

Mindtracker

Track your anxiety with Fitbit

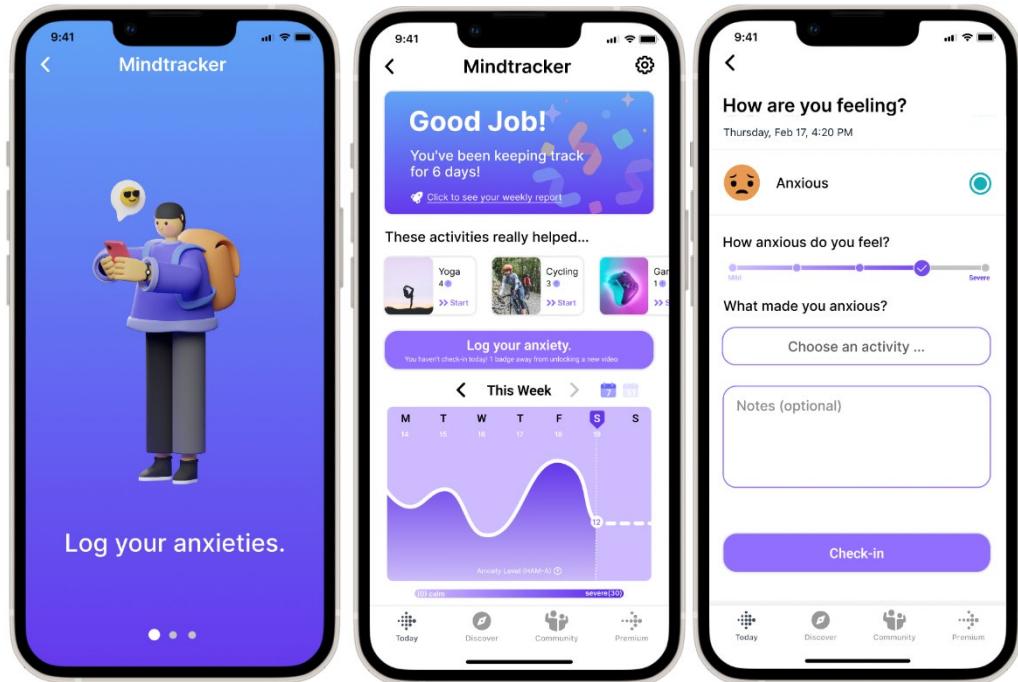


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1. Introduction

1.1. Team

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1.2. Prompt

Problem

The main problem with behavior change through technology includes a lot of persuasion which holds the users at the center of their own health's responsibility. There are numerous health apps, some native and plenty third party, that are working in this design space in retaining their users and supporting behavior changes in their health practices. One such we target in this project is the Fitbit.

Who is Fitbit?

Fitbit is an American consumer electronics and fitness company. It produces wireless-enabled wearable technology physical fitness monitors and activity trackers such as smartwatches, pedometers, and monitors for heart rate, quality of sleep, and stairs climbed as well as related software.

Aim

To target behavior changes of people towards their outlook towards holistic health within Fitbit.

2. Research

2.1. Secondary Research

2.1.1. Background

Prevalence of Any Anxiety Disorder Among Adults and Adolescents. Based on diagnostic interview data from the National Comorbidity Study Replication (NCS-R), an estimated 19.1% of U.S. adults had any anxiety disorder in the past year.

2.1.2. Literature Review

We researched the following issues from academic papers, health care organization websites, and blogs.

a) What are anxiety and anxiety disorders?

Anxiety is your body's natural response to stress. It's a feeling of fear or apprehension about what's to come. On the first day of school, going to a job interview or giving a speech may cause most people to feel fearful and nervous.

The wide variety of anxiety disorders differs by the objects or situations that induce them but share features of excessive anxiety and related behavioral disturbances. Anxiety disorders can interfere with daily activities such as job performance, schoolwork, and relationships.

b) How do people with anxiety cope with them?

Lifestyle changes can be an effective way to relieve some of the stress and anxiety you may cope with every day. Most of the natural "remedies" consist of caring for your body, participating in healthy activities, and eliminating unhealthy ones.

These include getting enough sleep, meditating, staying active and exercising, eating a healthy diet, staying active and working out, avoiding alcohol, avoiding caffeine, quitting smoking cigarettes.

c) Is self-help effective?

Self-help molds you to become more aware at your own pace and understanding. You develop into a person who can solve problems with awareness, and you tend to reflect on each step with tranquility before you dive into it impulsively. However, this is not to say that therapy is of no good. You require therapy if you are facing difficulties on a greater scale.

d) What is the demand for mood tracking apps, and are they effective for someone with anxiety?

A qualitative analysis of consumers' reviews of mood tracking apps showed that both the general population and consumers with mental conditions used the apps.

The general population mainly used the apps to learn about their mood patterns and cope with stress, while users with various mental conditions also used the apps to

monitor their symptoms. They not only tracked the data for themselves but also used the data to communicate with their healthcare providers and share it with family members.

2.1.3. Analyzing Fitbit

We analyzed Fitbit's existing application to understand how they currently provide support or features for anxiety. We found that they provide little to no help. They only have mindfulness sessions.

You would need to be a Fitbit premium user to access most of these features.

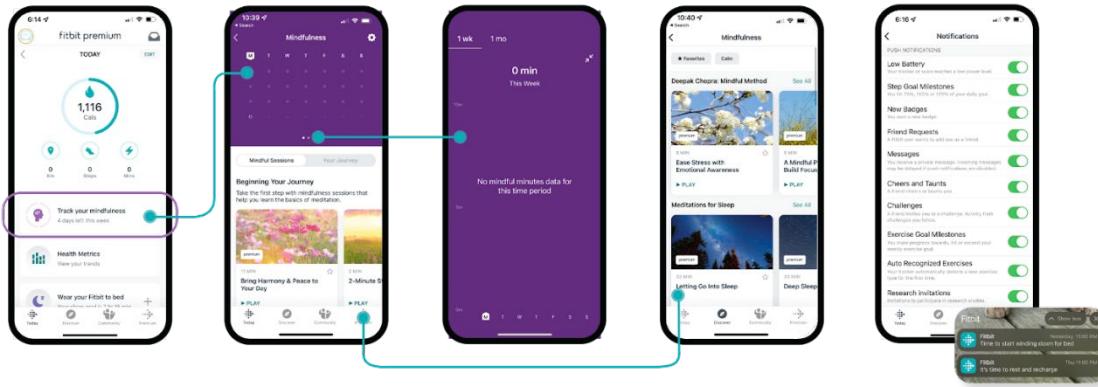


Figure 1: Analyzing Fitbit

2.1.4. Competitor Analysis: Daylio

a) Purpose

Intended for long-term use by the general public to provide insight into the user's patterns, moods, activities, and daily habits

b) Demographics

Google Play 340k+, Stream highest in Canada, UK, France.

c) Features

- Micro-diary that tracks users' moods, activities, habits, and goals.
- Statistics to show patterns in mood over time with weekly, monthly, and yearly reports
- Export the information in the app to an excel spreadsheet or PDF format for further exploration of personal habits and trends in mood
- Utilizes graphs and charts to demonstrate patterns over time

d) UX

- The simple design of boxes or rectangles to contain small bits of information, particularly to label each individual check-in and communicate the statistics.

