

Designing Habit: Final Thesis

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Integrative Project Section 005

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Introduction

Since middle school, I have been using organization to manage my life. This coping mechanism grew more difficult the older I got, and when I began to experience severe depression in late high school and early college it became ineffective altogether. With each depressive episode from which I recover I work harder to prevent the occurrence of the next, but my attempts seem more and more futile with each failure. I have worked in therapy to figure out what I need to change about my behaviors and I have used manual habit-tracking, journaling, list-making, schedule-making, and a variety of habit-building applications in an attempt to build and maintain those behaviors. Unfortunately, no method that I have tried has survived a depressive episode; they keep the depression from worsening, to a degree, but it progresses nevertheless. Eventually, I do get depressed and the depression continues to worsen until the only thing left for me to do is to strong-arm myself out of the episode, which is not an easy thing for someone with depression to do.

As a returning student with a B.A. in Psychology from Connecticut College, I decided to use this integrative project as an opportunity to explore the connection between my existing degree and my anticipated B.F.A. in Art from the University of Michigan. Specifically, I wanted to utilize design to create something that could help enable people with depression to build healthy habits; as I considered what an application like this might entail, I found myself with a series of questions. Was there a reason that none of the coping methods that I've tried have worked long-term? I found it difficult to believe that I was the only person who has struggled with this particular issue, but I did not know how universal my problems were. How did my experiences compare to those of other people with depression? How could I leverage my psychology education to better understand this issue? Finally, with these questions in mind, how could I use my design abilities to create an innovative app that will help people with depression build and maintain healthy habits?

Contextual Discussion

Empathy in Design:

When designing for a problem that has a negative impact on many people's lives, it is important to work in a thoughtful and intentional manner. Information about health can be sensitive and even confusing when viewed over an extended period of time. In the collaborative project, *BRUISES: The Data We Don't See*, Giorgia Lupi and Kaki King worked to visualize King's young daughter's experience with the autoimmune disease Idiopathic Thrombocytopenic Purpura, or ITP. King collected daily data on her daughter's symptoms, their family activities, and her own stress levels.¹ Altogether, the experience and pure data were too much to process. It was only through visualizing the data in a different manner that King began to see patterns. Figures 1 and 2 illustrate the difference between pure and interpreted. Through the layers of data in this visualization, King was able to finally see the larger picture of her daughter's illness.

This visualization was designed specifically to match King's needs and data set. Similarly, I want to keep the unique needs of my potential users in mind while designing for them. Specifically, when designing for people with depression, I want to reduce potential negative reinforcement that could discourage individuals from engaging with that which is meant to help. Instead, I want to visualize only the positive, making a visualization that showcases each user's unique journey and accomplishment. Each person's journey through depression is different and each person has different goals in life. What is an easy task for one person might be extremely intimidating to another; similarly, for one individual a task that is easily manageable one day could seem almost impossible the next. Therefore, I need to make something flexible enough that it can work for people with different values, goals, and varying levels of functionality over time.

1. Lupi, Giorgia, and Kaki King. "BRUISES — The Data We Don't See." giorgialupi. Accessed April 10, 2020. <http://giorgialupi.com/bruises-the-data-we-dont-see>.

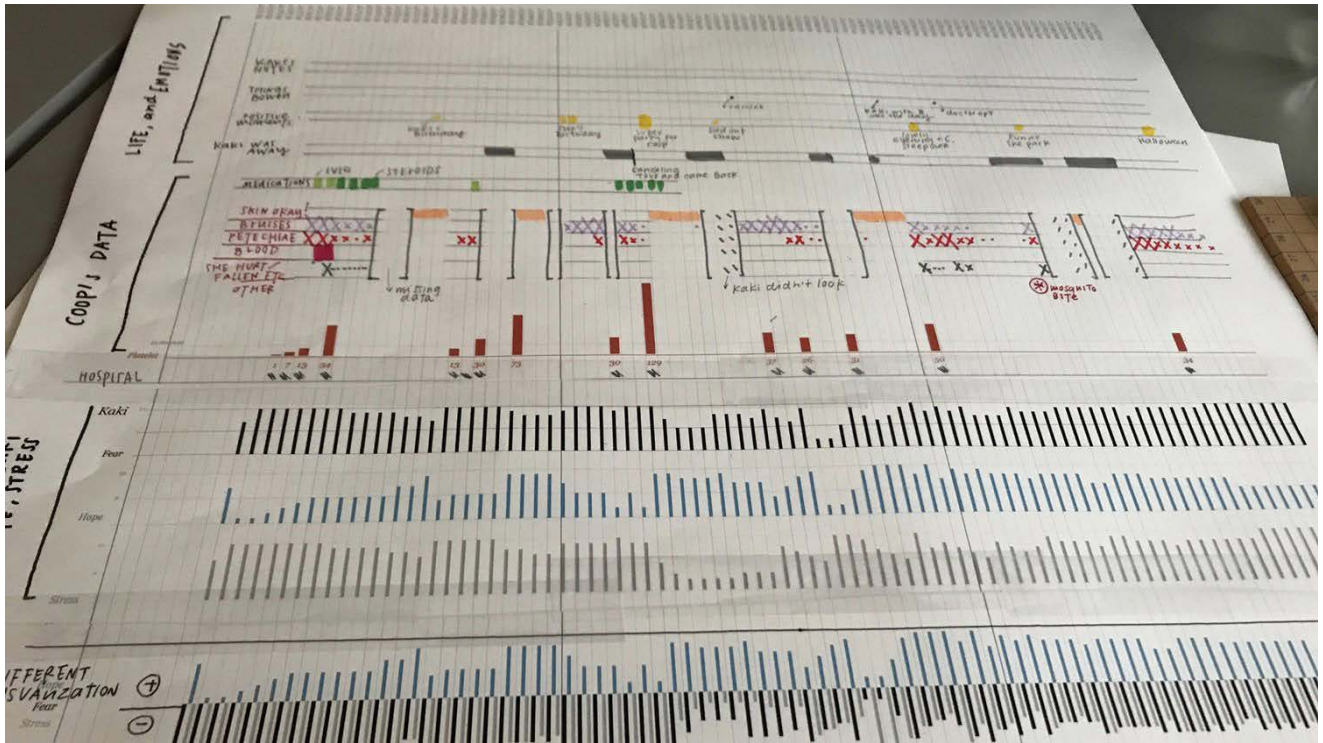


Fig. 1; Giorgia Lupi; Data chart for *BRUISES: The Data We Don't See*.

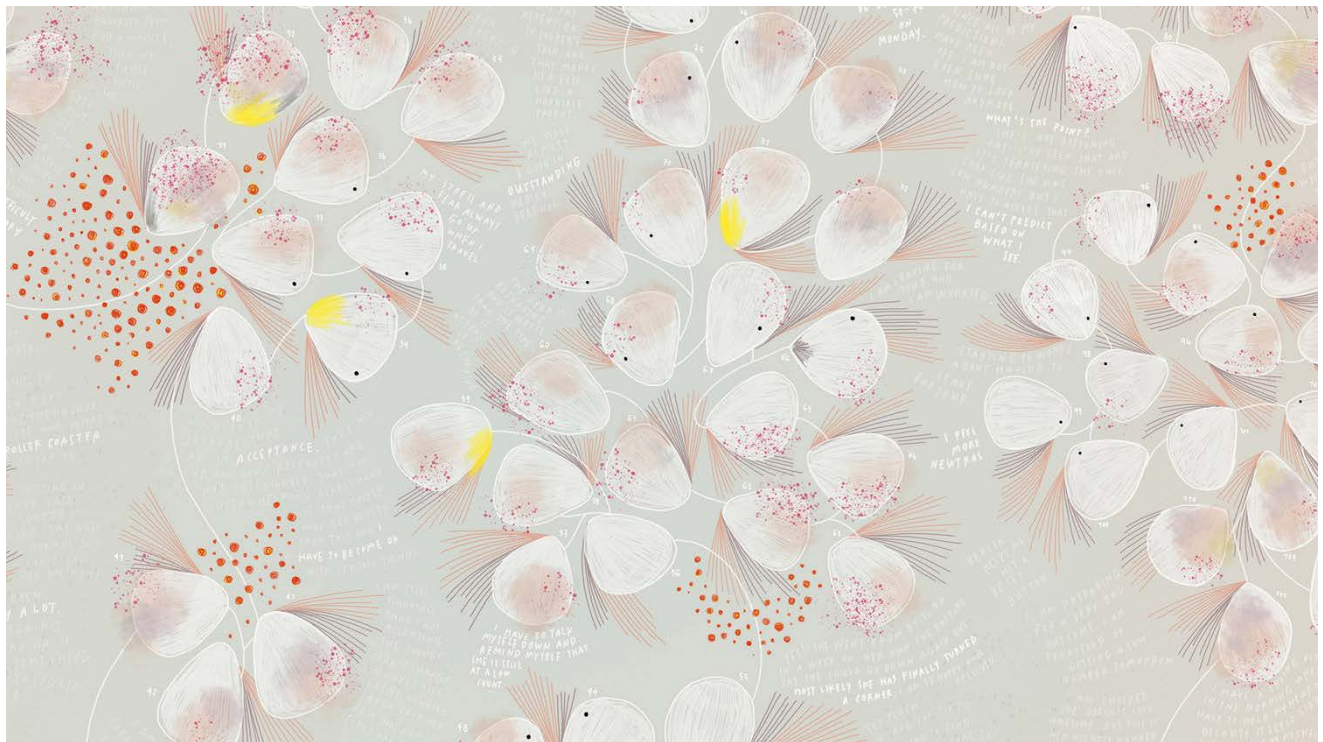


Fig. 2; Giorgia Lupi and Kaki King; *BRUISES: The Data We Don't See*, detail.

