Revitalization

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Content

Photo Refer to: http://616pic.com/sucai/vo9ir2l2v.html

Introducing Revitalization

Do you have a lot of useless boxes in your house? It may become a new toy for children. Through our app, you can search for new uses of waste products at home, and you can share your new ideas with others. This is an application that encourages everyone to be creative, turn waste into treasure, and enhance everyone's awareness of environmental protection and also environmental sustainability.

We want to address one of the environmental issues which is daily wastes. We design an app to provide a platform for our users to make contributions on the issue. Our application encourages everyone to be creative, turn waste into treasure, and enhance everyone's awareness of environmental protection.

& Deconstruction and Reconstruction Concept

Deconstruct:

Faded shirts, express boxes, branches in the backyard, and nut shells at home can be cleaned, cut, and changed in shape to become parts of new items. The app basically provides different articles to encourage users to deconstruct waste that they produce daily.

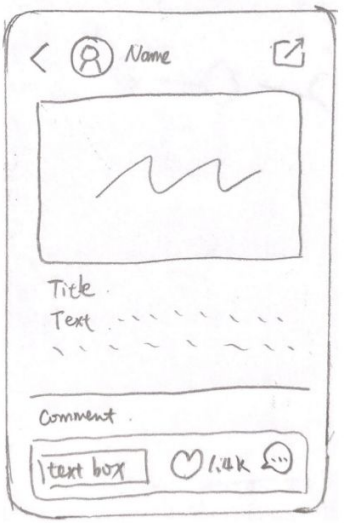
Reconstruct:

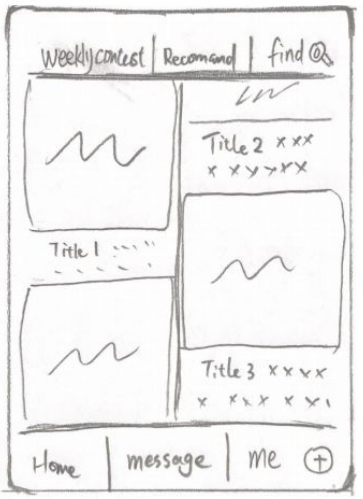
Use glue, rope and other tools to combine pieces of old objects into new toys, tools, and artworks. New ideas can give old objects new uses and new life. The app utilizes the deconstructed waste from the users and finds a way to reconstruct them into another useful form; in other words, revitalizes them.

Design Process

Brainstorm

Our team had many ideas during the brainstorm process. We started brainstorming about the idea of deconstruction and reconstruction. We ended up with many ideas, like room layout planner, a storyboard generator, stress and coping app, etc. While brainstorming, we communicate with instructors and TAs. Our design should be achieved fitting the theme, encouraging users to participate, helping them think, and inspiring users' creativity. Deepening into the idea of the process of deconstruction and reconstruction, our idea was finalized into revitalization after considering the pros and cons of different idea





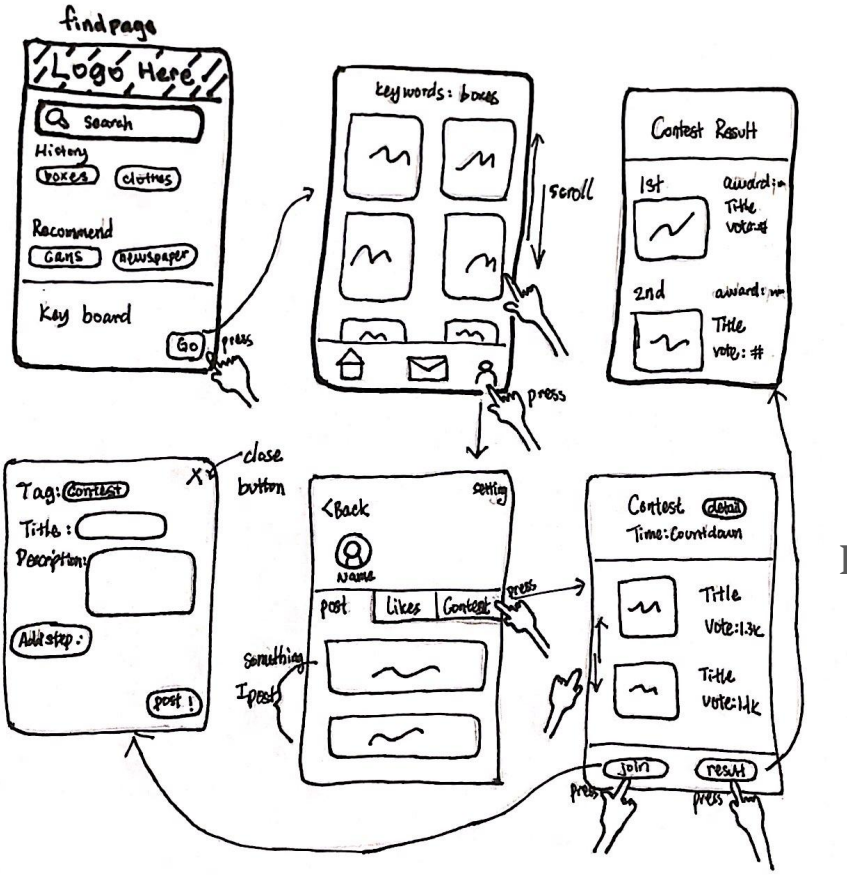
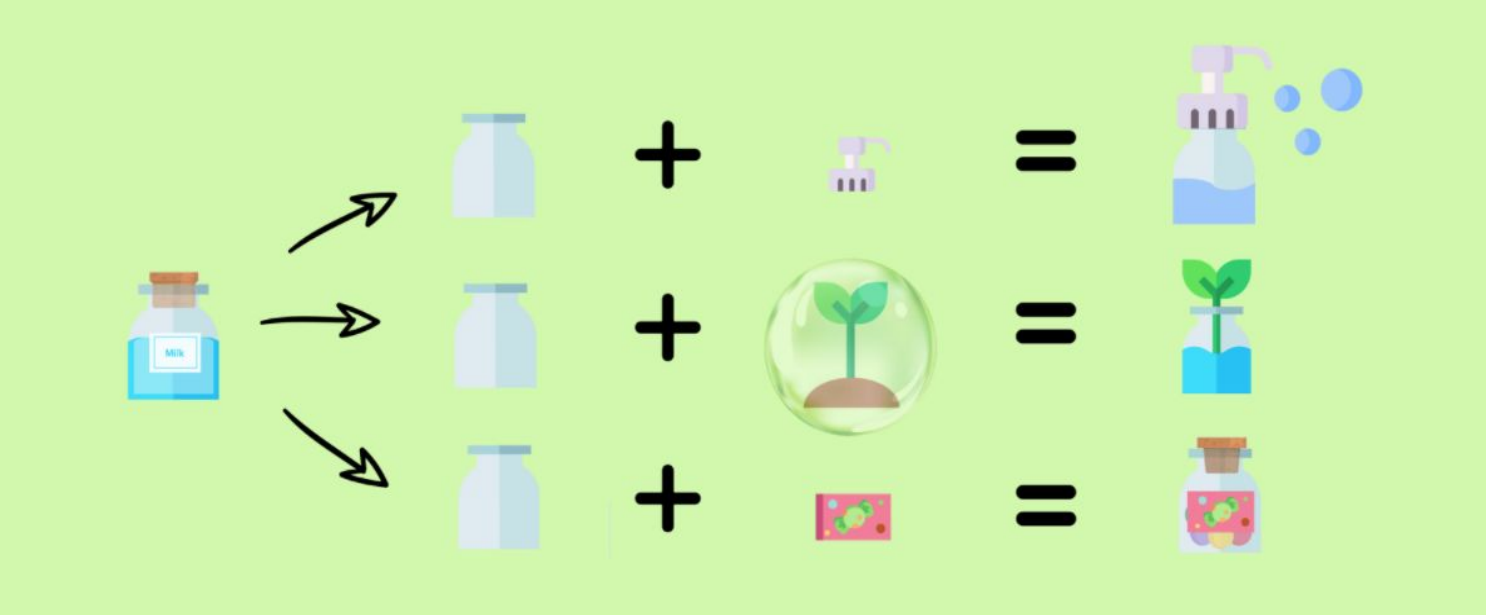