- Each clickable item in the app is bordered in a rectangle. This is patterned throughout every page except the calendar, which uses circles to define each clickable item.
- The app also uses color to highlight moods, leading mood to be the defining feature of check-ins.
- Activities are always purple, which may be confusing to some users because purple is also used as a mood color.

e) **Pros**

- Easy to customize.
- The app is free, and many features are available without the purchase of the premium version of the app.
- App provides support for the interpretation of data, making the statistics easy to understand.

f) **Cons**

- Must purchase the app for more sophisticated, in-depth statistics
- Limited guidance on how to utilize app content
- No direct research supporting the use of Daylio itself

2.2. Primary Research

2.2.1. Target Group

Based on our research, we decided to narrow down our target group to someone with low and medium levels of anxiety.

- A majority of people with any anxiety disorder experienced mild or moderate impairment (78.2%).
- For people with low and moderate anxiety, lifestyle changes may be enough to cope with the anxiety. However, in severe cases, it may be necessary to seek medical treatments such as psychotherapy and medication.

2.2.2. Interviews

We interviewed 4 participants based on a protocol

Interview Protocol We divided the interview into three broad categories Topic 1: Feeling and issues concerning anxiety Topic 2: Coping Mechanism and Motivation Topic 3: Monitoring and tracking Problem Statement: How might we motivate people to follow a routine to relieve their anxiety?	Probing Question (If they insist its a person/task/place) What about (the person/task/place)? How is (the Person/task/place) triggering?	Probing Question Has this activity helped with your anxiety effectively?
Topic 1: Feeling and issues concerning anxiety Understanding their anxiety and the possible situations they might face anxiety.	Topic 2: Coping Mechanism and Motivations Understand how they cope with anxiety and the motivations behind them.	Topic 3: Monitoring/Tracking Understand their ideas about monitoring.
Lead-Off Question • Can you describe a time when you felt anxious or stressed?	Leading Question • What did you do to deal with this situation?	Leading Question • Do you keep track of the stress levels or any other activities that you do to
Backup Question • Tell me about a time when you feel anxious.	Backup Question • What action or activities did you take to help you control your emotions in this situation?	Follow-up Questions • (If they don't mention tracking stress) Do you keep track of when you're stressed? • Have you tried to use any tools to track? • (If they prefer some tool) Why do you like it? • (If they mention multiple tools) How do you choose between the tools? • (If they say no) Why not?
Follow-up Questions • (If they list a place) Tell me about how you go about your day at (location) and why? • Does the location trigger anxiety? • (If they name a task) Why does the task trigger anxiety? • (If they name a person) Is it just (the person), or is it something else?	Follow-up Questions • Are there any other activities that you do to relieve stress? • How often do you do (this activity) to relieve your stress? • What motivated you to do these activities?	Concluding the interview • Do you have anything else you want to tell me? • May I contact you if I have any other questions or further research for this project?

Figure 2: Interview Protocol

2.2.3. Insights

We mapped our insights on an affinity diagram

a) Affinity Diagram

We interviewed 4 people with varying levels of anxiety and summarized the interview findings into several themes by affinity diagramming.

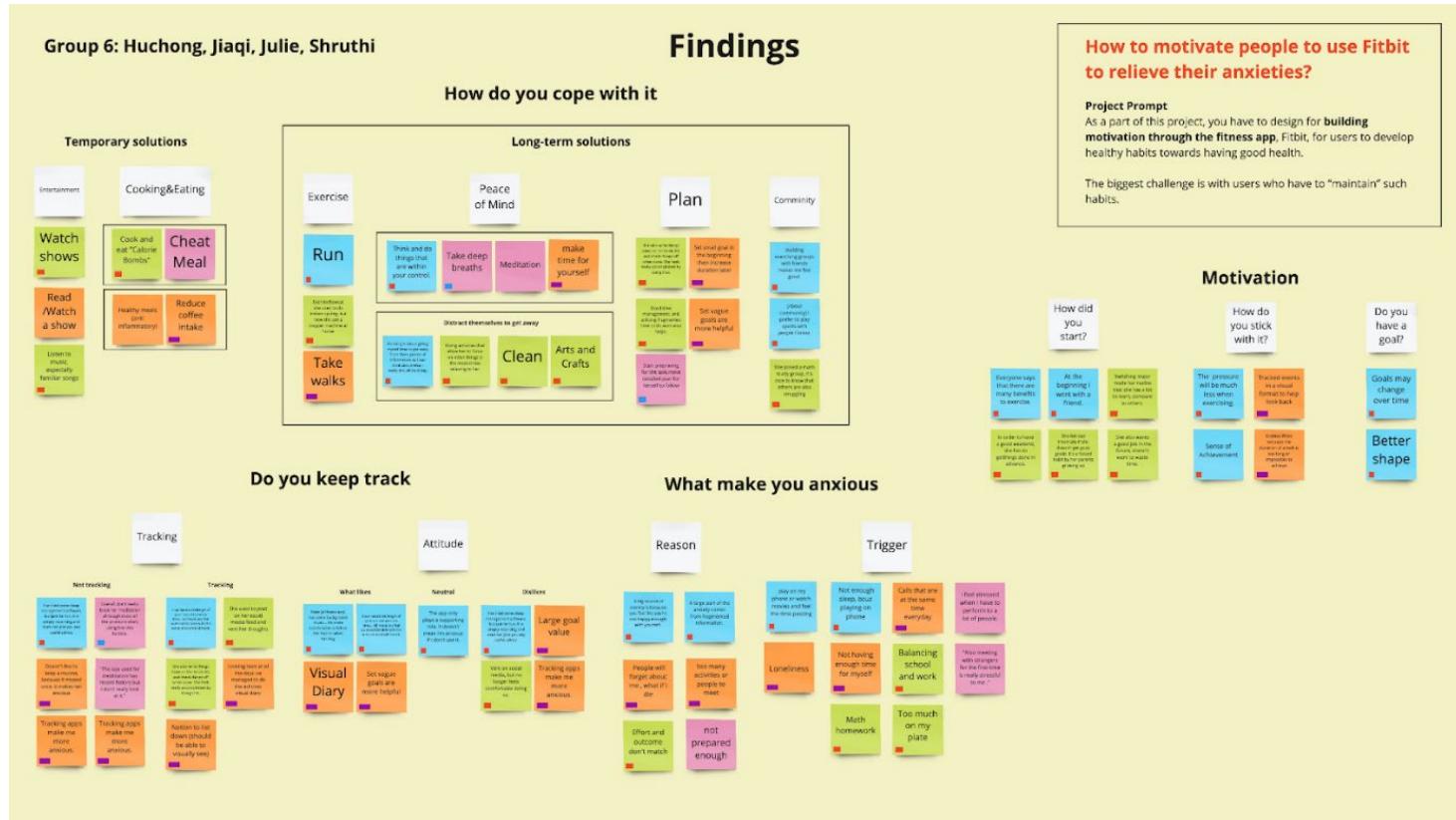


Figure 3. Affinity Diagram.

b) Prioritization Grid

Based on these research findings, we did a quick 5-minute brainstorming session and grouped similar solutions together. We then sorted them out on a prioritization grid based on value to users and feasibility for designers. The analysis gave us an insight into where we need to focus in our concept:

What we must need to do:

- Small tasks (sense of accomplishment).
 - Visualization.

What we could consider doing:

- Better notification.
 - Show progress.
 - Community.

