FamiTree

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Problem and Solution Overview

As people leave home for upper education or to enter the workforce, many people begin to grow apart from their families. With less face-to-face time together, it becomes harder to maintain healthy personal relationships with family who may be at a distance. Many people are not aware of the effort they must put into communicating so they begin to drift apart. Our design seeks to facilitate communication between these busy individuals and their families. It does so by providing a personal interface that positively rewards meaningful communication with family members and aids in building a habit of frequent communication.

Design Research Goals, Stakeholders, and Participants

We chose to complete interviews as we suspected that the largest reason why people did not have better relationships with their families was due to a lack of communication..By using interviews, we could ask targeted questions that would help our participants think about specific situations and relationships and share their thoughts about them. It would be difficult to have a contextual inquiry without urging people to inadvertently change the habits we would observe. Also, many other methods of design research include observations over time, and since maintaining a relationship takes many months and years, it would've been difficult to conduct those methods. Thus, we thought the most informative form of design research would be to interview people and have them reflect on their personal reasons why they might not communicate as much as they would like.

In our research, we interviewed 3 international students about how they felt about their relationships with their families. We focused on international students because they tend to have the most difficult time communicating with family due to distance and time zone differences. By addressing these problems, we would also be helping other people who might be closer in distance to their family members.

Kevin is a 21 year-old international student. He highly values family relationships and he says he does because of the way he was raised and the environment he grew up in (Taiwanese culture and filial piety). He calls his immediate family around once a month. He also has several group chats that consist of both immediate and extended family members.However, he finds it hard to use those group chats because the nature of group chats causes him to ignore them. He emphasizes the importance of family trips in building stronger relationships, but says they are hard to plan, especially since everyone in his family lives in separate places.

Seung is the second participant. He is a 30 year-old international student who's lived a total of 8 years alone, 3 years in Korea and then 5 years in Seattle. He makes a call to his parents once or twice a month, however, his parents would like to make contact with him more frequently. He thinks that he has not built solid immediate family relationships because he has been living apart from his family for such a long time and he has too many responsibilities as a student. Also, he mentioned that the time zone difference makes it harder to contact family. However, he realized during the design research interview that he is lacking willpower and might need a reminder to help him contact his family.

Reeya is a 21-year old international student. She lives in Seattle, while her parents live in Nepal and her brother is in California for college. She keeps in touch with her family using group chats and the occasional phone call. They usually update each other by sending messages and pictures, but she says even with these resources, she still lacks healthy relations with her family. She says this is due to the inability to express emotions in digital communication can match a face to face conversation. She tries to call and catch up with everyone at least 1-2 times per week, but she emphasizes that the time difference is a large hindrance.

Design Research Results and Themes

We noticed that all 3 participants mentioned that either them or their family would prefer an increased amount of communication. This revealed a general sentiment that people who have gone a significant life change find it difficult to maintain contact with loved ones.

One aspect to note is that all three of our participants were international students, meaning a portion of their families are still living in their native countries. This prevents in-person communication and creates a huge obstacle in what times all members of the family would be able to communicate at once due to time zone differences. Although there's no way to eliminate time zones, our design should take into account the time differences and try to find a common time in which family members can effectively communicate. In this way, we can bridge temporal distances.

Another theme was the idea that text communication is less genuine and meaningful as a form of communication. Two participants mentioned that group chats or messaging services were easy to ignore, however, they are a convenient way to have some form of contact with family members. People also seemed to value in-person time more than phone calls, which they valued over messages. All participants that were communicating with family cited some kind of phone-based communication, such as phone calls or text messaging, indicating that their families are already comfortable with and have access to this technology. When considering design, we should try to find ways to increase more intimate communications instead of just messaging. With more meaningful mediums of communication, familial bonds can become stronger.

Also, we found that all of our participants wanted to increase their time communicating with family, but found it hard to do so because of time constraints and other duties. As we saw in the second and third participants, it was also easier for people to keep old habits than to reach out for the first time in a while even if they wanted to do otherwise. Thus, we want to find ways to connect their desires to their actions while also not adding more burdens than need be. Our design should help people develop healthy habits of contacting family members in this way.

Task Analysis Questions

I.   Who is going to use the design?

Adults who have just made a significant life change who are trying to maintain good relations and relationships with their families. The participants we focused on were mostly people living far from their families, for either work or school. It seeks to aid those that are busy with their personal lives who do not have a habit of staying in touch with family but would like to.