Figure: refined sketches

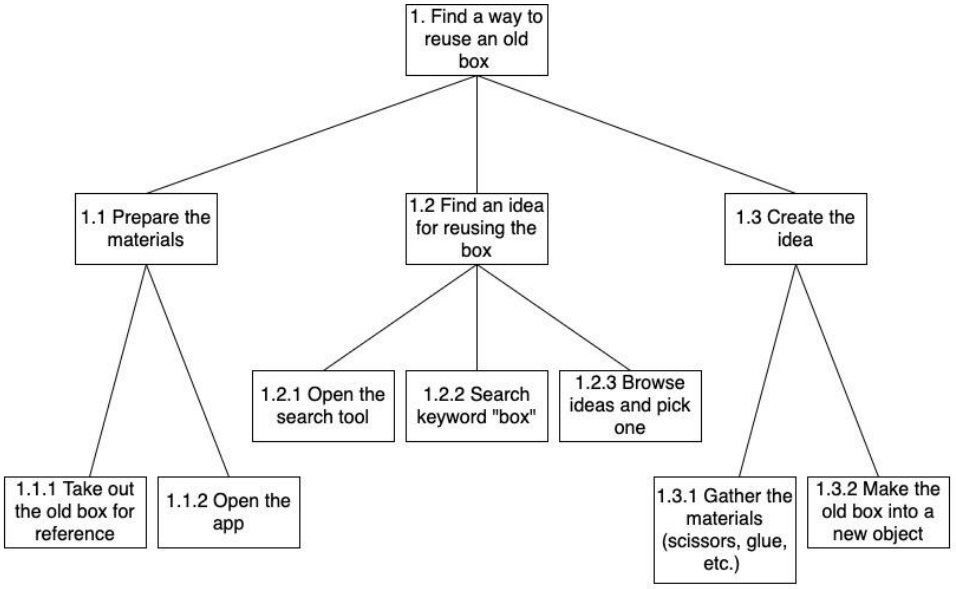
Task Analysis

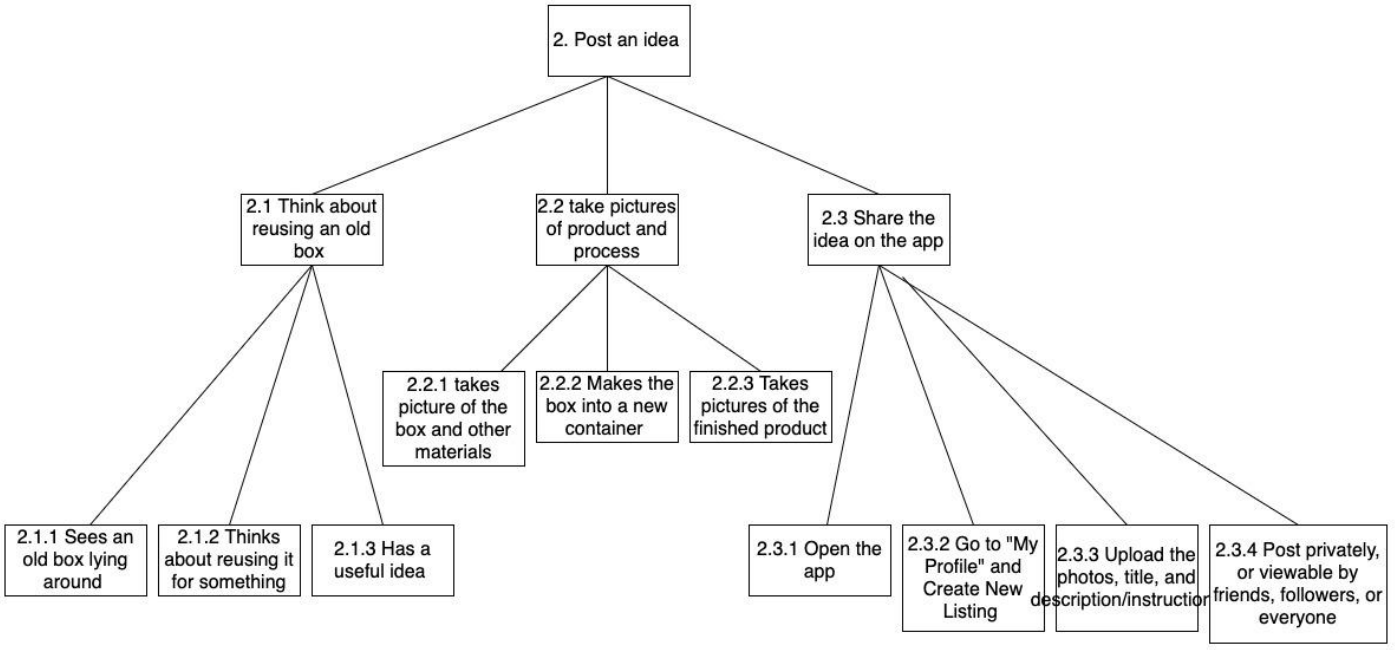
The idea of revitalization, a platform for users who want to share their ideas or follow other's instructions on how to turn waste into treasure. This idea felt compelling to us because it can not only help users to design and fit the theme of deconstruction and reconstruction, but also achieve the goal of environmental protection. One member of our team belongs to the user group of having too much waste but doesn't want to throw them. We believe that there should be many people who have waste that are waiting to be deconstructed like her. Even though it might be hard to find someone who has many ideas of how to reconstruct waste into another useful form, as long as we gather and share some users' design ideas and inspire more users to create new ideas, our goal can be achieved. Therefore, we put our ideas into action.

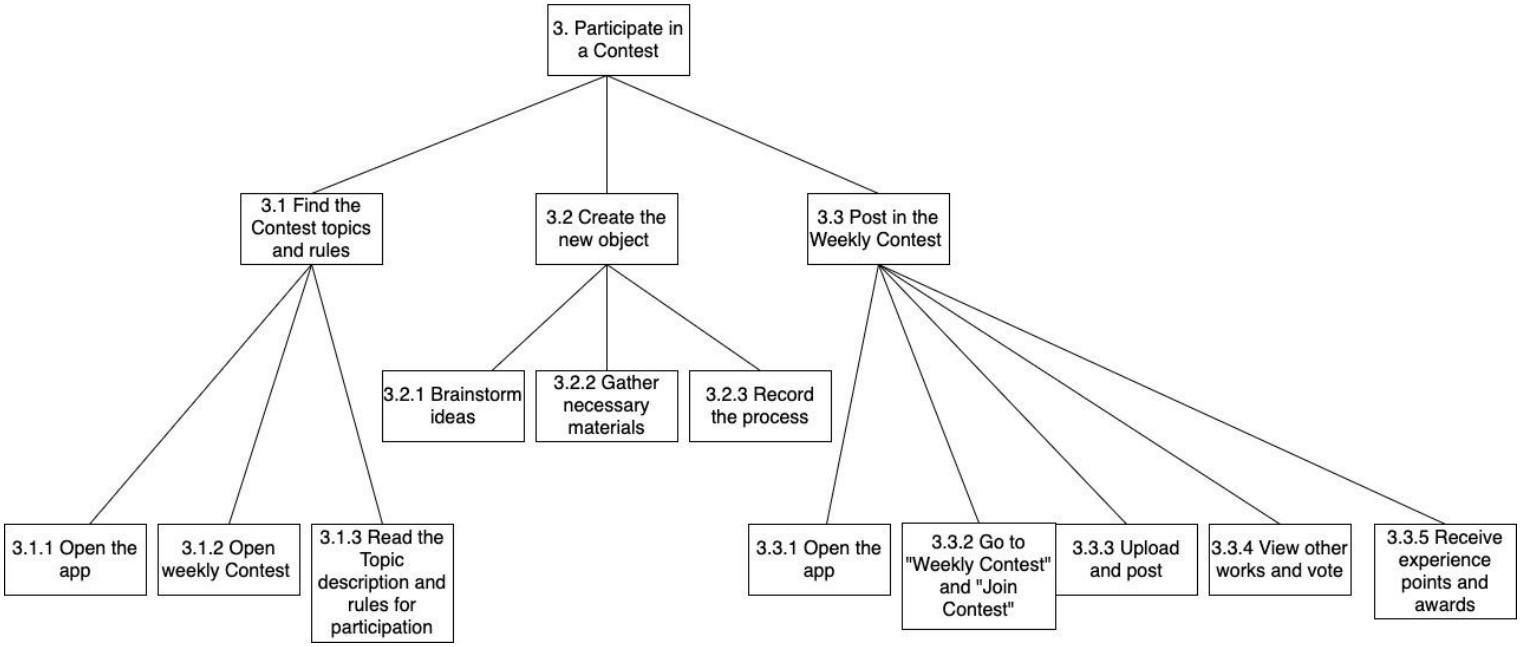


Three main tasks:

1.Find the new use of your things
2.Post your idea to the app
3.Join the weekly contest


1. Find a way to reuse an old box
1.1 Prepare the materials
1.2 Find an idea for reusing the box
1.3 Create the idea
1.1.1 Take out the old box for reference
1.1.2 Open the app
1.2.1 Open the search tool
1.2.2 Search keyword "box"
1.2.3 Browse ideas and pick one
1.3.1 Gather the materials (scissors, glue, etc.)
1.3.2 Make the old box into a new object


2. Post an idea
2.1 Think about reusing an old box
2.2 take pictures of product and process
2.3 Share the idea on the app
2.1.1 Sees an old box lying around
2.1.2 Thinks about reusing it for something
2.1.3 Has a useful idea
2.2.1 takes picture of the box and other materials
2.2.2 Makes the box into a new container
2.2.3 Takes pictures of the finished product
2.3.1 Open the app
2.3.2 Go to "My Profile" and Create New Listing
2.3.3 Upload the photos, title, and description/instructior
2.3.4 Post privately, or viewable by friends, followers, or everyone


3. Participate in a Contest
3.1 Find the Contest topics and rules
3.2 Create the new object
3.3 Post in the Weekly Contest
3.1.1 Open the app
3.1.2 Open weekly Contest
3.1.3 Read the Topic description and rules for participation
3.2.1 Brainstorm ideas
3.2.2 Gather necessary materials
3.2.3 Record the process
3.3.1 Open the app
3.3.2 Go to "Weekly Contest" and "Join Contest"
3.3.3 Upload and post
3.3.4 View other works and vote
3.3.5 Receive experience points and awards

Interviews

In order to narrow the gap between our expectations and user expectations, and make our design more in line with the needs of users, we conducted an interview.

Our interview included four participants. Each participant belongs to our user group in different ways. Participant 1 is a recent college graduate who studied nursing and cares about environmental protection. The second participant is a graduate student of University of San Jose. She likes drawing and joining activities. The third and fourth participant is a college student who likes to buy a lot of Amazon stuff. So he has a lot of cardboard waste.

After conducting these interviews, we came up with two major findings.

1. People tend to reuse items if it doesn't consume too much time or effort.
2. People have the potential to reuse a lot of items they throw away in life, but they don't know how.

Our team was confident that our app will be useful as a platform for people to share ideas and follow others ideas. According to interviews and findings, if there is an easy and convenient way for people to get information on how to reuse them, people will try to reuse items. So our user group has a strong potential to use our app.

