LUCIDLY

Sketching, Low-fi Prototyping & Pilot Usability Testing

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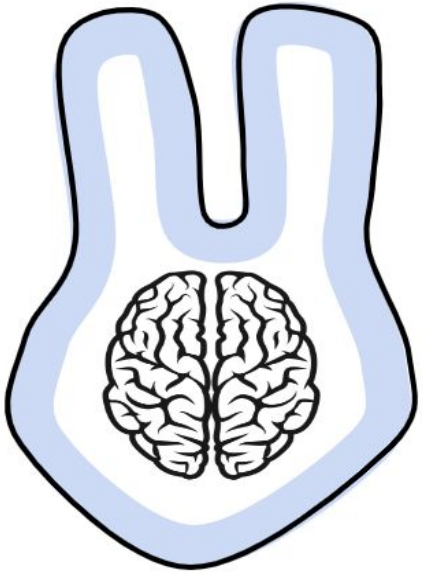
LUCIDLY



DAILY SELF-HELP WITH FRIENDS

Problem/Solution Overview

The Problem

- Hard to **understand symptoms** when they are not talked about
- Younger people need these conversations in their community to **assess their symptoms**
- Hard to **report symptoms** because of social pressures/lack of conversations around many medical conditions

The Question

how do we let users feel confident and enjoy independent self assessment while connecting this with a form of community?

The Solution

Create an empowering and fun routine to help the user better understand how they are feeling currently and over time that utilizes the power of communtiy

HOW?

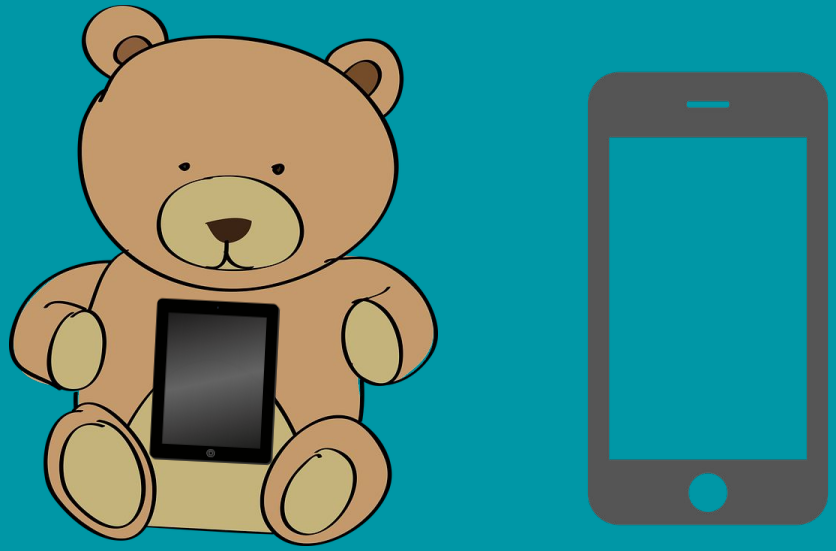
Concept: An **idle game model** with a habitat and creatures where the user is prompted to answer daily questions about their wellbeing.

Motivation: Upon completion of these questions they will earn **coins/credits/rewards** that will enable them to expand and evolve their garden and creatures

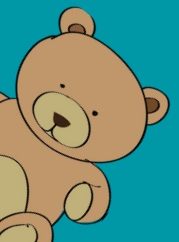
Novelty: Users also will be able to **visit other users' habitats** and talk to other users. They can choose to share their health status, invite friends over or ask to check on friends.

INTERFACE

Screen console built into a plush toy with a dual app component that can be used on the go. The toy is to create a comfortable home base for users.

