# Ajar: Open, Honest Communication for Parents
# Final Report

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## Problem / Solution Overview

**The Problem:** Parents feel isolated in their struggles, as well as external pressure and guilt due to portrayals of perfect parents from social media and parenting resources.

**The Solution:** Ajar gives parents a low-pressure platform through which to share honestly about their experiences and encourage one another along the journey. Ajar features a daily question jar (Figure 1), where users add responses to a shared question. Users build community by adding their responses and commenting on each other's responses.



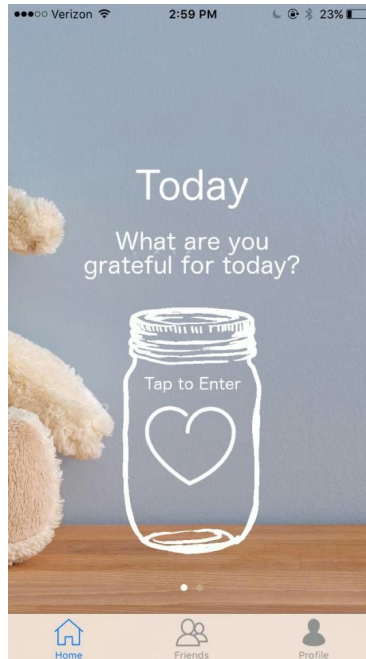*Figure 1. Home screen of high-fi prototype.*

## Tasks & Final Interface Scenarios

## Task #1: View your friends' responses to the daily question (simple)
Our simple task is to open the jar to view friends' responses to the daily question. This is the lowest-commitment use of our app, but it's important that our users see honest answers from their friends in order to build trust and transparency. (Figure 2)
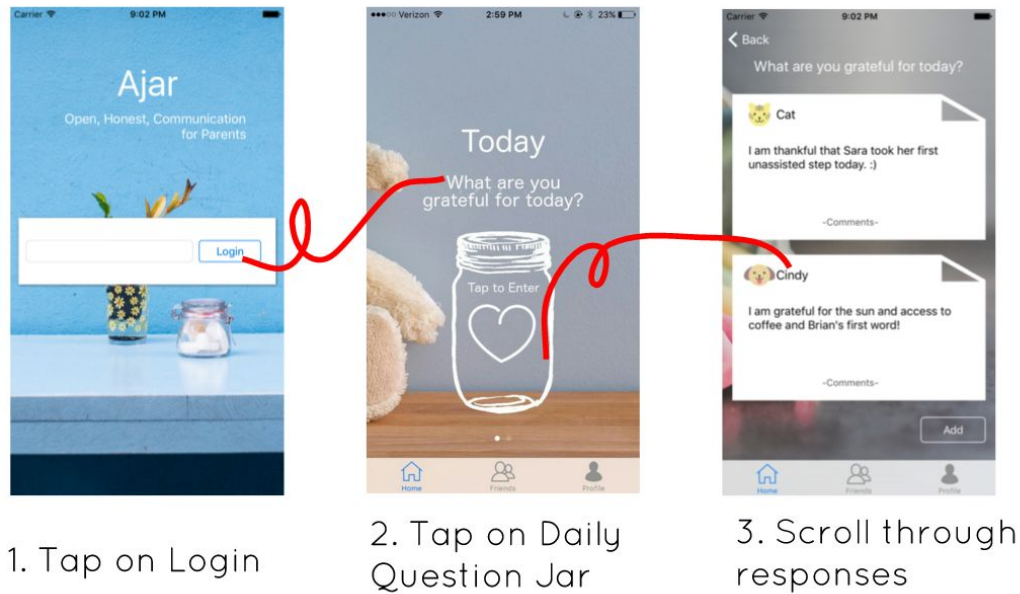
*Figure 2. Task #1 storyboard using high-fi prototype screenshots.*

## Task #2: Add your response to the daily question (moderate)

Our moderate task was to add your own response to the daily question. Adding one's own responses allows the user to become an active member of the community. (Figure 3)



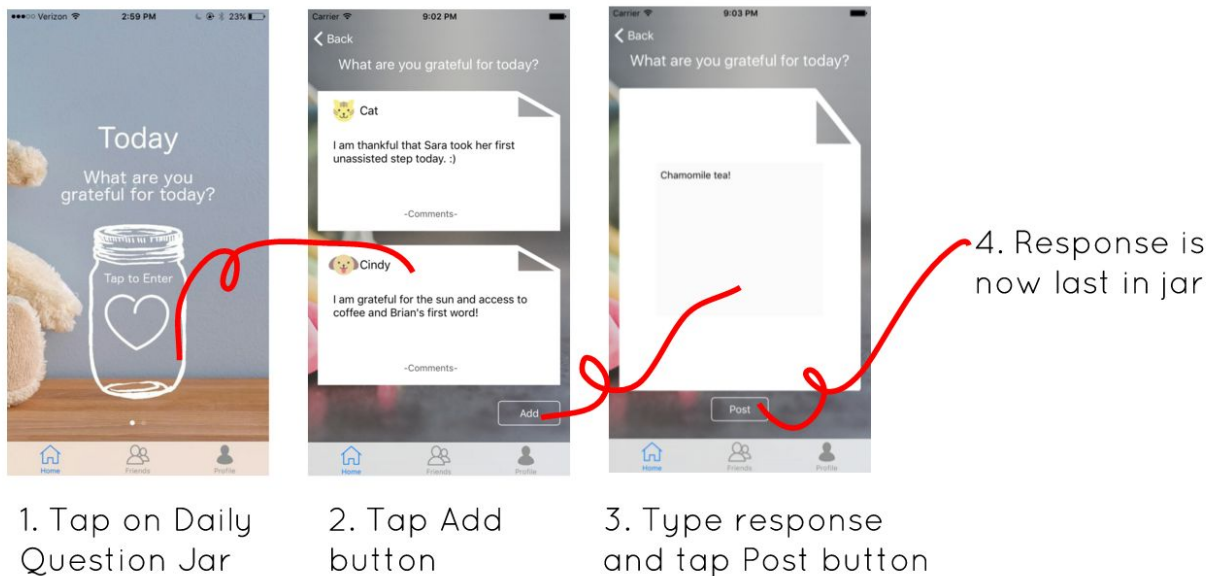*Figure 3. Task #2 storyboard using high-fi prototype screenshots.*

