

Product Requirements Document

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Team: TranquiliTEA

Project Title: Tranquil

Intro: current problem, existing solutions, what our project does, why it's important

Our project tackles the issue of the current mental health crisis, specifically, with anxiety. It would incorporate the use of wearable technology and artificial intelligence to provide a resource for those suffering from anxiety to eliminate or lessen these feelings. Overall, we would use past personal medical data including normal sweat levels and heart rate to be able to identify when the user is starting to feel anxious. This would then prompt an AI chatbot or offer breathing exercises and other techniques to combat these feelings. Lastly, the user will be able to log their anxiety levels and how they are feeling daily in a journal to check their progress.

Problem Significance

This problem is important because many people suffer from anxiety and do not have an effective way to deal with the symptoms and come down from high levels of anxiety. Many other applications that are available today rely on the user to actively set aside time to work through their anxiety. However, this becomes overwhelming or stressful for many people and they end up falling off the habit of using these apps. Creating this app where the user is automatically prompted to work through these techniques to calm down based on their physiological metrics is much more effective because it hits the anxiety exactly when it appears, as opposed to waiting to do breathing exercises later.

Current Solutions

There are currently many applications that can help with anxiety. Calm helps with guided meditation and breathing exercises, What's Up? helps users track their mood, Moodnotes is helpful for journaling, and MindShift uses cognitive behavioral therapy to help those who suffer from anxiety. In addition, there are also wearable devices for anxiety treatment. Apollo is a wearable band that uses vibrations to help your body and mind calm down, Muse is a wearable headband that can help guide your mind to safe spaces, and Oura is a ring that helps improve the circadian rhythm when sleeping. These apps and devices all have their own advantages, yet none of them combine tracking stress levels with guided meditation and AI chatbots when the anxiety peaks.

Project Outcomes

The outcome of the project is to reduce anxiety levels of patients willing to utilize the app and wearable tech. By giving a biometric analysis, the patient can be sure that the activities to calm them down is also making them biologically less anxious, or indicate whether they need immediate medical attention. Furthermore, through this app, patients can visualize their improvement over several days as their biometric data and self-reflections will be recorded. This app would hopefully serve to better mental health.

Initial project milestones: specification, design, prototyping

Some project milestones are a basic layout and design of the interface that the user will be able to see. We want to aim for this app to be inclusive of people with disabilities so they are also able to participate. First we will decide on the metrics to work upon for deciding anxious behavior through an API. We want to focus on the chatbot and backend aspects of the app working first then start focusing more on the front end interface once we can test some features of the services. We can then prototype the app once we have all of these basic features implemented and from here work on making the app as user friendly as possible.

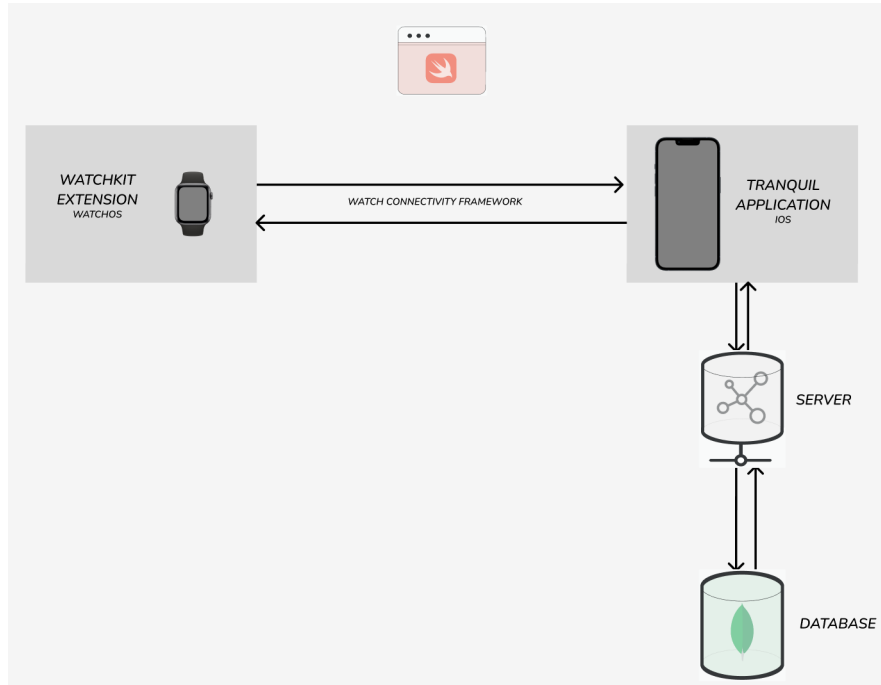
Team Goals:

- User friendly for different age groups as well as accessible as possible
- Seamless integration between watch and device application

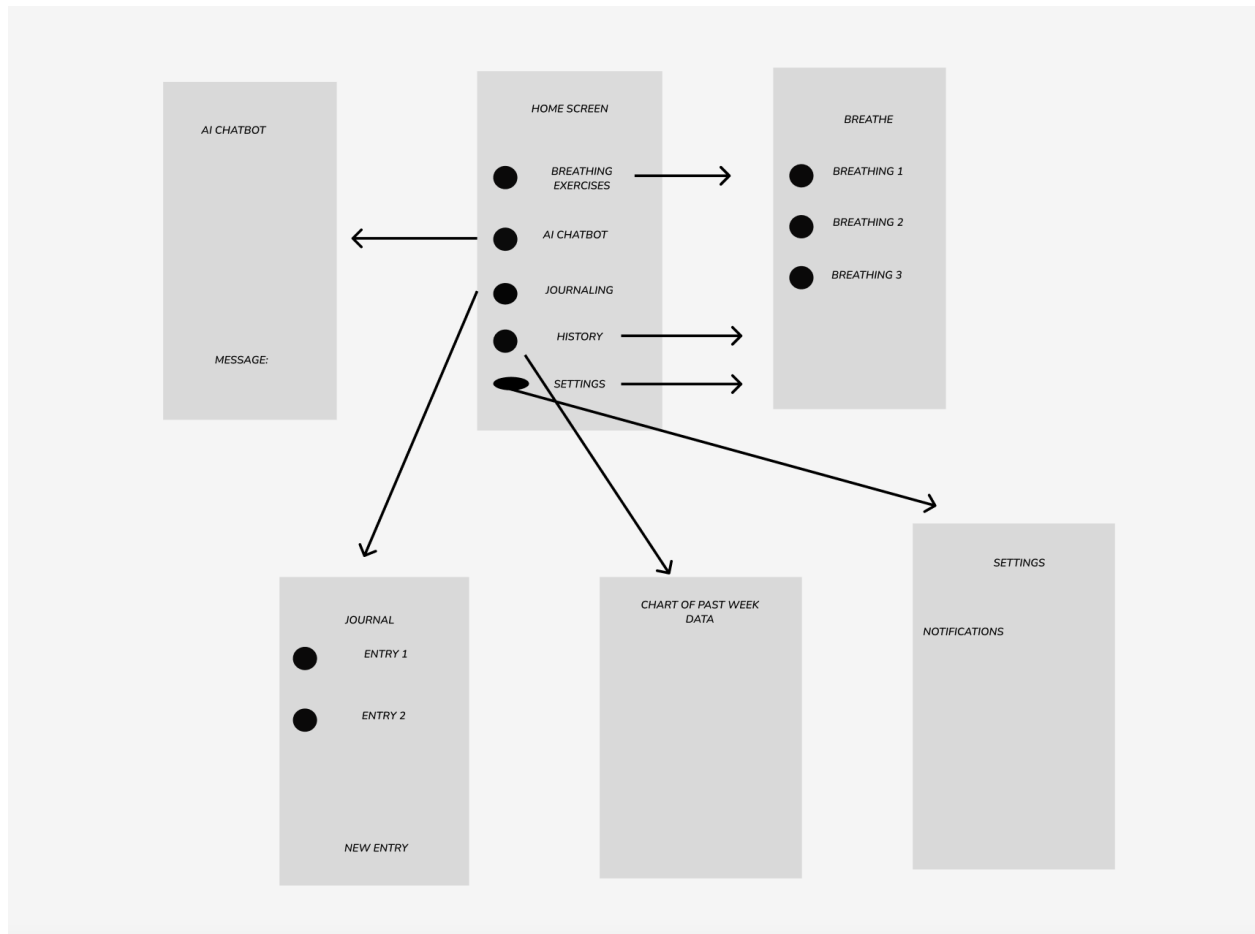
Team Assumptions:

- Application must be able to detect non anxious activity such as exercise where the user will experience heightened heart rate and other metrics similar to being under a lot of stress.
- The user is looking for a new application or method to cope with their anxiety.
- The user owns an Apple watch that tracks valuable metrics that can integrate with the iOS application.