II.   What tasks do they now perform?

Participants mentioned calling family members, participating as members of group messages, and going on trips with family to strengthen their relationships.

III.   What tasks are desired?

These people are separated from their families, either by busy schedules, physical distance, or both. They want to have stronger relationships with family members, and this is seen by them as more frequent communication despite their busy schedule. More specific tasks include having video calls with family and spending more in-person time together.

IV.   How are the tasks learned?

Tasks are learned growing up around family and learning how often they want to be contacted or communicated with. By the time people are separated from their families, they've spent a significant amount of time building their relationships. These habits of communication are likely formed before a person leaves their family by participating in how the immediate family maintains in contact with extended family. These habits and

V.   Where are the tasks performed?

Generally via phone communication, whether that's a group chat, a phone call, or video calling of some kind. These tasks are performed wherever is convenient to the person communicating, most likely someplace with reliable cell service or someplace where they can speak freely on the phone, such as at home where there is privacy.

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

The "data" is the quantifiable parts of a person's relationship with others, such as number of messages sent or number of minutes spent in a phone call. While it's hard to measure how much of that time is spent positively maintaining the relationship, most participants

indicated they'd prefer more communication in general. They hope to see their data increase over time to a point them and their family is content with.

VII. What other tools does the person have?

The participants all referenced using cell phones or messaging services. Most families will use a cellular group text, or an app like Whatsapp , Viber , or Messenger to communicate with each other via text and use Facetime for the video chat. There are lots of options to facilitate family communication, like cozi , but most current family-based communication services are focused on families with children under the age of 18 living in the same household. Those apps are also sometimes focused on family organization rather than communication.

VIII. How do people communicate with each other?

As mentioned before, most people will communicate either over the phone or through a messaging service. People would also use face-to-face communication, but this can be difficult when a person and their family are living in different locations. Messaging is sometimes preferred for its ease

IX. How often are the tasks performed?

This depends on the person — some participants call home 1-2 times per week, some participants call home only once per month. However, participants indicated they'd prefer more communication. Organization of trips is at most once a year.

X. What are the time constraints on the tasks?

People we interviewed were either students or professionals, as are most adult individuals. Because of this, people needed to find time in between appointments, meetings, work, and school to make contact with family — in the case of a phone call, they might need to block off 30 minutes to an hour if they haven't caught up with family in a while. In addition, some participants mentioned living in different time zones as their family, which adds more challenges to finding a time that works for both the person reaching out and their family.

XI. What happens when things go wrong?

It can depend on the person's family, but in most cases, a lack of communication means that the relationship will become weaker or that the other person in the relationship might not feel valued. This often doesn't have immediate effects, but the long-term effects of a poor family life, in the eyes of an individual, can cause stress and degrade a person's quality of life, especially if they value family as a large part of their identity. It can become frustrating during times of emergency when trying to seek emotional and mental support from their loved ones, but cannot due to distance and time hindrances.