Task Analysis (After Interview)

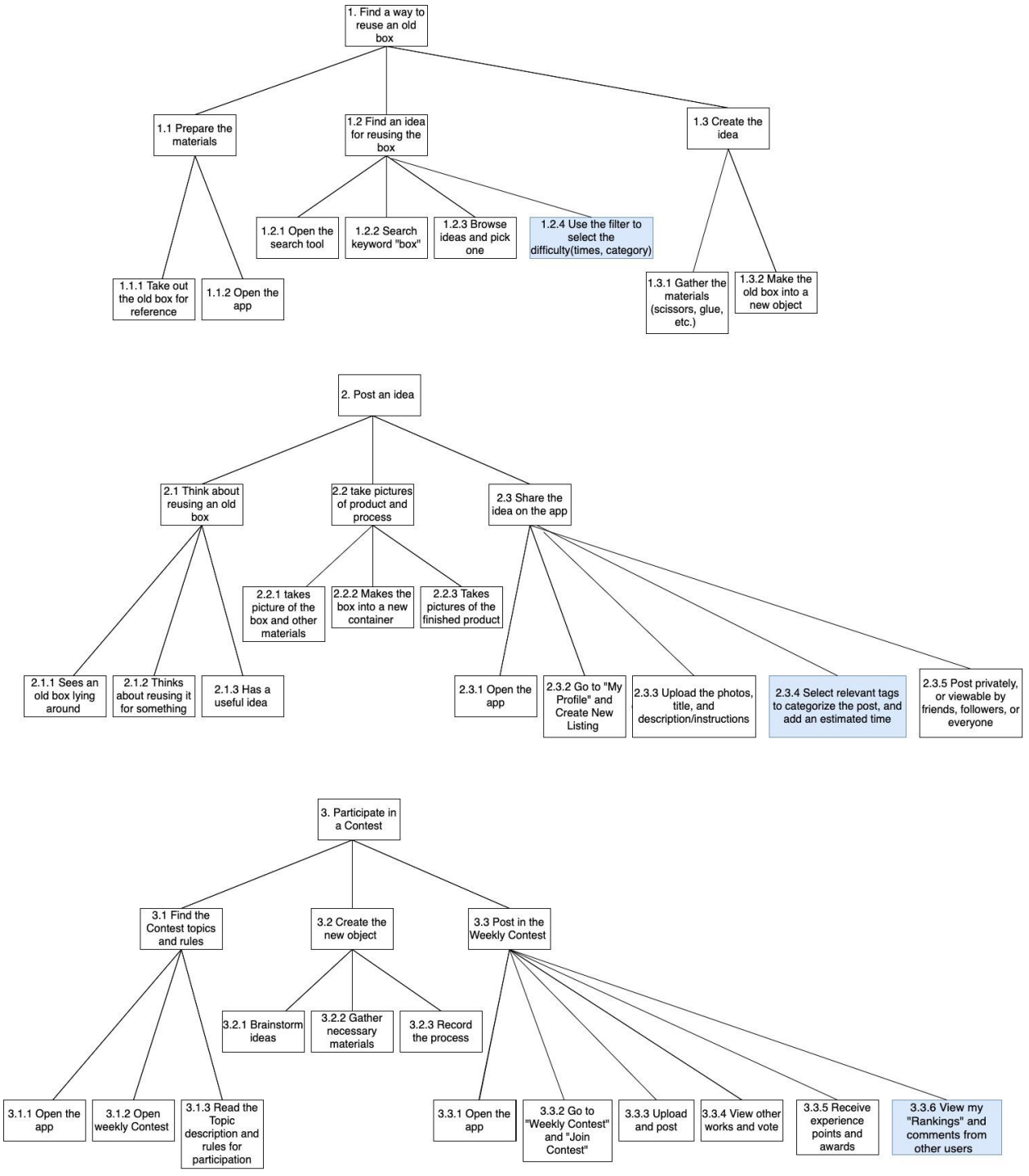


Figure: Changes made to task analysis with interview insights marked in blue

Narrative Scenarios

Narrative scenario 1: Search for an idea

Alex is a person who buys a lot of stuff. So he has a lot of stuff that he does not use nor touch already. For example, he buys a new gaming mouse every 2 months. He has been looking for a way to process these functional but useless things, but he does not know how to reuse them. Then he found our app. He searched for the keyword, “mouse”. Then a lot of awesome ideas on how to remake old, unused mouse into usage appeared. Alex then followed the instructions of one of the ideas that showed up in the app. Instead of an old, unused mouse, he now has an awesome new wireless light switcher!

Narrative scenario 2: Participate in Contest

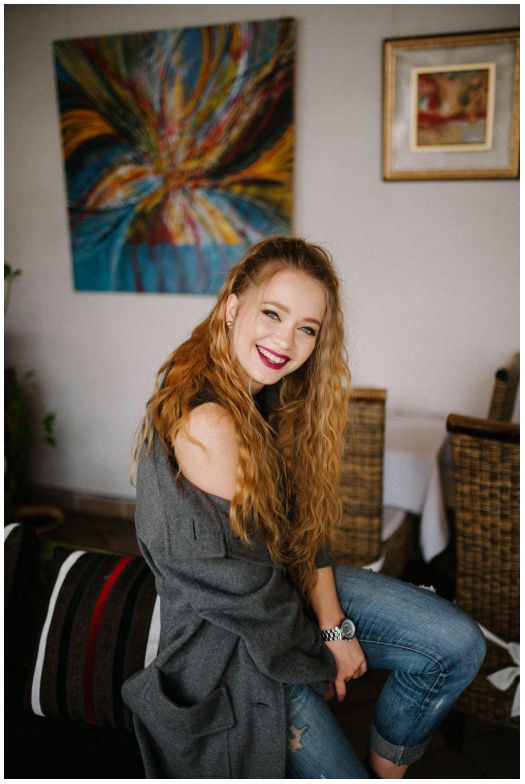
Connor loves to customize and make DIY stuff from daily materials. He enjoys sharing his new ideas to the public and gets likes about it. He even goes to contests and earns awards for it. He has recently found out about our app and the contest feature. He immediately likes this platform. He then starts to organize and share his works in the bi-weekly contests. Connor gets a lot of likes and comments on his ideas, motivating him to keep creating new posts. Other users message him telling him their successes when following his instructions. He feels accomplished from it.

Narrative scenario 3: Post an idea

Emily is a 20 years old student who is staying home and taking time to enjoy the summer. She has two younger brothers, but often feels distanced from them because of the generation gap. She wants to interact and communicate with her siblings in a way that is within her budget. She sees a lot of unused cardboard boxes at home. She became inspired by the Revitalization app she has been visiting, and thought of an idea to build a castle for them from the cardboard boxes. While she builds the castle with her siblings, she takes pictures of the steps. Afterwards, she shares her method in a new post. Emily has interacted a lot with her siblings during the process of building the cardboard castle. And her relationship with her two siblings just got better.

In conclusion, all three of these narrative scenarios have found or shared ideas of **deconstruction or reconstruction** of waste.