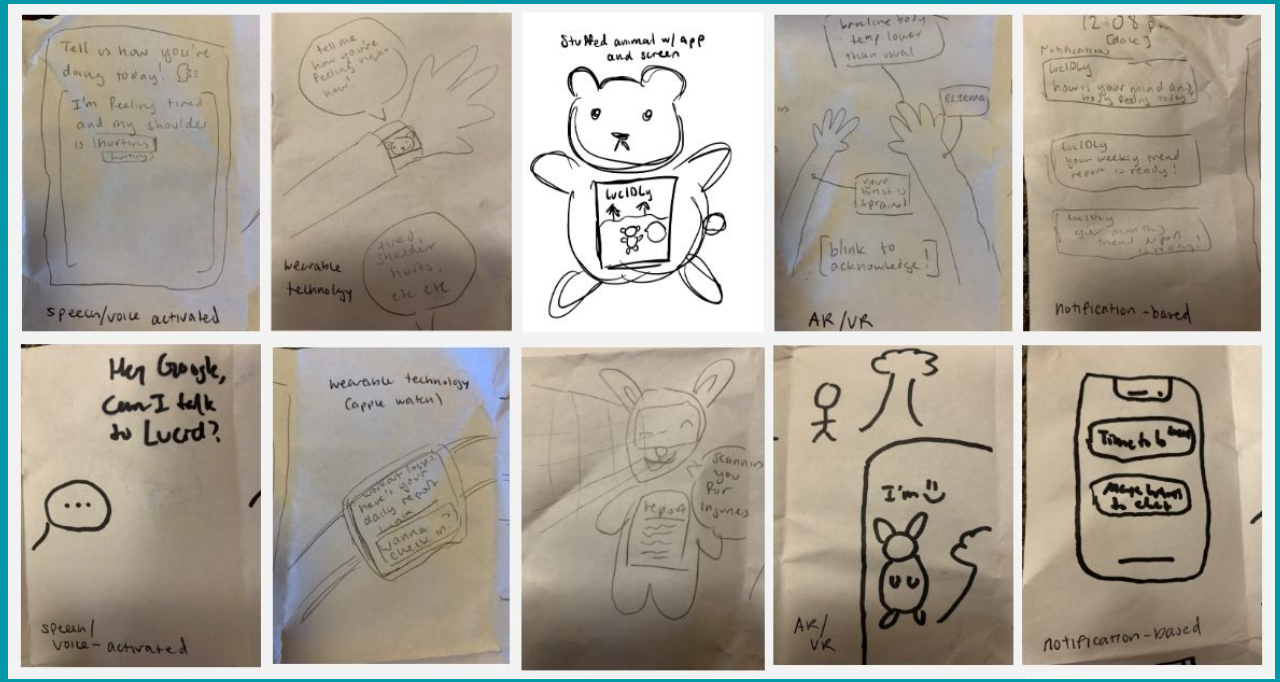


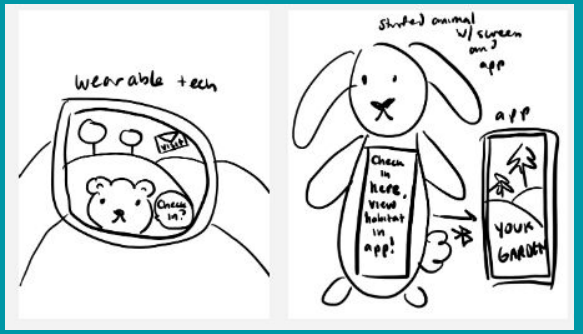
Outline of Talk



- *Overview sketching process*
- *Interface selection rationale*
- *How did we construct the low-fi prototype?*
- *Taskflow overview*
- *Testing process*
- *Results overview*
- *Implications?*

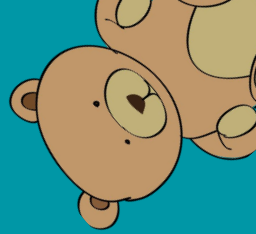
Concept Sketches


Tell us how you're doing today.
I'm feeling tired and my shoulder is hurting
hurting
speech/voice activated
tell me how you're feeling right now!
tired shoulder hurts, etc etc
wearable technology
stuffed animal w/ app and screen
lucidly
AR/VR
your wrist is sprained
blink to acknowledge
Notifications
lucidly
how's your mind and body feeling today
lucidly
your weekly trend report is ready!
notification-based
Hey Google, can I talk to Lucid?
speech/ voice-activated
wearable technology (apple watch)
your heart's overall daily trend
wanna check in?
scanning you for injuries
AR/ VR
I'm
notification-based

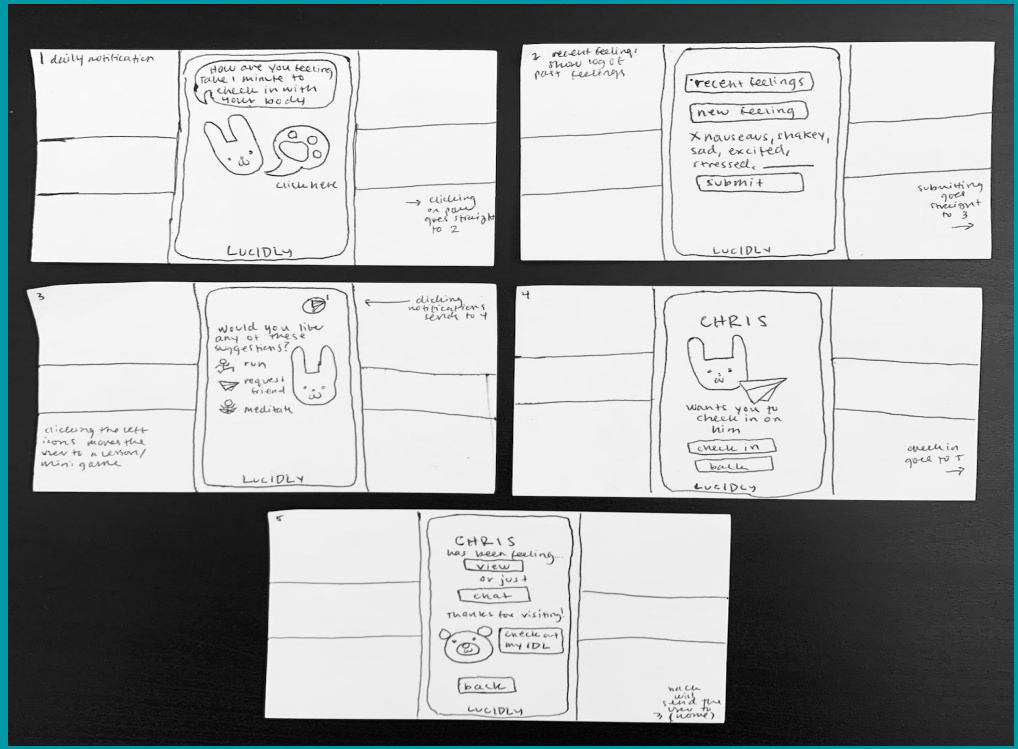

wearable tech
stuffed animal w/ screen on app
app
check in here, view habitat in app!
YOUR GARDEN