## Task #3: Comment on friends' responses to the daily question (complex)

The complex task is interact with friends by commenting on their responses. This level of communication brings the community together by encouraging one another, offering advice and celebrating and commiserating together (Figure 4).
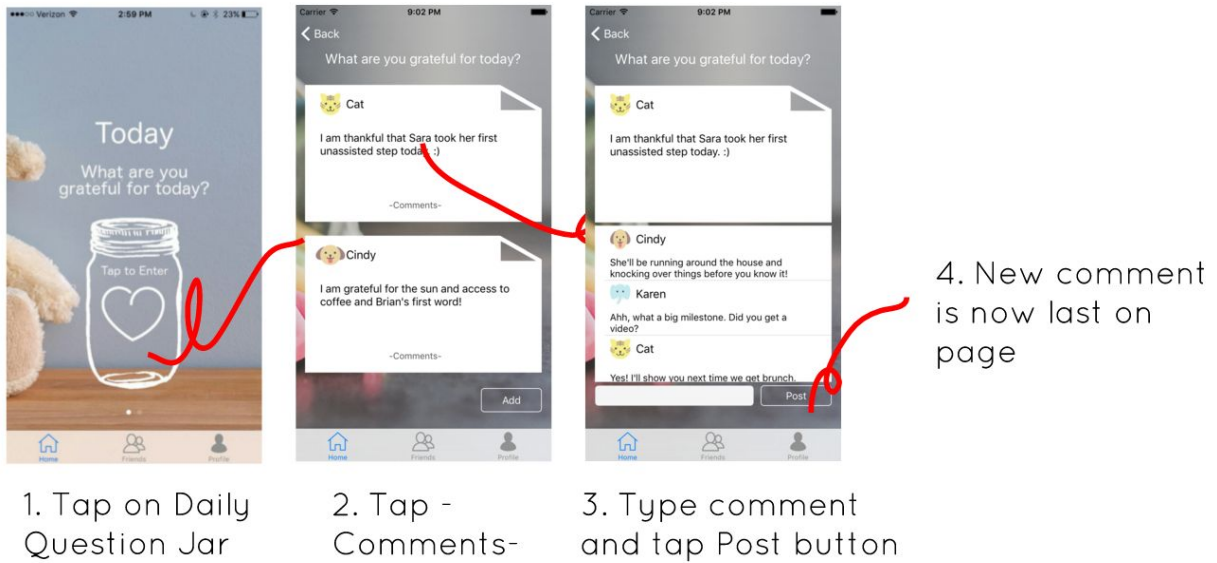
*Figure 4. Task #3 storyboard using high-fi prototype screenshots.*

## Design Evolution

## Initial Sketches

The inspiration for our initial "Diary in a Jar" idea was the idea of storing handwritten notes in a labeled mason jar. Before we thought of this concept, we had been thinking of creating a more generic social media app for parents. Taking into account the busy schedules of most parents, the "Diary in a Jar" allows for only two posting incidents: one for an answer to the daily question, and the other to add encouraging notes to another randomly generated friend's jar. Interaction with other members of the community include the passive viewing of other's answers to the daily question, active liking and commenting on other's notes, and engaging in direct messaging by adding notes to individual friends' jars. Our initial sketches are shown below (Figure 5).

*Figure 5. Initial sketches of our "Diary in a Jar" concept.*

## Low-Fi Prototype

For our low-fi prototype, we sketched the following screens on paper (Figure 6), scanned them into a document, printed multiple copies, and cut them out. The main difference between our initial sketches and low-fi prototype sketches is that we left blank spaces where we wanted the user to enter text, such as the "your answer" section on the fifth screen. We also put the idea of having an "archive" of old jars on hold in order to focus on our three main tasks.

*Figure 6. Low-fi prototype screens.*

## User Testing

We chose three participants for pilot user testing with our low-fi prototype. Our participants are all parents and represent diversity in age (20-60), gender (M/F), profession (grad student, tech, pharmaceutical), number of children (1-2) and age of children (toddler-college student). We conducted our user testing in three common, everyday locations where parents might spend their day: Stanford's medical school campus, Coupa Cafe, and a user's home. We initially contacted our participants over phone or email and set up a 10-20 minute time slot to meet individually with each user. We printed consent forms (see Appendix A) and asked the participants to sign them. Using a prepared script (see Appendix B), we briefly explained the project and gave a demo of how to interact with our low-fi prototype. For each task, we stated the expected task but did not tell the users how to complete the task. The user then interacted with each screen through tapping the paper or writing with a pen to simulate typing (Figure 7). We switched paper screens depending on the user's actions and wrote down observations

