Mind You

Team

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The members of our team participated in each aspect of the design process to ensure everyone's ideas influenced every step of the design. In a sense, we are all researchers, interviewers, task developers, artists, and authors.

Problem and Solution Overview

According to the National Alliance on Mental Illness, over 40 million adults suffer from mental illness in any given year in the United States alone. Due to various factors such as the expense of treatment and the stigmas that often surround mental health, pursuing treatment can often prove challenging. As a result, the most common treatment for mental health problems is no treatment at all. Mental illnesses can seriously impact the quality of life for people who endure them by impeding their ability to concentrate, perform the daily tasks most people take for granted, and interact with others. Despite the pervasiveness and effect of mental health problems in the United States, people can manage their symptoms and improve their quality of life. A designed system could potentially facilitate these endeavors by helping people monitor their mental health. For example, a formal system could assist people with tracking their mental health by recording their daily activities, their mood, the amount they sleep every night, their heart rate, and other factors. In addition, the system could allow people suffering from mental health problems to share their information with a therapist if they currently see one. Alternatively, if someone wants to attend therapy but has struggled to find a compatible therapist, the system could recommend a therapist based on various features about the person. Perhaps with a system that provides more information about their current state of health and more ways to connect with a therapist, people with mental illnesses may find some relief from their symptoms.

Stakeholders in Mental Health

The topic of mental health includes many stakeholders, including therapists who provide treatment for patients, friends and family who want to provide a support network for someone with a mental health disorder, crisis line operators who talk to people about their problems over the phone, and psychologists who research mental health. However, we want to design for a primary stakeholder: people who suffer from mental health problems.

Design Research Goals

After considering the many stakeholders in mental health, we established the primary goal of our design research. Namely, we sought to learn about the common symptoms and experiences of people who suffer from mental health problems, the ways therapists provide support, and the ways people have attempted to manage their mental health. Because it is extremely difficult to determine when the symptoms of a mental health disorder will manifest and it would be unethical to induce or observe such symptoms, we decided that a contextual inquiry would not be an effective research method to pursue. Instead, we explored a few other research methods. First, we conducted semi-structured interviews with two psychologists to identify common mental health conditions, the symptoms that arise, and the ways therapists and their clients seek to manage the conditions. We also posted an anonymous questionnaire online to gain insight directly from people who experience mental health problems. Finally, we performed a literature review to learn about the effectiveness of apps people currently use to deal with depression as well as ways therapists and organizations can destigmatize mental health. Through our research, we learned valuable information about common mental health conditions and strategies to manage them.

Participants

Leia Organa is a licensed psychologist and mental health therapist at the Mental Health Clinic of the UW Hall Health Center. She mainly works with university students who suffer from various emotional and behavioral difficulties, such as depression and anxiety. She also helps students with issues that commonly occur in a college setting, such as academic performance and procrastination. We met with Leia for an interview at her office in the UW Hall Health Center.

Han Solo is a clinical psychologist who sees patients at Harborview Medical Center and in a primary care clinic. He mostly works with patients who suffer from depression and addiction. In addition, he is a researcher at the UW who focuses on patient-provider interactions. His most recent publication, “The Use and Effectiveness of Mobile Apps for Depression: Results From a Fully Remote Clinical Trial”, explores how well mobile apps designed to improve mental health can support people with varying degrees of depression. We met with Han for an interview at the UW Health Sciences library.

52 people filled out our questionnaire, which was designed to gain insight directly from people who suffer from mental health problems. The first question asked if the person had ever experienced any mental health concerns; the questionnaire answers from the four people who responded no to this question have been discarded. We did not screen the questionnaire based on whether or not people had attended therapy because we wanted to learn common reasons people do not pursue treatment. We posted the questionnaire in the UW Class of 2016 Facebook group, the UW Class of 2017 Facebook group, a mental health subreddit (/r/MentalHealth), and a subreddit for people to recruit respondents to surveys (/r/SampleSize). People responded anonymously.

Design Research Results and Themes

Based on our interviews and the feedback we received from our questionnaire respondents, several themes emerged in terms of how mental health affects people and if or how those people seek care or support. Depression and anxiety seem to be the most common mental health problems people experience. Even when people suffer from other disorders like addiction, symptoms of depression and anxiety tend to accompany those disorders. As a result, many therapists screen their patients for depression.