Behavioral Activation:

There are many different types of treatments for depression that are comparably effective, ranging from in-person therapy sessions to pharmaceutical intervention. Cognitive Behavior Therapies, or CBTs, are known for making a measurable change in a limited amount of time. These therapies are based on both cognitive and behavioral theories of depression which suggest that depression results from negative cognitions and maladaptive behaviors. Specifically, Behavioral Activation is a CBT that focuses on the treatment of depression by addressing a reinforcing loop of inactivity and negative thought patterns. Behavior becomes habit through either positive or negative reinforcement. Positive reinforcement, like a reward, makes a behavior more likely to occur in the future, while negative reinforcement, like punishment, makes a behavior less likely to occur.²

Figure 3 illustrates a primary tenet of Behavioral Activation; when someone is depressed they stop doing things that matter to them, and this inactivity prevents the opportunity for positive feedback. In Behavioral Activation, depression is then treated by reintroducing activity that matters to the affected individual.³ This may seem like a fairly simple concept, but even with the assistance of a therapist it requires a lot of work and problem solving to make that change stick.⁴ One of the key barriers in this process for an individual with depression is that changing behavior and doing new things (or things they have not done in a while) can be so stressful of an experience that avoiding the change becomes a reward in itself.

2. Nolen-Hoeksema, Susan. 2007. *Abnormal Psychology*, 4th Ed. New York, NY: McGraw-Hill. <http://search.ebscohost.com.proxy.lib.umich.edu/login.aspx?direct=true&db=psyh&AN=2007-18972-000&site=ehost-live&scope=site>. 182-183.
3. Pass, Laura, Elizabeth Hodgson, Hannah Whitney, and Shirley Reynolds. 2018. Brief Behavioral Activation Treatment for Depressed Adolescents Delivered by Nonspecialist Clinicians: A Case Illustration. *Cognitive and Behavioral Practice* 25 (2): 208–24. doi:10.1016/j.cbpra.2017.05.003.
4. Martell, Christopher R.; Dimidjian, Sona and Ruth Dunn. *Behavioral activation for depression: a clinician's guide*. New York: Guilford Press, 2010. Print. 110-127.

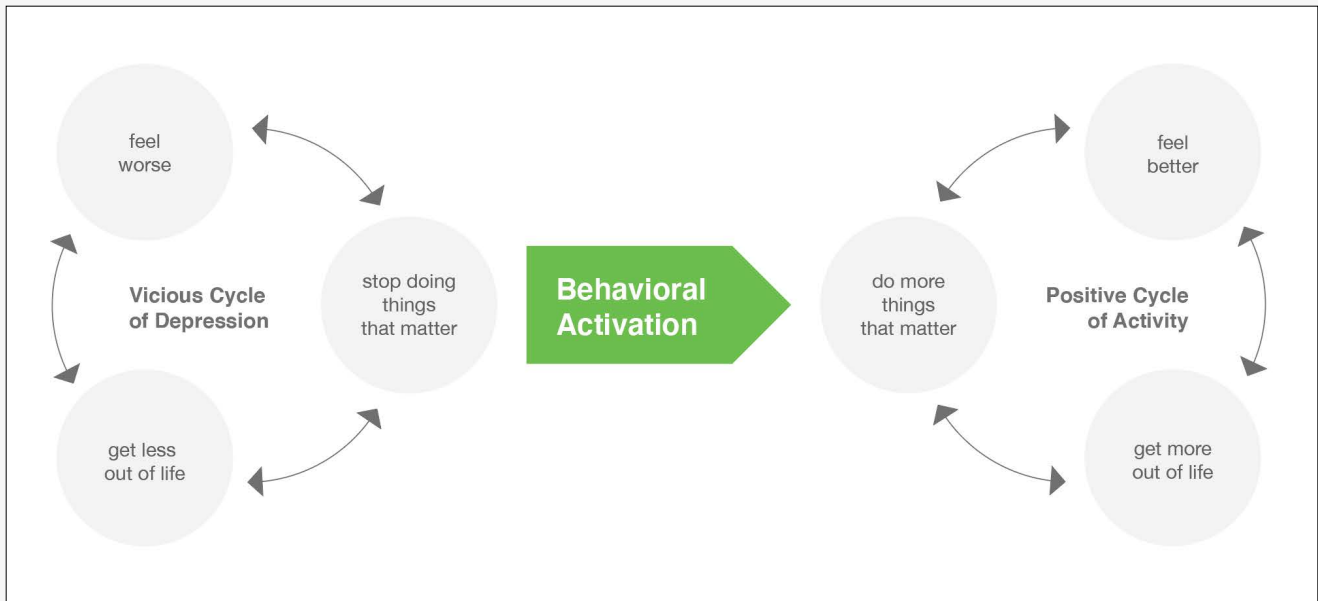


Fig. 3; Pass, Laura, Elizabeth Hodgson, Hannah Whitney, and Shirley Reynolds; Brief Behavioral Activation Model.

Avoidance can be mitigated by decreasing the potential for negative reinforcement while increasing the potential for positive reinforcement. Negative reinforcement can be lessened by setting reasonable and specific goals, while positive reinforcement can be strengthened by helping patients set goals that matter to them and relate to their values. This is a complicated process that is ideally administered by a trained clinician, but depression is often recurring which means that effective treatment often includes a maintenance therapy, wherein treatment is followed by continued drug therapy or periodic check-ins with a therapist.⁵

5. Nolen-Hoeksema, Susan. 2007. *Abnormal Psychology*, 196.

App Review:

Unfortunately, continued therapy or medication is not always feasible, which means that individuals may seek out alternative solutions. There are hundreds of mental health applications available on the app store, but few of them are proven to have any positive effect on its user's wellbeing. Marli Mesibov outlines the problem in her essay *Designing Experiences to Improve Mental Health*. Mesibov and her team found two main problems that make most mental health applications on the market ineffective; there is a disconnect between designers and clinicians and another between their processes. While the design process is fast and iterative, the process of clinically testing requires a slow and deliberate attitude. Mesibov outlines six principles that should be followed in order to design an app for mental health that will actually help people: apps should be human, evidence-based, accepting, lasting, tested, and holistic.⁶

Taking these standards forward into an app review, only a handful meet these criteria. Amongst the myriad applications that are marketed as mental health apps, there is remarkably little overlap between habit-building and depression. *Daily Feats* belongs to a suite of apps called Intellicare, which was developed by a team of clinicians at Northwestern's Center for Behavior Intervention Technologies (CBITs).⁷ *Daily Feats* helps to treat depression by encouraging the completion of meaningful behaviors, much like the theory of behavioral activation (Figure 5). Although I will be critiquing *Daily Feats* below, I want to be clear that overall, this app and app suite are successful. They were developed by mental health professionals and built off of existing, empirically-tested therapeutic treatments. They have also been tested in clinical studies to show their effectiveness, which means that from a research standpoint it is more advanced than the majority of mental health apps available on the app store right now.

When a user opens *Daily Feats* for the first time, the on-boarding process asks them to choose which of four statements they most agree with (Fig. 4). After they choose a statement, they are assigned to one of four corresponding levels of depression. With their assignment, they receive four pre-populated daily tasks or "feats" customized to their level of depression (Fig. 5). This seems counter-intuitive when compared to

6. Mesibov, M. (2018). *Designing Experiences To Improve Mental Health*. Smashing Magazine. Accessed 18 Jan. 2020. <https://www.smashingmagazine.com/2018/10/designing-experiences-improving-mental-health/>

7. Mohr, David C., et al. *Daily Feats*. Version 8.1, Northwestern, 2015. Apple App Store.

Behavioral Activation, where the goals patients set for themselves are related to the activities that they themselves value, which means that the values can not and should not be universalized. While users can create their own habits which will be put into their own separate category, there is no guidance in place for choosing habits that they actually value (Fig. 7).

Beyond that, the process of shifting which feats are available after the initial questionnaire is entirely manual (Fig. 6). This process requires the individual with depression to be self aware enough to know when they are ready to switch between behaviors and levels. Additionally, because depressive episodes wax and wane, this feature could negatively emphasize any downward shift in functionality. Rather than dividing an individual's functionality into levels and creating tasks for each of those levels, it might be more effective to divide one goal, for example exercise, into tasks of different levels so that no matter the user's level of functionality, they can still feel like they are working towards a goal that they value. My final critique of *Daily Feats* is that the user-interface is pretty minimal. At its core, it is simply a task and habit tracker. Other than the users' own desire for self improvement, there is little else to holistically encourage them to continue engaging with the app.

When any app can market itself as a mental health app, it is difficult for users to know which ones have gone through the rigorous clinical testing. Because of how time consuming the process of clinical testing is, it is difficult for the apps that were designed in this manner to compete with ones designed to go to market and make a profit. Ideally, rigorously tested apps should be appealing and engaging to users. There is little else to encourage continued engagement with clinically sound but unexciting apps. By introducing gamification elements, a developer can bridge the gap between clinically tested (but unexciting) apps and engaging (but unproven) apps.