Proposed Design Sketches

I. Refrigerator Picture Frame

There will be a digital screen that can be attached onto the door of the refrigerator. People will be able to use the screen to display pictures they've taken and adjust the size and position of the picture on the screen. The screen will have the ability to connect with other screens in other family members' homes so that whenever someone puts a picture on their screen, it will display on the other screens also. Thus, it allows families to be updated about other family member's lives through pictures on their refrigerator. Because it is a device that many people see, it will help build a habit of reaching out to family and provide people with things to talk about.
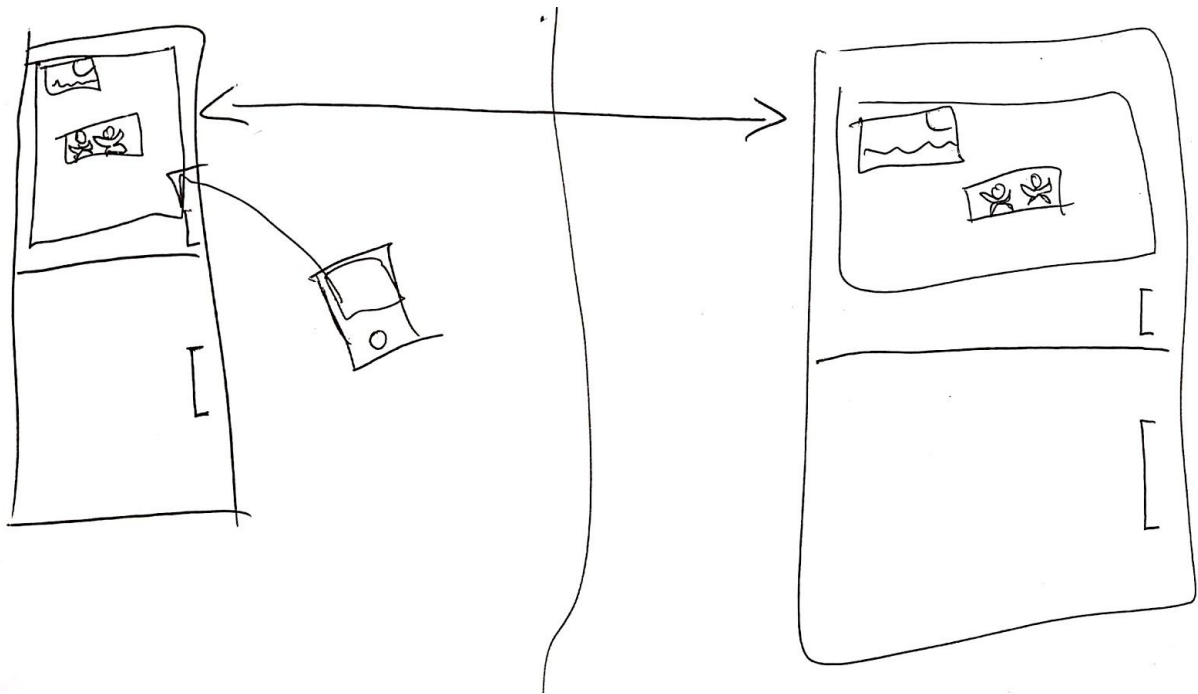
### II. Family Tree Contacter

There is a fake tree with different kinds of fruits where each fruit represents a family member. Each family member will also have a tree. Whenever a family member wants to contact you or has made an effort to contact you, the fruit will light up. If a fruit has lit up, the person can look at the fruit to see if their family member has left a message for them, if they have, the can look or listen to it. Additionally, they can use a fruit to leave a message or try to contact their family member, acting like a miniature phone. Also, whenever a person is free to talk, there is the option to allow family members to know that which will be indicated by a small image at the base of each family member's tree representing the person who is available to talk, helping coordinate a time to chat together. The physical representation of the fruit will also