Although the National Alliance on Mental Illness estimates that one in five American adults suffer from mental health problems, the majority of people do not seek treatment. Leia, Han, and several questionnaire respondents cited the expense of treatment, lack of health insurance benefits, embarrassment or shame about mental health, and the accessibility of therapy as common reasons people do not seek therapy for treatment. In addition, people who experience mild symptoms often recover on their own and do not need therapy. However, for people who decide they do need therapy, finding a therapist who offers sessions at a rate they can afford, in a location near them, and at times that fit their schedule poses a real challenge. Moreover, people often struggle to find a therapist with whom they can establish rapport. If clients attend a few sessions with a therapist and decide that person is not a good fit for them, the thought of finding another therapist who fulfills their needs for expense, location, and scheduling and explaining their life story once again to the new therapist deters many people from continuing to pursue therapy.

Regardless of whether someone has attended therapy, family and friends can provide a source of support for people suffering from mental health problems. Of the 48 people who responded to our questionnaire, 37 said they had reached out to family, friends, or others for support, and 30 of these reported their support as helpful and valuable to their treatment. In addition, some people choose to attend couple's counseling, in the sense that someone supportive, not necessarily a romantic partner, accompanies the person to therapy sessions and uses lessons and information from the therapist to provide additional support outside of therapy. Han informed us that this form of couple's counseling tends to be more effective than individual counseling. However, 18 questionnaire respondents reported that either the support they received from family or friends was not beneficial or they did not want to approach these people to maintain their privacy or to avoid bothering people about their mental health. Thus, many people with mental health conditions do not or cannot rely on support from family and friends.

With or without support, people can approach improving their mental health in many ways. In general, Leia suggested that eating three nutritious meals a day, exercising regularly, and sleeping eight hours every night would drastically improve people's overall wellbeing and resilience to stressors. As an example, Leia informed us of a particular case in which one of her patients tracked her sleep with one app and her mood with another and discovered that her mood tended to improve when she slept for a more regular length of time. However, people tend to respond differently to any form of managing mental health. For example, journaling may only help people who feel comfortable writing their thoughts on paper, and therapy may only benefit people who experience a positive connection with their therapist. When people search for a means to manage their mental health, it is important to remember that some techniques may work better for them than others.

By observing these themes and the problems people commonly experience, we uncovered important tasks for which we can design.

Task Analysis Questions

1. Who is going to use the design?

People who suffer from mental health problems will primarily use the design. These people may or may not have pursued ways to improve their mental health. Additionally, therapists may use the design to view data their clients have shared with them or be recommended to people interested in receiving therapy.

2. What tasks do they now perform?

Many people with mental health problems attend therapy to manage their symptoms. To find a therapist, some seek a referral from a doctor to a psychiatrist or psychologist; others call their insurance companies to find providers in their network or conduct an online search. However, the majority of people who suffer from mental health problems do not seek any kind of treatment; instead, they try to let their issues resolve naturally or use methods like journaling, reading encouraging articles online, and talking to friends to treat their own symptoms.

3. What tasks are desired?

People want to merge the different ways they treat their mental health into one cohesive system. For example, people who use one app for tracking their sleep, one for their diet, and another for their mood want to merge those tracking mechanisms into one application. Furthermore, people who struggle to find a therapist due to cost, location, compatibility, or other reasons want an easier way to pursue therapy.

4. How are the tasks learned?

To learn how to track different aspects of their life, people need to understand how the data is collected. The system we design can convey this knowledge via a tutorial people can view upon obtaining the system, a simple and intuitive interface, and a help section within the design to further clarify the tracking tasks. No special knowledge is needed to learn how to receive a recommendation for therapy. Although people may need to provide some information about themselves, having an intuitive interface should facilitate this process. In addition, we aim to automate the recommendations as much as possible, which will reduce the amount of knowledge people need to have about the task.

5. Where are the tasks performed?

Mental health problems affect people anytime and in any place. Thus, the tasks could potentially be performed anywhere. The one exception may be tracking sleep, which would generally occur at home depending on the person's lifestyle. Regardless of the exact location in which people perform the tasks, at times they may likely perform them under conditions of stress, especially if their mental health symptoms become exacerbated or triggered.