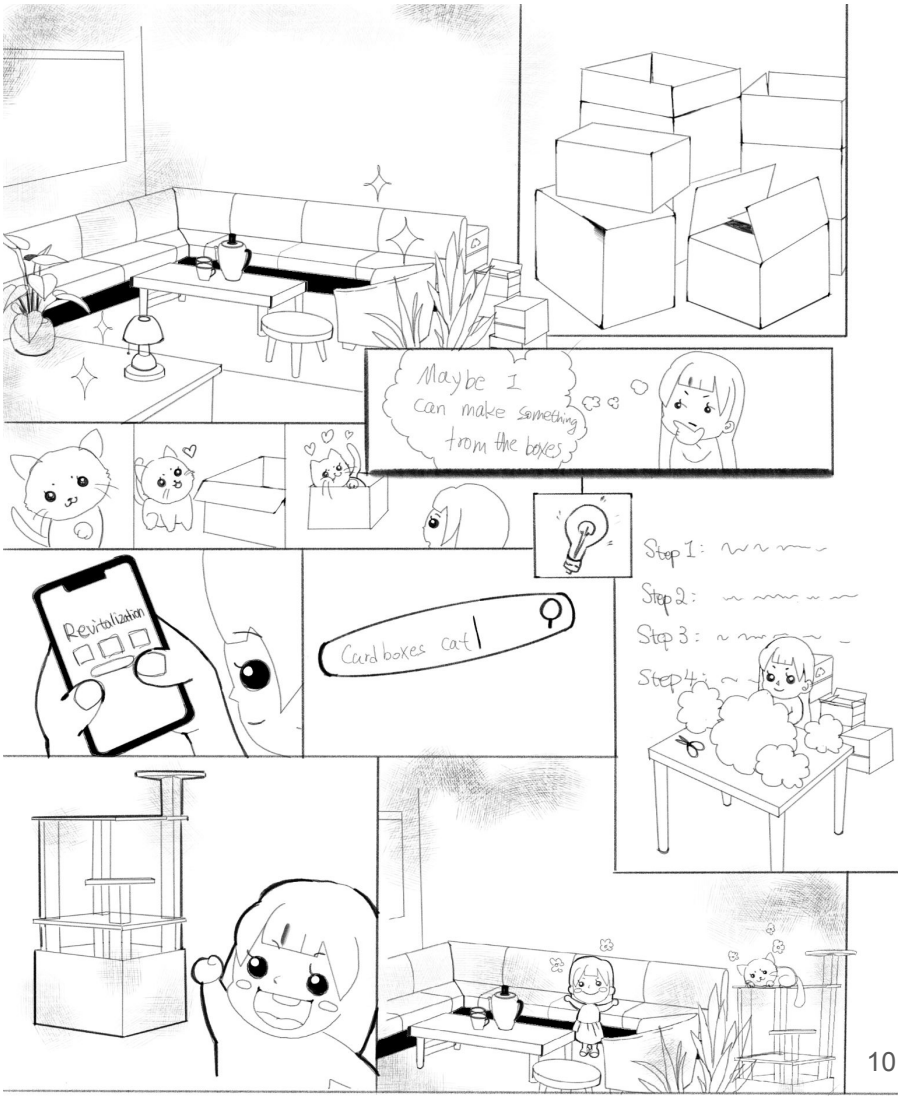
Persona



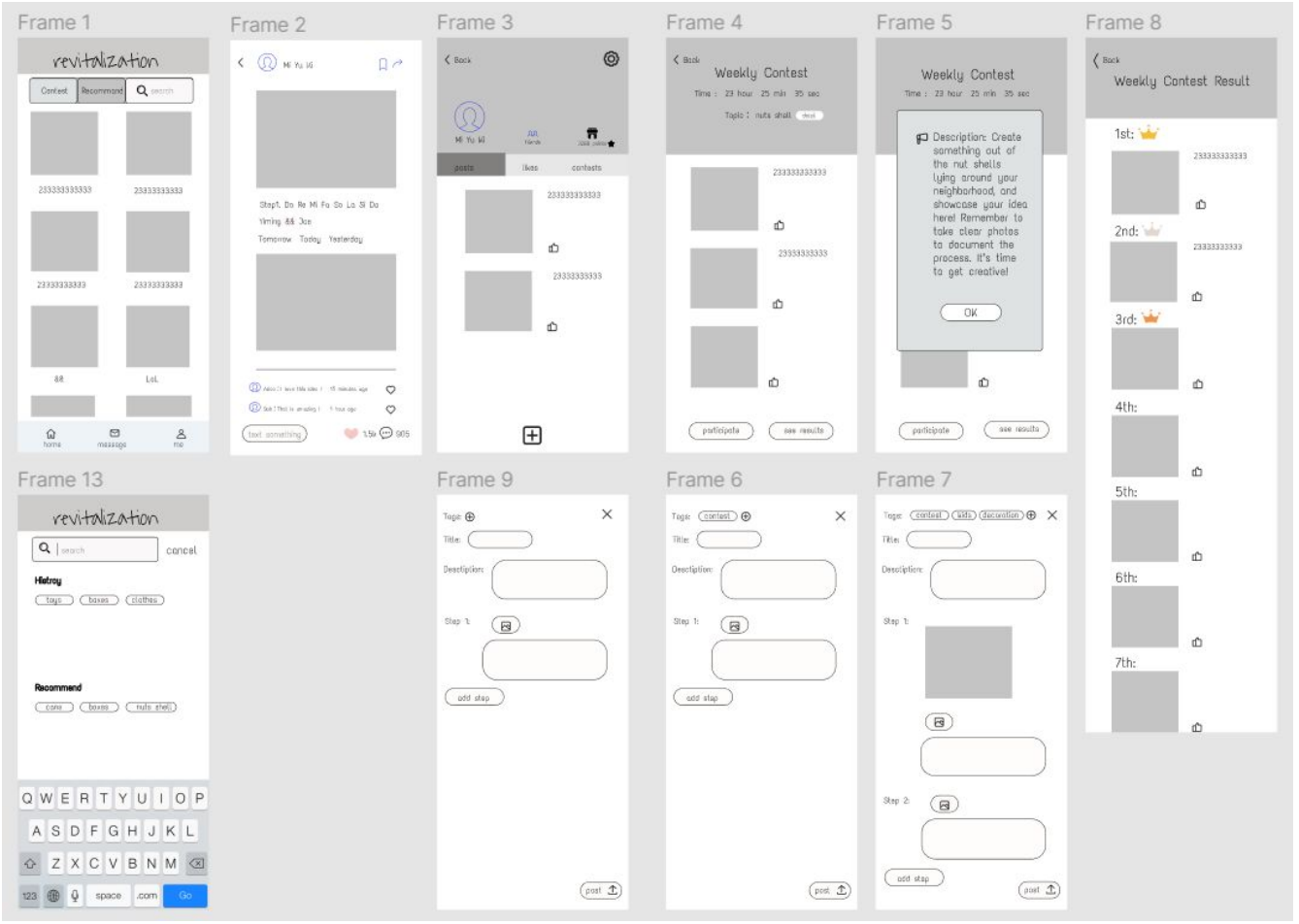
Francesca is a 23 years old girl who has recently graduated from college and has a pet cat. She is passionate about environmental sustainability, and has taken electives to learn about natural resource management. She also tries to limit the amount of waste that she could avoid, and recycle everything possible. When it's possible, she reuses things that she no longer needs and makes them useful again. But she does not do it often because she doesn't know what they could be useful for.

Storyboard

Our storyboard is telling a story of a girl, who just moved. She has too much cardboard left over but she doesn't want to throw them away. Then she got inspired from her cat, that she might be able to recreate something from it. Then she found our app, and searched Cardboard. Followed the instructions and made a cat tree!



Figma Wireframes



Feedback

We post our prototype on Slark and communicate with our TAs to collect feedback. After receiving feedback from our peers and TAs, we made the following changes:

- We replaced the home button on the main page with a button to the Store, because the Home button did not have a useful function in our original prototype.
- Contest time length: we decided to change it to two weeks to give more people the opportunity to participate in each contest. We think this will allow people to have more time to brainstorm, post, and vote.
- We added a page to view our list of friends, and a page to message our friends, since some comments mentioned that they're not sure what the intentions of our message and friends
- We also added more functionalities to our figma prototype, including posting, viewing friend's recent activities, and details of the contests page.

Link:https://www.figma.com/file/1ljFBLhwM5saKgzSXBskKZ/Milestone---wireframe?node-id=0%3A1

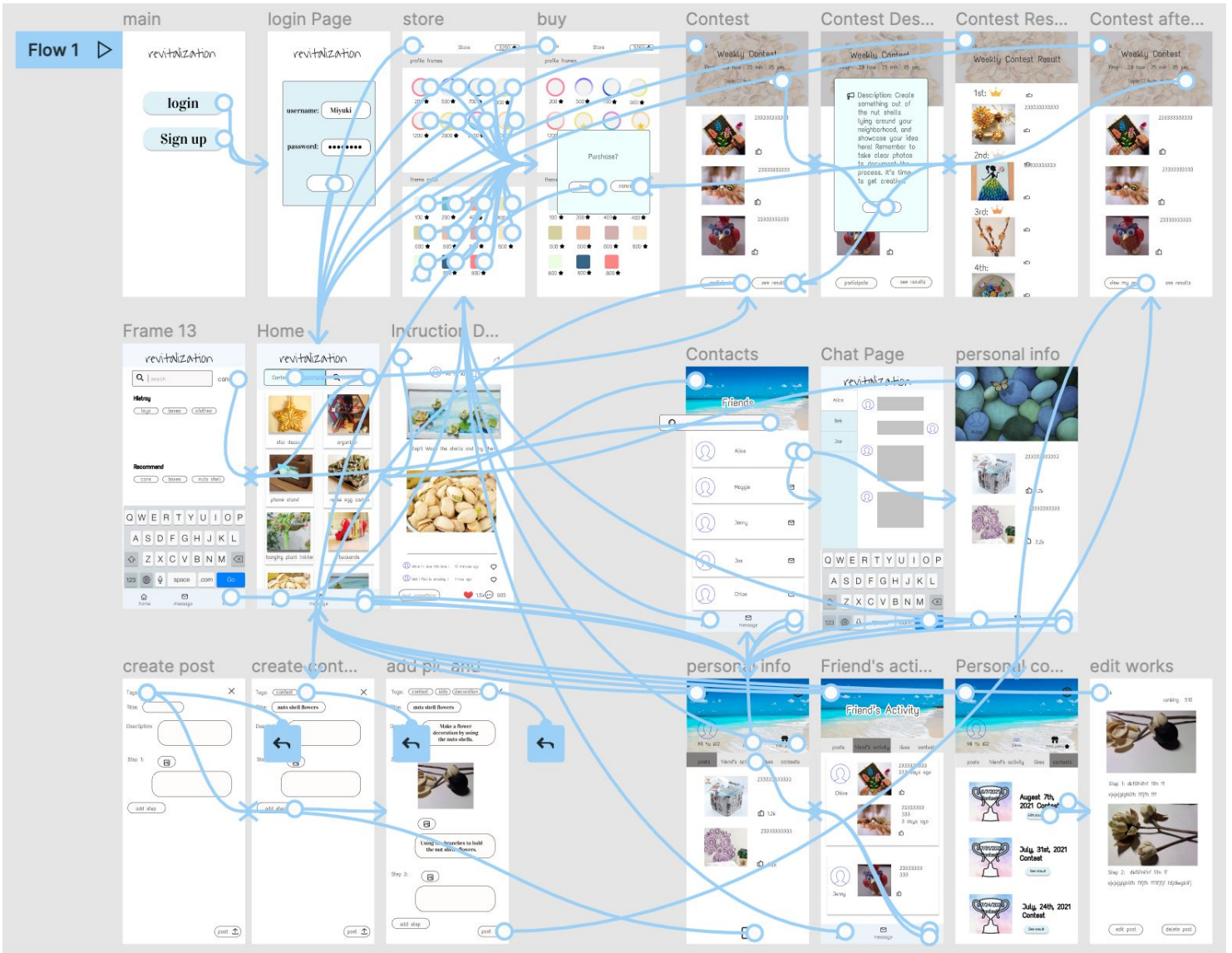
Cognitive Walkthrough

Pretend I'm Francesca. Today, I downloaded Revitalization. The first time I open the app, there is a prompt that requires me to either "sign up" or "login". Since I do not have an account, I will enter a new username & password into the textfield. After successfully signing up, I can see there are a contest, recommend, and search bar that are waiting to be chosen. Since I'm trying to find a way to make use of the delivery boxes at home, I will click on the search bar and type in "cardboard box" and enter. Then, there will be some articles that are related to DIY using boxes. After clicking on an article that is named "how to make a cat tower from your cardboard boxes" with the most "likes", the instructions popped up. Reading the instructions and sample images gives me a basic overview of the process, and the comments below show different users' perspectives and results. I think this could be great for delivery boxes instead of recycling them. I followed the instructions of the post and created a cat tower for my cat. When I finished, I decided to check out the other posts by this creator. I clicked on his profile and viewed his historical creations. Turns out, this creator made many posts for making cat toys. I suddenly find out there are a lot more rebuildings I can make with my stuff. I sent him a friend request so I can be updated on his posts and learn more about how I am able to turn waste into different treasures.