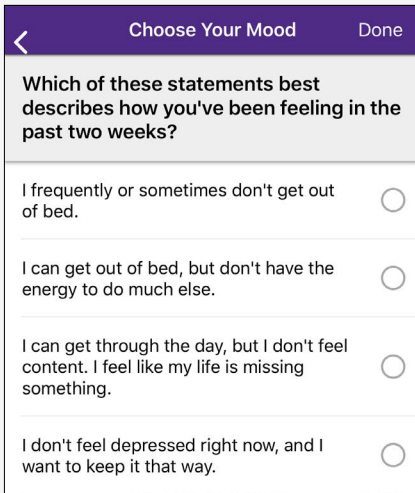


Fig. 4; *Daily Feats*, On-Boarding.

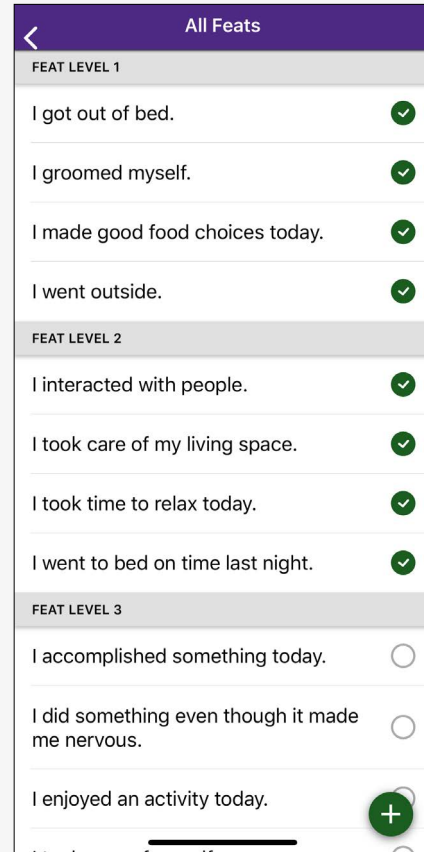


Fig. 6; *Daily Feats*, Feat Management.

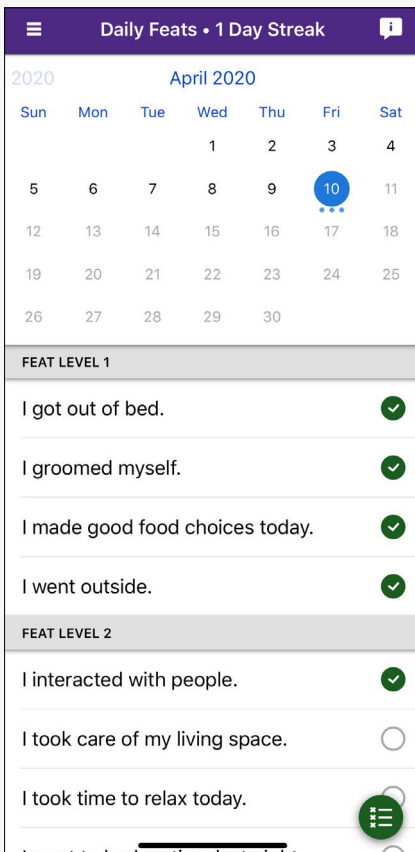


Fig. 5; *Daily Feats*, Main Screen.

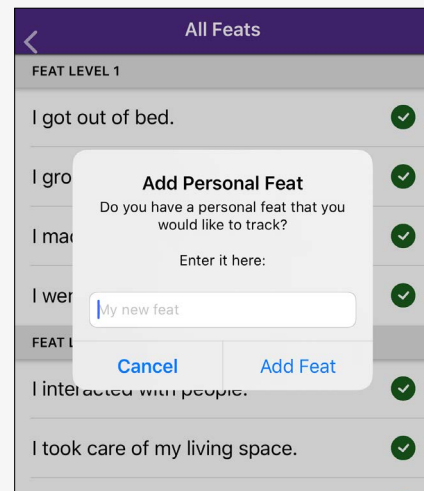


Fig. 7; *Daily Feats*, Feat Addition.

Methodology:

The methods I used for this project were ethnographic research in the form of in-person interviews, iterative prototyping of the app combined with brief usability think-aloud sessions, visual exploration of the data visualization, and an extended low-fidelity usability session. These methods allowed me to build on the literature review and develop the app prototype in various ways.

The ethnographic research helped me to ground psychological theories from the literature review and expanded my understanding of my potential user's needs past my own experience with depression. The iterative development of the prototype enabled me to explore different methods of expression of the concept I'd developed thus far. The think-aloud sessions, wherein users would speak through their experience navigating the prototype, helped me to understand what users were seeing while using the app as well as the where they were feeling frustrated. At the same time, I explored how I could communicate the entered data visually to understand how much I could include in such a small graphic without losing information. After solidifying the prototype and the visualization, I recruited a few people to complete an extended process, which allowed me to observe how they handled the goal-setting process and collect real-world data of people completing a relatively long-term goal.

Ethnographic Research:

After the literature and app review, I conducted ethnographic research in the form of user interviews. I interviewed twelve people, ten of whom had experience with depression, about their experience with mental health and developing habits. I asked my interviewees what helps them feel less depressed and what helps them to feel better when they are depressed. To my surprise, the answers to these two similar questions barely overlapped: they answered that doing an enjoyable activity, like dancing, helping others, or eating, improved their mood, whereas doing more basic things, like cleaning and leaving the house, helped them to feel less depressed. Initially, I separated the answers to these two questions into two categories — self-care and self-actualization, or activities that make an individual feel like they are enacting their ideal self. As I continued working with these categories, I realized how dependent they were on my own values and the questions that I had asked.

With this realization, I returned to materials for developing goals for behavioral activation, outlining twelve various values which I then divided into three categories: Personal Growth, Relationships, and Wellness.⁸ By creating habits from goals that correspond to the values with which one identifies, avoidance is discouraged and approach is encouraged. At the same time, fear of lack of progress and the reward of avoidance response is removed by setting reasonable and sustainable goals, encouraging limited avoidance and allowing a healthy amount of discouraged approach. One of the important design choices I made with this prototyping was limiting the duration of goals in order to decrease the feeling of burnout. This feeling of burnout is why, for example, so many people fail to follow through on their New Year's resolutions: the duration of their resolution is so long that it is difficult to stay motivated. Another way that I made the goals more manageable was by requiring the creation of three habits of varying levels of difficulty for each of the goals set, while limiting the number of goals to one in each of the three larger categories above.

Next, to gain insight into the process of habit-building, I asked the same group about their actual and ideal morning routines. Overall, there was a stark difference between the individuals who had dealt with depression and those who had not. Individuals who had dealt with depression had more variation in their morning routine and had quite a large gap between their ideal and actual morning routines. I then coalesced the gathered information into examples of different routines.

8. Behavioral Activation for Depression. (n.d.). <https://medicine.umich.edu/sites/default/files/content/downloads/Behavioral-Activation-for-Depression.pdf>

Ideal:	Actual:	Extreme:
5:30am: Wake up	8:15am: Wake up	8:15am: Turn off alarm
Work out	Run to class	Stay in bed
Shower		
Do homework		
Cook/eat breakfast		

While a variation of the “actual routine” may be typical for many college students, the disparity between the ideal and the actual routine is not; the difference is so large that it would take a monumental amount of effort to switch between the two. Additionally, there was an amount of judgement or disappointment on the individual’s part that they had “failed” to do part of their routine. In the extreme case, the self-judgement got so extreme that upon missing some steps waking up and dealing with other external stress, they would stay in bed later into the day and miss other important commitments.

From this line of questioning, I began to think of this same avoidance behavior within the context of an app. Therapy is typically done in person, with negative repercussions for missing a session, but having an app check in on users instead of a real person is a different experience. In my personal experience, I have found productivity apps that work for a period of time but if I fall behind the idea of opening the app and addressing my status becomes stressful, especially if the app uses negative reinforcement strategies. To deal with that, it often seems easier to avoid the application and dismiss any notifications they get from it, which is a reinforcing behavior because the ambient stress from the app becomes more extreme the longer they ignore it, but ignoring it feels like a reward because they do not have to deal with it at that particular moment.

Iterative Prototyping:

Iteration was a necessary method in my process because of how varied the symptoms, causes, and treatments for depression are. By drawing from the theory of behavioral activation, I was able to focus on building habits from values. My first sketches for this prototype resembled *Daily Feats* and other productivity applications but the functionality is more minimal to leave more room for customization.

Originally, I reserved one of the tasks for opening the app, which would provide a reason to open the app even when the user became worried that they had done nothing. However, this idea being an outright task is a little heavy-handed. Moving forward, I explored ways to make the use of the app positive and enjoyable so that opening it would be a reward in itself. The literature review and ethnographic research also inspired the idea of setting multiple levels of tasks for a single value/goal, which would enable an individual experiencing a depressive episode to continue making progress, even if it is not to the same degree each day.

To make the use of the app more engaging, I considered the use of an avatar, a digital pet, and a plant. I decided that a plant had the least potential for negative reinforcement and most for customization. This plant will grow as the goal is completed, providing the user with a positive visualization of their progress. Initially, I wanted this app to have a minimal single page experience, but I realized that having multiple goals with three daily tasks each on a single page would feel overwhelming, crowd the screen, and occupy space needed for the plant visualization. Additionally, combining that many data points into a singular visualization without losing information would be almost impossible, thus I decided to of the goals into three separate screens, each with their own visualization.

Fig. 8.
Initial Concept.