6. What is the relationship between the person and data?

Any data people track may help them determine or recognize if their symptoms have improved and identify any factors that tend to trigger their symptoms. If those people currently attend therapy, they can share their data with their therapist if they wish. Otherwise, people may receive a recommendation for a particular therapist, whom they may wish to contact so they can begin professional treatment with that provider.

7. What other tools does the person have?

People can search online for articles discussing mental health. To find a therapist, they can search for information online, ask their doctor for a referral, or call their insurance to determine if a provider is in their network. After finding a therapist, the person can ask the therapist to understand their condition and help them identify strategies to modify their behaviors, thought processes, or other patterns in their life. Outside of therapy, people may seek friends or family to support them. In terms of self-tracking, some apps and wearables currently exist, which can track certain activities like sleeping and exercising. However, most of the existing systems focus on one specific activity and are not customizable. As of now, we have not found any systems that attempt to automate recommending a therapist to someone.

8. How do people communicate with each other?

Using our system, people will be able to share any data they have tracked with their therapist. Once people receive a recommendation for a therapist based on relevant information they provide, they can contact the therapist with the information our design gives them.

9. How often are the tasks performed?

A majority of self-tracking tasks can be performed continuously with the help of body sensors. With characteristics like mood, however, tracking would have to be performed manually on a more periodic basis, such as once or twice a day. The task of finding a therapist would need to be performed fairly infrequently, especially after people find someone who is a good fit for them. Sharing data with a therapist could be performed once, and then the therapist would have access to a constantly updating data stream unless the client revoked that permission.

10. What are the time constraints on the tasks?

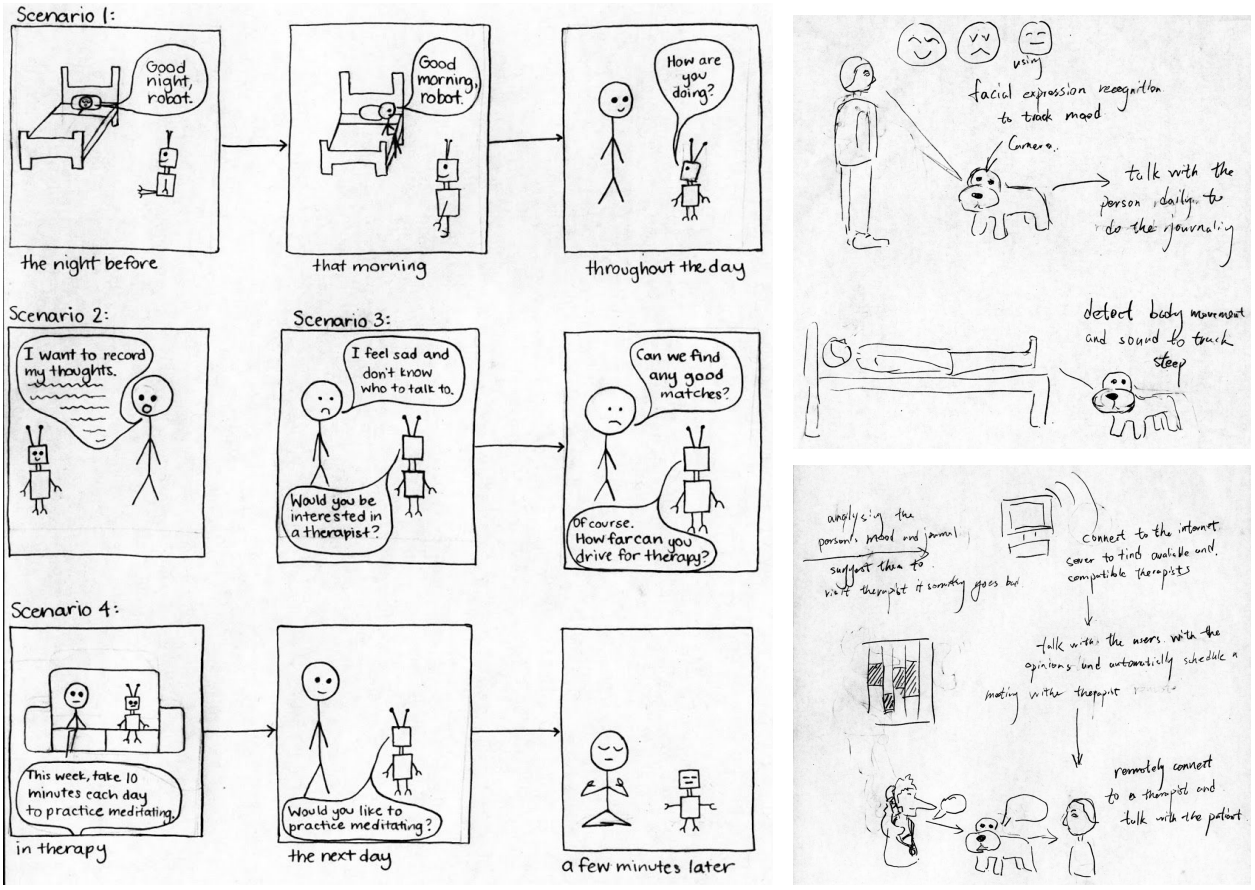
For self-tracking, it is best when people record their data as soon as what is being tracked happens. This avoids the problems of forgetting to record data or inaccurately recording data if one waits too long. Likewise, self-tracking should be done regularly, so that data can be gathered over time and changes or trends can be observed. There are no real time constraints for recommending a therapist to someone; this process may occur whenever the person seeks a recommendation or the system detects it may be beneficial to provide one. However, if a person rejects a given recommendation and wants to view another, the system should give follow-up recommendations promptly.