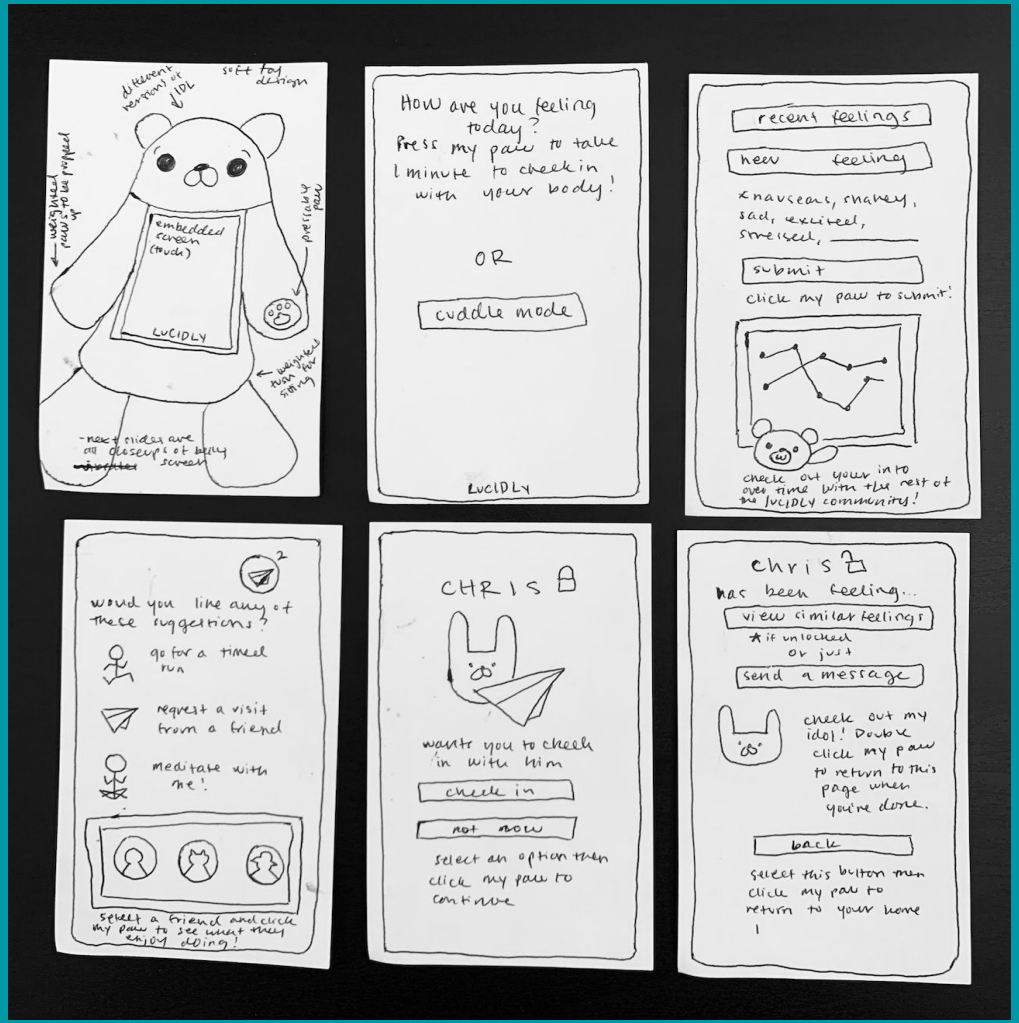

speech/voice activated
TAP to log recording
entry:
entry:
entry:
entry:
entry:
wearable tech
your biometric data trend analysis...
stuffed animal w/ app + stream
check in!
bluetooth
Hi! I'm Lucid, your virtual reality pet me.
AR/ VR
notifications - based
10:09
LUCIDLY:-
PING!
it's time to check in!

Realizations

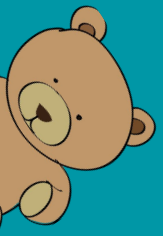


Wearable Tech (Apple Watch)





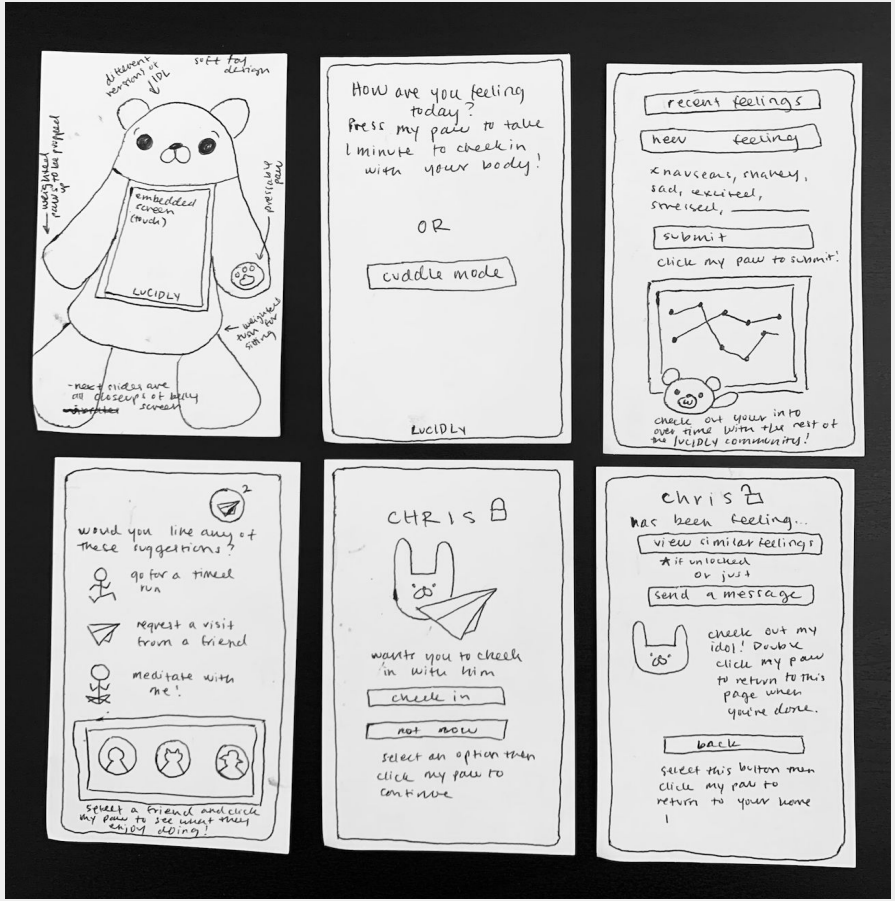
Stuffed Animal w/Screen and App



Selected Interface and Rationale

Stuffed Animal w/ Screen & App

Winner Winner!



Pros of Stuffed Animal

- Very **unique** and **novel** in market space
- Brings the **value of wellness** home, having a physical animal could make the user feel very **safe and comfortable**
- Help create sense of **community** by creating trend to have the toys
- Opportunity for **creative** and **never before seen** design

Pros of Wearable Tech that were good but not good enough:

- Already has biometric stat collection built into Apple Watch
- Convenient for travel which would make logging symptoms easy

These Pros did not benefit our design values enough!