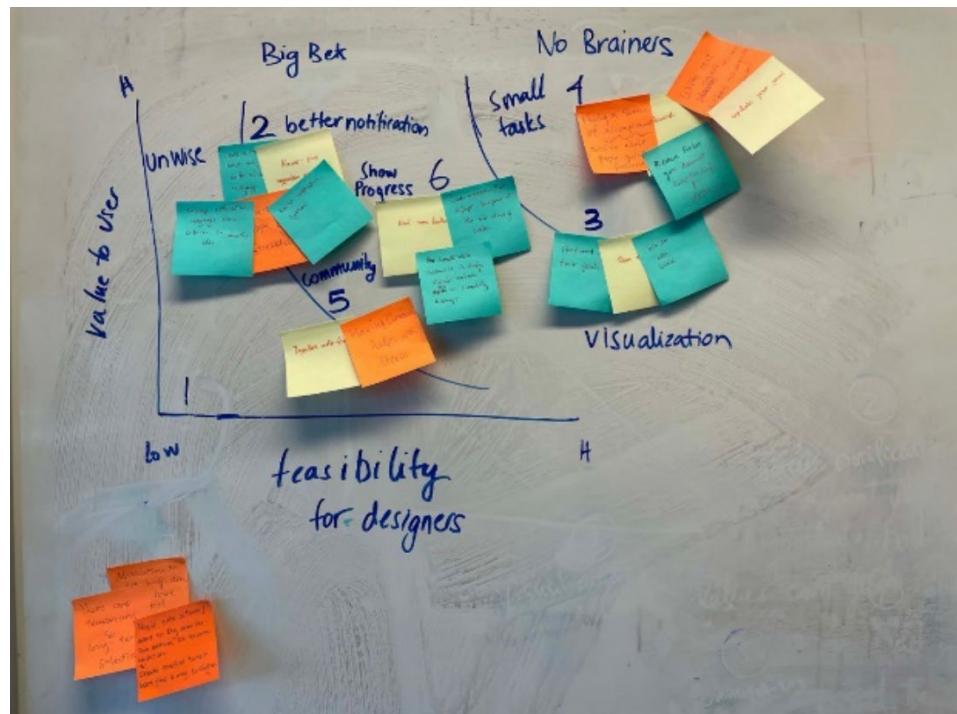
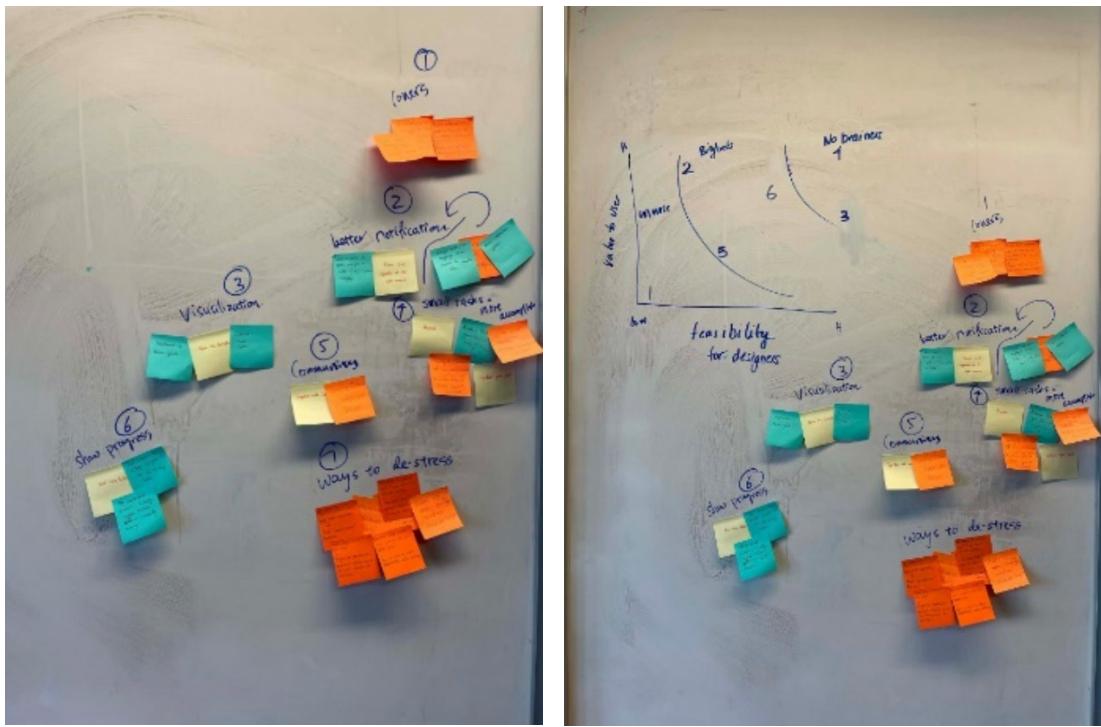


Figure 4. Prioritization Grid.

3. Concepts

3.1. Our concept

A Stage-Based Model: We conceptualized our design based on a stage-based model of personal informatics systems.

Table 1:

App features mapped into stages of mood tracking based on the Personal Informatics model

Stage	Feature	Description
Preparation	instructions & explanation	information about how to conduct mood tracking
Collection	interface for collecting mood data reminders	text, pictures, colors, emoticons, etc reminders for users to log mood
Reflection	visualizations	graphs, tables, lists
Action	recommendations sharing	further actions based on data, e.g., how to improve mood features for users to share or export data

Figure 5. A stage-based model

3.2. Current Scenario: How does Fitbit do it?

Currently, Fitbit only focuses on the Collection Stage. Most of the collected data is also only inputted if the user has a Fitbit watch. They have no clue what to do with the data, and there are no helpful actions based on the data. Fitbit only suggests users to watch videos at random.

3.3. How might we help Fitbit users detect and reflect on patterns that trigger their anxiety?

We target all four stages even if someone does not have the companion device.

- Stage 1 :
Preparation (Instruction & Explanation)
- Stage 2 :
Collection (Interface for collecting data and reminders to log data)
- Stage 3 :
Reflection (Visualization)
- Stage 4 :
Action (Recommendations & Suggestions)

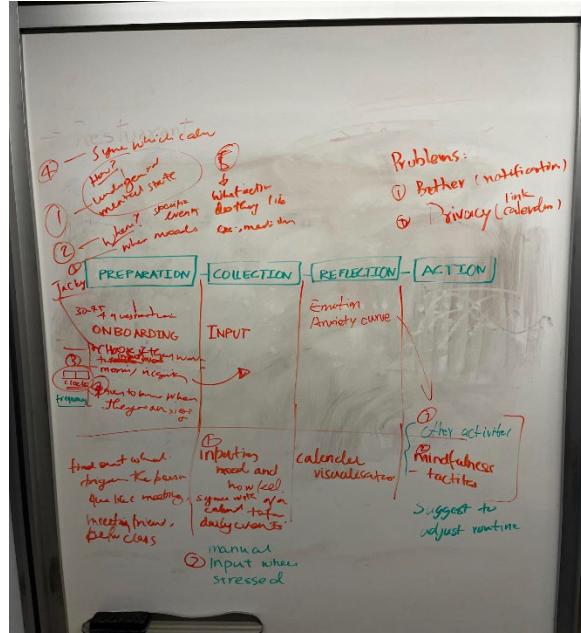


Figure 6. Conceptualization

3.4. How do we plan to get users to make this a habit?

a) Rewarding consistency

Users who checked in constantly for a regular time period, for example, 5 days, 15 days, 30 days, 2 months, would get badges that would provide access to premium videos.

What is the incentive?