Architecture Diagram:



User interaction and design(our app design):



User Stories:

1. As a new user, I can register for an account where registration data is stored globally, so that a user can log in and log out.
 - a. Acceptance Criteria: After downloading the app, there should be a registering page that lets the user sign up for an account, and possibly verify through email. This should also create an entry in the database to store the user's data.

Github: <https://github.com/capstone-team9-artera/tranquil/issues/4>

2. As a new user, I can easily integrate my watch data with the iOS application, so that app can use the biometric data.

- a. Acceptance Criteria: After downloading the app both on the watch and iOS app, the user is prompted to link the data from the watch to the phone. If one or the other app is not downloaded, there should display a screen prompting you to download the other. Check or confirmation that data is actually on iOS application

Github: <https://github.com/capstone-team9-artera/tranquil/issues/6>

3. As a user, I can be notified on my Apple Watch when I am having increased anxiety, so that the user is alerted and can manage symptoms in the app.
 - a. Acceptance Criteria: When the user is notified on the Apple Watch, they should be first prompted if they are exercising or not. If not, a screen will pop up directing the user to their phone where they will be guided to a helpful resource based on the intensity of their anxiety.
 - Maybe expand and add stories about creating a baseline and then false positive cases

Github: <https://github.com/capstone-team9-artera/tranquil/issues/2>

4. As a user, I can participate in guided breathing exercises on the app after being notified, so that the user can manage their anxiety/decrease the user's heart rate/stress.
 - a. Acceptance Criteria: A guided breathing exercise animation/screen pops up onto the screen and lasts for a few minutes until the user's heart rate or stress levels decrease.

Github: <https://github.com/capstone-team9-artera/tranquil/issues/1>

5. As a user, I can use the AIChatBot when I am having anxiety so that _____
 - a. Acceptance Criteria:
 - i. Scenario #1: after being notified I open up the chatbot
 - ii. Scenario #2: after being notified and doing the breathing exercises I am still feeling anxious so I open up the chatbot
 - Break two scenarios into 2 user stories

Github: <https://github.com/capstone-team9-artera/tranquil/issues/3>

6. As a user, I can see my past stress levels and data from the previous week so that I can track their progress.
 - a. Acceptance Criteria: There will be a specific page of the application that shows data visualizations of the past week, giving a general indication of stress levels in the past. Even though we store data and metrics from every day, the graph will only show data from the previous week so that it does not trigger any anxiety in the moment.

Github: <https://github.com/capstone-team9-artera/tranquil/issues/7>

7. As a user, I would like to log in my feelings and reflections after I experience a wave of anxiety, so that I can understand and track triggers and reflect on my experience .
 - a. Acceptance Criteria: This will take on the form of a survey with some general questions about their specific experience, with a field at the bottom to make additional comments.
 - i. NOTE: maybe we can track this/perform data analysis and how this improves anxiety over time → see the result of their product

Github: <https://github.com/capstone-team9-artera/tranquil/issues/8>

8. As a user, I will receive daily positive affirmations/encouragement so that my mood can be lifted during the day.

- a. Acceptance Criteria: User gets a daily notification with affirmations and encouragements

Github: <https://github.com/capstone-team9-artera/tranquil/issues/5>

9. As a user, I would like to have the ability to toggle certain features in the app so I can minimize notification spam.
 - a. Acceptance Criteria: We will create a settings menu so that the user can customize their experience in the application so that we can better serve the user and their needs.

Github: <https://github.com/capstone-team9-artera/tranquil/issues/9>

10. As a user, I can open the application unprompted, so I can explore the app whenever I want.
 - a. Acceptance Criteria: User can open the app whenever and it can be used to do self-lead breathing exercises, track progress, change settings, etc.

Appendix (listing the tools were using)

- Wearable Technology
 - Apple Watch
- App Development
 - Swift on Xcode
- Database Storage
 - SQL, MongoDB/Realm?
- Deployment
 - iOS app on AppStore