We found that participants were appreciative of the app's ultimate goal and aesthetic. Every single user, when instructed to view their friends' answers to the Daily Question, clicked on the jar labeled with the friend's name instead of the Daily Questions jar labeled with the question itself. Our assumption that users would simply disregard the presence of the randomly generated friend jar until we specifically asked them to complete a task regarding the jar was

false. All in all, all users successfully posted without much hassle, quickly realizing that the + button allowed them to add their own answers to the Daily Question. They also did not find it difficult, once they are finished with typing up a response, to post the answer to the jar. Lastly, most users were confused about the randomly generated friend jar and why the name changed after they finished posting in the initial friend jar.
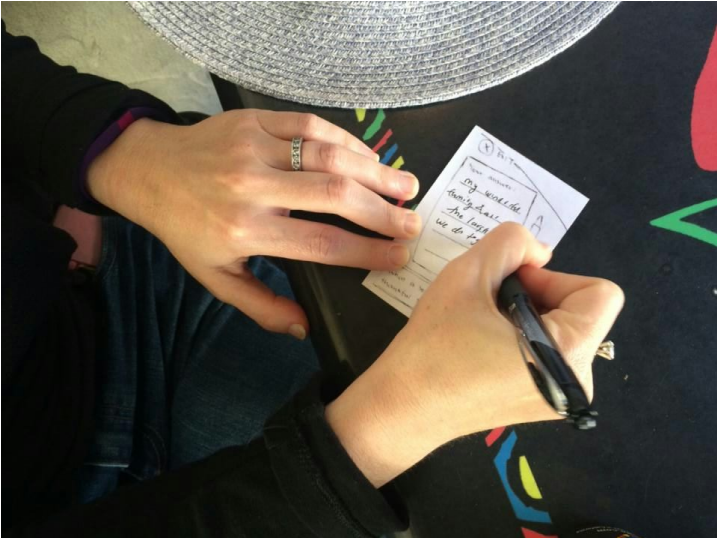


*Figure 7. Subject of user testing interacting with low-fi prototype.*

## Medium-Fi Prototype

Our medium-fi prototype was built using Sketch and Marvel (Figure 8).



*Figure 8. Medium-fi prototype created using Sketch and Marvel.*

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Based on our user testing and in-class feedback from our studio, we chose to focus on three major design changes:

1.  Home Screen (Figure 9)
    In our low-fi prototype, two jars take up equal space on screen, without any directions or obvious buttons. Our users didn't know to tap on jars to open them, and they also didn't understand our random friend feature (we intended to put a random friend's jar on the home screen each day to encourage more diverse interactions). In studio, we received the suggestion to put the daily question jar *only* on the home screen. We followed this advice by making the daily question jar central on the home screen and adding an instructive "Tap to view" bubble. The "View friends" button initially hides the complexity of that feature.



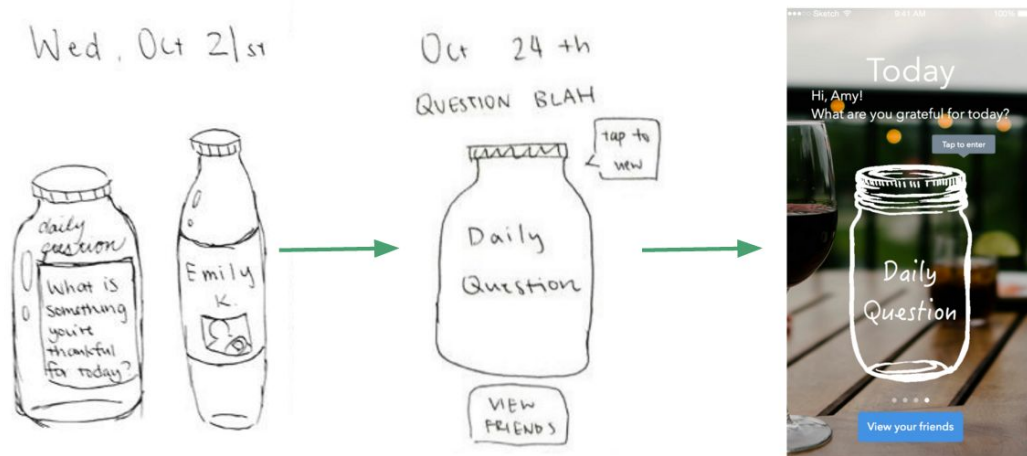*Figure 9. Home screen changes in medium-fi prototype.*

2.  View Friends (Figure 10)
    We initially displayed a random friend jar on the home screen of the low-fi prototype. There was no functionality for viewing other friends. Our users were confused by the lack of friend searching functionality, so our studio and CA suggested a newsstand-type shelf of friend jars, which we implemented in our medium-fi prototype.
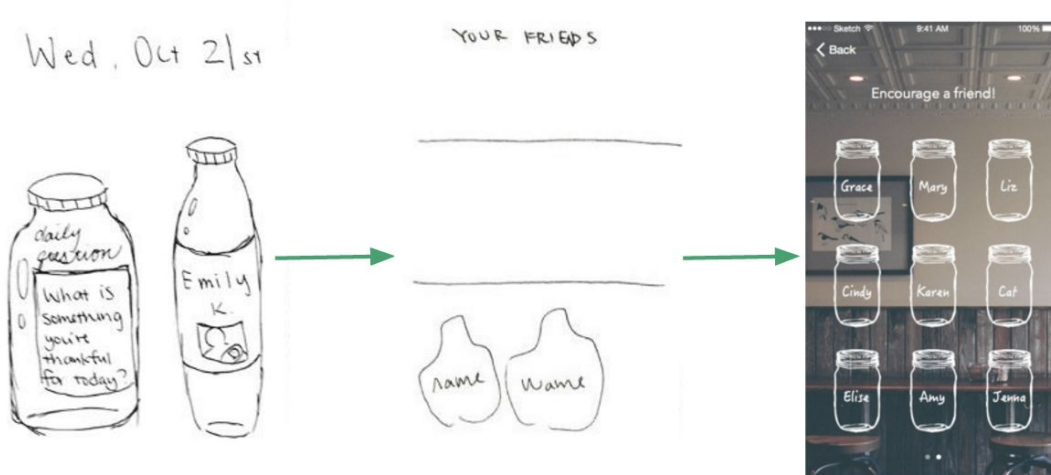
*Figure 10. Friend viewing changes in medium-fi prototype.*