indicate how frequently a family member has been contacted (e.g. a bright, ripe fruit for someone that's been contacted a lot and a gray, dying fruit for someone not contacted at all). The blinking lights and health of each fruit will help with habit-building and being able to leave meaningful notes helps with keeping family up to date on family.
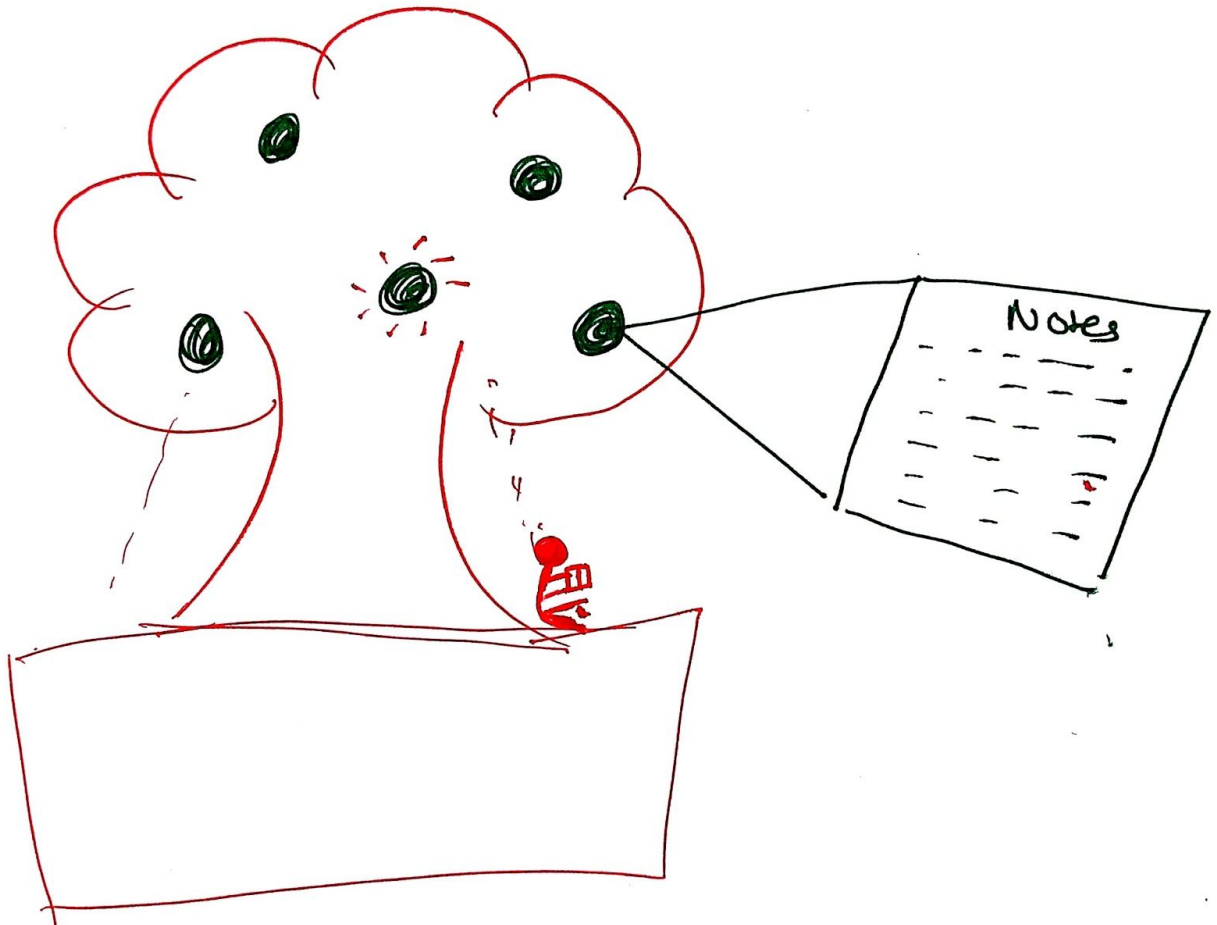
III.   Pendant

Each family member will have a pendant that they can keep around their neck. The pendant has the ability to connect with other pendants. When a pendant is tapped, the corresponding pendant will light up, notifying the other family member that the other person is thinking about them or wants to contact them. Different colors represent different family members. The pendant also has a built in mic that lets them record and send voice messages. Additionally, there is a camera attached to the pendant, allowing video to be recorded and sent to other people or used in video calling.
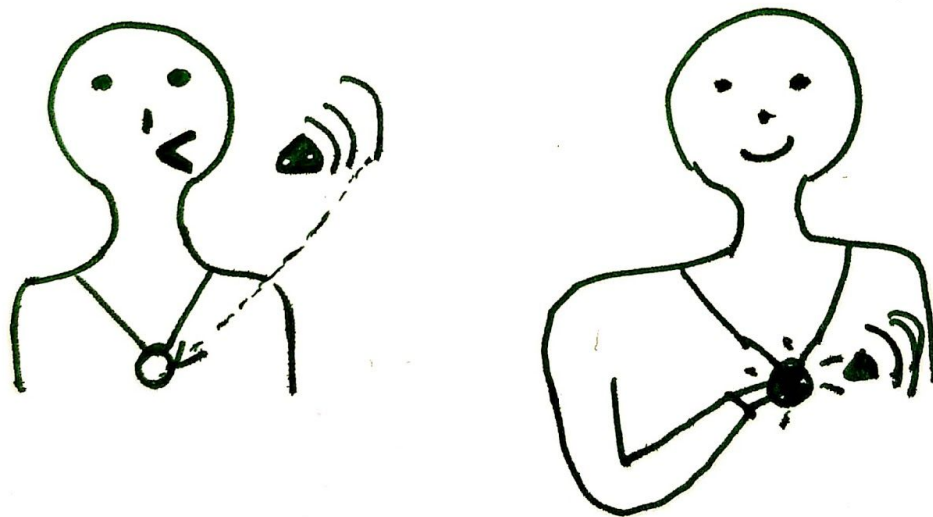
Final Design

Among of all our designs we chose to work off the tree design because it was the most meaningful and personal medium to help people maintain contact with their family. We decided that we would create a digital frame with a 3D model of a tree with fruits on it. This design would be the most personable and be expressive in what it could display.