11. What happens when things go wrong?

People may stop actively tracking data after they interact with the design for a certain amount of time, especially if they enter a mental state in which they cannot motivate themselves to use our design. This makes it difficult to help people manage their mental health when we cannot record data, especially since the information we would most like to know would stem from such events. To address this issue, we want to incorporate as much passive or automatic tracking as possible so that we can collect data without the person needing to actively enter it. In addition, we hope to have our design include some kind of tangible object, like a wearable or a robot, that will serve as a visual reminder for people to track their current emotions or experiences.

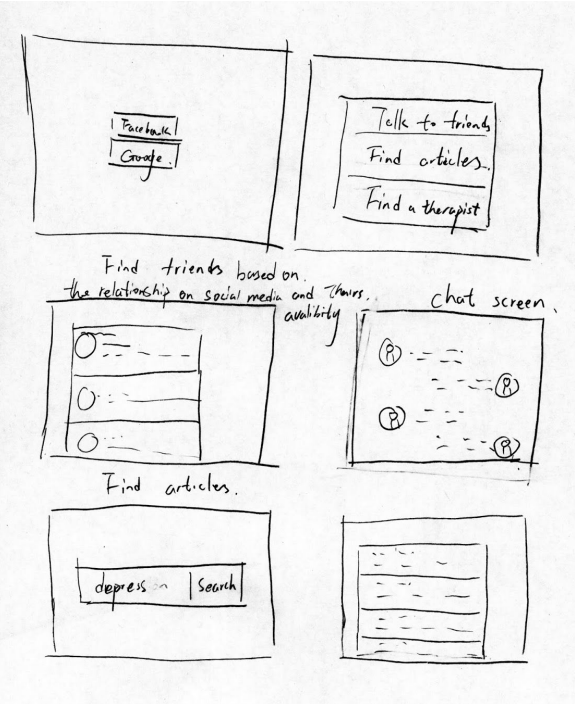
Proposed Design Sketches

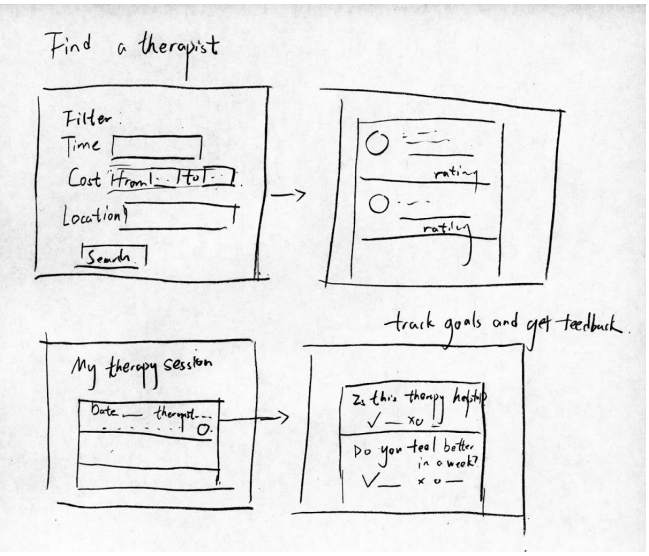
Design 1: A robot companion



Our first design is a robot that can serve as a companion to someone who suffers from mental health problems. The robot is relatively small and compact so that it can accompany people wherever they go. One of the main tasks we will have the robot perform is tracking various behaviors and other factors which have an influence on or are influenced by mental health. Some of these factors include sleep, mood, diet, and exercise. The robot will also allow people to keep a voice journal by talking with it and having those conversations recorded. In addition to tracking mood and behavior, people can bring their robot with them to therapy and then have it track their progress throughout the week on any goals the therapist prescribes. Finally, the robot companion can help a person find a therapist that meets all of their needs, including cost, location, scheduling, and personality.