3. Interactions (Figure 11)

   In our low-fi prototype, users click on the More button to read the full note. In the medium-fi prototype, we display notes in their entirety and add a scrollbar. Also, our low-fi supported like and comment buttons that none of our users tapped. In our medium-fi we decided to allow for users to send advice and encouragement directly.
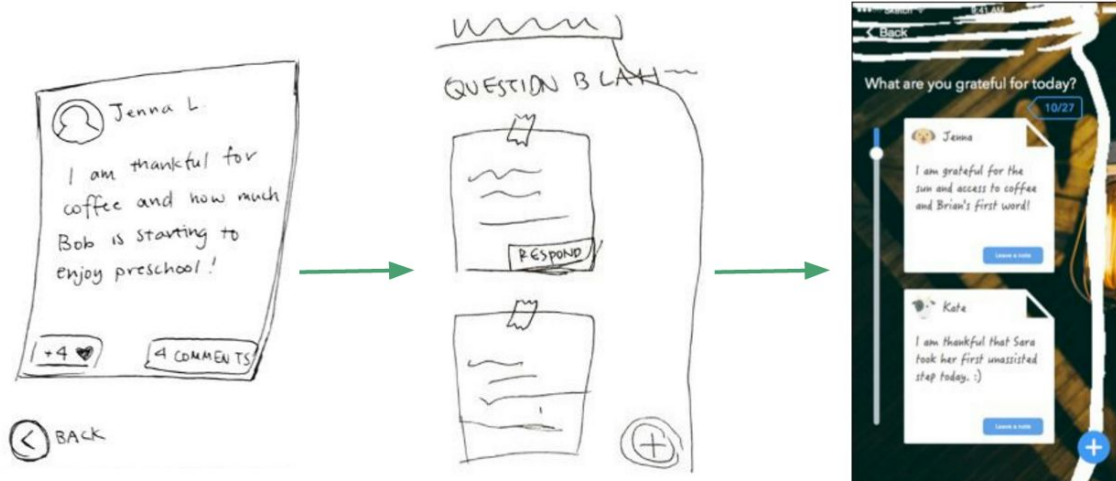


*Figure 11. Interaction changes in medium-fi prototype.*

## Heuristic Evaluation

Several classmates from our studio conducted a heuristic evaluation on our medium-fi prototype. They found 40 violations of Nielsen's Usability Heuristics, including 9 that were determined to be of severity 3-4, and also provided some recommendations for improvement. In the following section, we address the ways we changed our design in our high-fi prototype in order to address these issues.

## Major Usability Problems Addressed

## H2-1: Difficult to track of where you are in app

"It's difficult to track where you are in the app and how to get back to the home screen, other than tapping the 'Back' button multiple times and hoping for the best."

**FIXED:** We agreed with this evaluator that our navigation was limited in the medium-fi prototype (Figure 12). For the hi-fi prototype, we added a navigation bar with three tabs: Home, Friends, and Profile. This helps cleanly divide the functionality and task flows of each. We also updated our '< Back' button functionality to decrease user confusion (Figure 13).
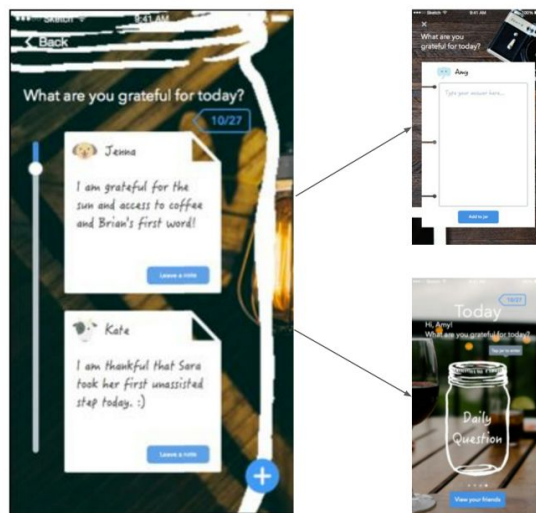


*Figure 12. Medium-fi prototype screenshots: Tapping < Back redirects to either adding a note or the home screen, depending on the user's previous navigation sequence.*
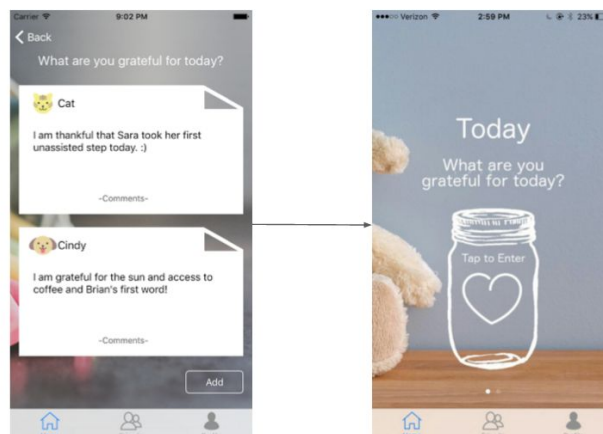


*Figure 13. High-fi prototype screenshots: Tapping < Back always redirects to home screen.*

## H2-1: "Encourage a friend" title isn't elaborative

"The list of friends' jars is titled with 'Encourage a friend,' but clicking on a jar takes you to a more profile-looking page, but there is no clear indication of what you're looking at. It's not quite clear to a user what this page is for, and having a clearer indication of that at the top of the page would clarify its purpose and give the information and actions some useful context."

