Serenova

Team 24 Project Backlog

Team Members
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Problem Statement:

In a world where people are consistently striving to improve their overall sleep experience, most sleep tracking apps fail to actively help their users find a path to a better sleep schedule. Existing iOS sleep tracking apps, such as Apple's Sleep, AutoSleep, and Shuteye, do track the user's sleep patterns and offer general advice, but fall short of providing a personalized plan for sleep improvements with a community forum feature for sharing experiences. Our app will have more features than an average sleep tracker, including a dream journal and improvement challenges to help users fix their sleep schedule to get more rest. There will be elements involved that let users interact with each other and share their own experiences and encourage each other.

Background Information:

Audience

Our iOS app is geared toward individuals experiencing sleep difficulties, from all age-ranges, who are seeking to improve their sleep quality and overall well-being. This includes users that own sleep-tracking technology (Apple Watch, Fitbit), who have busy, high-stress lifestyles, those with irregular sleep schedules like shift workers or students, and individuals who are interested in tracking their sleep cycles and their personal health and wellness optimization.

Similar Solutions by Other Platforms

There are similar platforms available for iOS devices, including: Pillow, ShutEye, and Sleep Cycle. These apps strive to create a comfortable environment for the user while they are going to sleep. They function as a basic sleep tracker with additional features such as smart alarms, sleep stories, and meditation guides. Wearable devices like

Fitbit and smartwatches also provide basic sleep tracking functionalities. These all share similar goals in our project of sleep monitoring.

Limitation of Current Solutions & How We Address Them
While the above platforms work to improve the sleep of users, they also have several limitations. These are included below, accompanied by proposed solutions.

- **Subscription:** Many platforms block extensive sleep data that could be used to improve user sleep experience with a pay wall or subscription, limiting the amount of benefit people are able to get from these sleep-tracking apps.
  Solution – All Features Free: By making our platform free, we ensure that all our users have access to personalized tools and resources to improve their sleep quality. Instead of gate-keeping advanced features, we leverage the power of community support and shared knowledge. This approach aligns with our missions to contribute positively to public health.
- **Superficial Data Analysis:** Many apps offer only basic analysis of sleep duration and disturbances without delving into the nuances of sleep stages or environmental factors.
  Solution – In-Depth Sleep Analysis: Our app will provide a detailed analysis of the user's current sleep stages using HealthKit, environmental influences, and lifestyle habits, offering users deeper and unique insights into their specific sleep patterns.
- **Limited Integration:** Only a few apps effectively integrate with a wide range of other health apps, which limits the holistic view of a user's health and its impact on sleep.
  Solution – Comprehensive Integration: By integrating a broad spectrum of health apps and devices using Apple HealthKit, our app will offer a more comprehensive understanding of factors affecting sleep, such as activity levels, diet, and stress.
- **Minimal Community Support:** Many of the sleep tracker apps we found lack a platform for users to share their experiences and tips, which misses out on the benefits of community support in improving sleep habits.
  Solution – Community Support: Our app will provide an environment for users to interact with others in a community forum. Users will have the opportunity to share experiences and dreams, ask questions, and get helpful sleep-related tips, all while fostering a supportive environment for sleep improvement.

- **Generic Recommendations:** Many apps provide sleep improving tips that are very generalized and may not be effective for everyone due to unique situations and individuals differences in sleep patterns, styles, and needs.
  Solution – Personalized Insights and Recommendations: Our app will use advanced analytics with Firebase to provide personalized sleep improvement recommendations that are unique to each user's sleep data and lifestyle factors.
- **User Flexibility/Lack of Personalization:** Most platforms do not allow much flexibility in user experience. For example, there are many complaints regarding the ability of current apps to track sleep if and only if an alarm is set to wake the user at a certain time.
  Solution – Flexibility: Our app will allow sleep tracking that adapts to an individual's unique lifestyle and preferences, rather than imposing rigid tracking conditions. It will offer customizable features like adjustable sleep goals and personalized insights, enabling users to tailor the app to their preferences, ensuring a more intuitive and accommodating sleep tracking experience.

Functional Requirements:

Backlog Item	Estimate
As a user, I would like to be able to manually log my sleep times so I can track my sleep patterns	10
As a user who owns a smart watch, I would like to automatically sync my device with the app so that I can track my sleep duration, quality and patterns.	15
As a user, I would like to be able to create a unique login username and password to keep my own personal information safe and secure.	10
As a user I would like to be able to view my account profile, which displays content including my app settings, past sleep data, and login information.	10

As a user I would like to be able to manage my account and take actions such as changing my password, deleting my account, and changing my username.	6
As a user, I would like to be able to reset my password if I am not currently logged in.	10
As a user, I would like a page that shows me a graph detailing how much sleep I got each day over the past two weeks	10
As a user, I would like a page that have sleep analysis, that shows me a graph of external noise, snoring, and movement, and uses values from these graphs to calculate a "sleep score" to tell me how well I am sleeping	10
As a user, when I am on the app's home page, I would like to easily switch between tabs such as "Deep Analysis", "Dream Journal", "News and Recommendations", and "Settings."	10
As a user, I would like a page that brings up articles from scientific sources on how I can get better sleep. I would like to be able to scroll through headlines of these articles and click on ones I like to read them	10
As a user, I would like to be able to observe my sleep environmental conditions such as room temperature, noise levels, and light exposure so that I can understand how my sleep is affected by those factors.	10
As a user, I would like to have an alarm that can wake me up during the lightest sleep phase so that I can feel more rested.	10
As a user, I would like to be able to see an overview of noise levels that could be affecting my sleep environment.	13
As a user, I would like to view individual factors such as excessive movement and snoring to track my activity while I am asleep.	10
As a user, I would like to be able to see a detailed analysis of my	13