Cons of Stuffed Animal

- People might not want to carry around an animal, too **cumbersome**
- Don’t want people to **purchase just for the physical toy** but also to actually use the app and self-assess

By **connecting the stuffed toy interface with an app** that you can download on your phone, these cons can be minimized.

Cons of Apple Watch:

- Not everyone has an Apple Watch; **unequal opportunity**
- **Limited space** to view habitat on **small screen**
- **Unoriginal**

...Constraints of the Stuffed Toy Platform?

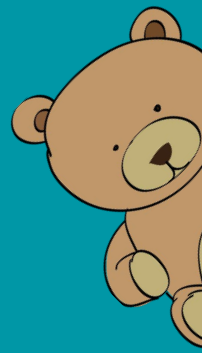
- Necessitates **both** stuffed toy screen functionality and phone app functionality
- Screen on stuffed toy must be large enough to be **readable** but small enough to **fit** within medium sized toy chest and not **obstruct cuddliness** of toy
- User must be able to **physically interact** with stuffed toy (i.e. press paw) and have this result in a **change on screen**

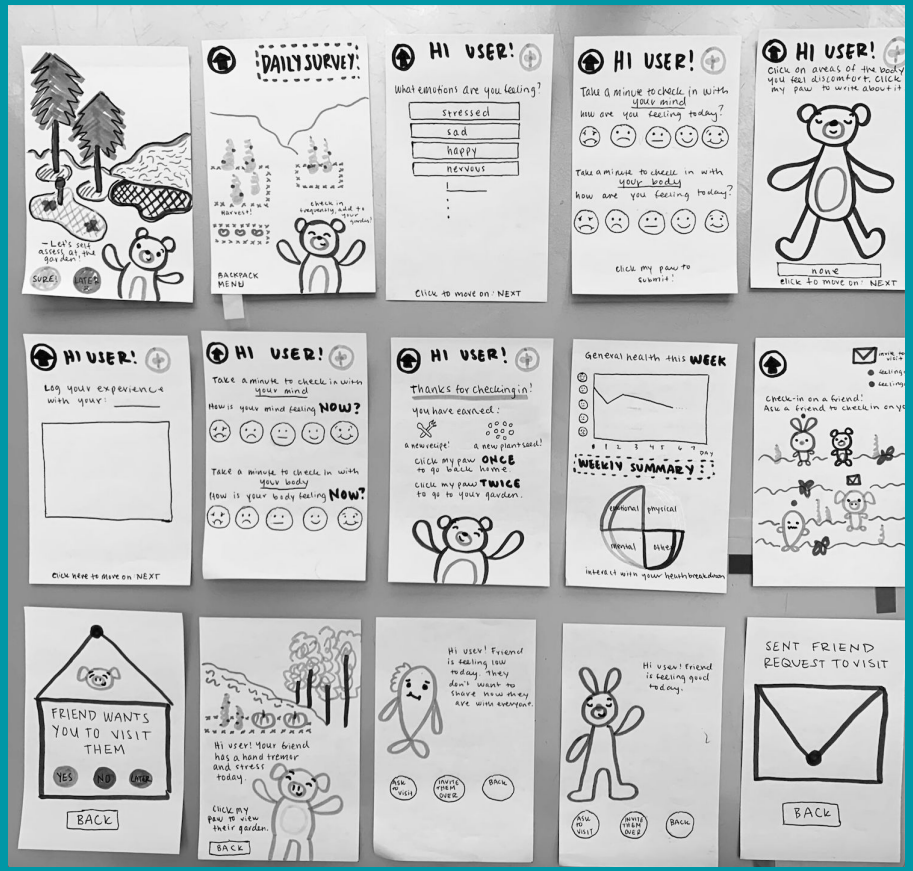
What Ultimately Shaped Our Decision?

- After conducting extensive market research, **no other** health assessment/self-help/personal health app has a direct interface with a stuffed plush toy

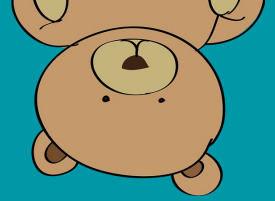
- Many members of the team reflect fondly on stuffed toys they were attached to as children and **still have today**, demonstrating **clear emotional attachment** and **grounding** in these stuffed toys that will help with **consistent self-assessment**