**FIXED:** Originally, we had a screen showing a list of friend jars and titled it with "Encourage a friend" to indicate that users should send notes to individual friends (Figure 14). We made a pretty big design change by removing direct messaging entirely from our app; instead, users interact more publicly by commenting on each others' daily question responses. Thus, we replaced the list of friends' jars with the Friends tab (accessed through the navigation bar). The Friends page shows a list of friends' info: name, location, and number of children (Figure 15).
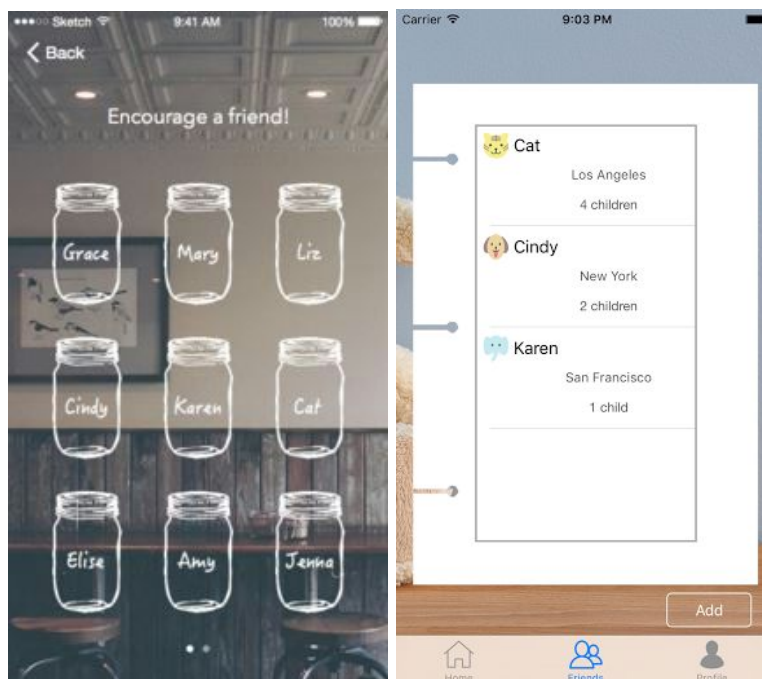


*Figure 14 (left). Medium-fi prototype screenshot: List of friend jars with instructions to encourage a friend (by leaving a note).*
*Figure 15 (right). High-fi prototype screenshot: New Friends page.*

## H2-4: White text on background difficult to read

"The white font and background picture becomes an issue for the iPhone text (the phone and Wi-Fi signal, time of day and battery percentage). Either changing the background image or changing the color of the iPhone text would solve this problem (specifically in the 'Today' and 'Yesterday' screens."

**FIXED:** We agreed that the white text was hard to read (Figure 16), so we chose new background images with darker colors and less color contrast (Figure 17). Our new background images are also more suited to the theme of parenting.
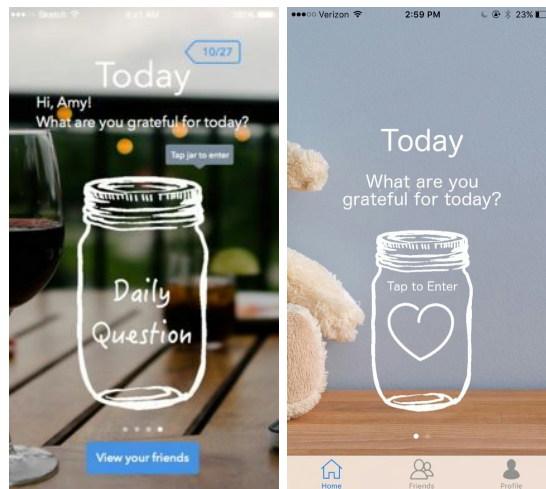


*Figure 16 (left). Medium-fi prototype screenshot: White text difficult to read.*
*Figure 17 (right). High-fi prototype screenshot: White text easier to read.*

## H2-4: Purpose of date label inside arrow

"The purpose of the blue arrow outline with the date inside of it is a bit unclear. I'm assuming clicking on it will lead me to a previous date, but having it on the right side to go backwards in time feels strange, and it appears there is already functionality to go backwards based on swiping...There might be other stylings for dates that would be more clear."

**FIXED:** The blue "arrows" were meant to be tag icons and were not supposed to indicate pointing to a previous date (Figure 18). Since they were confusing, we removed the date tags and kept the "Today" and "Yesterday" headers standalone (Figure 19).
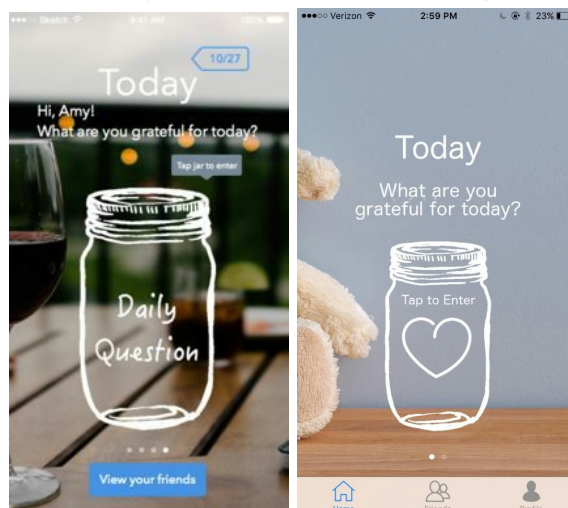