Overall, it will be easy for a new user to understand the intentions of our figma prototype. The functionalities or login, contest, and posting will be easy to understand, and they will not need much instructions to learn it. Importantly, a new user will be able to perform our three main functionalities:

1. Find the new use of your things
2. Post your idea to the app
3. Join the weekly contest

High-Fidelity Figma Mockups



https://www.figma.com/file/AUztNJXMqbxOwMapXetiv7/Milestone-2?node-id=0%3A1

High-Fidelity Figma Mockups

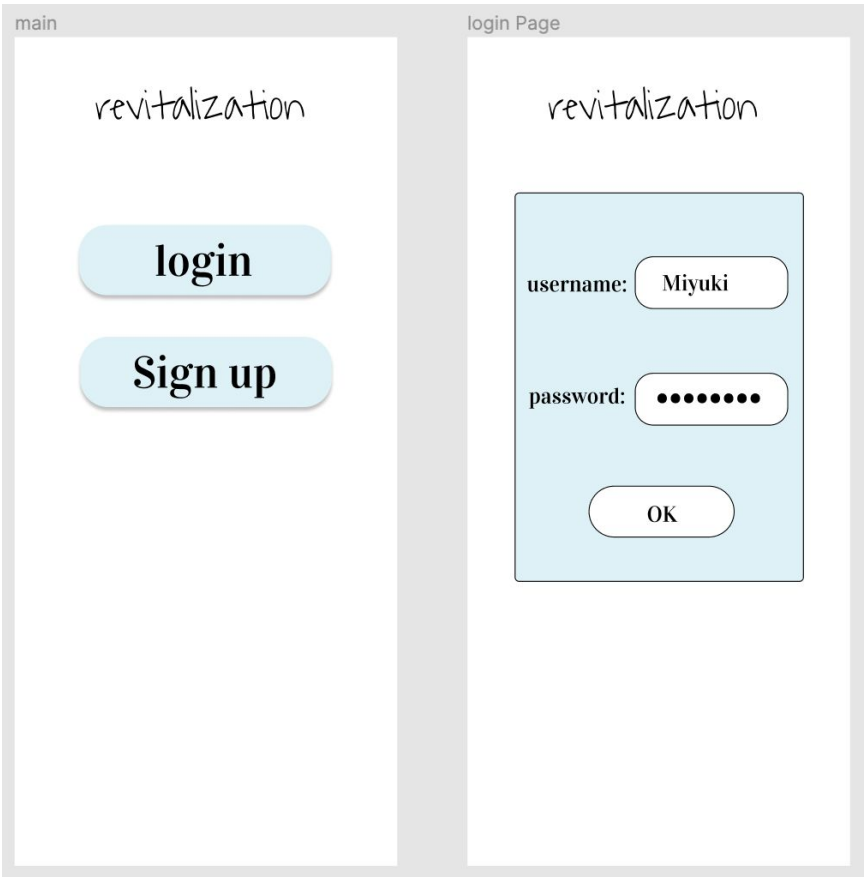


Figure: These are the login pages. User can login their account or sign in a new account.

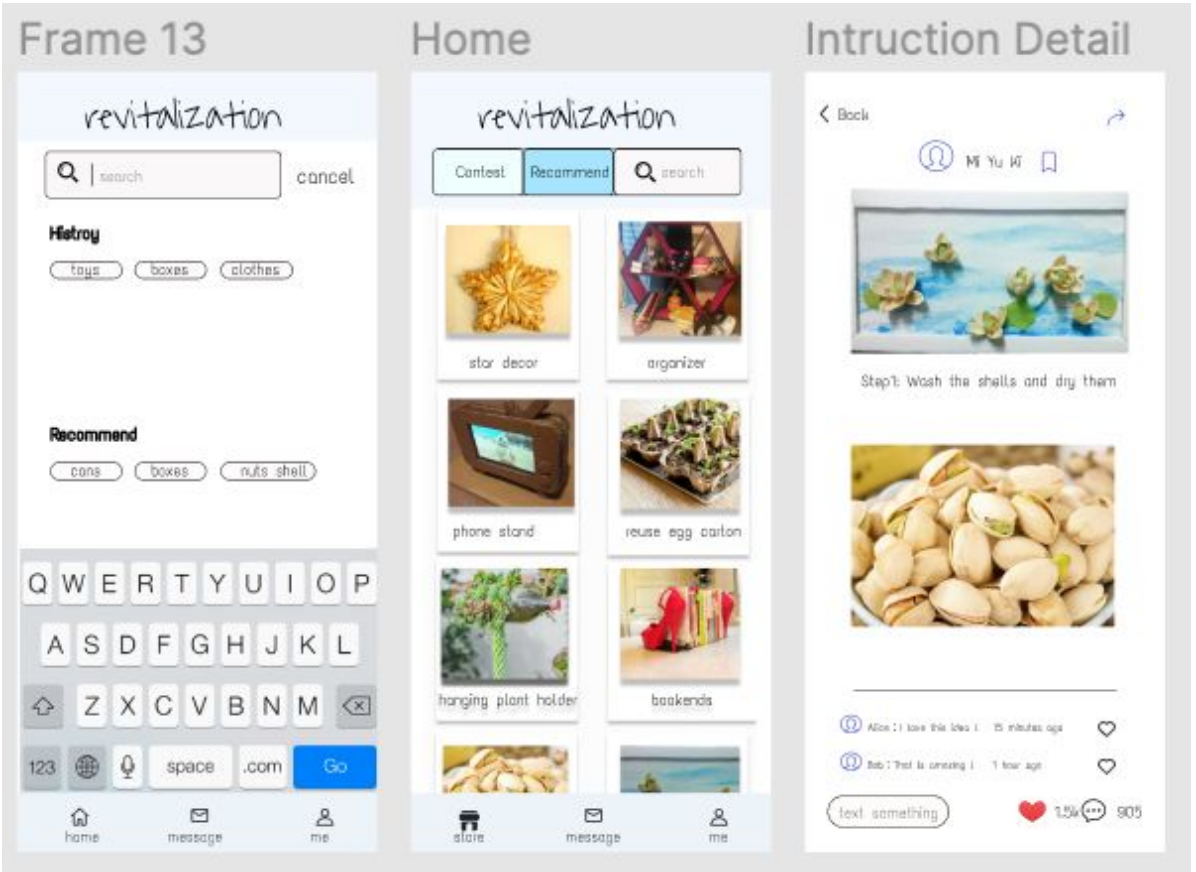


Figure: From left to right, the search page, the main page, and the profile page.