With the help of our design research, we found out that many individuals who had difficulties maintaining regular communications with family members was mainly due to the time differences. We focused on tasks that would help solve this problem. Frequent communication was the key to maintaining family relationship, but finding that common time was difficult.

We chose '**find a common time to communicate with family**' and '**build a habit of reaching out to family**' as the tasks for our design. We made the decision to choose these because they helped us cover the ultimate goals of our project proposal; to maintain a healthy relationship with the family members living in different time zones amongst a busy personal life. Since finding a common time to communicate and building a habit of reaching out were closely related to our goal, we chose these tasks and made our design such that it would meet these requirements.

Written Scenarios

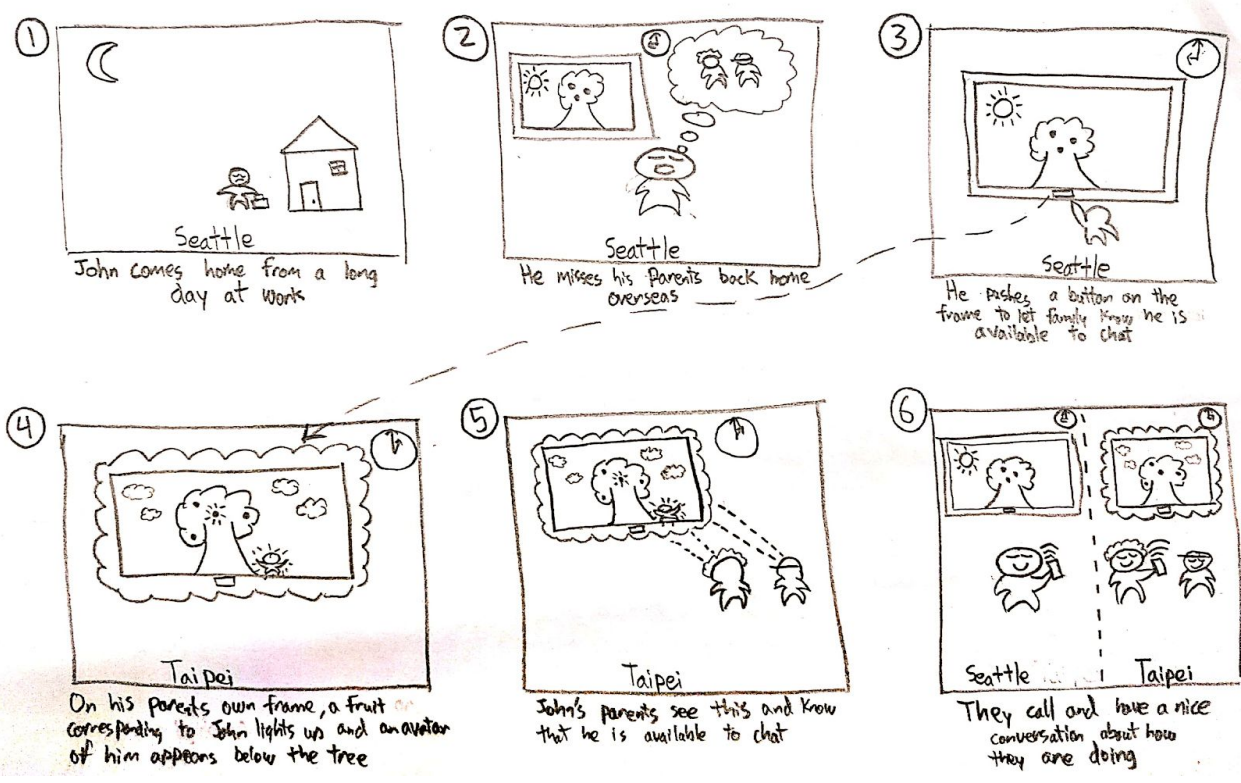## I. Find a common time to communicate with family via telephone or video calls

John works in the United States while the majority of his family lives in Taiwan. After a long day of school he comes home and misses how he used to be able to talk to his parents about his day everyday when he used to live with them. He wants to talk to them but doesn't want to bother them by calling them right away since he knows that it's early morning in Taiwan and doesn't know if his parents are awake yet. So he goes to his tree and presses a button on the frame so his parents can see that he's available to talk. In Taiwan, John's parents sees John's fruit light up and a picture of John appear on the frame. They see that John probably just got home from school and he's available to talk so they call him and John talks about his day.