*Figure 18 (left). Medium-fi prototype screenshot: Blue tag in top right corner indicates date.*
*Figure 19 (right). High-fi prototype screenshot: Blue tag removed.*

## H2-4: Contradictory instructions

"The button on the Daily Question screen says 'View your friends,' but then the instruction at the top of the next page is 'Encourage a friend,' which is a different action. A user just aiming to look at a friend's profile would be thrown off by the new instructions. Having the documentation on the friends' jars page be more encompassing would cover more actions."

**FIXED:** As mentioned above under "H2-1: 'Encourage a friend' title isn't elaborative," we decided to restructure the Friends page to remove the 'Encourage a friend' title (Figure 20). The user views friends by tapping Friends in the navigation bar, which is much more intuitive (Figure 21).
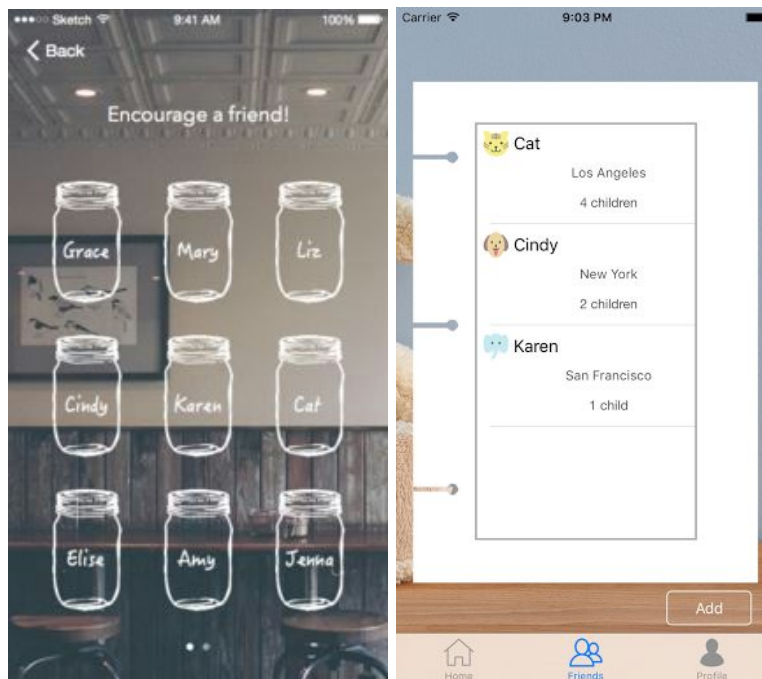


*Figure 20 (left). Medium-fi prototype screenshot: List of friend jars.*
*Figure 21 (right). High-fi prototype screenshot: New Friends page.*

## H2-6: "Tap jar to view" only on first jar

"On the Daily Question screen for Yesterday, the 'Tap jar to enter' tooltip is missing - this may be unclear to users who end up on this page and do not know how to proceed. Users shouldn't have to remember the instructions from the previous page - showing the same tooltip here would be more consistent and clearer about the intended interaction."

**FIXED:** The original Yesterday jar did not have a label (Figure 22). We added a "Tap to Enter" label directly on each jar, including the Yesterday jar, to clarify the intended action (Figure 23).
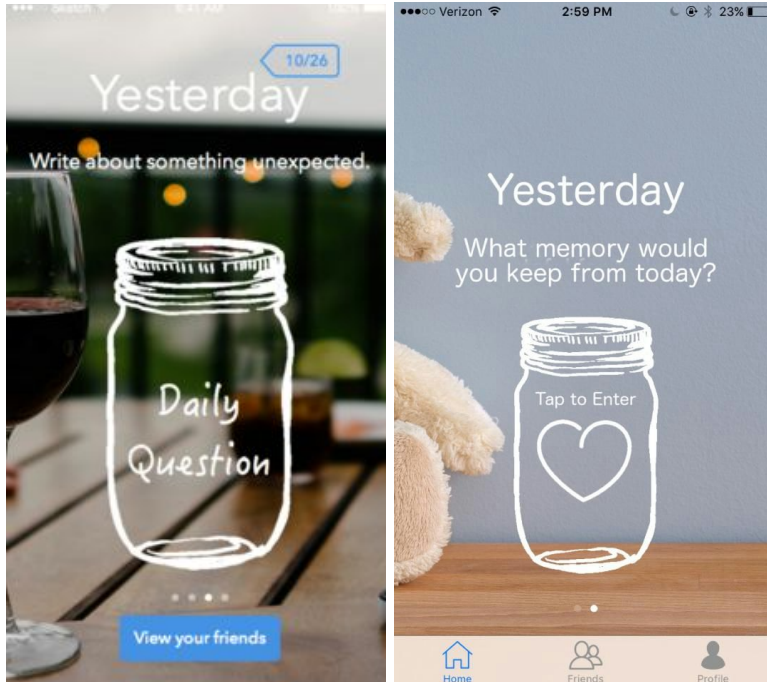
*Figure 22 (left). Medium-fi prototype screenshot: No tooltip / instructions for jar interaction.*
*Figure 23 (right). High-fi prototype screenshot: All jars have "Tap to enter" label.*

## H2-7: No way to answer question on landing page

"The Daily Question screen asks a question, like 'What are you grateful for today?' but then there is no way (on this screen) to answer that question. This could be both confusing to new users, who are unsure why a question is appearing there with no answers given or way to answer, but it also might be inconvenient for experienced users that want to answer the question without first going into the jar."

