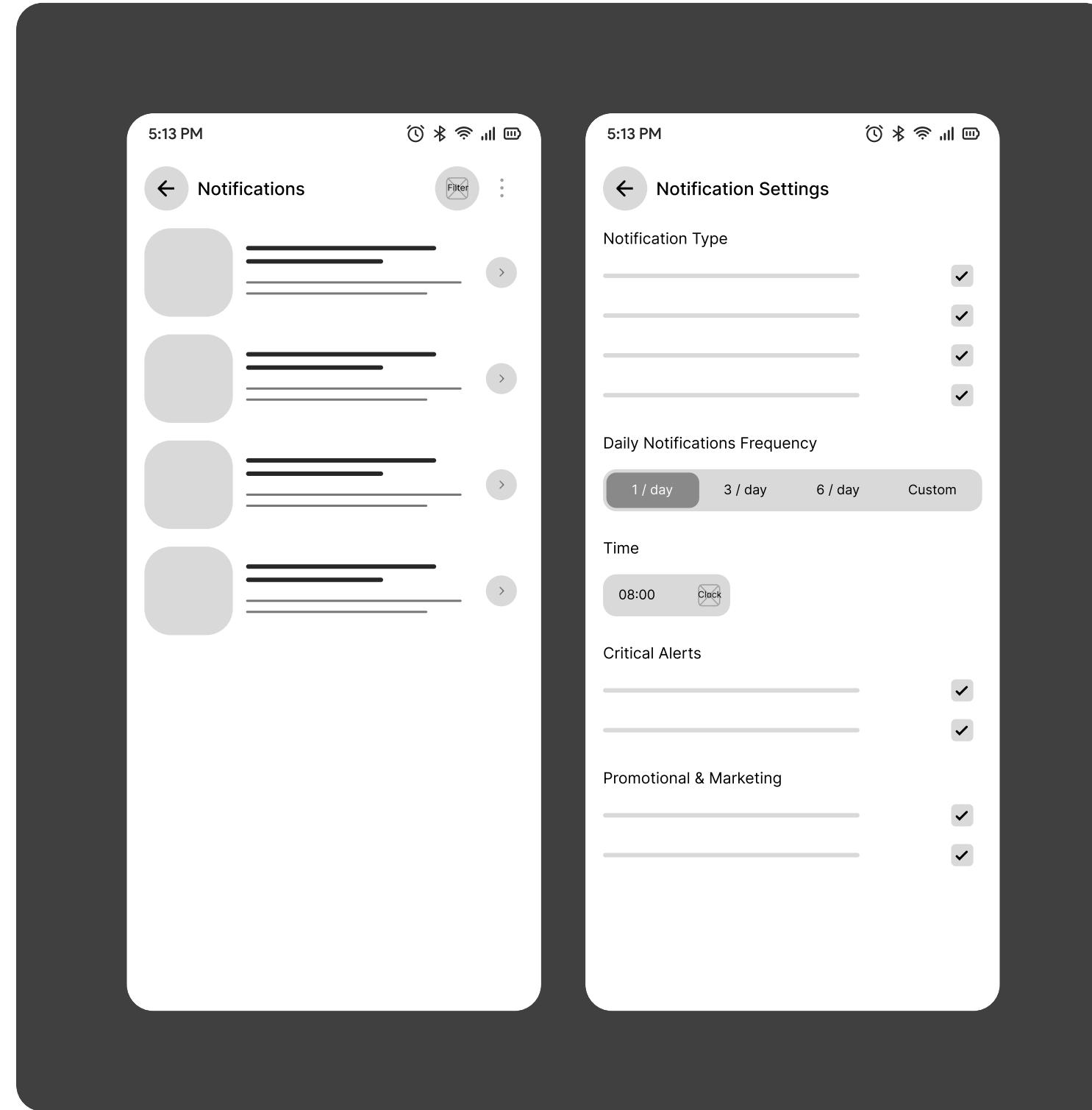
# Design Iteration: Streamlined Self-Guided Exercise Experience

The functionality of self-guided exercises, such as breathing, meditation, and music, has been enhanced by streamlining the user journey. The number of clicks required to start an activity has been reduced, and pause/reset controls are now conveniently available on the same screen, inspired by the intuitive design of mobile stopwatch functionality.



# Design Iteration: Personalized Notification Settings

Notifications can now be filtered, personalized, and modified, including timing, frequency, and critical alerts, based on user feedback, putting control in users' hands.



# Project Reflections

& Future Goals

# Reflections

The shift from assumptions at the start of development to insights from users at the end of it reinforced the need to listen to users. Empathy-based research methods such as interviews and surveys identified nuanced insights such as privacy concerns and a desire for personalization that influenced the final solution.

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# Iterative Refinement

Illustrating the iterative process of good design, prototyping and usability testing. Real improvements were evident as a result of that testing and iteration, and we proved the worth of navigation, onboarding and customization as part of an effective product.

# Future Opportunities

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Thinking back on it, I can see a clear opportunity for expert interviews and actual empirical data to build a stronger base.

Such being said, expanding on these findings in future work has the potential to better bridge the gap between theoretical designs and actionable, meaningful solutions for students mental health.

## Potential Commercialization

This product has the potential to scale across universities, providing accessible and effective mental health solutions to students nationwide. By partnering with educational institutions, it can be adapted to meet diverse needs while maintaining a user-centered approach. Additionally, introducing subscription-based services could ensure sustainability and enable further development, making it a valuable tool for long-term mental health support.

# Thank You!

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