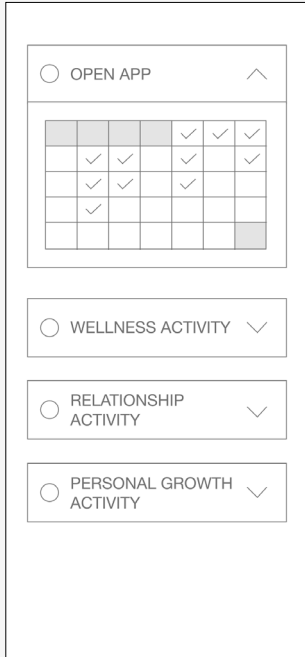


Fig. 9.
Initial Concept, Task Levels.

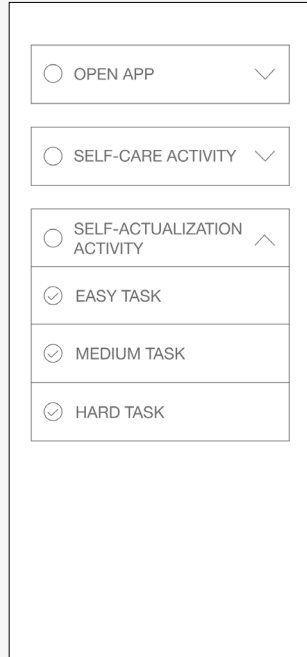


Fig. 10.
Plant Concept.

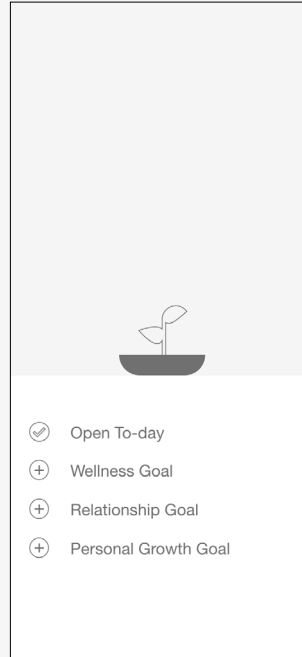


Fig. 11.
Plant Concept Extended.

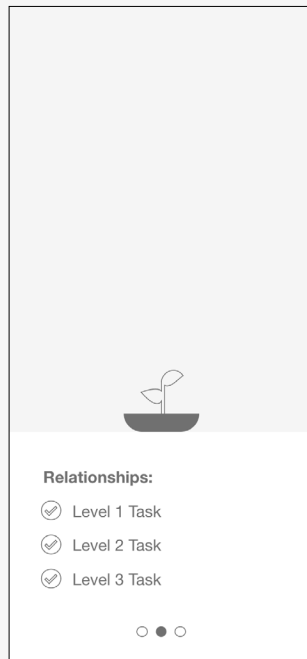
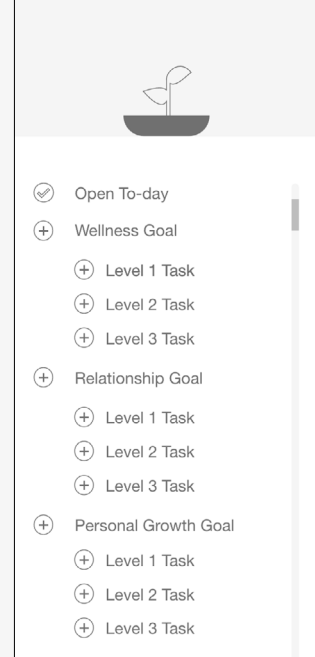


Fig. 12. Plant 1,
Relationship Goals.

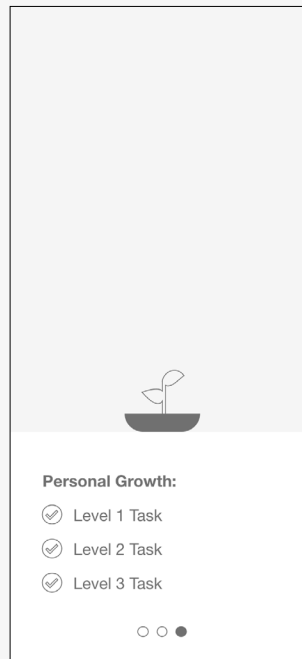


Fig. 13. Plant 2,
Personal Growth Goals.

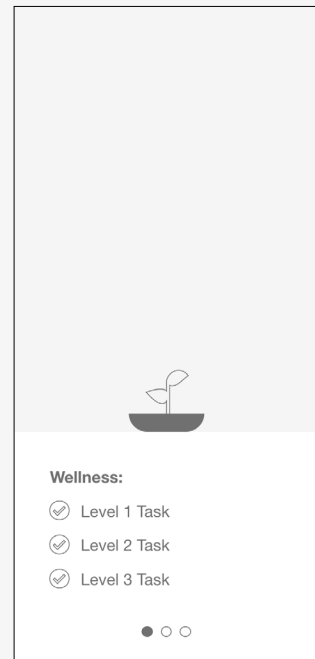


Fig. 14. Plant 3,
Wellness Goals.

The idea of setting goals based on values seems straightforward, but there was a lot of nuance and necessity to complete a more step by step process. In my initial layout, the goal-setting process took five screens, all of which were entirely separate from the main functionality of the app (the screens with the growing plant). In think-aloud sessions, users were frustrated with the number of steps needed to complete one goal. For someone to use this app as a regular tool, a four-step goal-setting process is overly cumbersome.

Through iteration, I was able to condense the previous four-step process into two, while providing more guidance in goal setting and task selection. I was also able to better combine the main screen of the prototype with the goal-setting process, thus creating a more cohesive user-experience.

Fig. 15. Initial Goal-Setting, Screen 1.

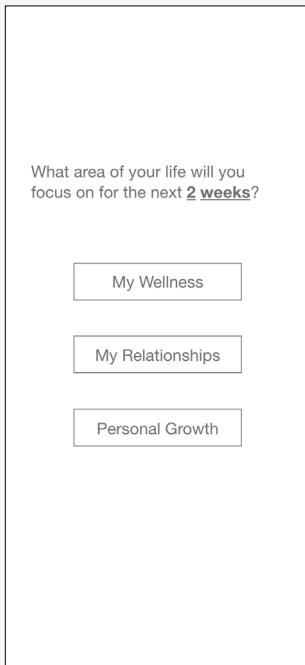


Fig. 16. Initial Goal-Setting, Screen 2.

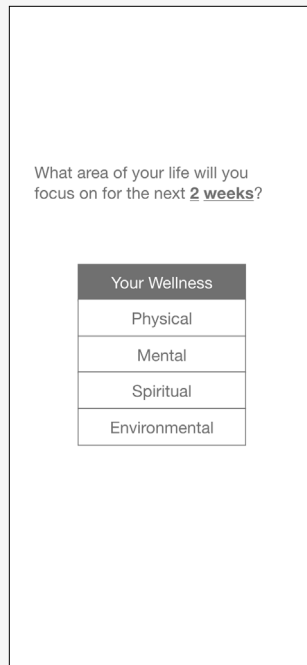


Fig. 17. Initial Goal-Setting, Screen 3.

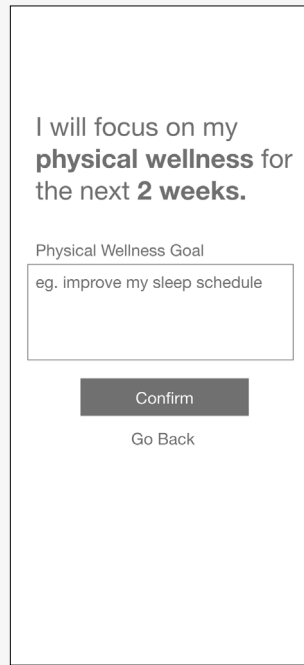


Fig. 18. Initial Goal-Setting, Screen 4.