Low-Fi Prototype Construction



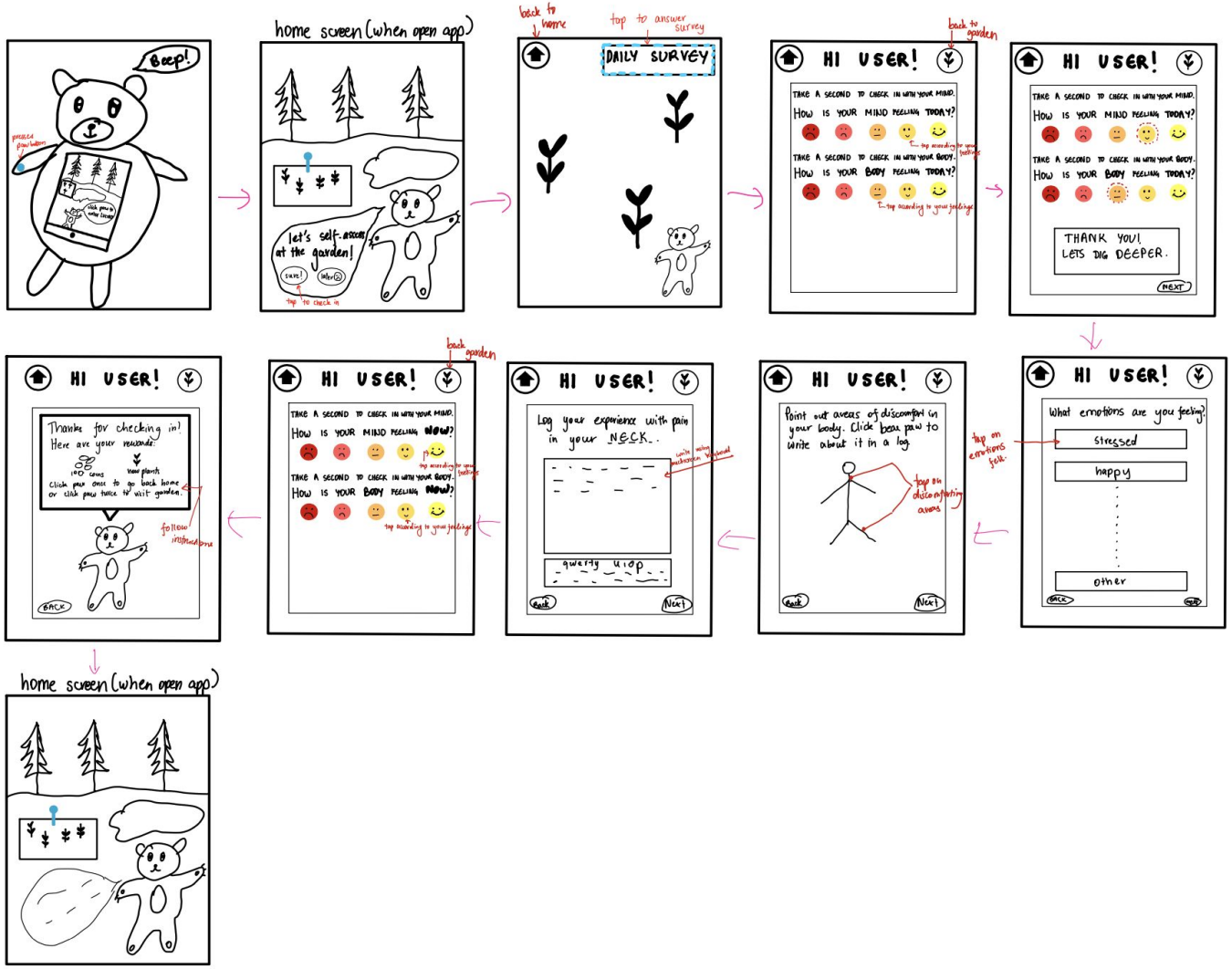


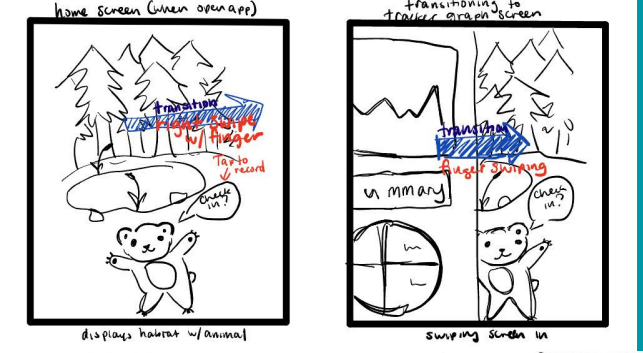
For our low-fi prototype, we chose to use a paper flip book with tabs to simulate an app. We have extended paper segments to simulate scrolling, and page flips to represent button taps. The flip book is mounted onto a stuffed bear on its belly, in the same place the screen would be attached to.

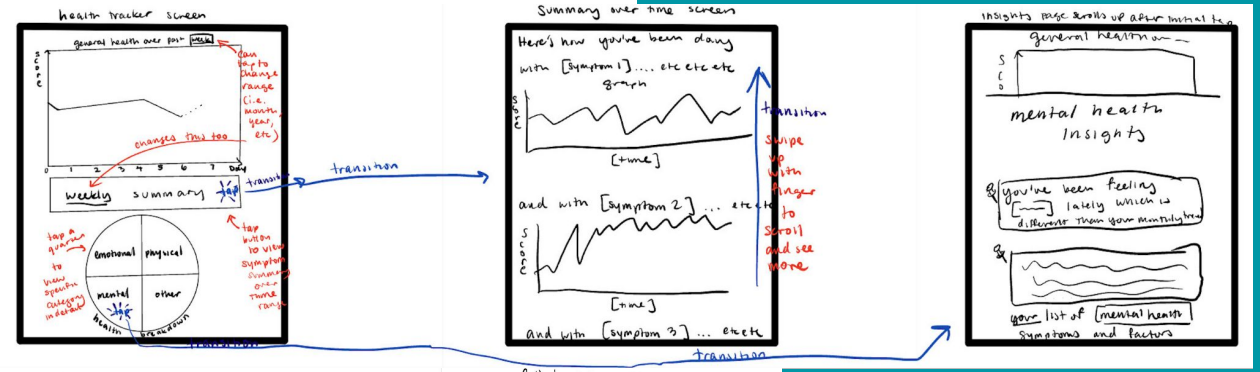


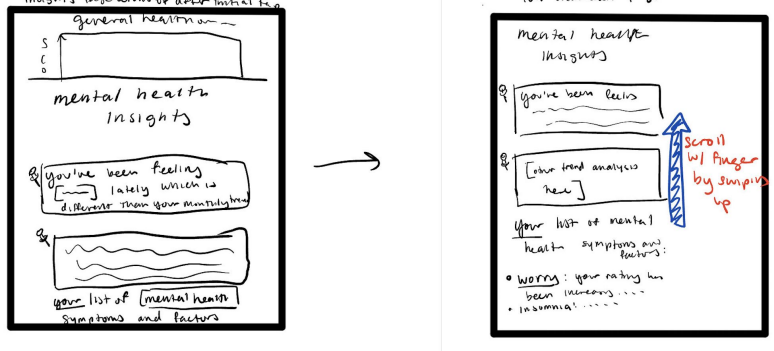
Low-Fi Prototype: 3 Task Flows

Simple


Beep!
home screen (when open app)
let's self-assess at the garden!
back to home
top to answer survey
DAILY SURVEY
HI USER!
back to garden
TAKE A SECOND TO CHECK IN WITH YOUR MIND.
How is your mind feeling today?
TAKE A SECOND TO CHECK IN WITH YOUR BODY.
How is your body feeling today?
THANK YOU!
LETS DIG DEEPER.
NEXT
What emotions are you feeling?
stressed
happy
other
tap on emotions felt.
Point out areas of discomfort in your body. Click bear paw to write about it in a log.
tap on discomforting areas
Log your experience with pain in your NECK.
qwerty uiop
Next
back garden
Thanks for checking in! Here are your rewards:
Click paw once to go back home or click paw twice to visit garden.
follow instructions
BACK
home screen (when open app)