sleep stages such as deep, REM, and light sleep.	
As a user, I would like to see any suggestions or insights into my cycle in order to fully understand my sleep schedule for that night.	10
As a user, I want to be able to view articles, videos, and tips on sleep hygiene, the science of sleep, and strategies for improving sleep quality.	13
As a user, I want to receive a sleep score every morning based on various factors such as my duration, quality, and consistency of sleep to help me better understand any improvements in my sleep cycle.	12
As a user, I want to be able to see a long-term analysis of my sleep patterns in order to determine any improvements in my routine or needed improvements in my nighttime routine.	13
As a user, I would like to receive a reminder to wind down and begin my bedtime routine every night based on my desired and recommended sleep schedule each day to help solidify a good nighttime regime.	10
As a user, I would like to be able to have options to connect with sleep specialists and/or healthcare providers so that I can receive professional advice for improving my sleep experience.	13
As a user, I would like to be able to create a profile on the app so that I can save data about my sleep patterns, my posts in the community forum, and my dream journal.	10
As a user, I would like to be able to personalize my profile so that I can create a more comfortable nighttime viewing experience.	10
As a user, I would like to be able to interact with an online AI chatbot with a chat interface.	10
As a user, I would like to be able to get answers to my questions and queries from the chatbot.	12

As a user, I would like the chatbot to offer information about healthy sleep patterns, so I can understand what a good night's sleep entails.	12
As a user, I would like any chatbot to specialize in this app, and only provide information regarding my sleep and features this app has.	12
As a user, I would like the chatbot to learn from my preferences and improve its recommendations over time.	8
As a user, I want the chatbot to provide tips on improving sleep quality, so I can make informed changes to my sleep routine.	13
As a user, I would like to be able to use the speech-to-text option to interact with the chatbot.	12
As a user, I would like to be able to set sleeping goals for duration and and regularity.	10
As a user, I would like to receive in-app rewards for meeting those goals.	10
As a user, I would like to have an outlet to connect with others through a community forum so that I can share and receive sleep experiences, tips and advice about sleep-related topics.	10
As a user, I would like to be able to see forums of various topics, with each forum's content restricted to only covering its particular subject.	10
As a user, I would like to receive personalized tips and recommendations based on my sleep data and habits so that I can improve my overall sleep experience.	10
As a user, I would like to have access to this app in multiple languages so that I can fully understand and use this app effectively from any background.	10

As a user, I would like to have a space where I can record and reflect on my dreams so that I can gain personal insight on my subconscious state and so that I can identify any sleep disturbances.	10
As a user, I would like to be able to discuss my dreams with others in a comment-style.	10
As a user, I would like to be able to send friend requests to certain users to build my own community of friends.	10
As a user, I would like to share my own comments, thoughts, and dream journals exclusively with my in-app friends.	12
As a user, I would like to have a separate page where I can post my dream journal to a public page for other users to view.	13
As a user, I would like to be able to change settings on my dreams journals, so I can choose to make them public, private, or only available to friends.	10
As a user, I would like to add tags to the dream journals I post.	10
As a user, I would like to have a direct messaging system to communicate with other users of the platform.	10
As a user, I would like the app to provide a summary of recurring themes I have been seeing in my dream (For example, it could tell me if I have been having similar dreams repeatedly each night)	10
As a user, I would like to have access to relaxation techniques, such as guided meditations, breathing exercises, and ambient sounds designed to help users relax and fall asleep more easily.	10
As a user, I would like relaxation techniques to be recommended to me based on my profile.	10
As a user, I would like to be guided through relaxation techniques such as breathing exercises.	10

As a user, I would like to be able to integrate all relevant health data from my smartwatch and other iOS health apps.	13
As a user, I would like to get personalized sleep tips and recommendations using supplementary data from other IOS apps.	12
Total Number of Hours:	547

Non-Functional Requirements:

System Requirements
- Compatible with iOS devices.
- Integrates Google/Apple Maps to connect users with local doctors.
- Integrates Apple HealthKit API to collect and process user data for sleep analysis.
- Integrate with Apple Watch and/or Fitbit to produce accurate sleep analysis
- Integrates Firebase as the backend web server service
- Runs 24/7 in background to track sleep environment and collect data throughout the night

User Requirements
- Needs some sleep tracking technology such as a Fitbit or smart watch

Data Privacy and Security
The app will ensure high levels of security for user data, including encryption and privacy controls via Firebase. Our Firebase-based backend will offer a secure authentication system for user verification which will effectively protect unauthorized users from accessing data that does not belong to them.

Scalability
Our app should be able to handle requests from multiple users at the same time. Using Firebase's cloud functions will greatly increase our flexibility when it comes to our project's scalability as it will allow us to scale out when more resources are necessary.

Usability

We plan to make the user interface for our iOS app Serenova user-friendly and easy to navigate. Up to 100 concurrent connections at any given time, and running 24 hours per day.

Response Time
Seranova will have fast request and response times and efficient use of bandwidth. It will have an average response time of 1 second, while handling up to 1000 requests per second.

Reliability and Error Recovery
If the app stops responding for 10 seconds, an error message is displayed.