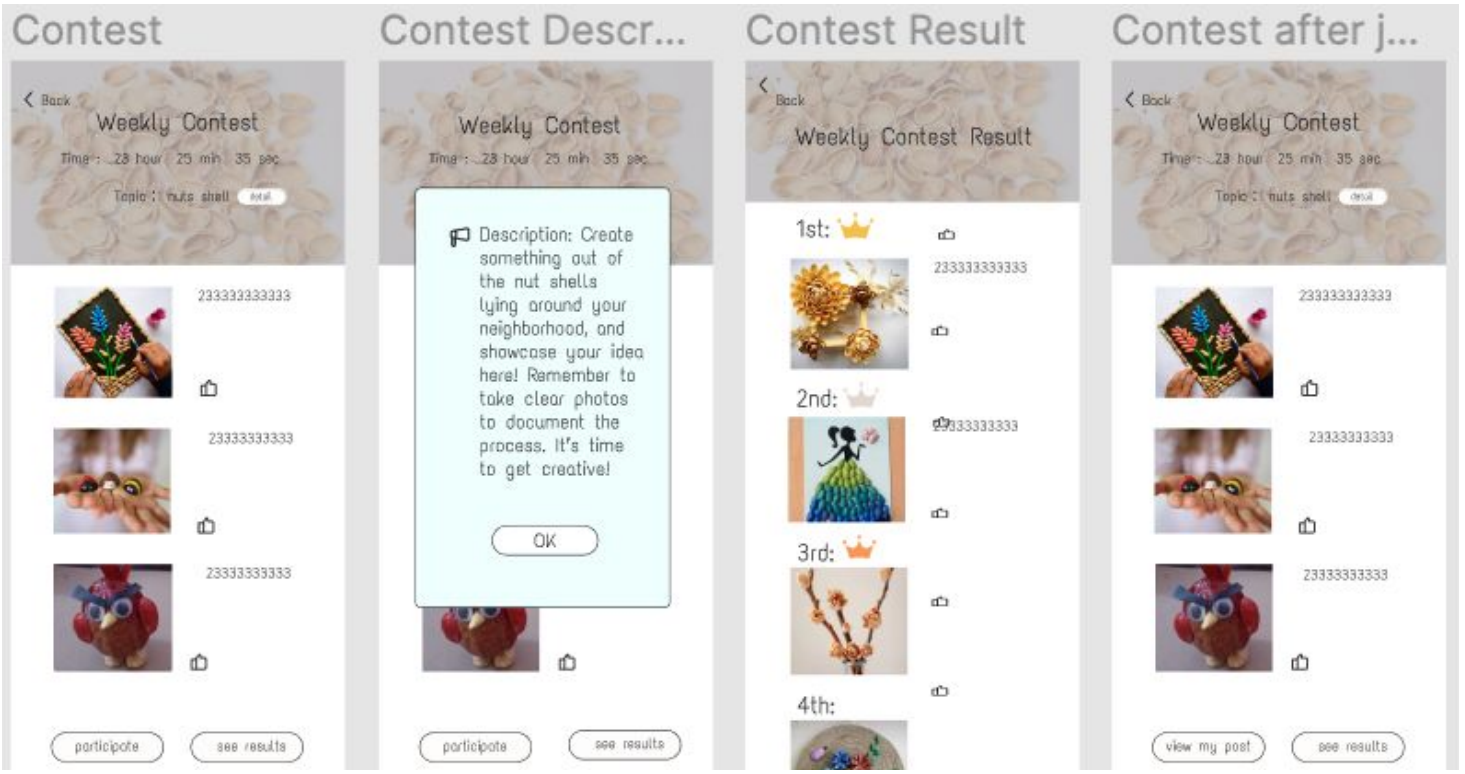


Figure: These are the contest page. Users could view the contest description, join the contest, anc check out the result here.

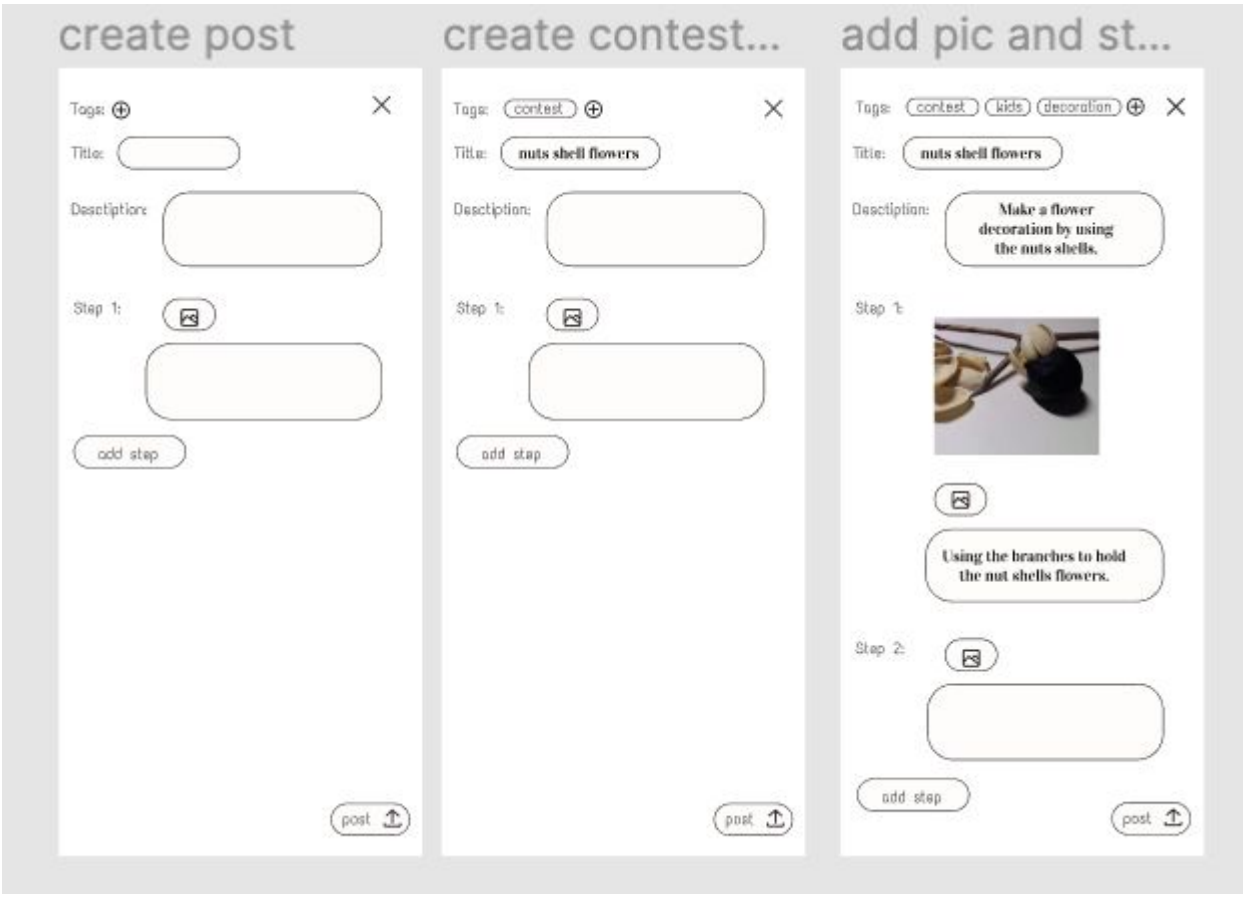


Figure: These are the post page. Users could follow the instructions and make their post here.

Profile Pages

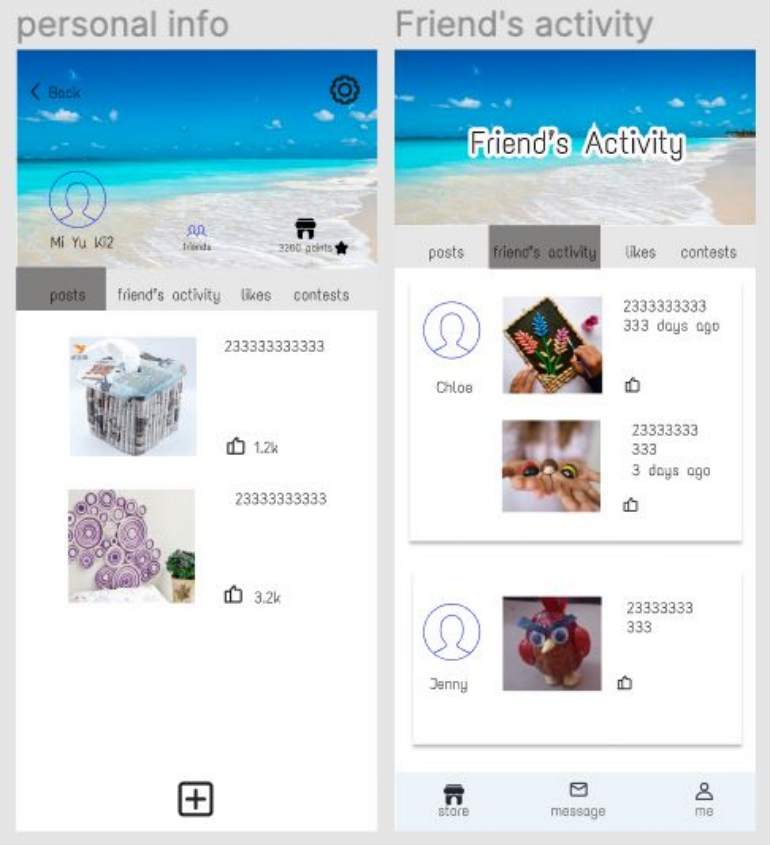


Figure: These are the personal pages.

The top left figure: Showing the posts which were posted by the users

The top right figure: The posts which posted by the users' friends.

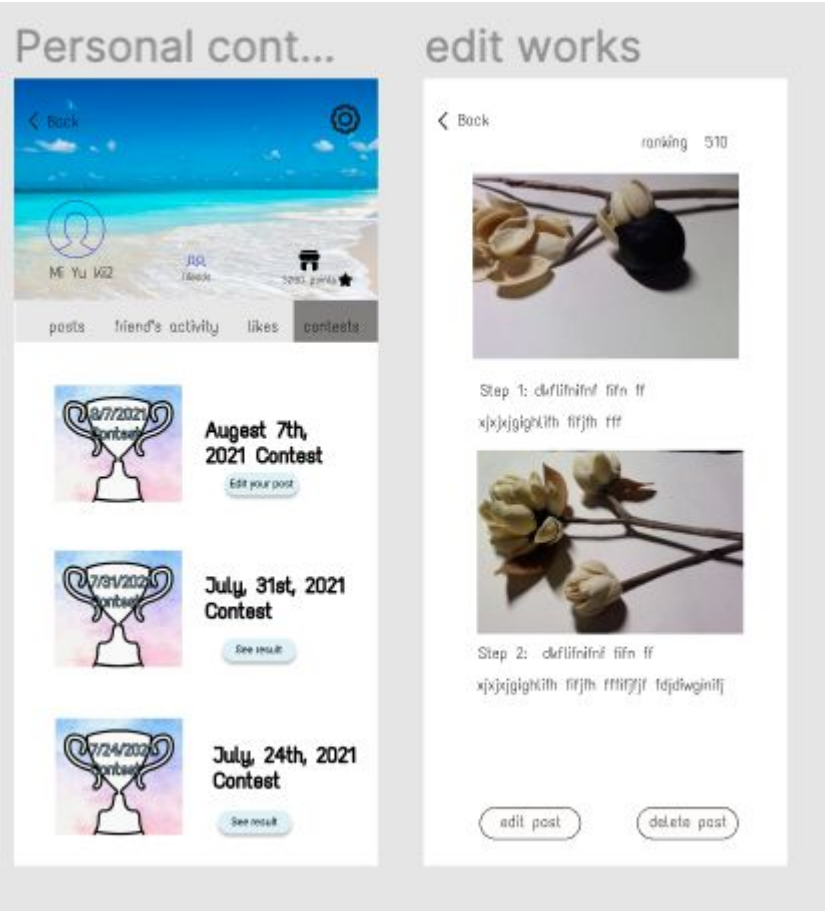


Figure: These are the personal contest pages.