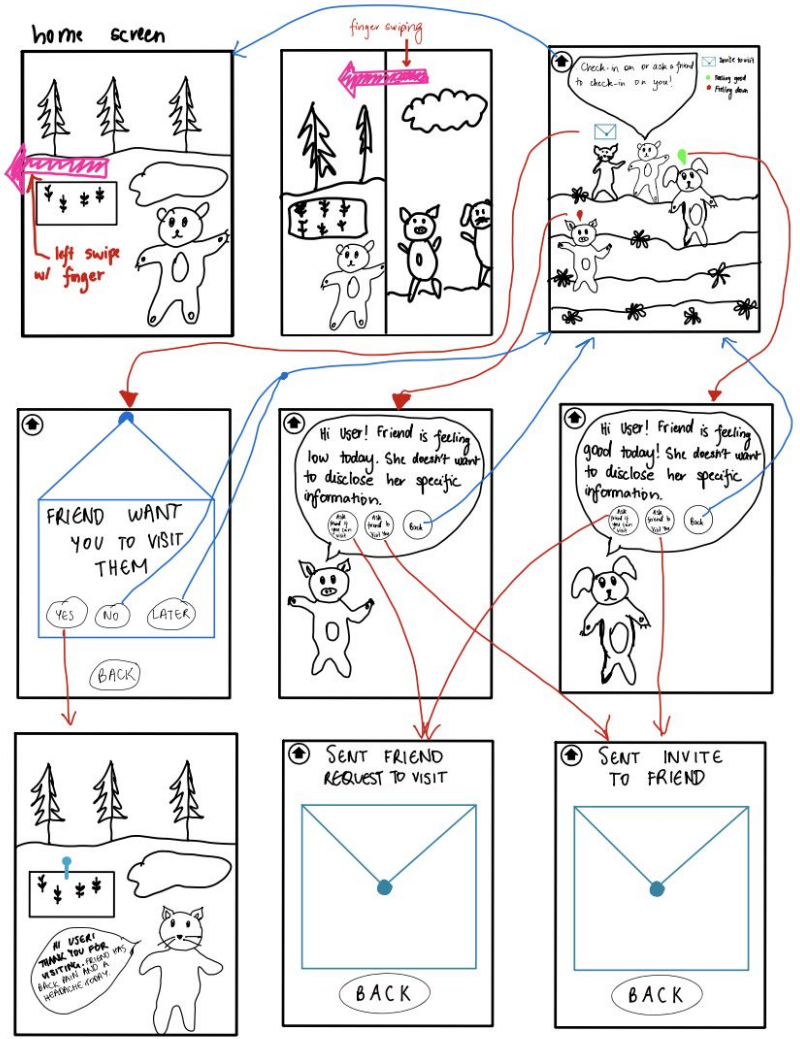

home screen (when open app)
transition
swipe right w/ finger
Tap to record
displays habitat w/ animal
transitioning to tracker graph screen
transition
finger swiping
swiping screen in


health tracker screen
general health over past week
tap to change range (i.e. month, year, etc)
changes this too
weekly summary
transition
tap button to view symptom summary over these ranges
tap a quadrant to view specific category in detail
emotional
physical
mental health
other
breakdown
transition
Summary over time screen
Here's how you've been doing with [symptom 1].... etc etc etc
graph
[time]
and with [symptom 2] ... etc etc
[time]
and with [symptom 3] ... etc etc
transition
swipe up with finger to scroll and see more
insights page scrolls up after initial tap
general health over ...
mental health insights
you've been feeling [...] lately which is different from your monthly trend
your list of [mental health] symptoms and factors
transition
full breakdown page

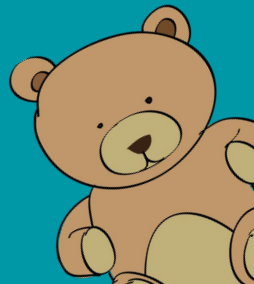

insights page scrolls up after initial tap
general health over ...
mental health insights
you've been feeling [...] lately which is different from your monthly trend
your list of [mental health] symptoms and factors
mental health insights
you've been feeling
[other trend analysis here]
Scroll w/ finger by swiping up
your list of mental health symptoms and factors:
• worry: your rating has been increasing....
• insomnia: .....

Moderate

Complex


home screen
left swipe w/ finger
finger swiping
Check-in on or ask a friend to check-in on you!
FRIEND WANT YOU TO VISIT THEM
YES
NO
LATER
BACK
Hi User! Friend is feeling low today. She doesn't want to disclose her specific information.
Hi User! Friend is feeling good today! She doesn't want to disclose her specific information.
SENT FRIEND REQUEST TO VISIT
BACK
SENT INVITE TO FRIEND
BACK

Testing Methodology



Our Participants:

- Participant 1, a Highschool girl met outside Pete's Coffee
- Participant 2, a Post-Grad student (non Stanford) male met in parking lot on campus
- Participant 3, a Highschool boy met outside local swim team practice
- Participant 4, a male Stanford Student met in a dorm common room

Target audience: a **younger demographic**; focused on young people of different genders, **equal gender distribution**

Recruitment: To ensure diversity, the first three participants were approached at **random**.

Compensation: We compensated each participant with a **Halloween inspired recipe** when they reached the survey completion screen.