**CHOSE NOT TO FIX:** We decided to maintain that the user needs to enter the jar and see other users' responses before adding her own response. We feel that it is important to encourage the user to interact with other users' responses in order to develop community; otherwise, this could become more of an individual diary app, which is not our aim. The extra tap is not a significant barrier in our opinion (Figures 24, 25).
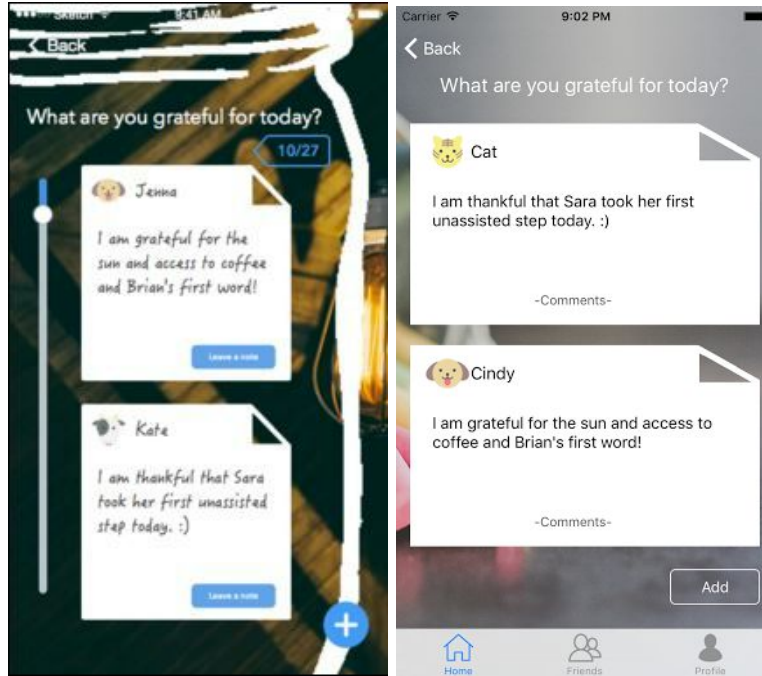
*Figure 24 (left). Medium-fi prototype screenshot: Add button (+) in bottom right corner is only accessible from inside jar.*
*Figure 25 (right). High-fi prototype screenshot: Add button in bottom right corner is still only accessible from inside jar.*

## H2-10: Privacy of "Send a note" unclear

"The functionality of the 'Send a note' button is unclear. I'm not sure if this is a private or public message, or where I would go to see the messages I've sent or received. Is this supposed to be a note related to the note they wrote, or just any message?"

**FIXED:** Initially, our medium-fi prototype allowed users to leave private messages for friends by writing a note and leaving it in a friend's jar (Figure 26). As mentioned above under "H2-1: 'Encourage a friend' title isn't elaborative," we chose to completely remove the direct messaging functionality (which was referred to by our "Leave a note" instruction) from our app. After considering the pros and cons of private vs. public messaging, we decided to shift to public messaging since there are many other options available for private messaging (e.g. texting, FB message). The purpose of the messages (whether they express encouragement, excitement, or advice) is to build community between parents going through similar challenges and experiments. Therefore, we decided to replace private messaging with "public" comments, that is, "public" among friends (Figure 27).
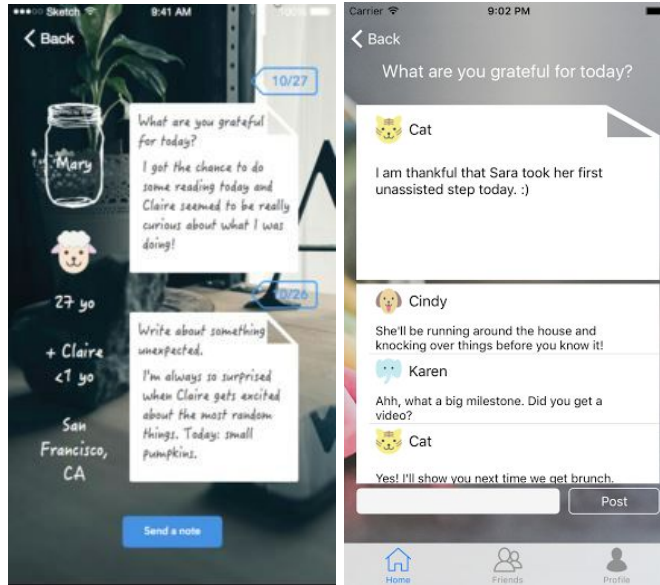
*Figure 26 (left). Medium-fi prototype screenshot: User can send private message by tapping "Send a note" button at bottom.*
*Figure 27 (right). High-fi prototype screenshot: Users interact through comment threads on responses, and comments can be viewed by all friends.*

## Other Changes

Although our three main tasks are all accessible from the Home screen, our new navigation bar additionally includes a Friends tab and a Profile tab.