The bottom left figure: Here show the contests which the users have participate, and the user could edit their posts by choosing the current contest.

The bottom right figure is the post page which the user have post in the current contest. He could edit the their post here.

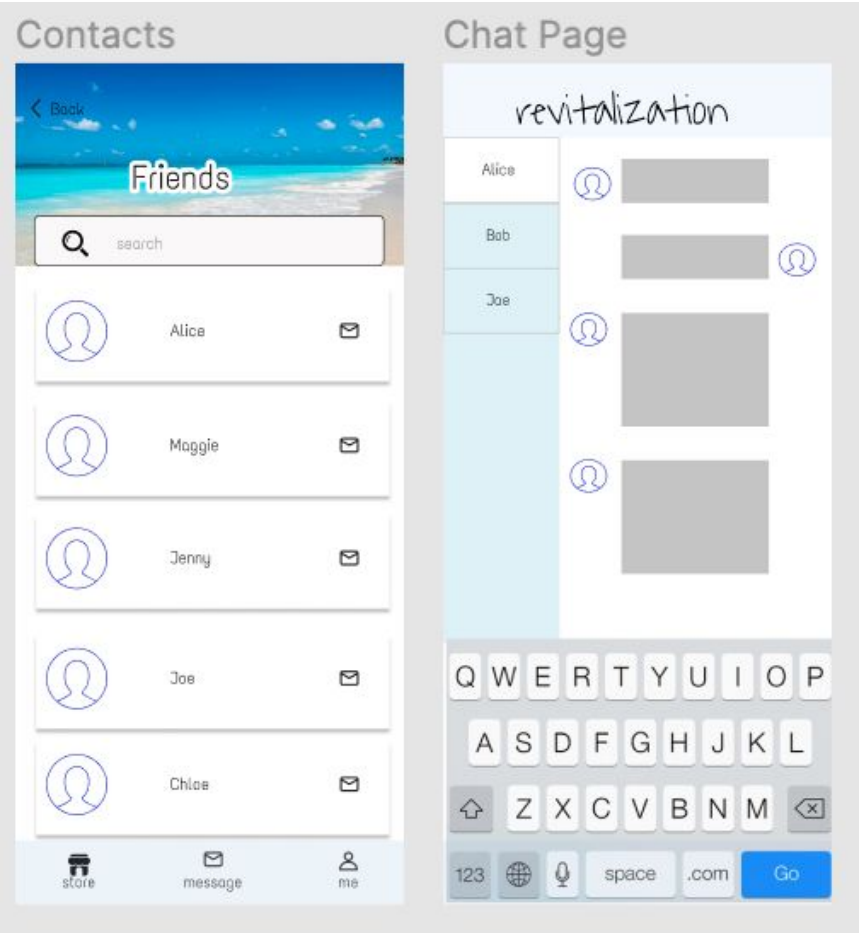


Figure: These two figure are the user's friends contact list. Uer could send the message to their friends here.

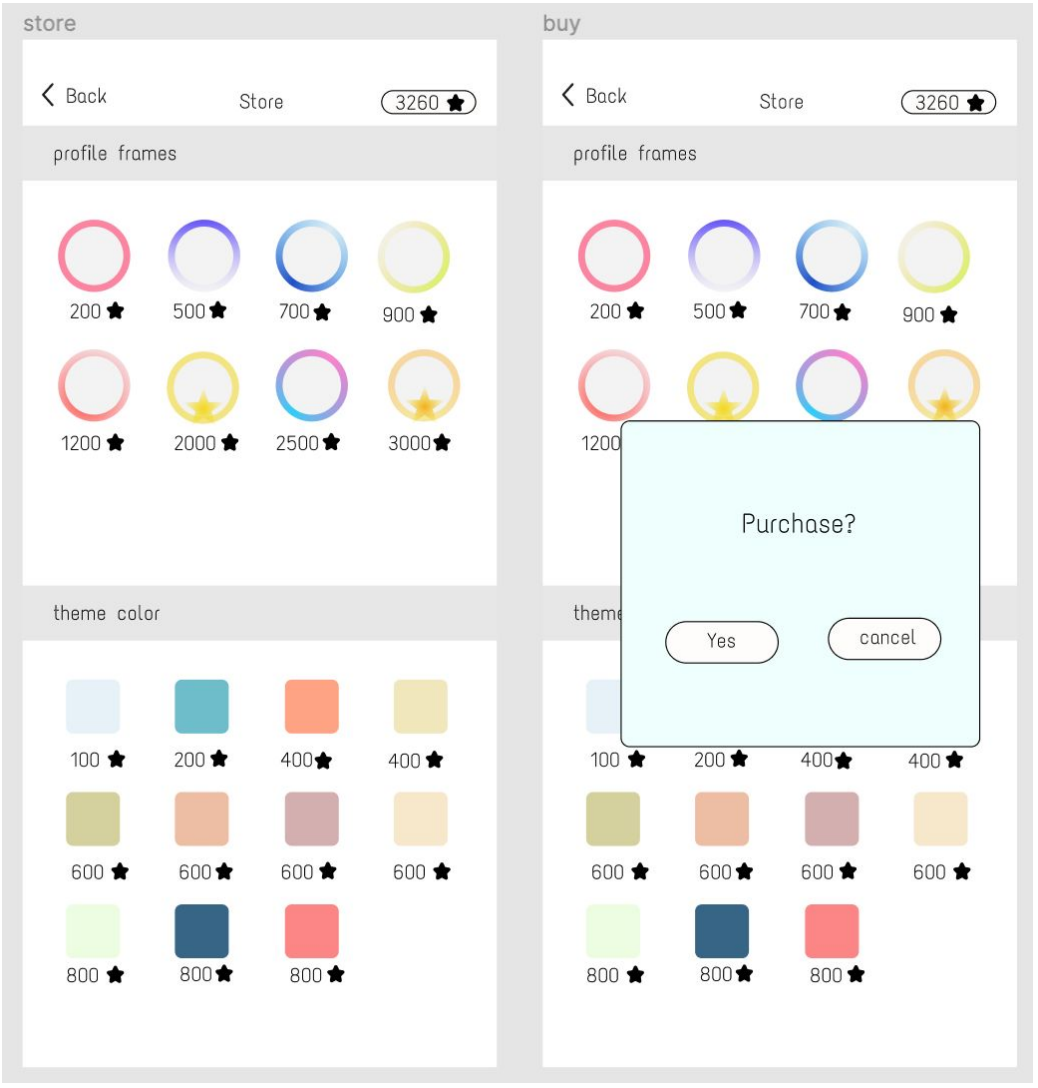


Figure: Here are the shop pages. Users could earn points by daily login, join the contest, and vote the contest.
They could use the points to exchange the digital gifts.

Reflection on the Design Process

The different techniques of milestone 2 helped us develop our idea from simple sketches to a high-fidelity prototype. The low-fidelity sketches helped us brainstorm our ideas and think about how our users could navigate our app and access the different functionalities. Receiving peer feedback helped us catch things like the home button being redundant and allowed us to gauge how successful we designed the social aspect of our app. Storyboards, personas, and scenarios helped us to keep our design focused on the users we identified from the interviews. The wireframes helped us brainstorm more and add more details to our ideas. Finally, the high-fidelity figma mockups helped us see what our app would potentially look like and act as a guide when we start planning the code skeleton. The code-skeleton helps us create a structure and break down our implementation.

The most important part of milestone 2 is designing the high-fidelity Figma mockup. This is because when we design the figma, we clearly see what we should implement and how we should approach them. Also, the other most important one would be the cognitive walkthrough, because this causes us to think about how our users would try to approach their goal.

We thought that out of all the techniques, the least helpful one is the figma wireframe. While it saved us time from inserting the details and helped us focus on what is important, we thought that it was a similar function as the low-fidelity sketches and was somewhat overlapped with the high-fidelity mockup.

Implementation

Development

Recommended search:

In order to make it easier for users to search for the materials they want and related materials, our homepage not only contains a search bar, but also provides some small tags. As long as users press the small tags they are interested in, the system will automatically filter the corresponding works for them. By watching other people's works on related tags, it helps users to brainstorm and inspire their creativity.