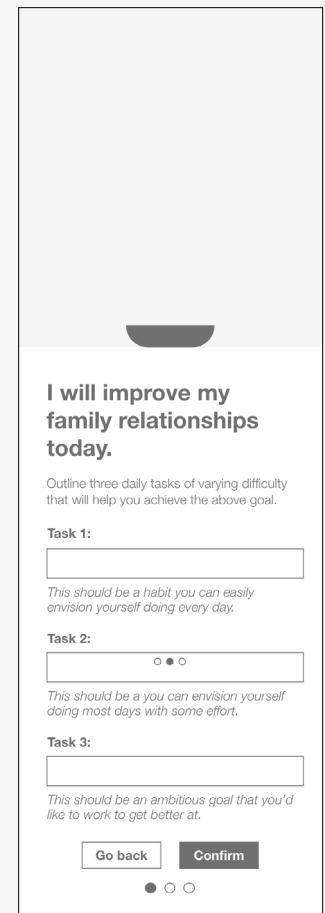
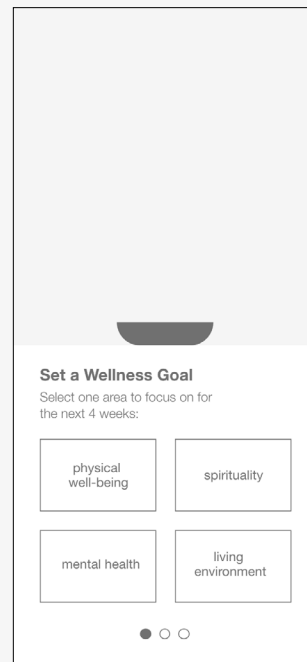
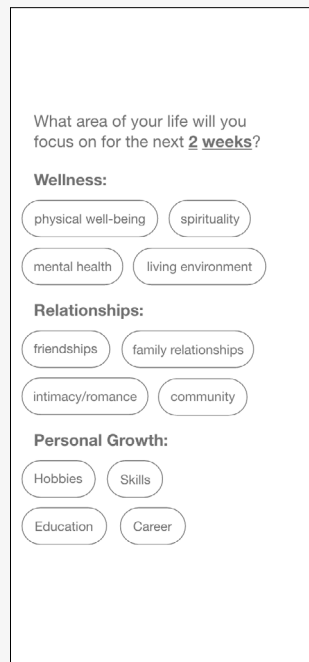
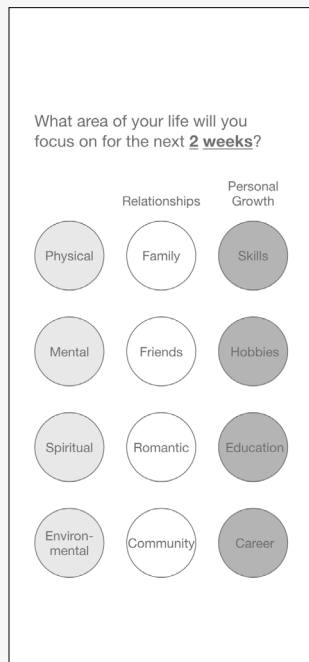
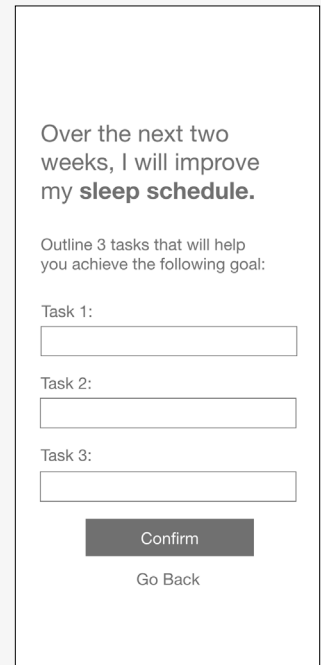


Fig. 15. Goal-Setting, Concept 1.

Fig. 16. Goal-Setting, Concept 2.

Fig. 17. Refined Goal-Setting, Screen 1.

Fig. 18. Refined Goal-Setting, Screen 2.

Visual Exploration:

Simultaneously, I was developing the plant visualization. Initially, the concept was represented by a standalone plant with two leaves, but I knew I'd have to build out more to completely explore the growth pattern. I wanted to explore two options: one building out the more organic appearance of the original leaf and one drawing more from data visualization, wherein the leaves and stems grew different amounts based on how much the app was utilized.

While the organic visualization was initially more visually pleasing, I realized that the pattern was rigid after mocking up a four-week growth pattern. Each day had to be completed in order to keep the growth on track, which meant that if a user were to miss a day they wouldn't be able to complete their visualization. Ultimately, the more geometric plant with separately variable leaf sizes and stem heights would create visualizations in tune with users' unique progress.

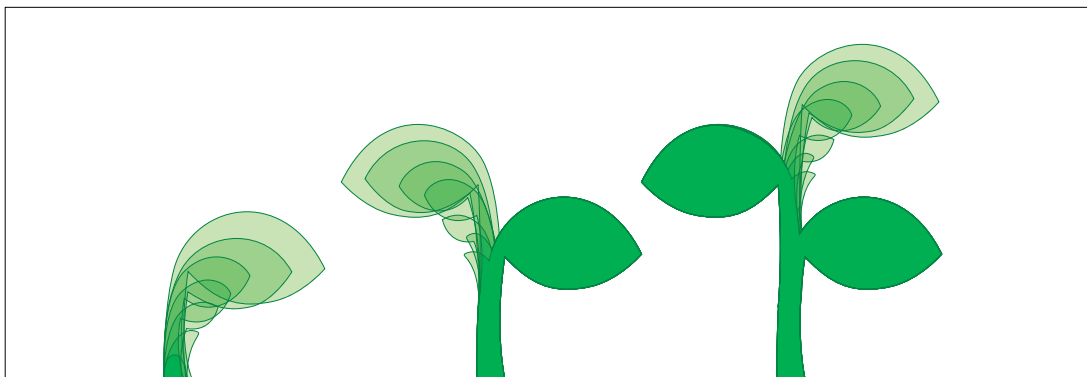


Fig. 19,
Plant Growth,
Concept 1.

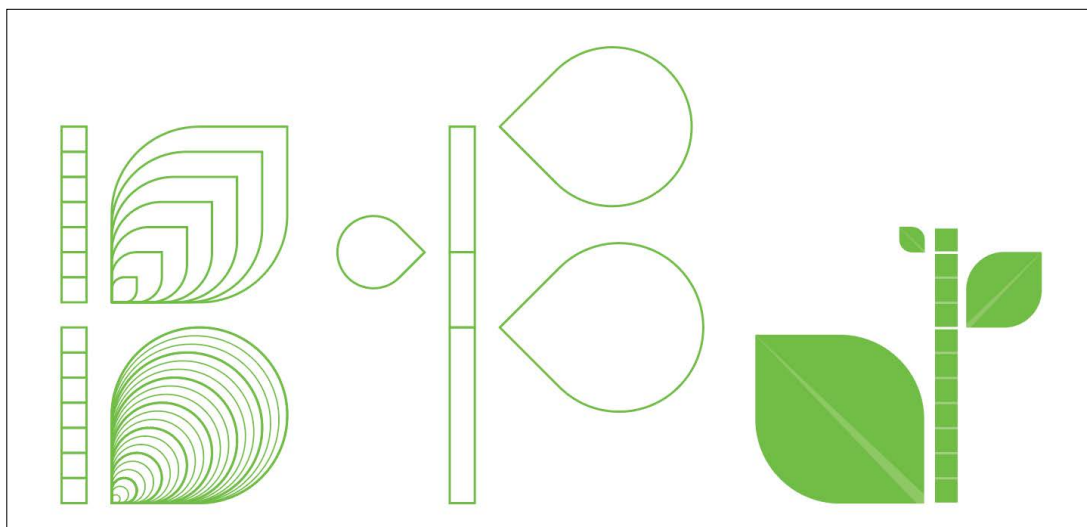
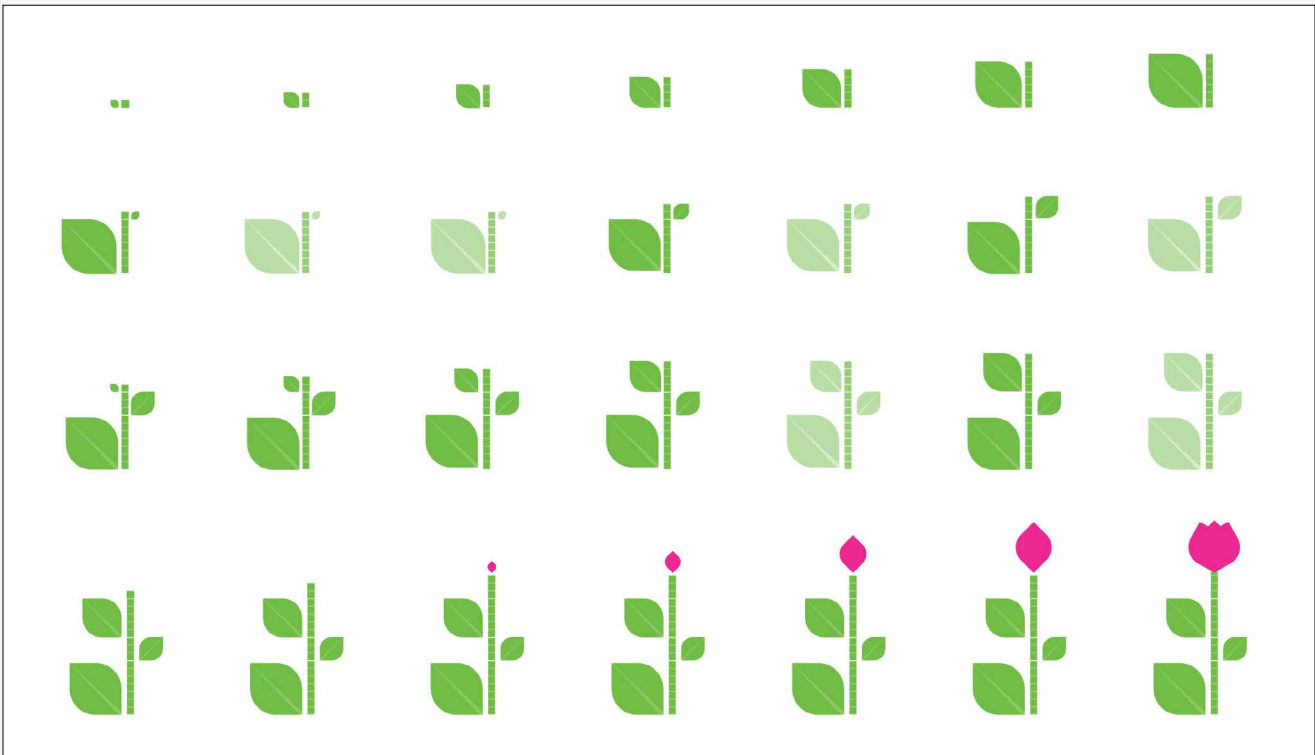
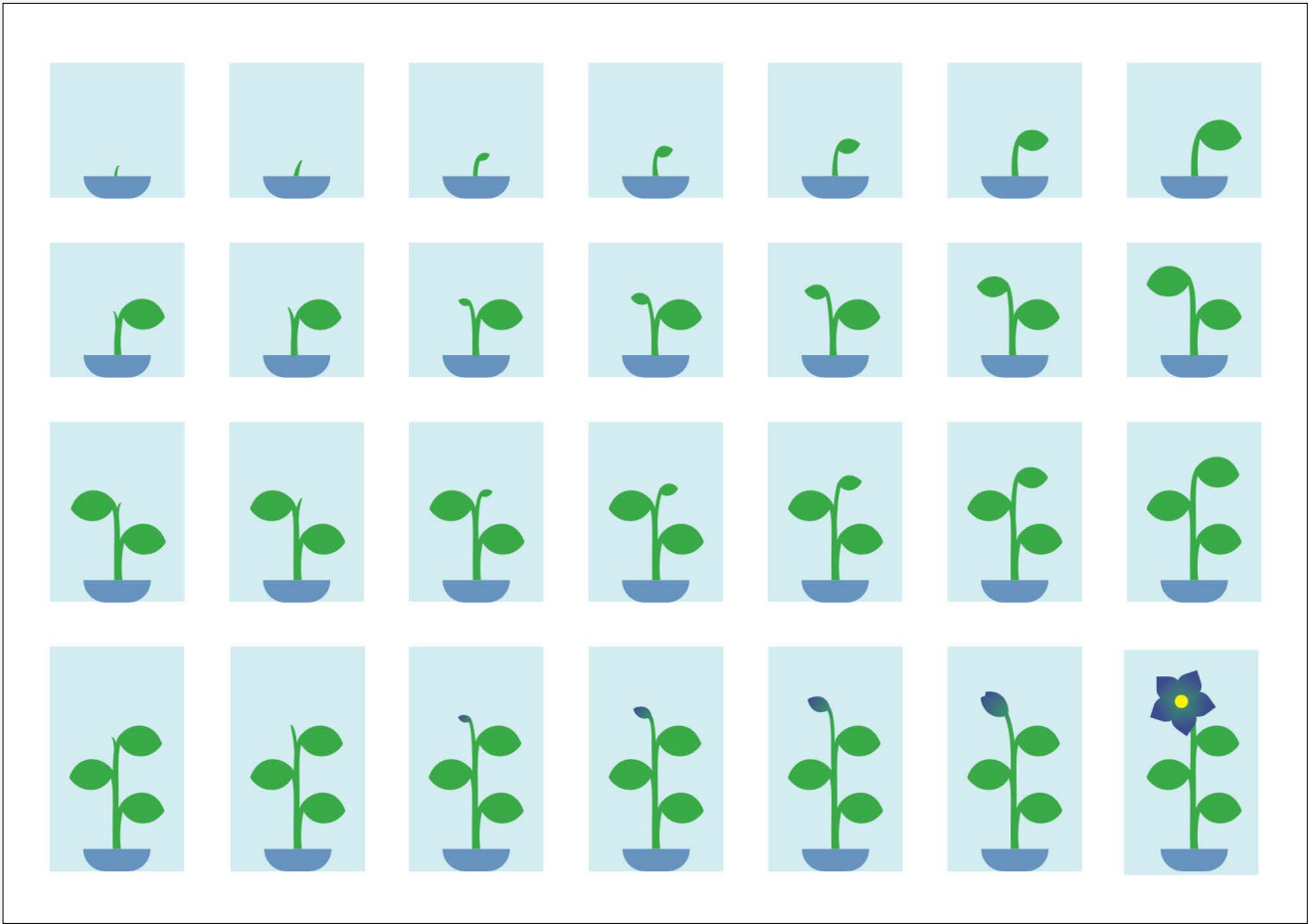


Fig. 20,
Plant Growth,
Concept 1.



Usability testing:

After developing the primary components of the application, I decided to test my concept. The app I have designed remains a prototype, so I instead created a worksheet that could be completed over a period of twelve days that would act as a partial proof-of-concept test. Originally my goals and visualizations were centered around four-week goals, but, in the interest of time, I shortened this worksheet to twelve days, or four sets of three days, which would enable the continued use of a four-part visualization. I had been hoping to start usability testing in early March, but had to relocate due to the COVID-19 pandemic. After moving back home with my family, I enlisted my family members as usability testers on this worksheet.

As I had had trouble with the goal setting process on the app, it was equally difficult to talk users through the process. The idea of changing habits not by immediately setting goals but first focusing on values was not an intuitive one. Additionally, each person who set a goal modified them after confirming, which means that I needed to add in the ability to edit a goal after setting it. While the decision to shorten the goal from 4 weeks to 12 days was made out of necessity, I am going to keep that goal length for now; even with how short this goal was, motivation had thinned by the second week.

This lapse could potentially be mitigated by the visualization of the plant growing alongside the tasks completed, but for this session, I was not able to provide that visualization. After the period of twelve days, I attempted to visualize the data and realized that having a singular leaf grow in response to all three habits was too muddled. The changes were so minute as to be imperceptible and the lack of differentiation between the different habits completed left the visualization feeling more vague than informative.

[]'s Goal:

Over the next 12 days, I will improve my family relationships.

Day 1 – March 23	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 2 – March 24	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 3 – March 25	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 4 – March 26	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 5 – March 27	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 6 – March 28	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 7 – March 29	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 8 – March 30	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 9 – March 31	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 10 – April 1	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 11 – April 2	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings
Day 12 – April 3	<input checked="" type="checkbox"/> Communicate with all of my children	<input checked="" type="checkbox"/> Have a meaningful conversation	<input checked="" type="checkbox"/> Talk to one of my siblings

Fig. 22, Usability Testing Worksheet

Creative Work

Goal-Setting

Once the app is open, the user has the ability to select one of twelve total goals to focus on for a period of twelve days. This short length helps prevent burnout and ensures that users are working towards goals that matter to them in that moment, which means that for the duration of the goal, they will likely still remember why they decided to work on it in the first place. Additionally, this brief length of goal provides users the opportunity to explore goals that maybe weren't their first instinct but could be something they'd really enjoy. When people with depression get stuck in a loop of inactivity, they can and do forget the things that they enjoy and the things that matter to them.

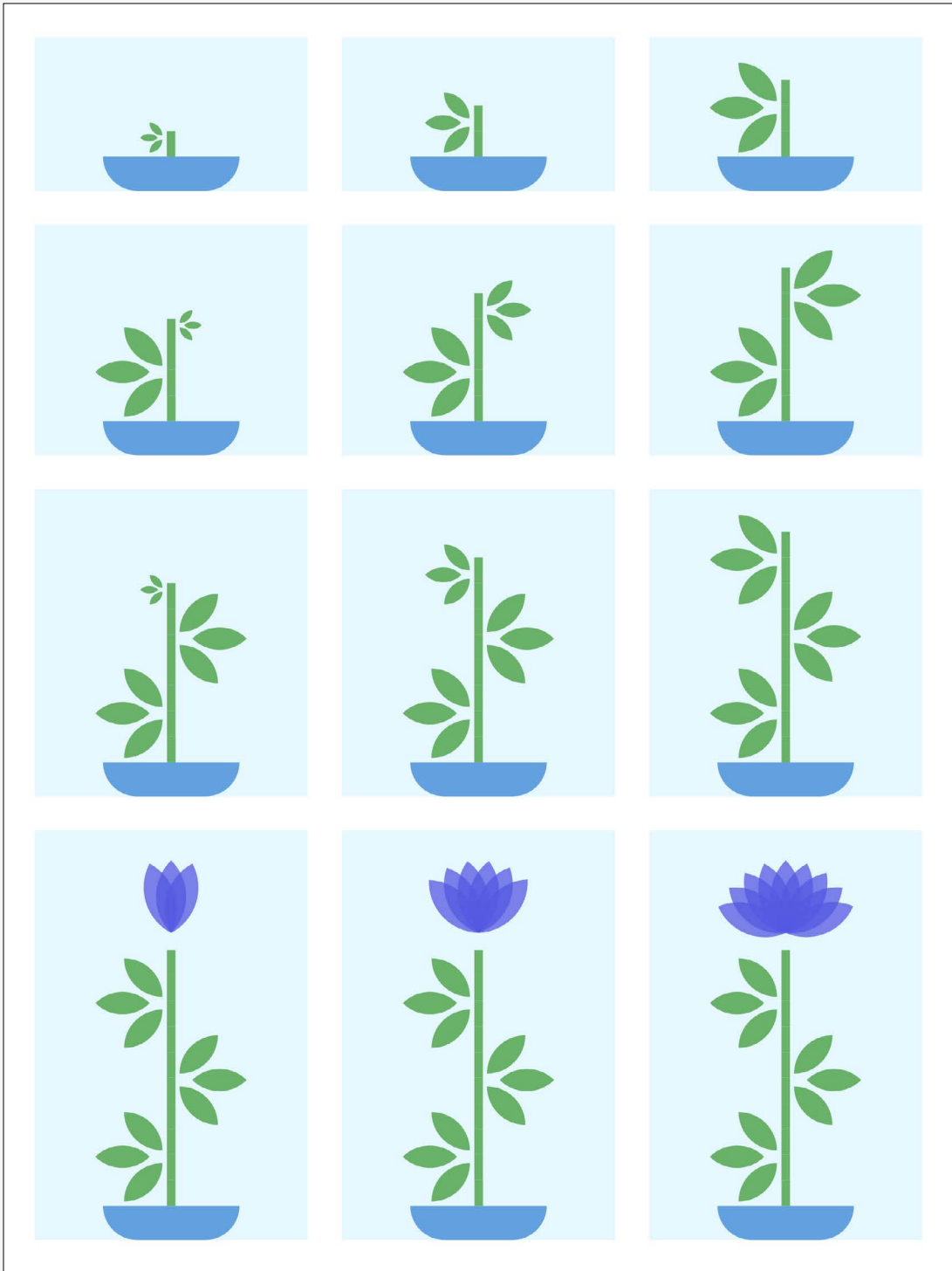
In response to my brief usability testing session, I added the interaction to edit a goal after you set it. Every person in the usability testing session changed their goal when they started to discover whether the tasks they'd set out were reasonable or even desirable, which is an type of engagement thatt should be encouraged because it means that they are reflecting on the goal rather than just going through the motions. In the event they weren't able to modify these goals, it could lead to less engagement with the app and with the process.

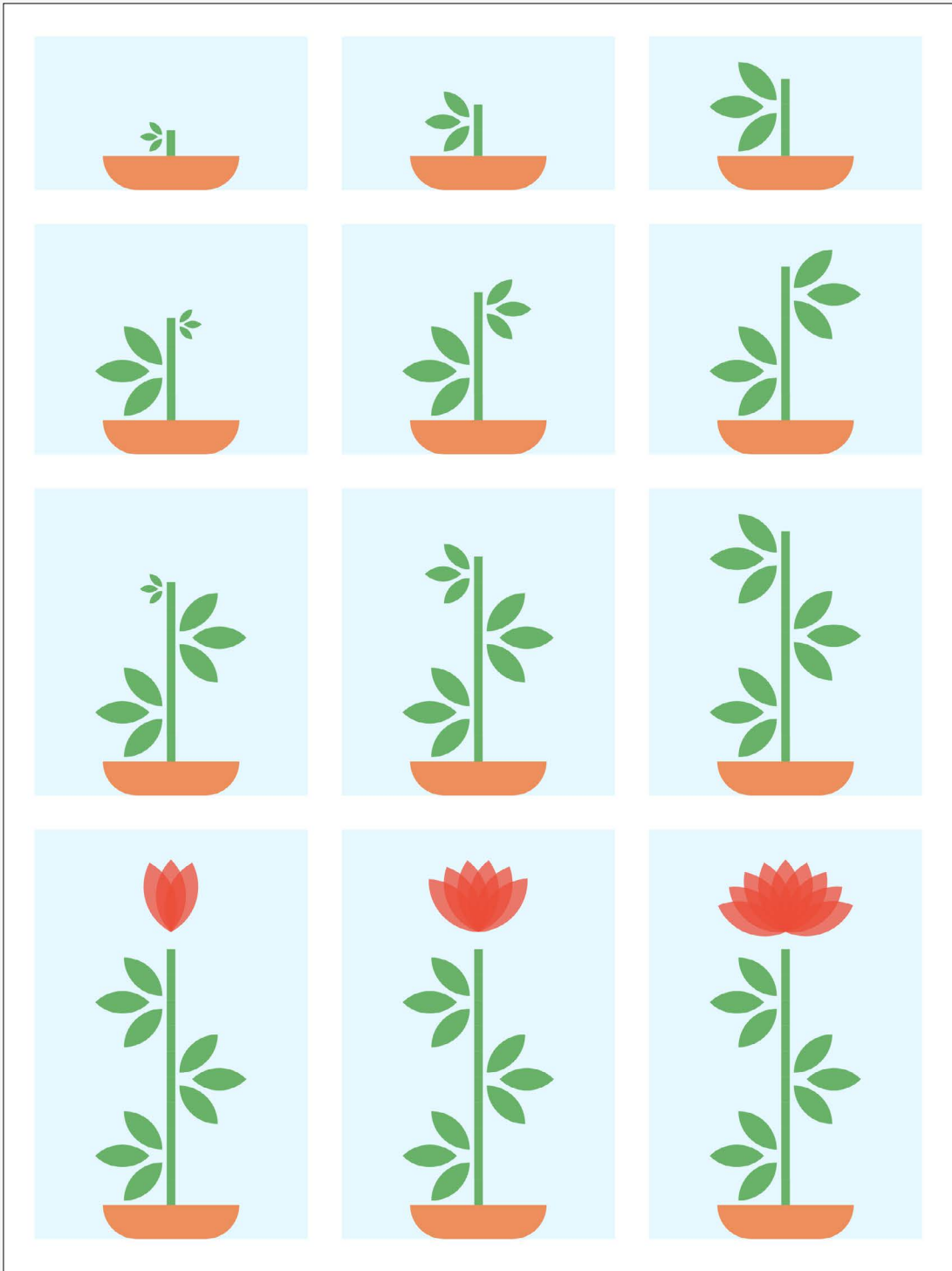
The image displays a 3x4 grid of 12 cards, each representing a step in a goal-setting process. Each card features a light blue background with a central illustration of a plant growing in an orange pot. The plant's growth progresses from a small seedling in the top-left card to a fully bloomed red flower in the bottom-right card. Below each illustration, the text reads: "I will improve my family relationships today." followed by a checklist of three items: "Communicate with each of my children", "Have a meaningful conversation", and "Talk to one of my siblings". The checklist items are marked with green checkmarks, and the progress of the goal is indicated by a row of four circles at the bottom of each card, where the first circle is filled and the others are empty.

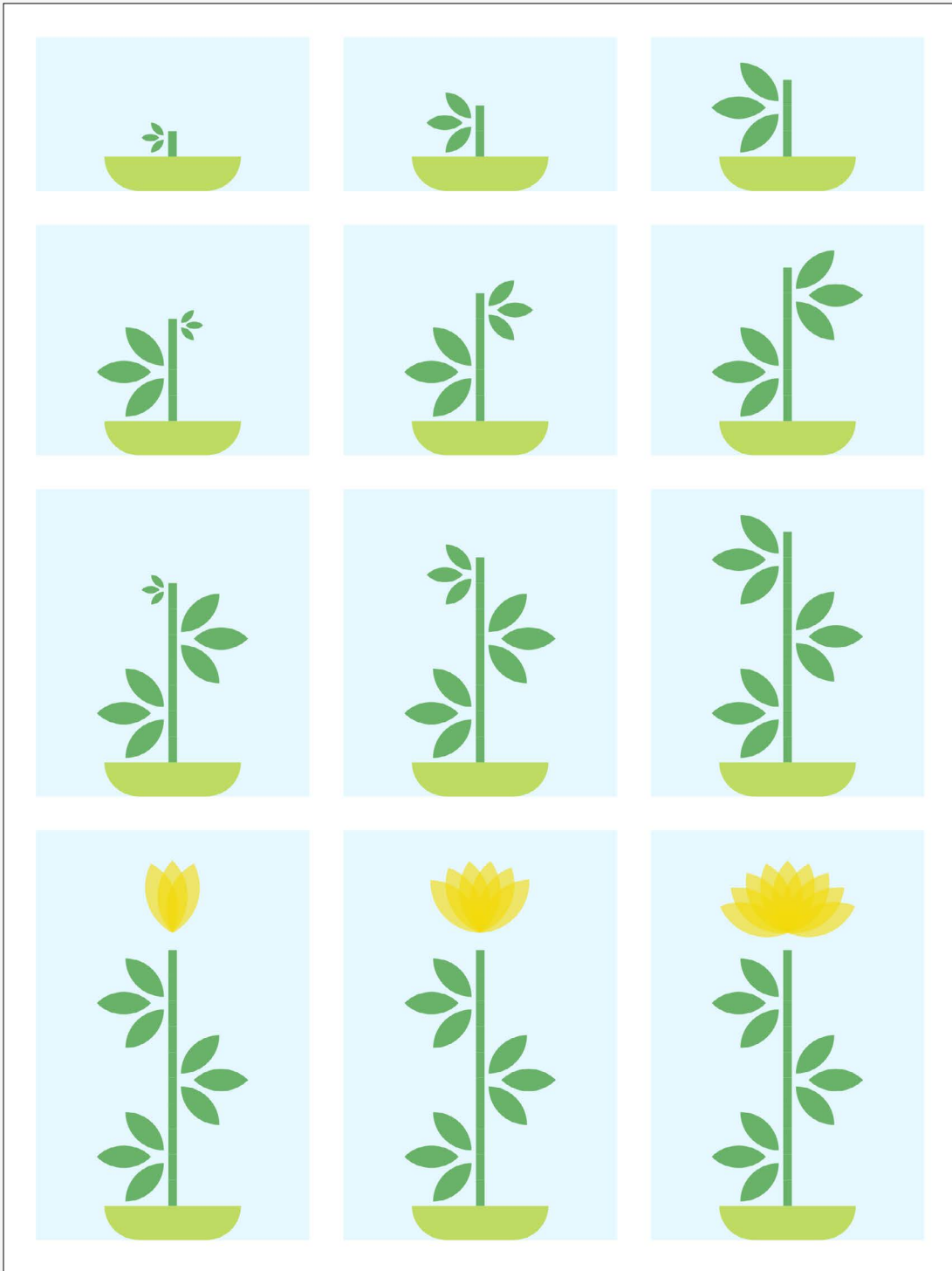
Card Number	Plant Stage	Goal Statement	Checklist Status
1	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
2	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
3	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
4	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
5	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
6	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
7	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
8	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
9	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
10	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
11	Seedling	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)
12	Full Flower	I will improve my family relationships today.	Communicate with each of my children (checked), Have a meaningful conversation (checked), Talk to one of my siblings (checked)

Data visualization:

While the goal of the visualization is to show the data, I worked to keep the forms simple and clean so as not to distract from the information portrayed. There are three plant variations, one for each of the primary goal categories. I selected the colors carefully so that they would feel unified yet distinct. Each of these colors is saturated yet they're all unified by underlying cool tones, which makes them feel positive and energizing while still being a bit calming. Because the design itself was already abstracted, I drew the color of each flower from nature so that they seem more grounded in reality. I was concerned that the additional use of unrealistic colors would break the user's suspension of disbelief that was needed to engage with this habit-building concept. The colors of the pots are similar enough to the color of the bloom that they seem to belong together, yet are different enough that they retain a sense of surprise when user sees the flower starts to bloom after nine days of watching the plant grow bit by bit.



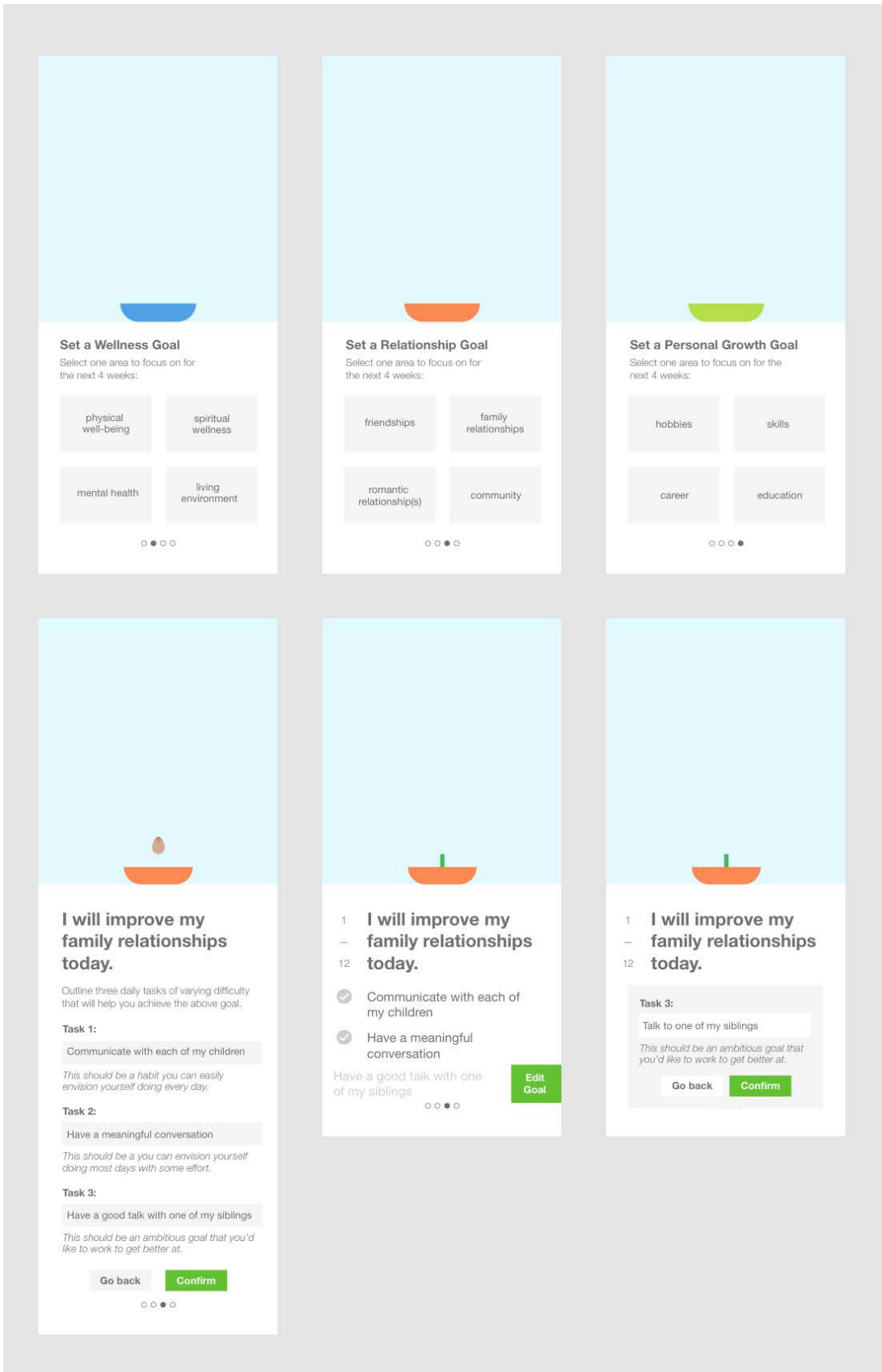


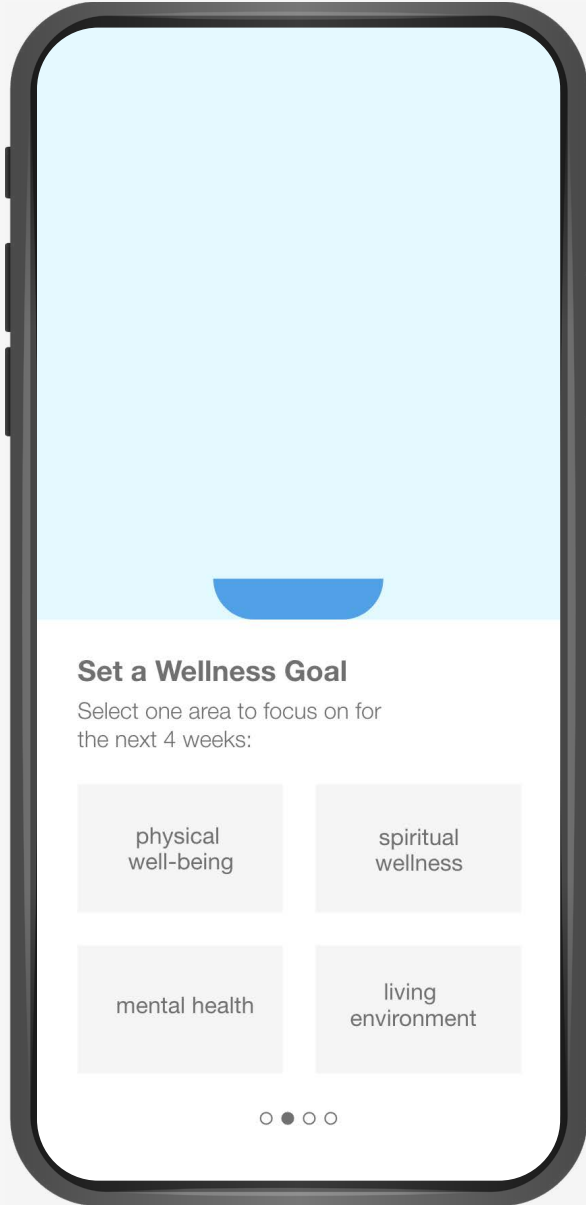


App Use:

After the goal-setting process the functionality of the page remains largely the same until the goal is complete. The following screens shows how the plant grows alongside the completed tasks in a unique manner to mirror the data being inputted. In the finalized visualization, the geometric plants are more customized to the user's actions. The stem grows in response to the app being opened each day while each of the three leaves in a set grows in response to one of the three goal-related tasks. Each cluster of leaves has the opportunity to grow for three days, at which point the next group starts. In the final three-day period, the tasks completed contribute to the growth of the flower's bloom; each task completed adds an individual petal, emphasizing the importance of each task in finishing the goal.

When the goal is complete, the flower moves to a separate page with the other completed flowers so that another goal can be started without hiding the user's progress. When the user navigates to the screen with the plants representing their previous habits, they are greeted by positive representations of all the work that they have done. It's likely that every plant will be different, which is part of each one's beauty. Everyone encounters obstacles and has days that are less than stellar, but we're all still growing. We all have our own paths and they don't have to be perfect to be good and beautiful and worthwhile.





Conclusion

I chose to work on this project because I saw a gap in the accessibility of productivity applications for people with depression. There are plenty of beautiful habit-tracking and productivity applications and there are a handful of well-researched habit-building applications for people with depression, but they don't overlap. On a conceptual level, the difference between these applications is really the difference between something that will let you set goals for yourself and something that will prevent you from setting yourself up for disappointment.

We are living through an era of global uncertainty due to COVID-19 and there are many people who could use an application like this prototype. In this time of quarantine, there's pressure to be creative, to be productive, or to learn a new skill. These are all great things to do, but in times of uncertainty and stress people are often unable to meet the expectations they have for themselves. While following accessibility guidelines in design or building makes a huge difference to those who need it, it's also good practice and makes life at least a little bit easier for everyone. Designing with depression in mind is no different; everyone has days where they have less energy, are more stressed, are less motivated. That has never been more apparent than it is right now and that is why this type of application is even more essential.

Unfortunately for the people who would stand to benefit from it, this application is still in the prototyping phase and will remain so for the foreseeable future. In the past year, I have developed a concept that I'm proud of, but as I test it further I want to develop a more rounded application. This will includeWhile I work on adding other features, I also hope to design a more robust worksheet or booklet, so that my research can be of use in spirit if not in application form.

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