From the Friends tab (Figure 28), users can view friends and add new friends. The initial page displays a list of existing friends. To add new friends, the user taps the add button at the bottom of the screen to see a list of friends to potentially add.
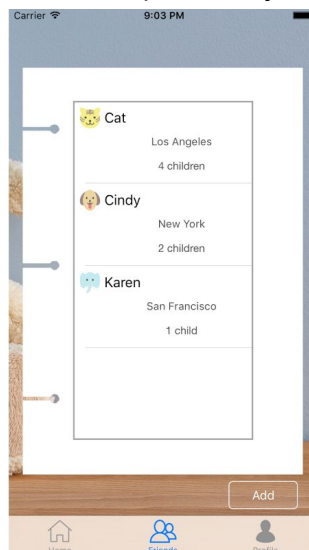


*Figure 28. The Friends page lists existing friends.*

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On the Profile page (Figure 29), users view their profile information and have the option of editing. The information is pretty basic: a name and avatar (not editable), location (editable), and number of children (editable). Tapping the arrow next to 'Select Location' or 'Select # of Children' takes the user to a page where she can scroll through a list of preexisting options.
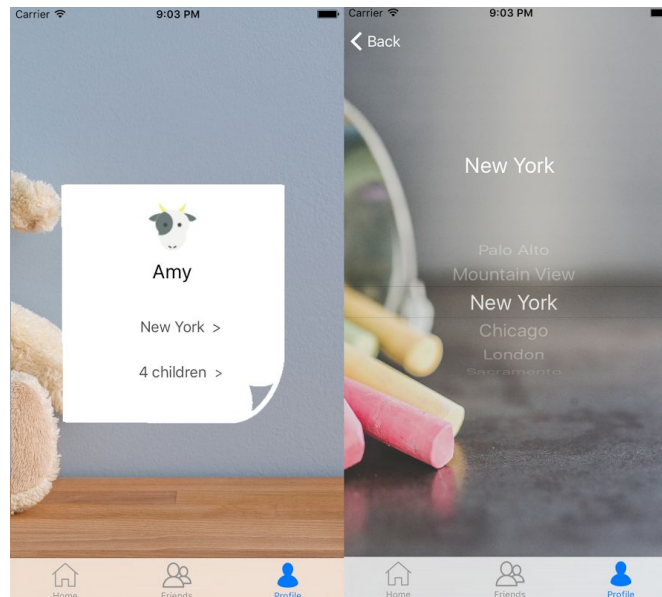


*Figure 29. The Profile page allows users to edit profile information.*

## Prototype Implementation

## Tools

In order to create our high-fi prototype, we used Xcode, a developer environment containing software developer tools for creating iOS and OS X applications. We also used GIMP for editing graphics and Git for version control.

Here we discuss some ways that Xcode helped us during our development process:

● Data: We decided to hard code all our data so that we could focus on the interface of our app, a challenging part of the process. In iOS development, it is actually quite easy to update lists of information and pass information between different screens, so implementing the data side was not too challenging.

● Animations between screens: In the Xcode interface builder, there is something called a UINavigationController. Placing this in the interface builder made Xcode automatically create back buttons and animations between screens.

Here are some ways that we found Xcode frustrating or difficult to use:

● Xcode interface builder environment: We found the interface builder difficult to interact with. Our app is unique in its design, that is, a lot of our lists of information had to be customized from the standard iOS list that xcode has available (our app uses pictures and icons in the background for a lot of our lists, including our list of responses to

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questions and our lists of comments). This means that we had to spend a lot of time messing around with xcode's tools to define how these images would appear in our lists, which proved to be frustrating. It was especially frustrating trying to make our background images look exactly the same in all our screens. It was hard making our information fit inside our lists correctly, so we focused on making this work for iPhone 6 and above.

● Making transparent navigation bar: Although we were able to utilize the UINavigationController to automate the creation of back buttons and animations, it would create an upper navigation bar that would push everything down in our screen, and we had to play around with the code to fix this issue and make this upper navigation bar appear invisible.

● Sticky Animations: Although the navigation bar automatically created the animations we wanted, sometimes they would take a while to load, and despite our investigations, we couldn't figure out why.

## Wizard of Oz and Hard-Coded Data

We did not use any Wizard of Oz techniques, but the following are hard-coded:

1. The user's name, friends, and list of potential friends.
2. Each of their friend's responses
3. The question for 'Today' and the question for 'Yesterday'
4. The user's name is always 'Amy'.
5. List of possible locations in user profile settings.

## Missing Features and Future Improvements

Our hi-fi prototype focused on implementing the basic interface, so there are many candidates for potential future improvements. First off, we would want our app to be personalized for each user, rather than hard-coding the user's information. We would implement a backend that would allow users to log in to their accounts (with a password) and save the user's data beyond a single interaction with the app. We would have real users create content rather than populating the app with example content we generated. We would also need many more questions for each day that app is used. In order to make our app scalable, we would need a search feature for new friends. We would also expand our list of possible locations in the user profile settings.

In the future, the concept of our app could be applied to new target user groups beyond parents. For example, groups of friends could use the app to discuss their travel experiences or to reflect on their personal goals. We could also allow users to generate their own questions. We could have suggested friends and allow groups of friends to create their own communities.

## Summary

In summary, over the nine weeks that we worked on Ajar, we closely followed the design process to create a product that focuses on the needs of parents. We started by interviewing a

variety of parents and professionals who work with parents with the purpose of understanding their wellbeing. Through developing point of view statements, we empathized with our users, which motivated our brainstorming on how we might creatively solve their needs. While we focused on combatting parental guilt and developing community support networks, we iterated through many potential ideas, including a travel app that recommends good daycare and a photo/video app where parents post honest photos for 100 days. We were very excited about our final idea of creating a shared jar where parents answer a daily question and interact with a community of other parents. Our low-fi, medium-fi, and high-fi prototypes made our interfaces concrete, and we conducted user testing and heuristic evaluations along the way to help us improve and sharpen our ideas. We appreciate the lessons that we learned throughout the process.