Environment and Apparatus

We tested two of our participants inside, and two of them outside. We had all participants sit down to help with fluidity of flipping the screens.

Apparatus included prototype (right images) and iPad for note-taking and recording.

Roles

Participant 1 was interviewed by **Maya** who served as facilitator, observer, and computer.

Participant 2 was interviewed by **Janelle** as facilitator and by **Jonny** as observer and computer.

Participant 3 was interviewed by **Jonny** as facilitator and by **Janelle** as observer and computer.

Participant 4 was interviewed by **Gaya** who served as facilitator, observer, and computer.

Testing Procedure

Introduce team & thank participants for their consent. Provide background to project including values and goals.

Demo how to flip pages with button clicks, paw clicks and tabs

Encourage participants to verbalize their thoughts and emotions while interacting with the prototype

Explain each goal to user one a time; repeat for each task

After each task, ask the participant what stood out to them and what was easy or difficult.

Conclude at the end by again asking how the experience made the user feel, and what was difficult and easy about the whole process.

Thank the participant!

Usability Goals and Key Measurements

- **Efficient:** Users are able to complete tasks in a reasonable amount of time with little issues
- **Pleasing:** Users enjoy interacting with the prototype and want to come back for more

Success:

- Users **complete tasks** with no interruptions
- Users **interact** with button clicks, tab slides, and scrolls **without help**
- Users have **fun and feel comfortable** while using the prototype
- Users express interest in using the prototype and **desire to continue** interacting with it

Failures:

- Users need **help completing tasks**
- Users are **confused or frustrated** by buttons and flips
- Users express **confusion, distaste, or discomfort** in using the prototype

Testing Results

Process Data: Strengths

- All 4 participants **successfully used the swiping mechanism** to toggle between tasks
- All **buttons on the screens in Task 1** were successfully pushed and navigated to the next pages
- Were **willing to interact** with the stuffed animal outside of the screens
- 2 participants expressed eagerness to see their **real “past” and “future” health stats**
- All participants **expressed interest in the garden** and what it could possibly look like
- 3 participants expressed **excitement and satisfaction** when their **invites** to their “friends” were successfully sent
- **2 users** wanted to **continue** using the prototype after the tasks were completed

Process Data: Weaknesses

- 3 participants had **severe problems** interacting with the **buttons** in Task 2, from not clicking to clicking the wrong things to not realizing there were buttons on that screen
- 3 participants felt the **free response** screen was **too open ended** and preferred to just tap
- Sometimes participants would **incorrectly interact with the plush toy** at different times
- 2 users wished there were **more next and back** buttons
- Swiping and scrolling seemed “**unintuitive**”
- 1 user expressed **confusion about the bear** body parts screen and what was supposed to be tapped (the physical plush toy or the bear on the screen)

Kay Measurements of Success

- Users **complete tasks** with no interruptions
- Users **interact** with button clicks, tab slides, and scrolls **without help**
- Users have **fun and feel comfortable** while using the prototype
- Users express interest in using the prototype and **desire to continue** interacting with it

Bottom-Line Data:

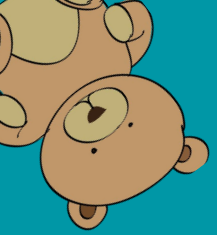
- 3 participants had **severe problems** interacting with the **buttons** in Task 2, from not clicking to clicking the wrong things to not realizing there were buttons on that screen
- Swiping and scrolling seemed **“unintuitive”**
- 3 participants expressed **excitement and satisfaction** when their **invites** to their “friends” were successfully sent
- **2 users** wanted to **continue** using the prototype after the tasks were completed

Usability Goals: Efficiency

- Achieved goals for efficiency with Task 1 and 3; had mis-clicks and misunderstandings with Task 2
- Task 1: when to click paws vs screen, when to swipe vs click
- Task 2: Inefficient because not intuitive, instructions not clear
- Task 3: Very few issues, successful!
- Need for more back/next buttons made experience less efficient

Usability Goals: Pleasing

- Achieved
- Users wanted to come back for more
- “community aspect made me feel safe”
- “my privacy was protected”, aligns with our values
- Phrase “here is how you are dealing with” in Task 2 elicited negative emotions; could be replaced with “here is a summary”



Discussion

- Participants were very **eager** to interact with their community in this personal way
- Concepts of each task were exciting and valuable to users.
- **Satisfactory usability**, can improve
- Many users struggled with **button presses** and understanding when to use the **plush toy interface.**
- **Limitation:** hard to truly simulate a swipe

Moving Forward

- Make **buttons more obvious** and **wording more clear**
- Remove text box survey component from task 1
- Have **hovering arrows** that guide the user to swipe
- **Change** some weighted emotional wording **to simpler phrases**
- Dive deeper into **implementing** what a **garden** would look like
- Add **back and next** buttons for linearity

Things Testing Might Not Reveal?

- Will the **kind of stuffed toy** impact how easily users interact with it?
- How easily **integratable** the stuffed toy with a screen will be with a separate phone app
- Will users **prefer to just use the phone app** as opposed to playing with the stuffed toy?
- Whether or not **notifications** will be helpful to remind users to self-assess

Thank You

Appendix

Full Pros & Cons List - Wearable Tech/Apple Watch

PROS:
-Already has biometric stat collection built into apple watch (i.e. heart rate etc)
-Opportunity for very clean, tamagotchi-like design
-Already have easy ways to connect with others
-Convenient for travel which would make logging symptoms easy

CONS:
-Need to format it for the Apple Watch
-Not everyone has an Apple Watch - unequal opportunity
-Need to be able to integrate with apple health, etc?
-Limited space to view habitat on small screen
-Would make the community aspect wholly virtual
-Unoriginal

Full Pros & Cons List - Stuffed Toy w/Screen, App

PROS:
-Very unique and novel in market space
-Brings the value of wellness home, having a physical animal could make the user feel very safe and comfortable
-Help create sense of community by creating trend to have the toys
-Materializes the solution in the physical world rather than in cyberspace or virtual reality
-Could be like a “home base” for people, if the toy is always on a bed/desk it would be an extra manifestation/reminder to log how one is feeling
-Opportunity for creative and never before seen design

CONS:
-Difficult to implement in timely manner due to having two interfaces: one on toy and one on app
-People might not want to carry around an animal - too cumbersome
-Don’t want people to purchase just for the physical toy but also to actually use the app and self-assess

Testing Script

Thank you so much for participating in our study! We are Stanford Computer Science students testing a new app called LucIDLy that guides users through their daily mind and body symptoms. We would appreciate your help to test our app. As you explore this prototype, please verbalize what you're thinking as you tap buttons and complete tasks. There is no such thing as talking too much, the more you explain what you're thinking the better.