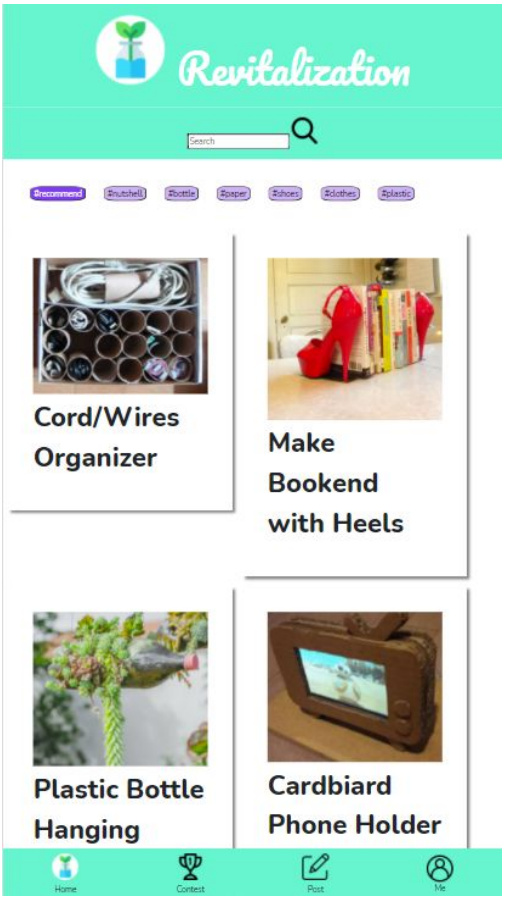
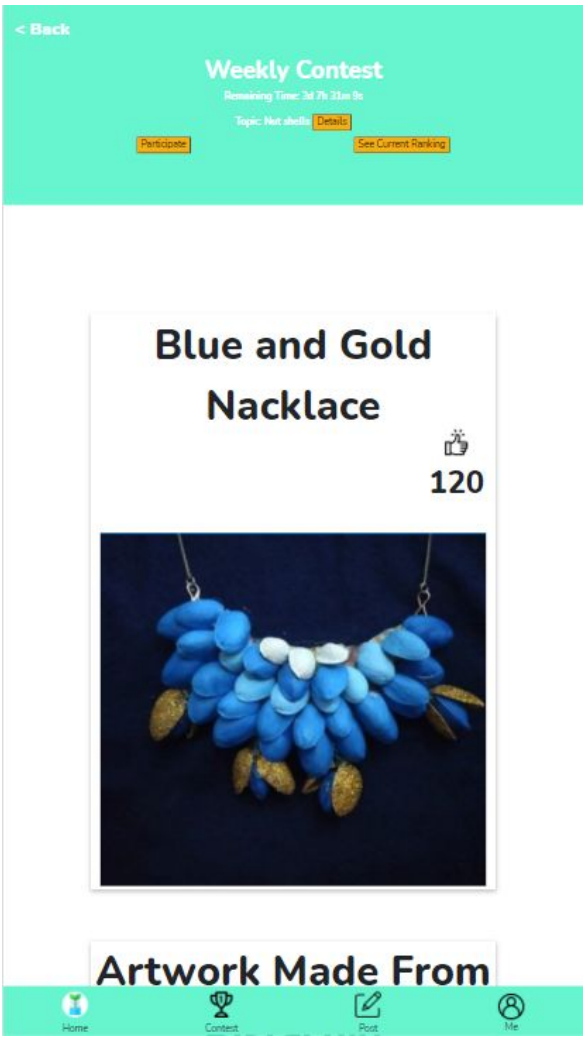


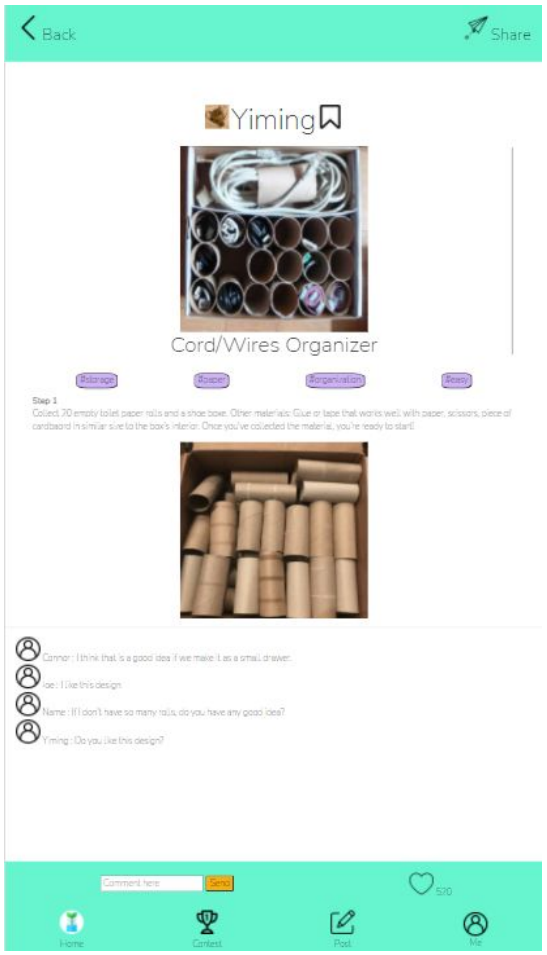
Figure: User can view posts, share posts, and search/filter on the topic of the posts.



Competition:

We have a weekly contest functionality. Users could click the contest button and navigate to the contest website. On the top of the page, users could checkout the time limit and the description of the contest. Also, if the users are interested in our contest, they could join the contest by pressing the participate button and post their crafts. The users could check out the result after the competition and get some feedback.

Figure: Contest allows people to interact through participation, voting, and comment.



Post Profile

On the profile page, users can view all the materials and detailed steps for making this work. The user can follow the instructions step by step and make their own craft. At the bottom of this page, we set up a comment area. The author of the craft could collect the feedback here and the other users could share their comments and ask some questions here. If the users like this craft, they could press the heart which will turn white to red meaning the user likes this idea.

Figure: Users can share a post, follow a user, like the post, comment, and follow tags to another topic.

Making a Post

The users could make a post by pressing the post button. In the post page, our app would guide the user make their own post step by step. There are four elements in this part which include tags, title, description, and steps. Users could add a new tag by pressing the "+" button, and use the add step button to add the step of making the crafts. Referring to the rapid reversible incremental actions principle, we added a delete button for each step so users can quickly edit their drafts. Users could delete the step they don't want by pressing the "x" button. After they fill out all the information, pressing the post button could post their works on the app.

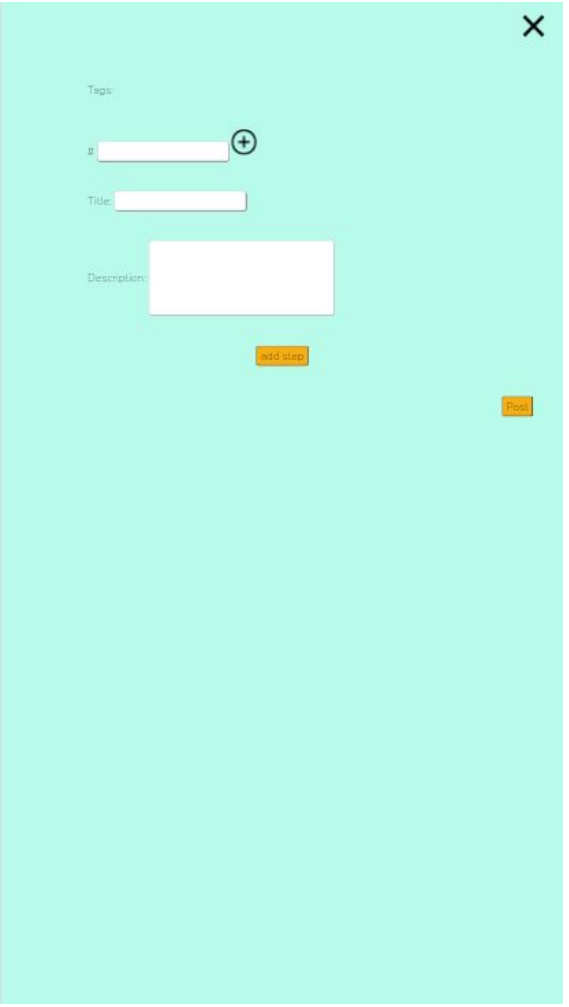


Figure: User can make a post with self-chosen tags, create the instructions step by step.

Technical Challenges

1. Given enough time, we could've finished a fully functional app with backend available. In this case, we can store all of our history data as well and users' posts during their using time. But implementing a fully functional database takes a lot of time, which we weren't given. Also, there are many more pages and functions that still needs to be implemented. For example: a personal page that displays all the work or post someone has shared. Nor a "completed" list that lists all the works that a user has completed. I think we can have a better functional app if we are given more time.
2. It's really hard for us to implement a moving pages. Also, if we want to enable users to delete post, it's very hard to keep track of the history data without backend. And when we want to reorder the list of step data, it's hard to reorder them because we lost the data during the time. So, this is also due to lack of the existence of backend.

Usability Test

We conducted 5 usability tests with users who belonged to our user group of young people with concern for environment. We found the following findings.

Findings:

1. Each post did not appear as a clickable page to the user. To make each post appear to be a clickable page, we wrapped each image and title in a shadow effect to create a metaphor to papers lying on a table. Then, we changed the fonts of the post titles to suggest that it represents a “title”.
2. Add tag functionality was confusing, users needed to type “#” themselves. We added a suggestive “#” in front of our tag textbox to create a more intuitive understanding of a hashtag.
3. Color was not attractive and stimulated users’ interests. We changed the background color from light blue/gray to a more vibrant and playful color that embodies our app’s spirit of creativity, innovation, and community.
4. Tags and Recommendations sorting on the main page does not confuse users and encourages them to explore topics.
5. People tend to want more information in our main page of each post such as required materials, difficulty of the making process, and total time to make. With the additional information provided, users tend to think that they are more engaged to click on the post.
6. Some users think adding a step at the post page is confusing because they do not know what the button is for. They tend to want a guideline or a demo to show how to add image and text with the add step button. We added a demo for the add step button at the post page.

Conclusion

From this project, we learned that group project is actually much more effective than individual, because we can share ideas and concepts with each other. We work on the part that we like and we are passionate about, which makes us to be satisfied with the current project. During the project together, we find that brainstorming is the most difficult part, while interviewing different users are educational and full of fun. Even though brainstorming is difficult, we found that we can think of a lot of different things with each other and It's valuable to learn about others' feelings and take a best route to implement the features that might satisfy most of the users' needs.

As the project progressed blossomed from single ideas into the final prototype, we learned the importance of each step of the design process. