Assignment 8: High-Fidelity Prototype

Flutter

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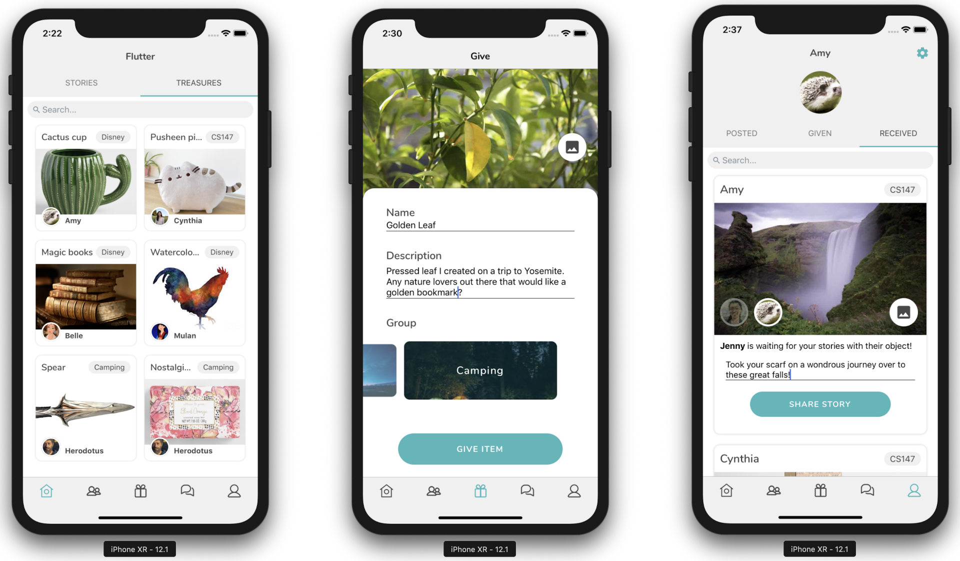
Problem and Solution Overview

We are often reluctant to declutter because objects hold sentimental value.

We make the process of giving items easy, social, and emotionally rewarding. Through closed, tight-knit communities, Flutter encourages a sense of trust. By systematically encouraging receivers of treasured objects to share their side of the story, Flutter creates deeply human connections behind every transaction, giving people the agency to declutter meaningfully.



Name
Golden Leaf

Description
Pressed leaf I created on a trip to Yosemite. Any nature lovers out there that would like a golden bookmark?

Jenny is waiting for your stories with their object!

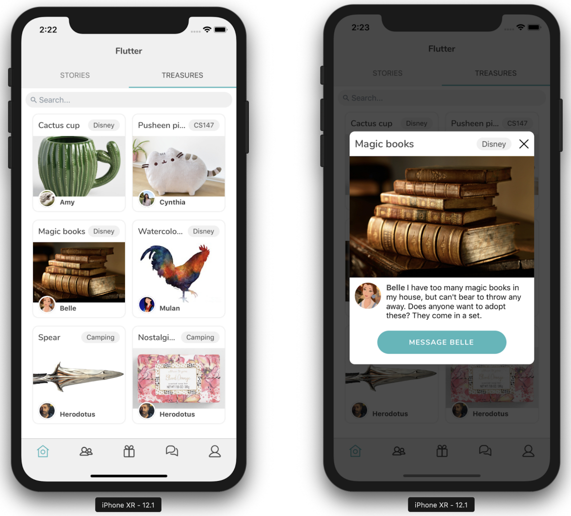
Took your scarf on a wondrous journey over to these great falls!

Figure 1. Core screens.

Tasks & Final Interface Scenarios

Simple: find an object.

The user taps on the "Treasures" tab on the homepage, which leads them to a page showing all items that haven't been claimed. By tapping on the object card, the user opens a modal showing the story behind the object being given away. This task allows the user to find objects they are willing to give new homes to, because every transaction requires a receiver to take sentimental objects off a cluttered giver’s hands.

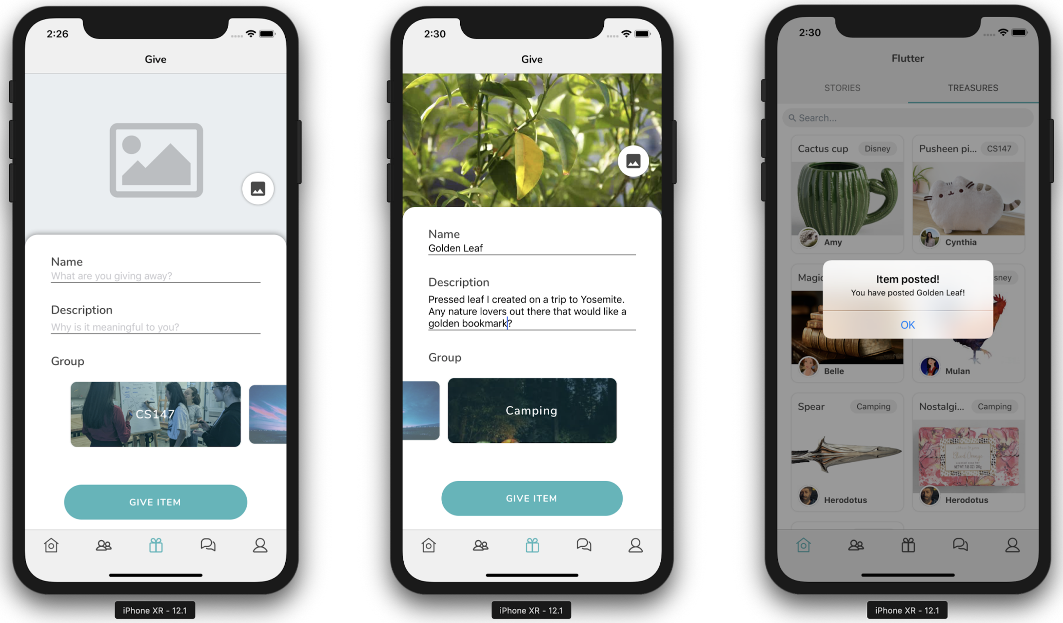


Belle I have too many magic books in my house, but can't bear to throw any away. Does anyone want to adopt these? They come in a set.

Figure 2. Finding an object.

Medium: give an object.

The user taps on the “gift” tab on the bottom, taking them to a page where they can fill in information about items they’re posting, including a picture of the object, the object name, a description of why that object is meaningful to the user, and which group they would like to post the object in. After filling in all fields, the user taps the Post Item button on the center bottom to post the item into the group Treasures page, as well as in their own profile under the Posted section. This task allows for users to share their meaningful memories with an object, as well as preserve this meaning when they pass on these objects without the hassle of the objects taking physical space.



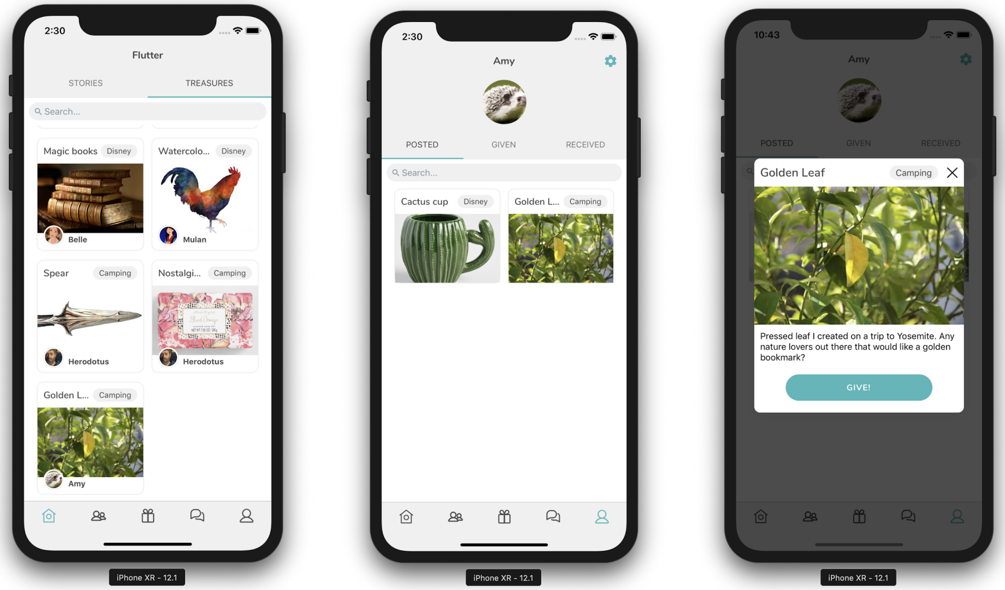
Name
Golden Leaf

Description
Pressed leaf I created on a trip to Yosemite. Any nature lovers out there that would like a golden bookmark?

Group
Camping

Item posted!
You have posted Golden Leaf!

Figure 3. Posting an item.

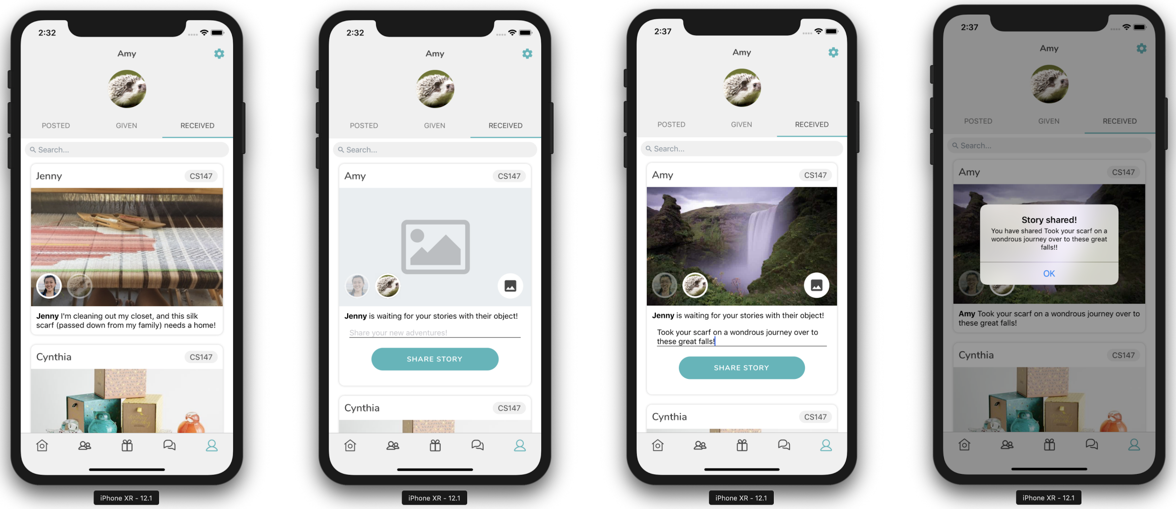


Pressed leaf I created on a trip to Yosemite. Any nature lovers out there that would like a golden bookmark?

Figure 4. Users can view items they posted from their profile.

Complex: Share new experiences with the received object.

The user taps on the “gift” tab on the bottom, taking them to a page where they can fill in information about items they’re posting, including a picture of the object, the object name, a description of why that object is meaningful to the user, and which group they would like to post the object in. After filling in all fields, the user taps the Post Item button on the center bottom to post the item into the group Treasures page, as well as in their own profile under the Posted section. This task provides emotional security for the giver, as we found that people are more willing to part with unused sentimental objects if they know they will be meaningfully treated, and the receiver sharing new experiences with their object is proof that the object is being meaningfully treated.



Jenny I'm cleaning out my closet, and this silk scarf (passed down from my family) needs a home!

Jenny is waiting for your stories with their object!

Share your new adventures!

Jenny is waiting for your stories with their object!

Took your scarf on a wondrous journey over to these great falls!

Story shared!

You have shared Took your scarf on a wondrous journey over to these great falls!!

Amy Took your scarf on a wondrous journey over to these great falls!

Figure 5. Updating the story of a received object.

Design Evolution

Sketches

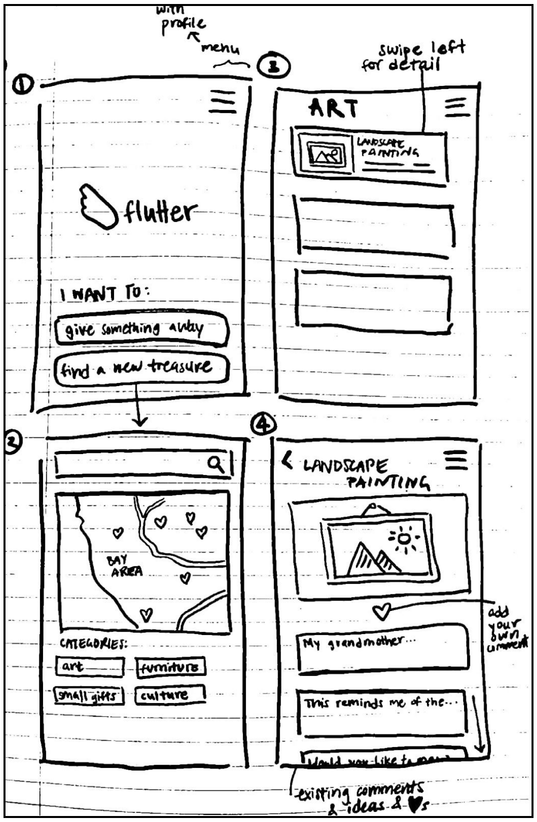


Figure 6. Initial chosen UI Design.

Initially, we envisioned a split-path design for our UI. Users would choose whether they were givers or receivers of objects from the home screen (top left), and after choosing,they would be directed to either the giver-specific or receiver-specific paths. Receivers would be able to look through nearby objects by a continuous scrolling feed (top right), by proximity, or by categories (bottom left). Once givers posted an object, potential receivers could comment publically, notifying the giver of why they wanted that specific object (bottom right), and givers would decide based on responses to whom they wanted to give the object.

Low-fidelity prototype

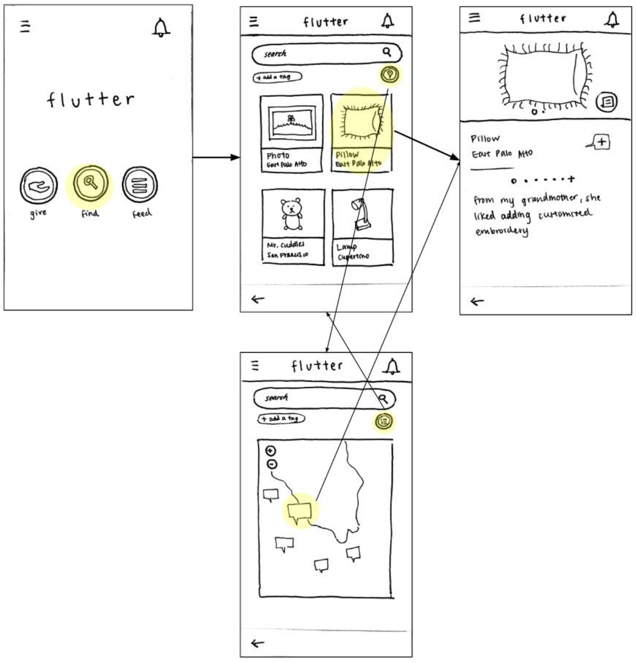


Figure 7. UI flow of simple task (find an object) for our lo-fi prototype.

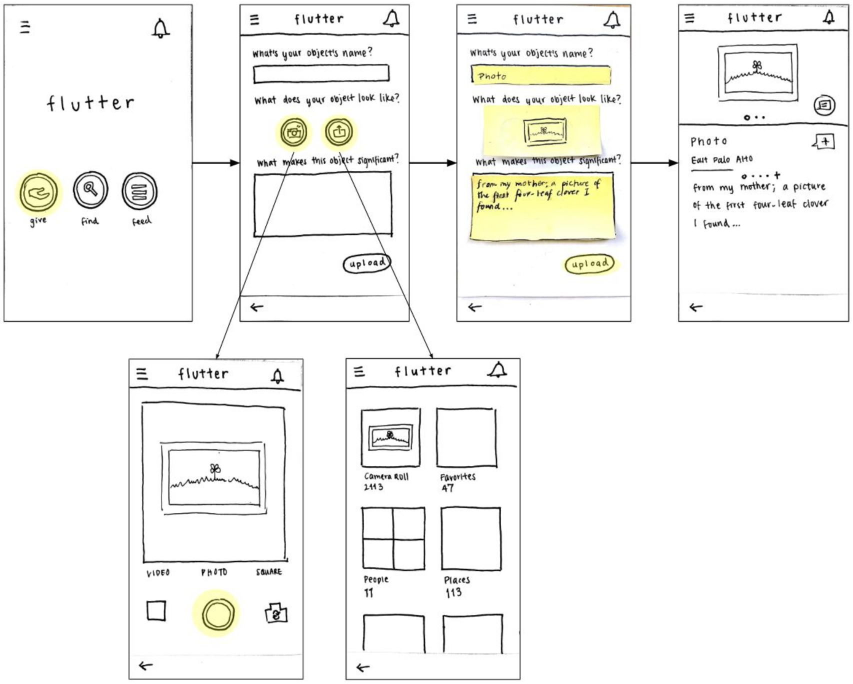
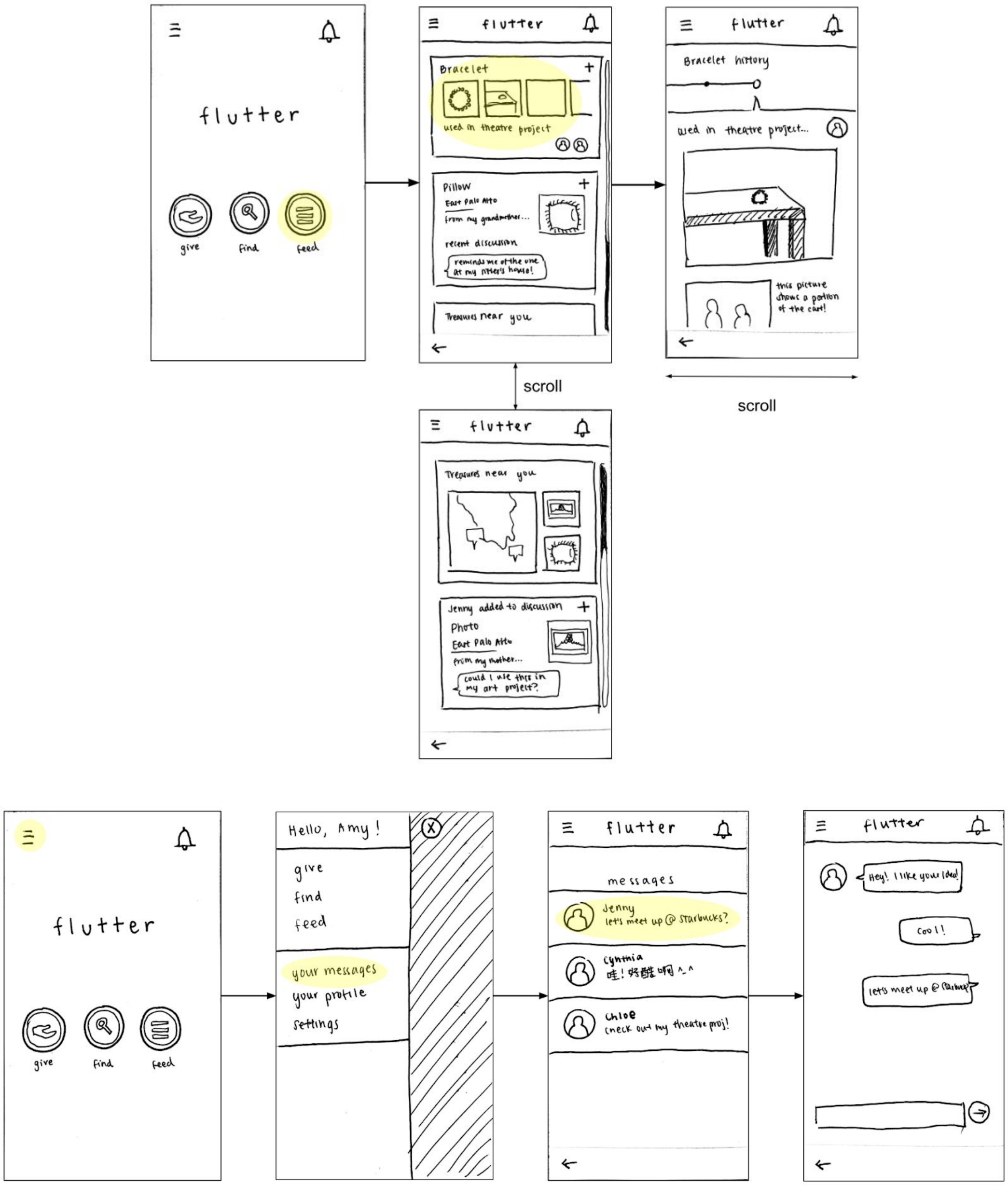

flutter
give
find
feed
flutter
What's your object's name?
What does your object look like?
What makes this object significant?
upload
flutter
What's your object's name?
Photo
What does your object look like?
What makes this object significant?
From my mother; a picture of the first four-leaf clover I found...
upload
flutter
Photo
East Palo Alto
From my mother; a picture of the first four-leaf clover I found...
flutter
VIDEO
PHOTO
SQUARE
flutter
Camera Roll
2113
Favorites
47
People
11
Places
113

Figure 8. UI flow of moderate task (give an object) for our lo-fi prototype.



from my grandmother...

reminds me of the one at my sister's house!

used in theatre project...

this picture shows a portion of the cart!

from my mother...

could I use this in my art project?

let's meet up @ Starbucks?

哇！好酷啊 ^_^

check out my theatre proj!

Hey! I like your idea!

Cool!

let's meet up @ Starbucks?

Figure 9. UI flow of complex task (connect and create new experiences) for our lo-fi prototype.*

*complex task was later changed.

Usability Testing Feedback

Based on feedback from low-fi testing, we adjusted our medium-fi prototype as follows:

1. Changing location of navigation bar

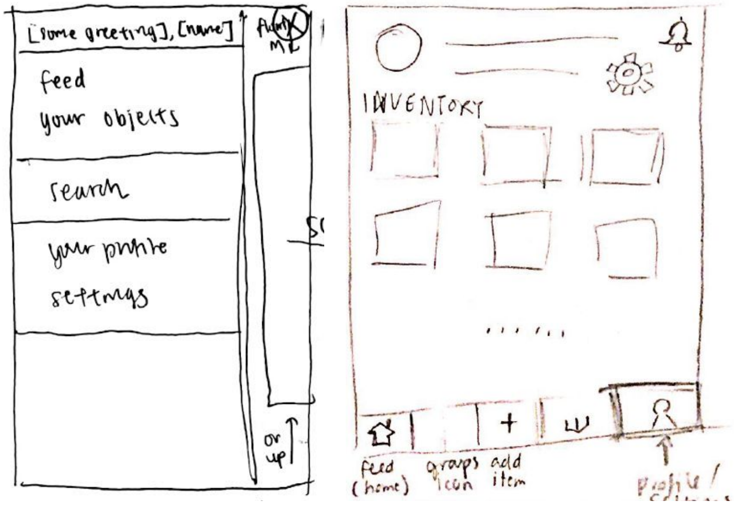


Figure 10. Navigation bar changes, old (left) and new (right).

We noticed that users were clicking the back button multiple times to return to home before switching tasks instead of using the navigation bar. Tab navigation increased constant visibility compared to sidebar navigation.

2. Sharing visibility limited to closed groups instead of to the public

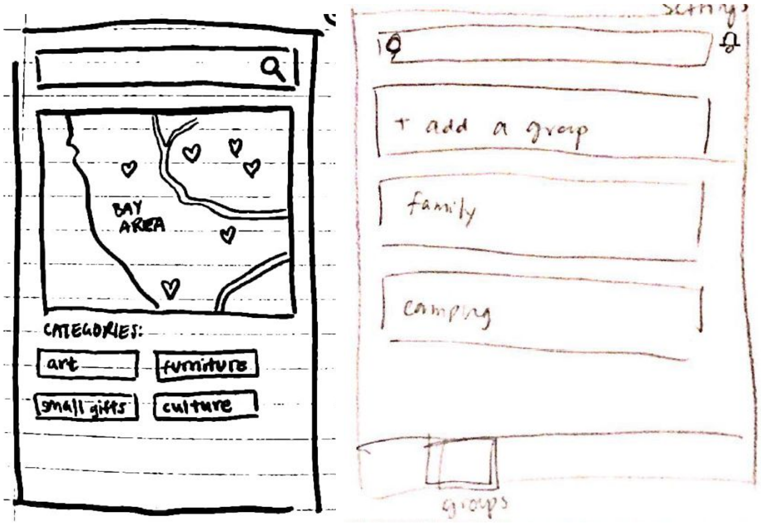


Figure 11. Object sharing visibility, old (left) and new (right).

There were concerns from our low-fi testers about interaction with strangers and having their locations and objects be publicly visible. Previous needfinding sessions concluded people like to have control and agency over their objects, so we concluded that people give items away to people they know in their communities as opposed to donating and making them up for grabs to the greater population. Therefore, we created a Groups tab, where users could create closed groups to share their objects.

3. Indicating items have been given

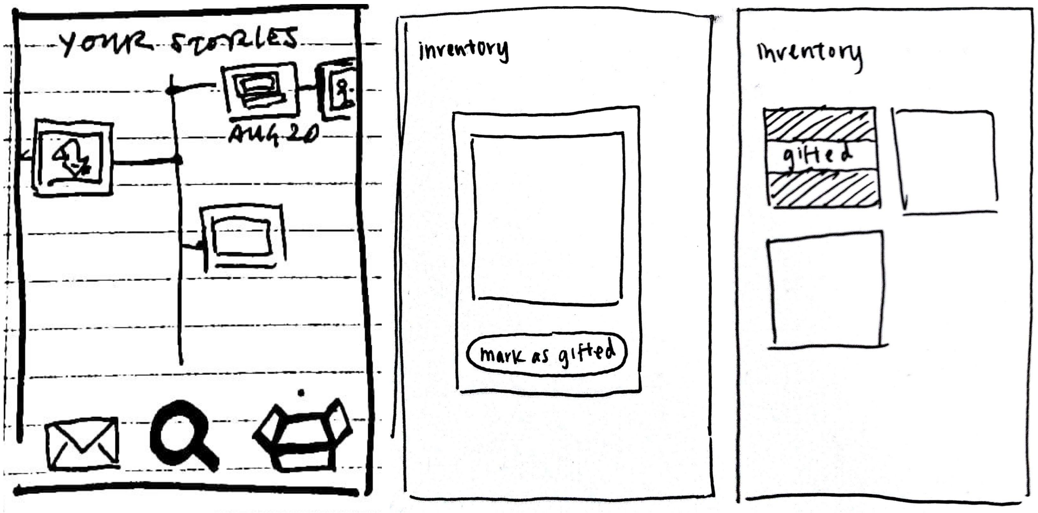


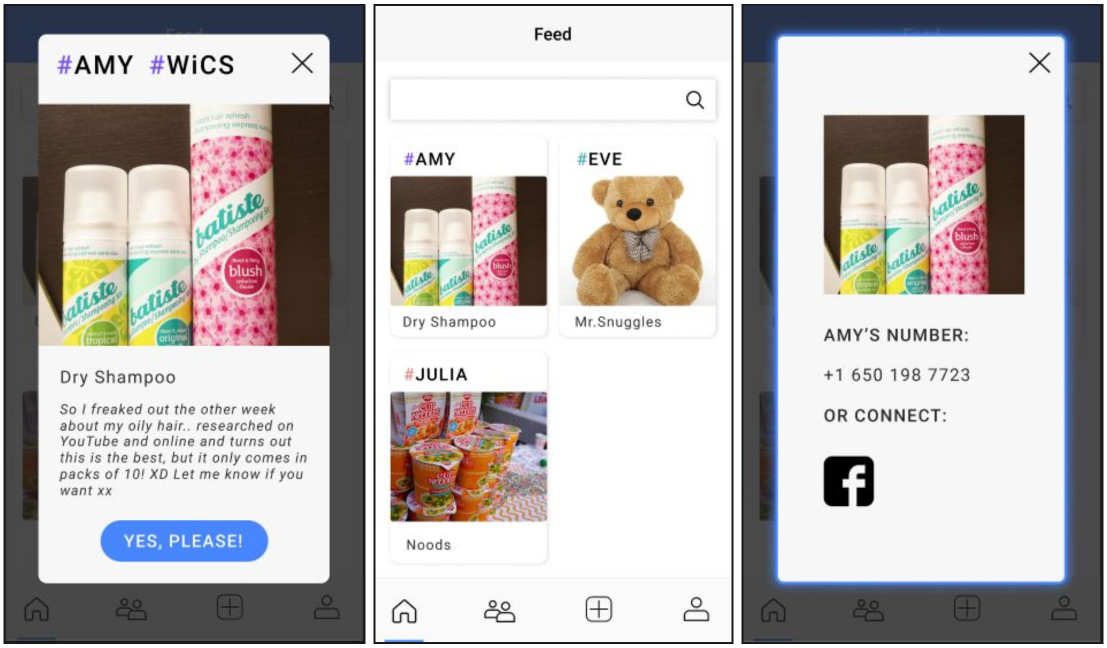
Figure 12. Showing that an item is already gifted, old (left) and new (right).

None of our lo-fi testers touched the timeline, so in order to show that an item is gifted and encourage people to “complete the story”, we chose to substitute the timeline for a “mark as gifted” button in the medium-fi prototype and notify receivers to post what they did with the object once the button is pressed.

In addition to all of these changes, we had extensive discussions about the direction of our app and decided to change our complex task during the medium-fi prototype to “create groups to give and receive objects in.”

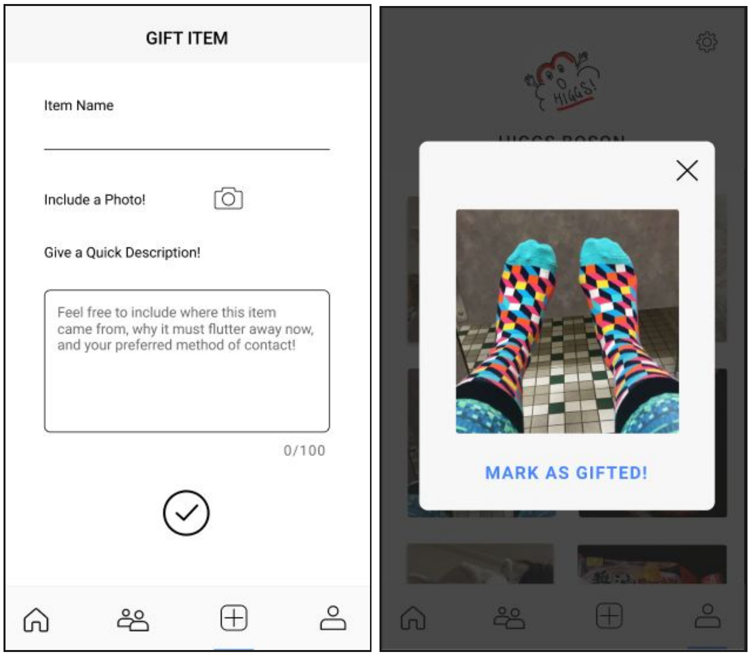
Medium-fidelity prototype

We created our medium-fi prototype, as seen below, with lo-fi testing conclusions in mind.



So I freaked out the other week about my oily hair.. researched on YouTube and online and turns out this is the best, but it only comes in packs of 10! XD Let me know if you want xx

Figure 13. Finding an object in our low-fi prototype.



Feel free to include where this item came from, why it must flutter away now, and your preferred method of contact!

Figure 14. Giving an object in our low-fi prototype.

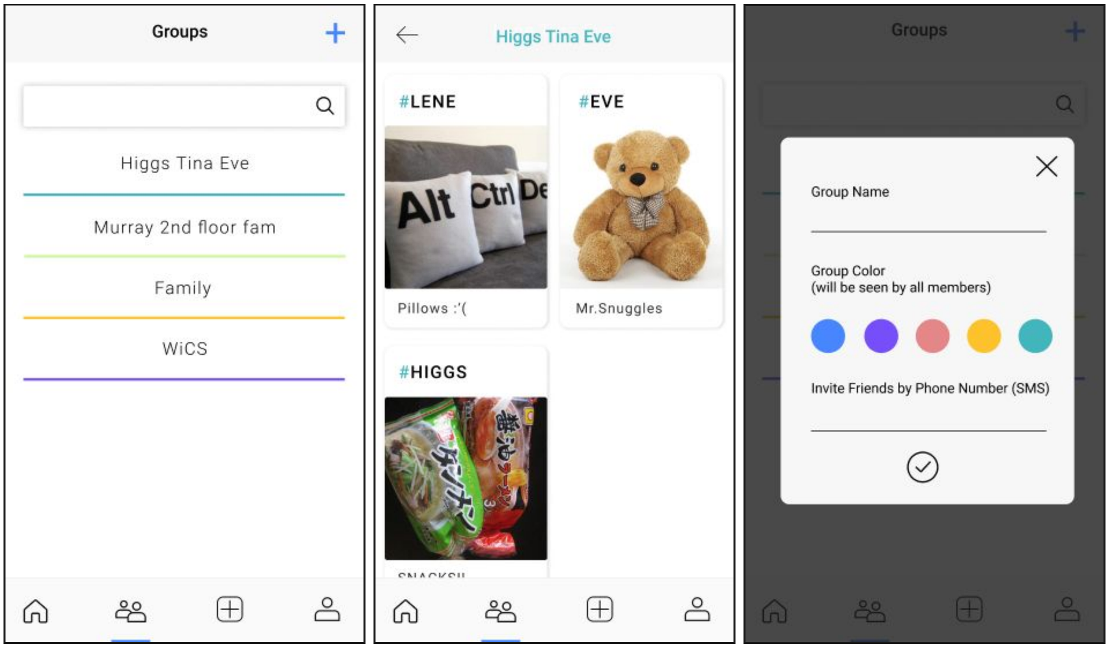
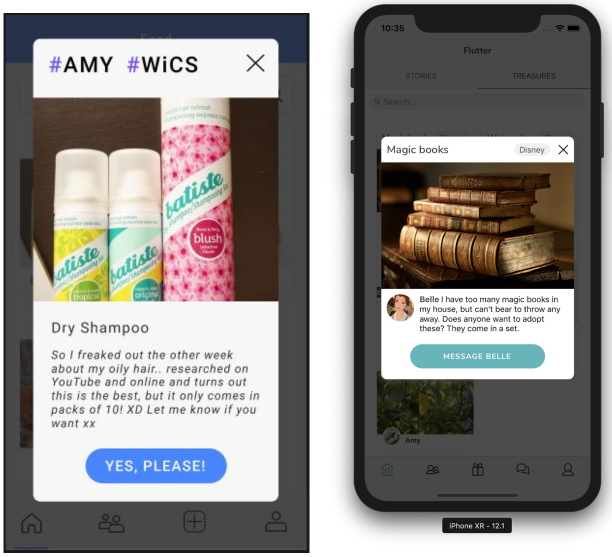


Figure 15. Groups in our low-fi prototype.

Major Usability Problems Addressed

1. Lack of clarity in the “Yes, please!” button to claim an item



Dry Shampoo

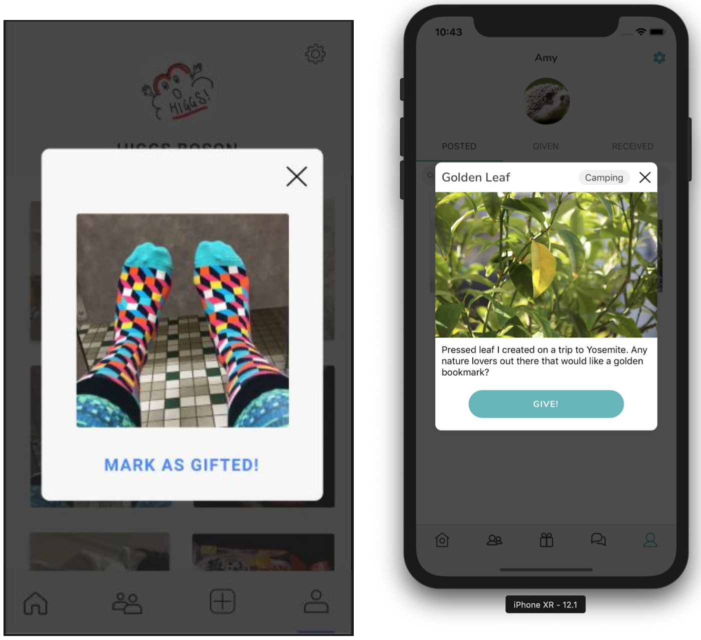
So I freaked out the other week about my oily hair.. researched on YouTube and online and turns out this is the best, but it only comes in packs of 10! XD Let me know if you want xx

Belle I have too many magic books in my house, but can't bear to throw any away. Does anyone want to adopt these? They come in a set.

Figure 16. Claiming item button changes, old (left) and new (right).

The medium-fi prototype features a “Yes, please!” button for users to claim posted items; heuristic evaluators found this wording confusing and ambiguous. We have changed the wording to “Message [Giver]” to more clearly indicate translation/ acquisition. Additionally, this button will lead to the messaging system so that both giver and receiver are aware that it is an indication of interest, not necessarily a completed transaction. A giver might have multiple messages regarding the same objects and can determine for him/her self who it will be gifted to.

2. Edit functionality



Pressed leaf I created on a trip to Yosemite. Any nature lovers out there that would like a golden bookmark?

Figure 17. Lack of edit functionality, old (left) and new (right).

Heuristic feedback noted that there is currently no way to edit already posted items. Though edit functionality is definitely important and we will be implement this in the future, we have chosen to focus on other aspects of functionality instead for the time being, as editing is a relatively isolated function not connected to other parts of the app.

3. Lack of functionality in deleting duplicate group or modifying group

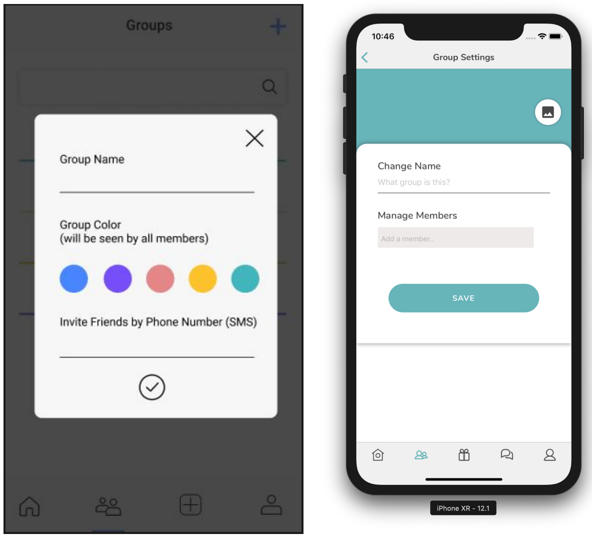
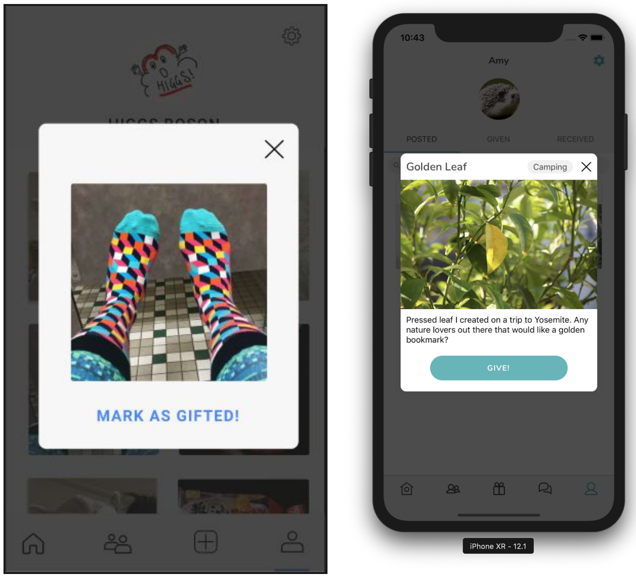


Figure 18. Ability to create groups but not to edit vs. editing functionality, old (left) and new (right).

Heuristic evaluators noted that the medium-fi prototype contained no way to delete duplicate groups or modify existing groups; the only way to change group settings was during initial creation of the group (left). We will not be addressing the issue regarding deleting duplicate groups, as we think that's not something that will likely happen without somebody intentionally doing so (i.e. trolls). We allow for users, however, to modify groups in our current hi-fi prototype; there is a Group Settings tab in each group that allows users to change the group name and photo, as well as manage members.

4. Lack of undo button when marking an object as gifted/given



Pressed leaf I created on a trip to Yosemite. Any nature lovers out there that would like a golden bookmark?

Figure 19. No undo option, old (left) and new (right).

Heuristic evaluators mentioned that givers of an item would not be able to undo “giving” an object. We did not address the issue regarding undoing the gifted marking. For example, any other transactional app does not complicate the interaction with undo or appeal (e.g. venmo). In the same vein, we would like these transactions to be final and preserve the element of trust between users (the trust that users will go through with the tasks that they’ve selected).

5. Confusion regarding hashtag labels

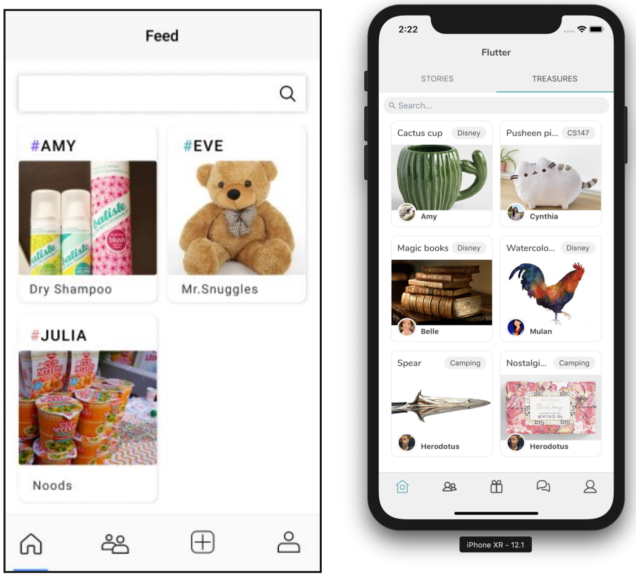
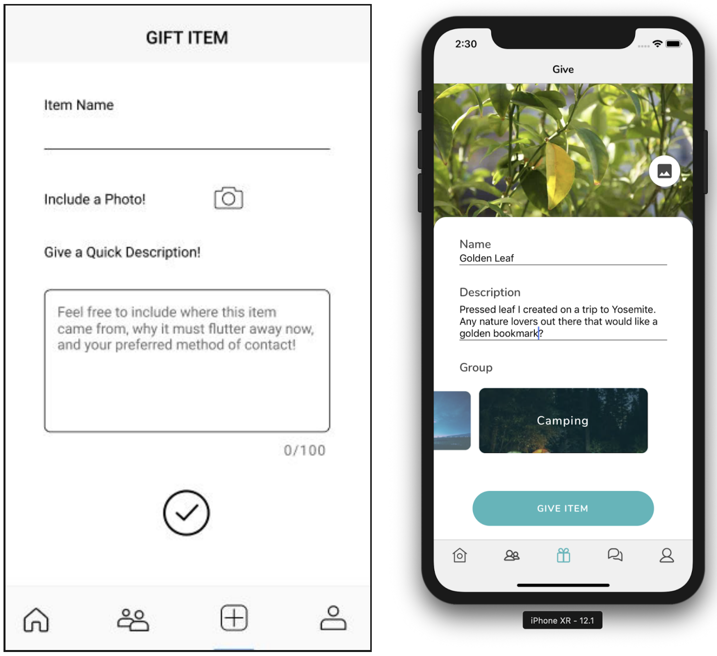


Figure 20. Hashtag labeling system vs. lack of, old (left) and new (right).

Our med-fi prototype contained hashtags when labeling names and groups (for example, user Amy was labeled #AMY in our medium-fi prototype). From our heuristic evaluation, we received feedback that these hashtags were confusing. Therefore, we removed the hashtags entirely from our new groups and usernames system in the hi-fi prototype.

6. No option of adding to a specific group



GIFT ITEM

Item Name

Include a Photo!

Give a Quick Description!

Feel free to include where this item came from, why it must flutter away now, and your preferred method of contact!

0/100

2:30

Give

Name
Golden Leaf

Description
Pressed leaf I created on a trip to Yosemite. Any nature lovers out there that would like a golden bookmark?

Group

Camping

Figure 21. Added add to group functionality, old (left) and new (right).

Heuristic evaluators pointed out that in our medium-fi prototype, we did not include an option for users to post to specific groups, in our hi-fi prototype, users can swipe through groups in order to add an item to a specific group (in the above example, the user has selected the Camping group on the right).

7. No log out/log in option

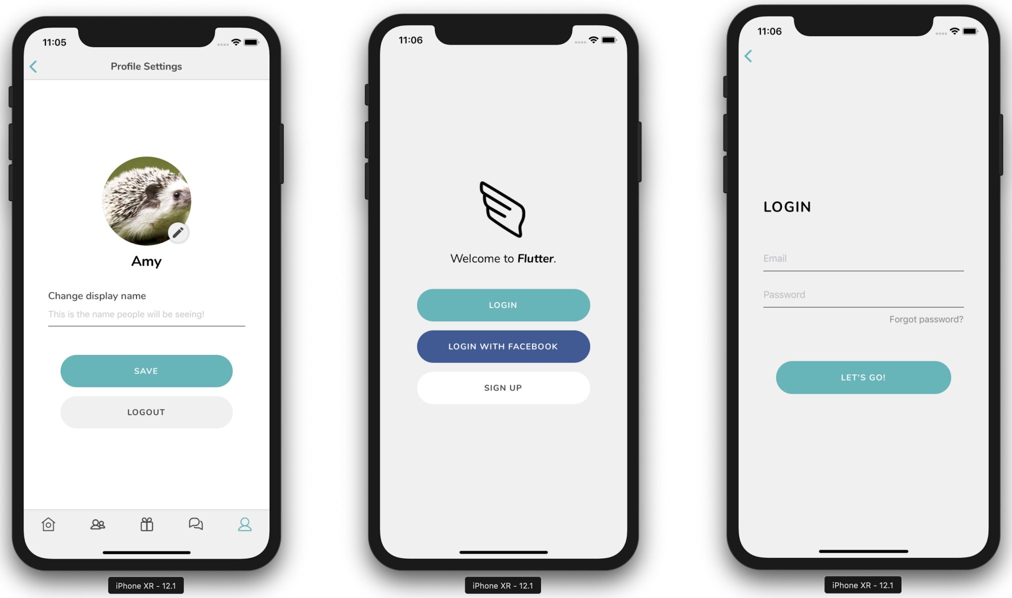


Figure 22. New implementation of log out/log in process, hi-fi.

Evaluators mentioned our medium-fi prototype had no log out/log in option, so users did not have unique accounts associated with them. We have added a log out/log in process from the Settings button in the Profile tab. One evaluator also mentioned there not being a "forgot username" option; to address this, we have made the first field in the login screen an email field, as users are likely to remember their email addresses.

8. Lack of clarity for search function

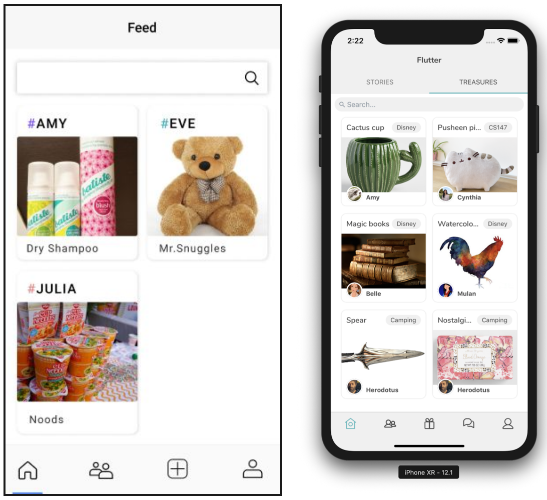


Figure 23. search function from feed, old (left) and new (right).

Heuristic evaluators wrote that it was difficult to understand what exactly they should search from the “search” function, given the confusing hashtag system of both names and groups being hashtags; our new layout makes it intuitive for users to search for object names in the search function and filter for groups by clicking into a particular group with the Groups tab.

Prototype Implementation

We built our prototype using React Native, Expo, and Firebase. Since we all had hands in the development but had a mix of iOS and Android test devices, React Native allowed for flexibility in cross-platform implementation and usability testing. In addition to coding from scratch components like the round buttons that appear a number of times in the prototype, the story and treasure cards, and the create object posting and create group interfaces, we also used a few third-party React Native libraries, such as the treasure modal popups, card sliding interface in the create object posting screen, and contact autocomplete in the create group screen, to ease and shorten shorten development time.

None of us had used React Native in the past, so there was a bit of a learning curve with learning to efficiently use React Native and Expo. As we were developing, we found that third-party libraries had a certain amount of styling limitation to them, which were difficult to work around. For example, it was practically impossible to style the contact autocomplete component, which meant we weren’t able to style it to be consistent with the rest of the application.

We also ran into difficulties working with Firebase, and we found that running the application with Firebase made it surprisingly slow. After discovering this, we decided not to continue with Firebase, with the exception of account authentication, for demo purposes, and instead reverted to hard-coded data. Hard-coded data includes all the profiles, groups, objects, and stories.

All of the functionality that we implemented (giving an object, updating stories, creating groups, to name a few) is fully functional and we did not employ any wizard-of-oz techniques. With that said, there was some functionality missing that we plan to add in the future:

- Currently the button from objects cards takes the user to a working global chat with every user. We will make the chat private.
- Despite having a button from the profile objects cards to set objects as given, we didn’t implement its functionality and intend to complete that.
- We have search bars in a number of the screens, but it’s currently not functional. We will work on enabling users to be able to search for stories and objects from descriptions.
- There is no way to edit groups, stories, or object posts. We will add this edit functionality.
- We plan to add an overlay-style onboarding tutorial the first time the user logs into the application.
- We would like users to have the option of logging in via Facebook.

- Full implementation with Firebase.

Summary

People often own more things than they actually use, causing clutter in their lives. In most cases, this is due to some level of sentimental attachment to the object. People need trust and emotional security to encourage the process of decluttering. Flutter aids this decluttering process by building on a person's existing communities, ensuring the trust component, to give and receive objects, as well as allowing for emotional continuity of these objects through encouraging sharing of stories between giver and receiver. We received a lot of positive feedback from the project expo, and are excited to continue adding functionality to Flutter.