II. Build a habit of reaching out to family

Monica is a young professional who had to move far away from her family for work. She often stays late at work so she usually comes home very tired and forgets to contact her family. Thus, she decided to get FamiTree to help her build a habit of reaching out to family. One night, after coming home from work, she sits down to eat dinner and starts to watch a new TV show. However, right after finishing dinner, she notices a pulsing light on her tree reminding her to contact her grandma. After seeing the alert, she realizes that she hasn't contacted her mom since last week and decides to talk to her mom instead of watching TV. The next day, Monica realizes another pulsing light on the tree, but this time, it's reminding her to contact her grandma, so she calls her grandma. Everyday Monica sees the tree and gets used to quickly noticing any alerts on the tree reminding her to contact her family. After a while Monia develops a habit of reaching out to her family with the help of the alerts from the tree.
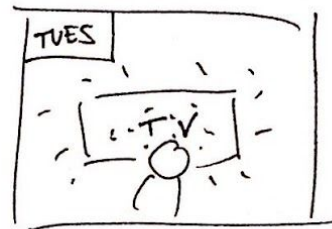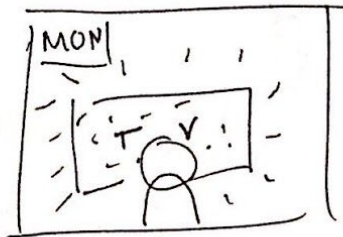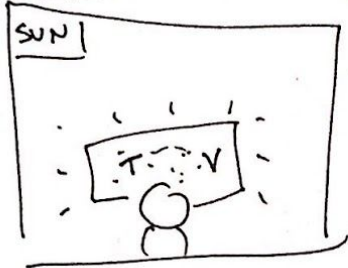
Storyboards of the Selected Design

I. Find.a common time to communicate with family via telephone or video calls

① Seattle
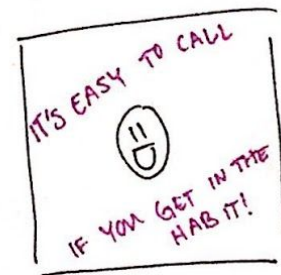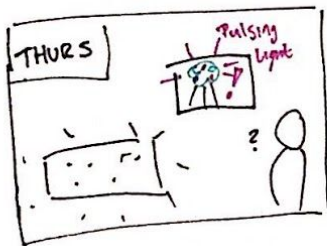John comes home from a long day at work

② Seattle
He misses his parents back home overseas

③ Seattle
He pushes a button on the frame to let family know he is available to chat

④ Taipei
On his parents own frame, a fruit corresponding to John lights up and an avatar of him appears below the tree

⑤ Taipei
John's parents see this and know that he is available to chat

⑥ Seattle   Taipei
They call and have a nice conversation about how they are doing

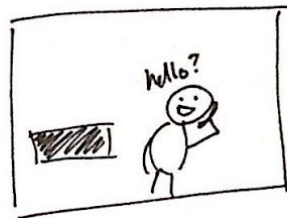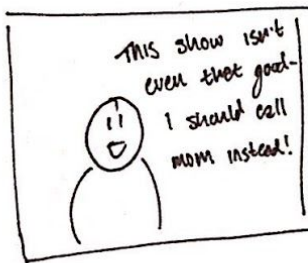## II.   Build a habit of reaching out to family
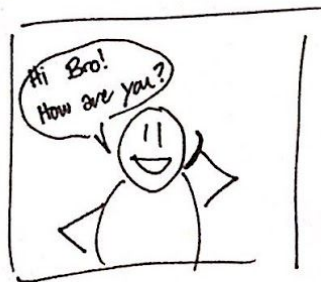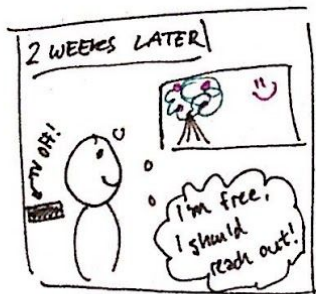
Contribution

Eliza Huang - 15% Copied over information into sections
Jinsoo Choi - 5% Proofreading
Pratibha Kharel - 5% Proofreading
Tyler Mi - 65% Formatted and revised document
Vivian Lappenbusch - 10% Formatting and text revisions