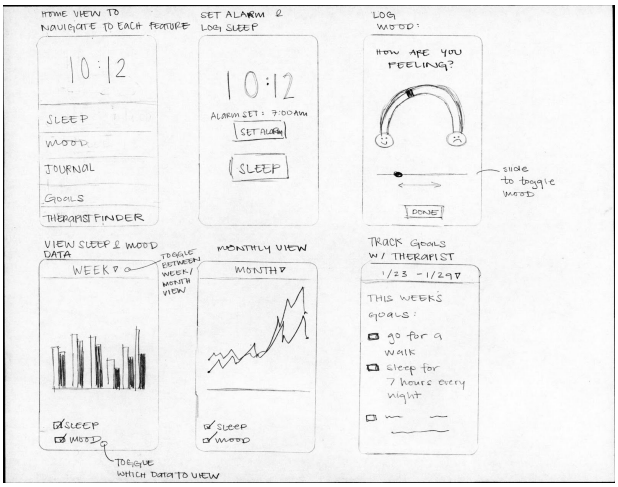
Design 2: A website

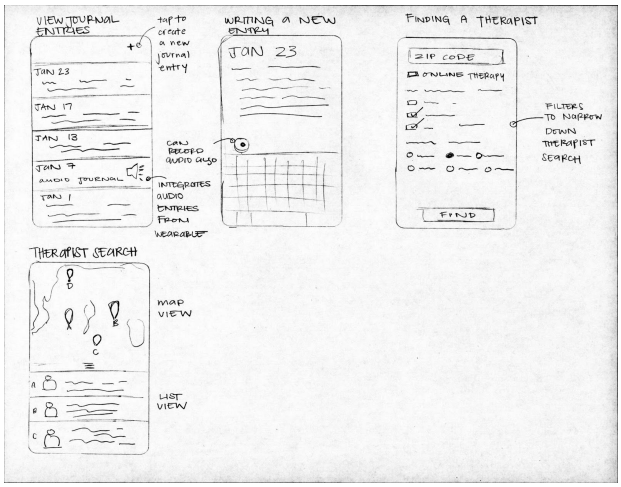


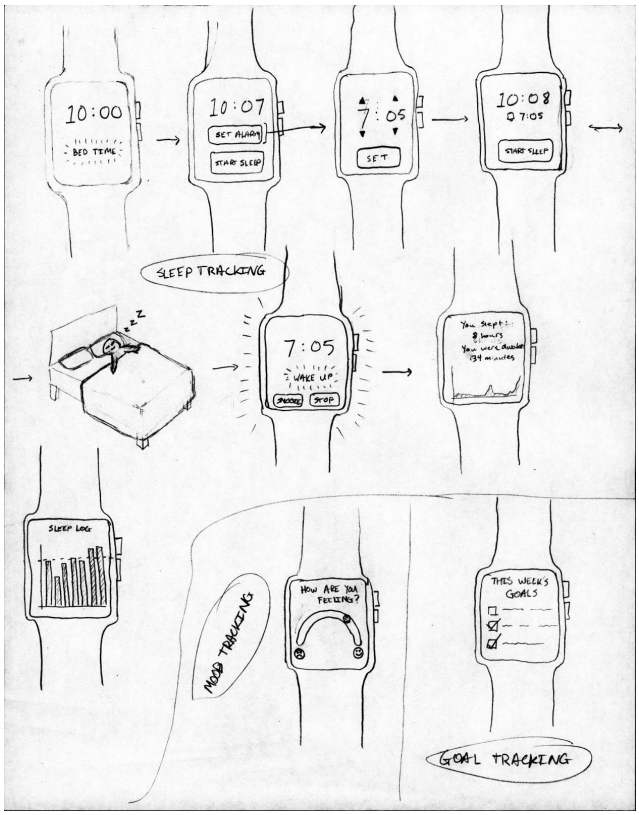


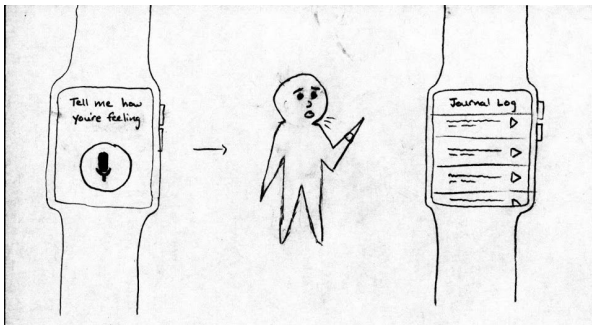
Our second design is a website that provides different approaches for someone to find support for mental health problems. For example, the website can suggest therapists who may be compatible with people based on such factors as the price they can afford, the times they are available, and the location they can access. When people attend therapy, through the website's recommendation or otherwise, the website can help them track the goals their therapist may have prescribed during sessions. In addition, people can use the website to track friends or family who have supported them well or to search for informative and encouraging articles to help them cope with their symptoms.

Design 3: A wearable supported by an app









Our third design focuses on tracking mental health by integrating a watch and an app. By wearing the watch, people can easily track different factors, including their sleep, activity levels, diet, and mood. For example, to track their sleep, people can use the watch to set an alarm for the next morning; the watch then monitors the quality and length of their sleep based on their breathing and movement throughout the night. To view the tracked data, people can view graphs on the app. In addition, the app allows people to journal by writing entries; find a compatible therapist by inputting information about desired cost, their availability, and their personality; and track any goals from therapy after attending sessions.

Final Choice of Design

Based on our design research and subsequent brainstorming, we plan to design a watch supported by a mobile app that will enable people who suffer from mental health disorders to track certain factors like their sleep, diet, exercise, and mood and to find a compatible therapist. From speaking with psychologists Leia Organa and Han Solo, self-tracking can help people recognize if their symptoms have improved over time and identify which aspects of their life may influence their mental health. In addition, those who currently attend therapy can share their tracked data with their therapist; having access to information about their clients' conditions throughout the week can greatly help therapists provide deeper insight into the struggles their clients face. For those who do not currently have access to therapy, receiving a personalized recommendation for a therapist can facilitate beginning professional treatment, particularly given the number of factors that prevent people from seeking professional help. The wearable and app design seemed the most beneficial for these tasks. The watch simplifies tracking by allowing us to automate recording sleep, heart rate, movement, and other factors and by serving as a visual reminder for people to actively track other information throughout the day, such as their mood. Likewise, the accompanying app allows people to view graphs of their data, set new goals, and find compatible therapists. By supporting these tasks, the watch and app will hopefully help people manage their mental health.

Written Scenarios

Scenario 1 (Storyboard 1):

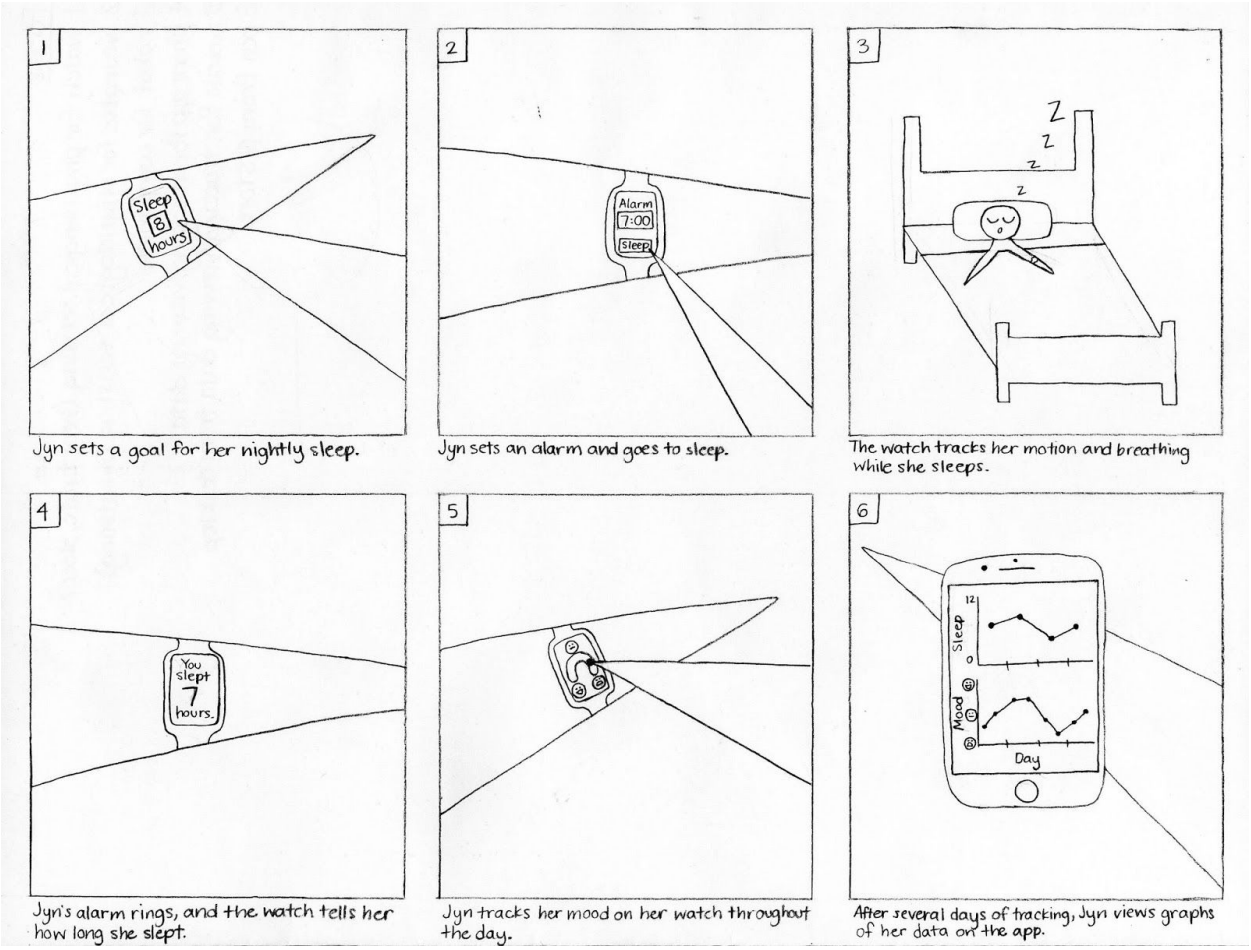
Jyn Erso is a freshman at the University of Washington. Having a stressful and busy quarter, she often sacrifices her sleep to finish homework and study for exams. In doing so, she has noticed changes in her mood. She has become stressed, anxious, and irritable. She wants to start improving her sleep patterns and mood so she decides to use our design. Using her watch, she sets her alarm for the next morning right before going to sleep. Throughout the night, the watch records her sleep time and quality by tracking her movement and breathing. During the day, she frequently logs her mood. Jyn can then view graphs of her sleep and mood data on the supported app for her phone. Overtime, she sees that improving her sleep patterns also improves her mood.

Scenario 2 (Storyboard 2):

Mace Windu is an account who works for a firm in downtown Seattle. After experiencing symptoms of depression and anxiety, he decides to use our design to manage his mood. Upon installing the application on his phone, he fills out a brief questionnaire about himself. He answers various questions about factors like his personality and his health insurance company. On his watch, he logs his mood several times throughout the day for a month. Because of his consistently low mood, our design suggests that Mace pursue therapy and uses his questionnaire data and location to recommend a therapist. He can view the suggested therapist on the app and contact that person or reject the recommendation and search for other possibly compatible therapists.

Storyboards of the Selected Design

Storyboard 1: Tracking sleep and mood



Storyboard 2: Finding a compatible therapist