Background Questions:
-Name, Age, background (are you in school? Are you a parent?)

System Demo:
-Facilitator will raise tabs, will only explain the swipe right and swipe left features due to the paper form of the prototype
-The Facilitator will lift up the sheets in the demo as the participant swipes and clicks for fluidity

Tasks:
-"Please explain what you are doing and what you are thinking as you tap."
Task 1: "Your first task is to log how you are feeling today. Use this app to do so"
-Task ends when participant reaches the "Thank you for checking in" Screen

Task 2: "Your next task is to see your progress over time"
-facilitator will explain this demo is what you can expect for your own personal information
-Task ends when the participant has checked on all the Task 2 screens and is back at the home page

Task 3: "Your final task is to check on and share with friends"
-Task 3 ends when the participant has sent an invite or has requested to visit to a friend.

Conclusion:
"How did that whole experience make you feel? What were some key emotions you felt or feel about the app?
"What was difficult to navigate or confusing? Or was anything easy?

Critical Incident Log - Participant 1

Successfully completed all of task 1	0
Had no idea where to start tapping at the beginning of Task 2, asked if she was supposed to input something somewhere	3
“I really like this, I always deal with something and it sucks, and when it’s over I just forget that it ever happened, I like the graphs a lot”	0
Had some problems with the wording on the stats page, felt “this is how you’ve been dealing with” was a little too negative, especially when stating positive emotions	2
Asked “Like do I tap the paw on the screen?” When prompted to click a bear paw to log a free response question, before successfully clicking bear paw	2
Expressed happiness and excitement around how private and safe the community sharing task is	0
Felt confusion about the difference between inviting a friend to come to their garden or asking to go visit a friend	1
“Wait, we're done?! Is there anything else I can do?” Very pleased at the end of the trial	0

Critical Incident Log - Participant 2

“Is that like I…my name? Do I put my name?” Unclear whether to answer daily survey questions with multiple choice or free-response, and what to put in free-response.	3
Successfully swiped both in and out of health tracking page and friend view page	0
“Does this do something?” Difficult to find weekly summary button	2
Successfully wrote free-response answers to question asking about experience with ____	0
Did not click bear paw to move on every time this was prompted on the screen	3
Successfully used multiple choice smileys to answer survey questions	0
Relied on hard coded next buttons but did not use the hard coded back button at top of screen	1
Did not see Daily Survey button immediately when looking at garden screen, had to ask facilitators if there was a button to press	3

Critical Incident Log - Participant 3

“I got a little lost at the start, but then I kind of figured it out!” Participant initially confused, but format became more intuitive with greater use	1
Before interacting with ‘screen’, participant squeezed physical bear body parts expecting this to do something	2
Wasn’t sure if had the ability to scroll up or down	2
“Log your experience with your…what?” Experience question too open-ended, participant not sure what to write about	3
Successfully used multiple choice smileys to answer survey questions	0
“Does this do something?” Not clear that the pie chart circle led to more insights on specific health categories	3
Did not see Daily Survey button immediately when looking at garden screen, had to ask facilitators if there was a button to press	3
Successfully clicked bear paw to move on every time this was prompted	0

Critical Incident Log - Participant 4

“When it says [click to submit], should I tap on the screen or press the paw?” Confusion about what the paw does and doesn’t do	3
Participant found the bear tedious to hold on to.	2
“Oh, those were gardens?” Participant thought that the gardens were just background decor on the home page.	2
Not clear that the pie chart circle led to more insights on specific health categories	3
“I wish I could get to the home page faster”; in task 3, wanted the option to return to the friend garden and home page	1
Successfully navigated through Task 3: visiting friends/inviting friends	0

Elaborating on Testing Results

Process Data & Strengths

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- All buttons on the screens in Task 1 were successfully pushed and navigated to the next pages
- Were willing to interact with the stuffed animal outside of the screens
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Bottom-Line Data & Weak Points

- Three participants had **severe problems** interacting with the **buttons** in Task 2, from not clicking to clicking the wrong things to not realizing there were buttons on that screen
- Three participants felt the free response screen was too open ended and preferred to just tap
- Sometimes participants would incorrectly interact with the plush toy at different times
- Two users wished there were more next and back buttons
- Swiping and scrolling seemed “unintuitive”
- One user expressed confusion about the bear body parts screen and what was supposed to be tapped (the physical plush toy or the bear on the screen)

Usability Goals: Efficiency

We achieved our usability goals for **efficiency** with Task 1 and 3 rather proficiently, but there were a few mis-clicks as well as some more severe problems with Task 2. The main problems from Task 1 came from confusion on when to click the bear's paw and when to click on the screen. There also was a lack of back and next buttons that could have made the overall experience a little more linear. Most participants experienced a learning curve by task 3 so there were less issues there. Most of the time, the wording was not clear enough on where to click or when to swipe.

Usability Goals: Pleasing

Our usability goal of being **pleasing** was more accomplished. Most users expressed wanting to come back for more. One expressed outwardly that the community aspect made them feel safe and like their privacy was protected, which aligns very well with our values. A few times there were places where certain wording elicited negative emotions, such as the phrase “here is how you are dealing with,” where these words could be replaced with less emotional phrases like “here is a summary” to bring up less negative emotions.