The badge would start fading away if the user stops checking in or performing activities such as exercise for more than 2 straight days.

b) Making choices easier

Less is more. The tasks are kept simple and we purposely restricted the number of exemptions that the user could choose from to 5. Providing accomplishments even for tasks like exercising.

c) Not only for premium users

Our feature is for everyone. Badges are a way for users to access the premium video content.

4. Task Flows

4.1. Preparation

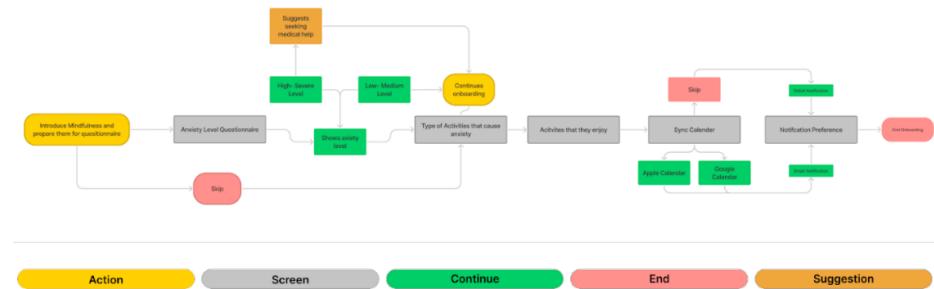


Figure 7. Preparation task flow

4.2. Collection

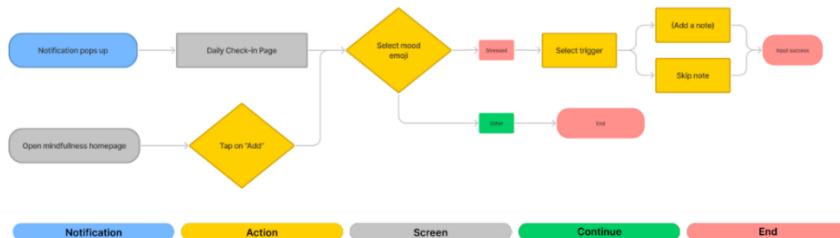


Figure 8. Collection task flow

4.3. Reflection

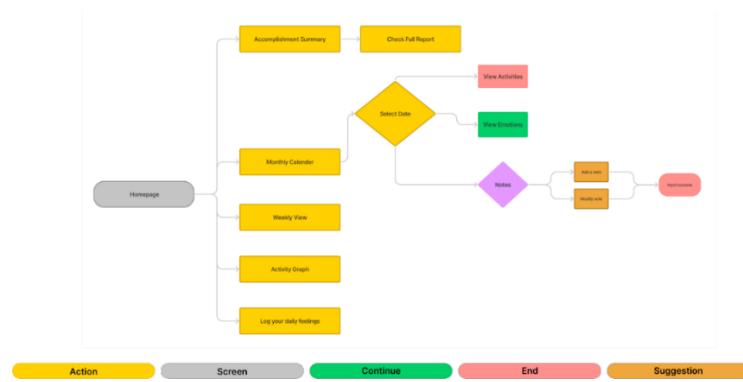


Figure 9. Collection task flow

4.4. Action

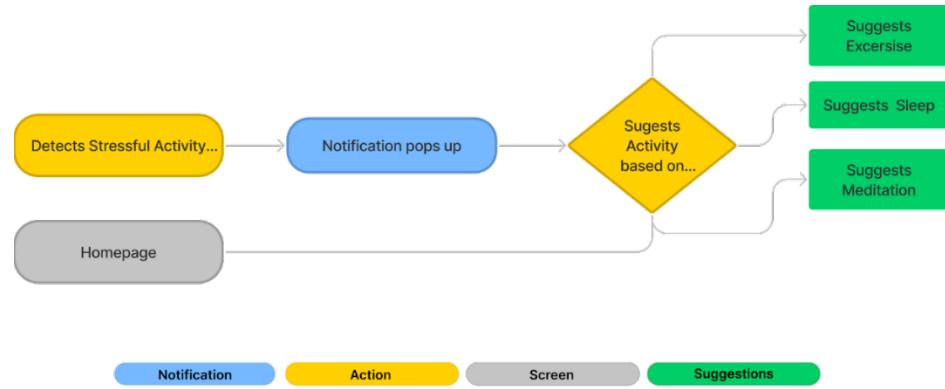


Figure 10. Task Flows.

5. Lo-fi Prototype

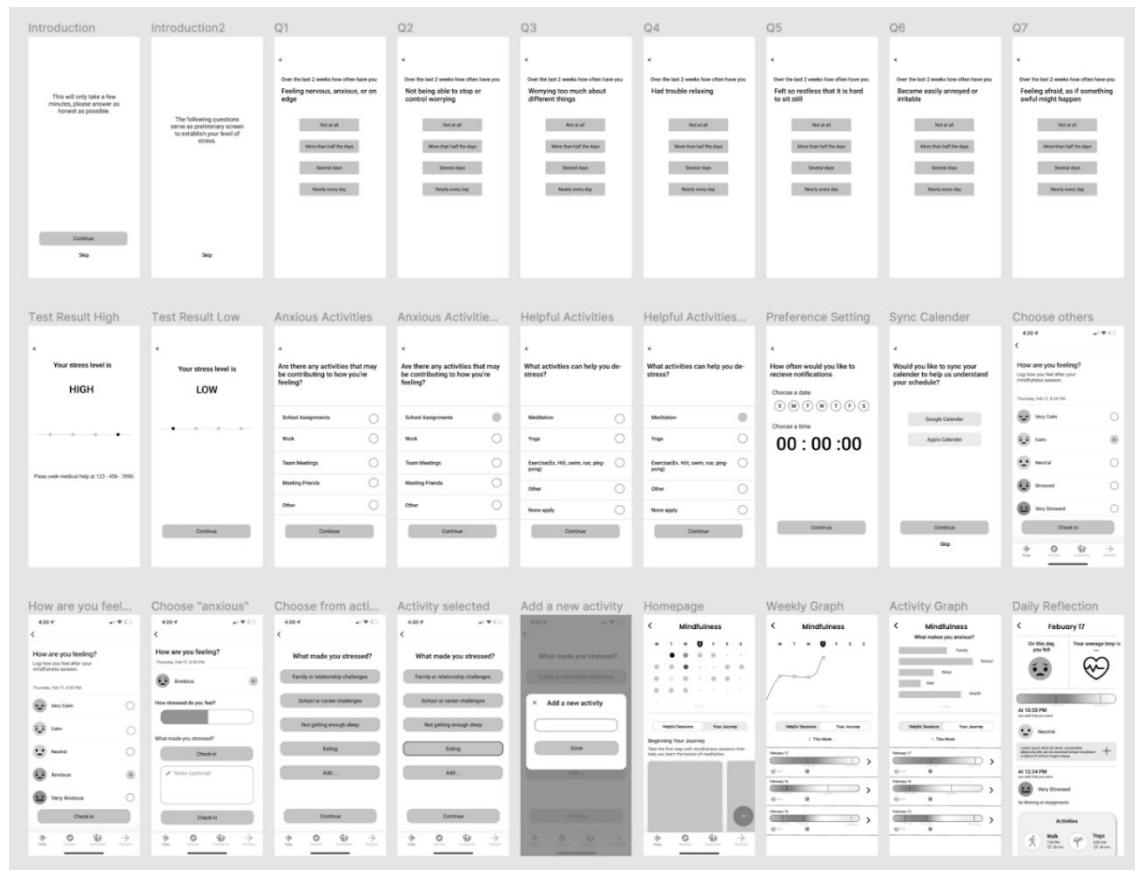


Figure 11. Lo-fi Prototype.

6. Testing

We tested our initial low fidelity prototype with our 4 interview participants by usability testing and A/B testing.

6.1. Usability Testing

6.1.1. Testing Protocol

Welcome: explaining what's going to happen.

The Questions: getting the participant talking.

The Home Page Tour: Check to see if the basic concept of the app is clear.

The Tasks: give them a few things to do:

- Go through the onboarding process.
- Try to log your current feelings.
- Try to learn about your statistics
- What makes you anxious?
- How do you feel on Feb 17?

6.1.2. Key Takeaways

1. The onboarding process might be too long.
 - Cut down the number of questions and group similar questions
 - Added a progress bar
 - Provided the option of having access to the test to finish later.
2. The ability to log feelings was not clear.
 - Removed plus icon from the bottom of the screen and made it a more visible and easily accessible section on the homepage



Figure 12. Lo-fi Prototype.

3. Visualization of daily emotions.

- Our users did not understand what the gradient meant, so we changed it to a line graph for better visualization

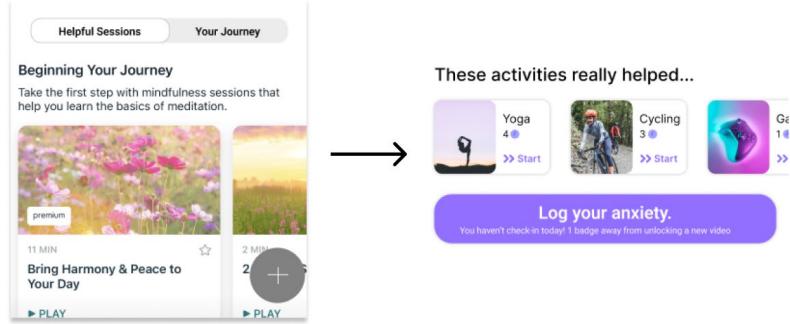


Figure 13. Lo-fi Prototype.

6.2. A/B Testing

1. Swiping to see calendar vs. Scrolling down

Result: We found that 2/4 users did not swipe to check.

Iteration: We changed the visualization of the calendar from the existing swipe format to represent them as a monthly and weekly view. We decided to let the users access the trigger statistics by scrolling down.



Figure 14. Swiping vs. Scrolling

2. Swiping right vs. Tapping to add a note

Result: We found that 3/4 users did not swipe to add a note.

Iteration: We decided to eliminate the swiping action and decided to incorporate it as a button

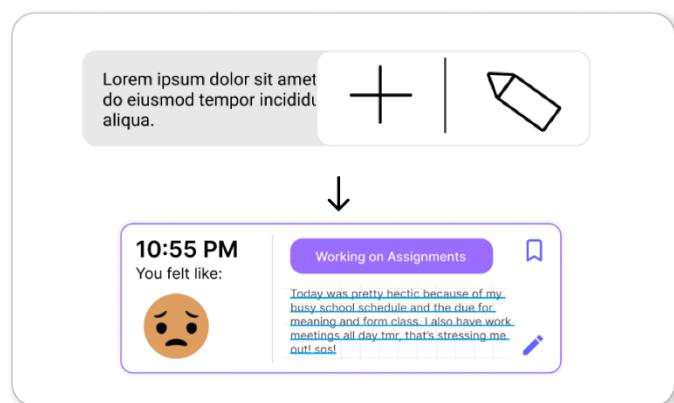


Figure 15. Swiping vs. Tapping

6.3. Emotion Mapping

We mapped our users' emotions, the average time it took to finish a task, and how easy it was for them to use in each stage.

We did this to understand and visualize all the users' data from a single picture. This helped us figure out what exactly we wanted to change

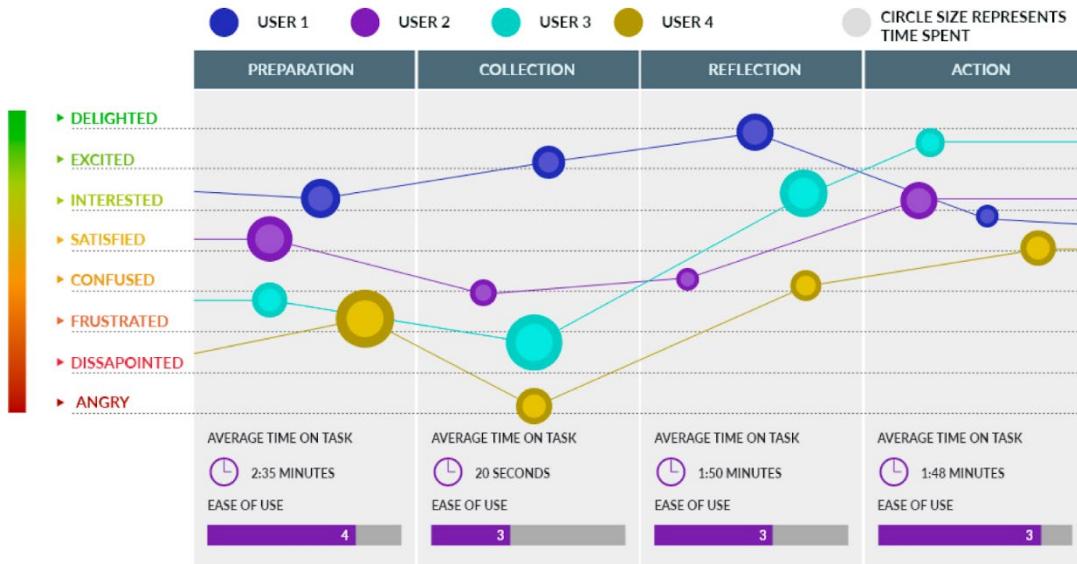


Figure 16. Emotional Mapping.

7. Edge Case

What happens if someone doesn't want to give access to their calendar?

- a) The alternative solution to this was for them to input their level of anxiety every time they were triggered.
- b) We would then detect patterns from their manual input to understand their routine
- c) Continuous prompting every few days and explaining benefits.

8. Hi-fi Prototype

8.1. Design System

8.1.1. Why we change?

We didn't strictly stick with Fitbit's branding because we felt like the existing branding is rigid and serious. Though anxiety is a serious space that we should tackle, we felt it necessary to create a space where users can freely express their struggles.

- d) Relating back to the prompt of this project, we really wanted to highlight "motivation", therefore we created exciting and encouraging visuals so the users look forward to opening our app.
- e) In addition, in order to have clear visual representation for the data, we created a purple gradient to show severity.
- f) We've also incorporated it into our brand so they tie in together, which is why we applied that in our interface.
- g) We also chose to remove the switch between the suggested mindful sessions and your journey as there was no concrete explanation for either of those tabs.

8.1.2. How are we aligned with Fitbit?

Though we changed up the design systems a bit, we kept some of the visual elements from Fitbit's existing brand.

- a) We kept the emoji system in our collection stage, because we think these emojis are clear in translating the feelings and stages of .
- b) We also kept the shape of the buttons, the activity cards, and the calendar because we think the basic guidelines should still be consistent.

8.2. Persona



PERSONA

Meet Brian

Brian is a IT professional **working as a software engineer doing master's part time**. He gets very anxious when he has a lot to do and has trouble balancing work and life. He is introverted and doesn't feel comfortable sharing his emotions with people. He usually relieves anxiety by doing exercise and yoga, and he uses Fitbit to track his exercise routine.

He has heard that Fitbit can also help manage anxiety but never tried it, because he didn't want to pay for a smartwatch without knowing if it would work.

Goals

- Reduce his feelings of anxiety.
- To have a more positive mindset.
- Improve mental and physical health.

Frustrations

- Feeling exhausted at work.
- Difficulty falling asleep.
- Difficulty maintaining a new habit.

A 3D character of Brian, a man with a mustache, wearing a pink jacket, striped shorts, and a beret, holding a laptop.

Figure 17. Persona

8.3. Preparation

At first, "Brian" is taken through the onboarding process; he then takes an anxiety test. Once the result of his anxiety test is determined, he is then prompted to link it to his calendar

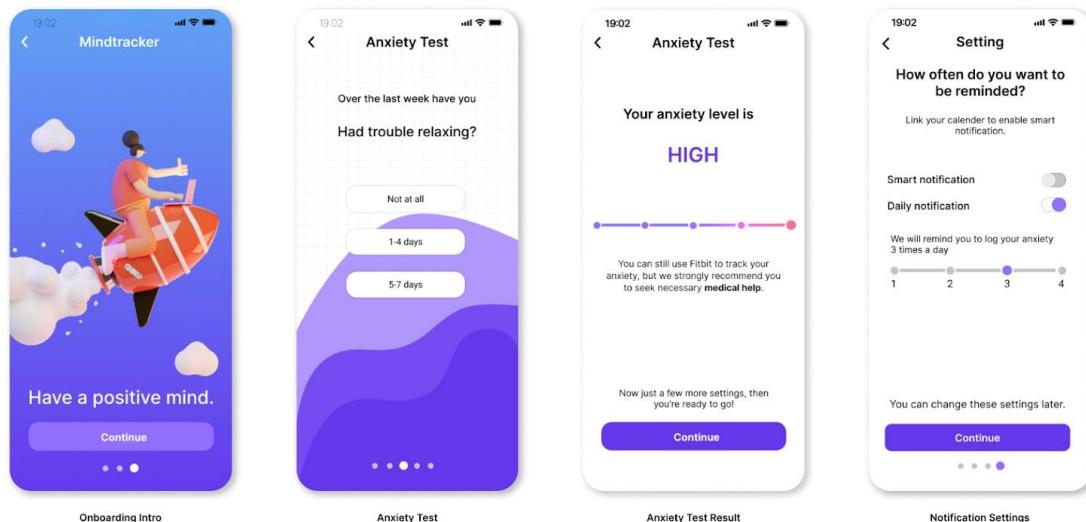


Figure 18. Main Screens of the Preparation Stage

8.3.1. Onboarding Introduction

The user is first given an explanation of what the feature is and how it would be helpful to him.

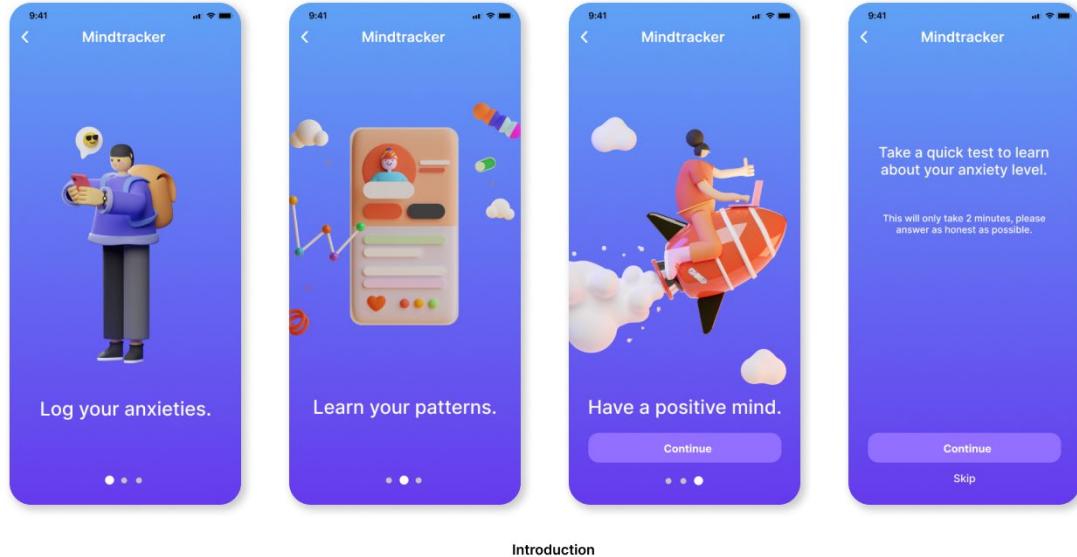


Figure 19. Onboarding Screens

8.3.2. Anxiety Test

The user is then asked a series of 5 questions to determine how level of anxiety

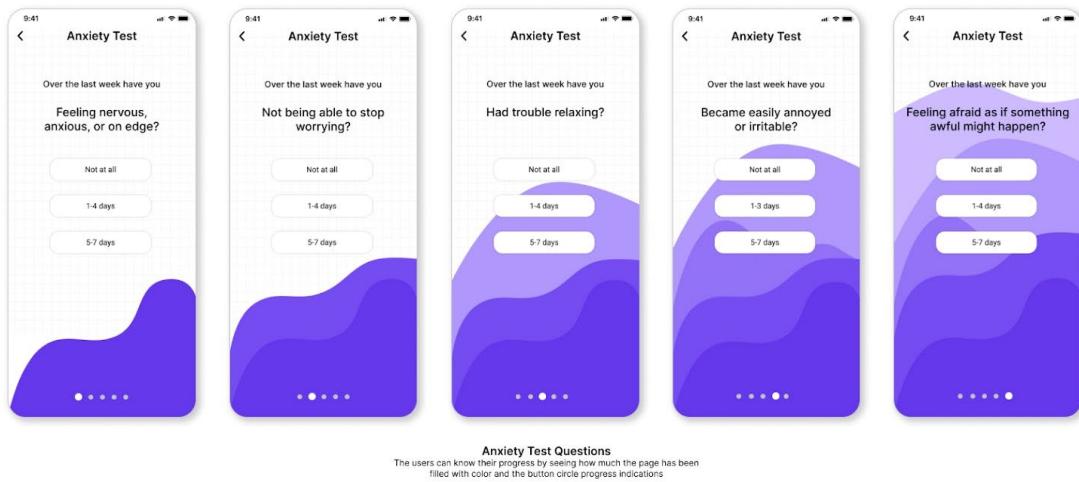


Figure 20. Anxiety Test Screens

8.3.3. Anxiety Test Results and Settings

The user is shown whether his level of anxiety is high or low based on the questions he answered. He is also asked to choose his notification settings and preferences in terms of syncing the type of calendar and how often he would like to be reminded.

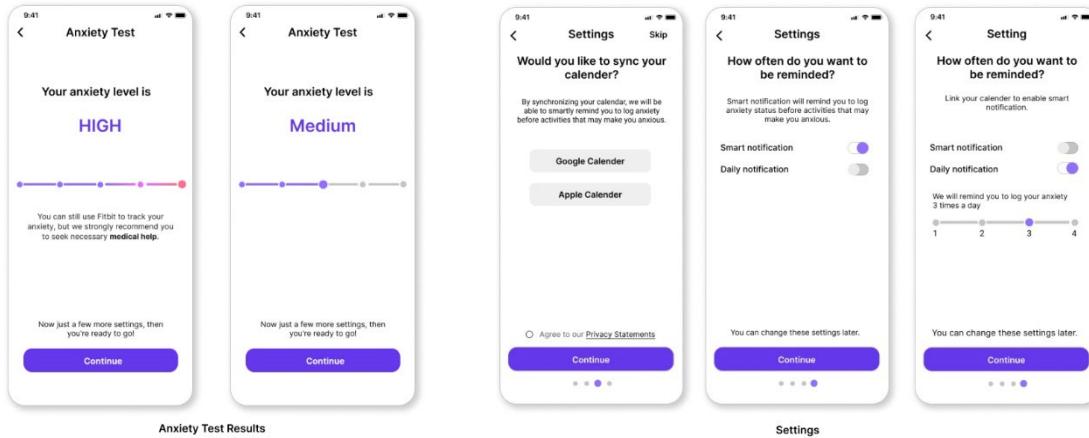


Figure 21. Anxiety Test Results and Settings

8.4. Collection

Depending on the frequency of his notification settings, Brian logs his feelings. He can also log his moods and activities at other times of the day. He could also add notes or choose a specific activity that triggered him.

How can we make sure Brian logs his moods and activities?

- Provide easy access on the homepage.
- Incentivize logging by providing a badge that "withers".
- Using the badge to access premium meditation and exercise videos.

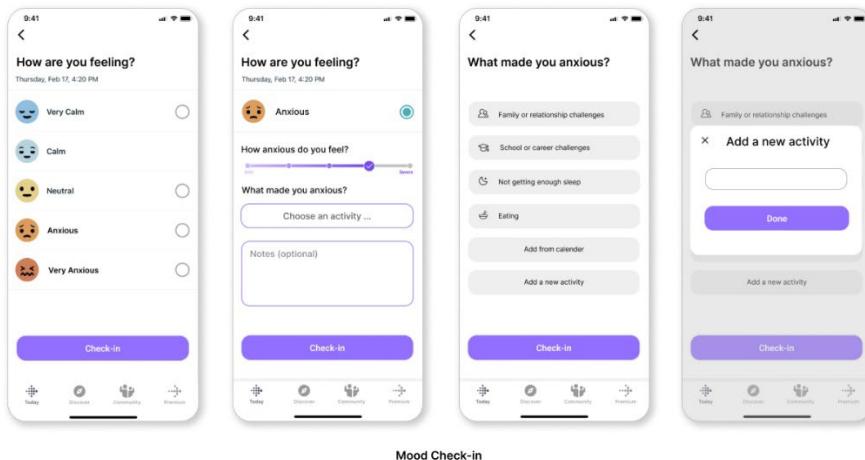


Figure 22. Check-in and Make a note

8.4.1. Collection through daily check-in

The user is asked to log his moods once a day from a button that is visible on the homepage. We chose to make it an obvious button with subtext such as "You haven't logged in today; you're five rewards away. " This acts as an encouragement message about the possibility of a reward



Figure 23. Daily Checkin notification

8.4.2. Collection through notifications

Additionally, the user is prompted to check in through external notifications based on his calendar and schedule. He is also prompted once a day to remind him of his daily check-in.

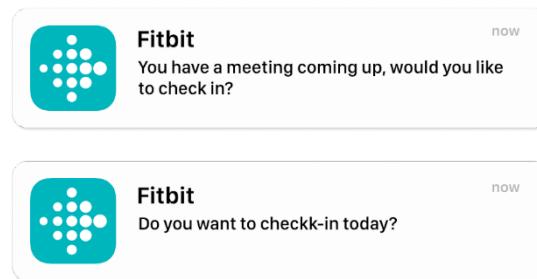


Figure 24. External Notifications

8.5. Reflection

Brian can then view his data and what triggers his anxiety. He is provided accomplishments for even smaller tasks such as drinking enough water taking a walk. He can also see his upcoming potential trigger as a notification which prompts him to log his mood and trigger.

Why would Brian want to look at these charts?

- Validates that he made a 'good decision.' Motivated by how many days he's actually been less anxious than he thinks.
- Accomplishment over small tasks.

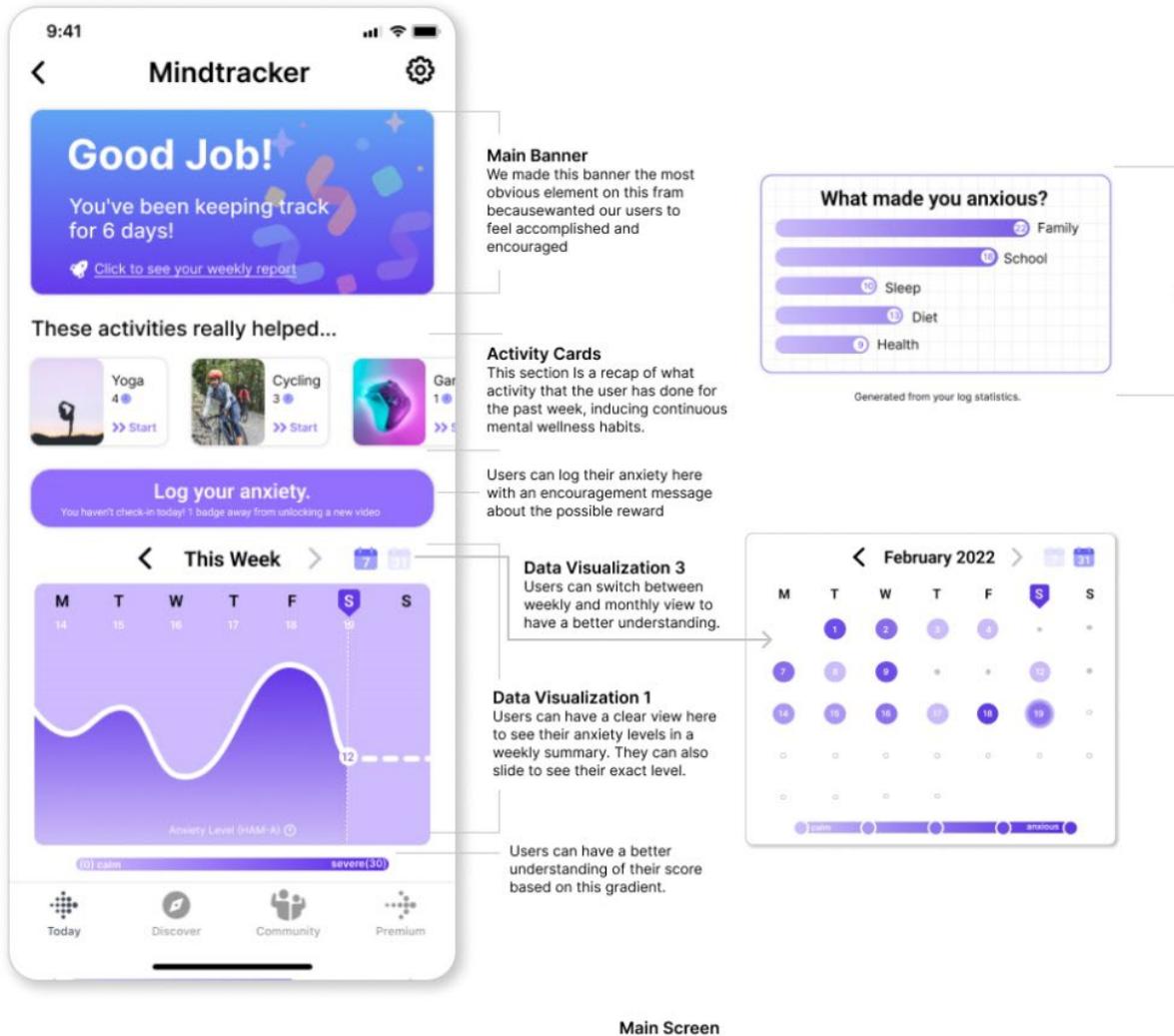


Figure 25. Figure explaining icons on the screen.

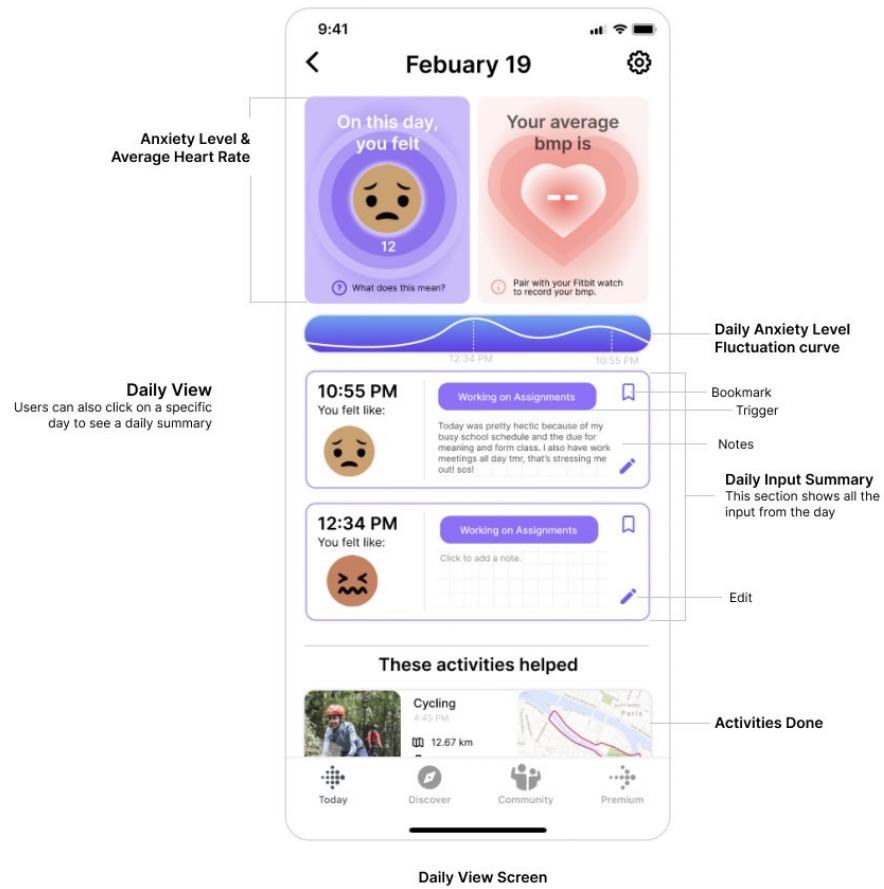


Figure 26. Figure explaining icons on the screen.

8.5.1. Reflection through Data Visualization

a) Data Visualization 1 – Line Graph

This gives the user a view of his emotions for the week in a line diagram. They can see a clear view of their anxiety levels in a weekly summary. They also have a better understanding of their score based on this gradient.

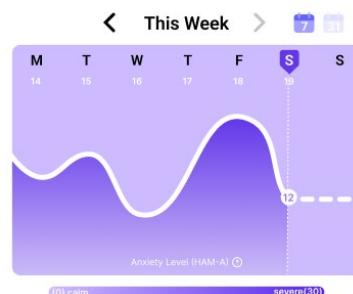


Figure 27. Data Visualization through a line graph

b) Data Visualization 2 – Trigger Bar graph

Users can then scroll down to see their anxiety levels based on tasks. This diagram also shows the weekly view. This lets them know what exactly their triggers are.



Figure 28. Data Visualization through a trigger bar graph

c) Data Visualization 3 – Monthly Calender

Users can then switch between weekly and monthly views to have a better understanding of their moods.

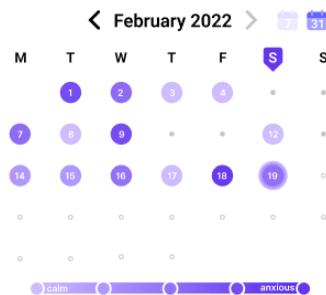


Figure 29. Data Visualization through the monthly calendar

d) Data Visualization 4 – Daily View

Users can also click on a specific day to see a daily summary and the notes that they have added.

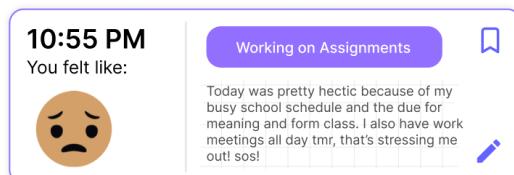


Figure 30. Data Visualization through the daily view

e) Data Visualization 5 – Fluctuation Curve

Users can then switch between weekly and monthly views to have a better understanding of their moods.



Figure 31. Data Visualization through fluctuation curve

f) Data Visualization 6- Anxiety Level and Heart Rate

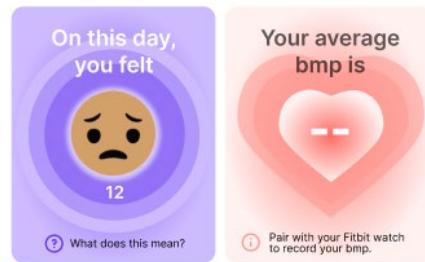


Figure 32. Data Visualization through heart rate and emotions

8.6. Action

Based on Brian's schedule, triggers are detected beforehand, and activities such as yoga, walking, and meditating are suggested, which have worked for him before.

Why would Brian consider these activities?

- a) The activities are personalized based on his schedule
- b) Indulging in activities allows him to use the Fitbit app more, and self-care habits such as eating and sleeping promote mental wellbeing.

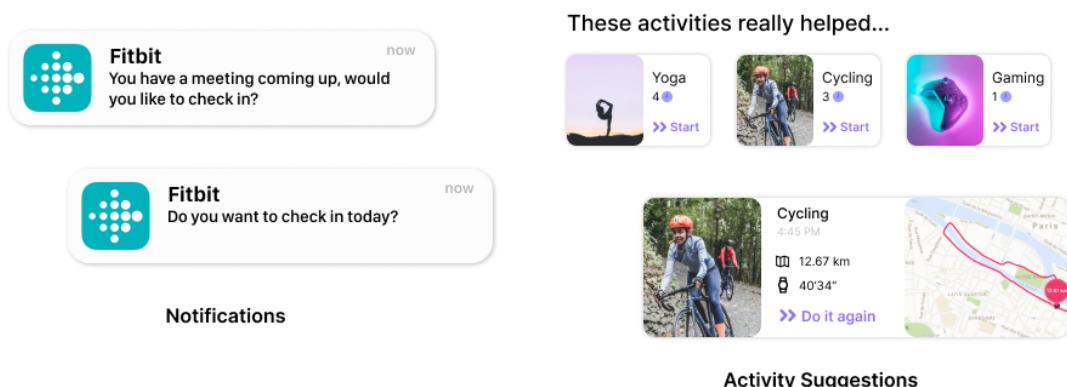


Figure 33. Actionable suggestions

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<https://www.nimh.nih.gov/health/statistics/any-anxiety-disorder>

10. List of figures

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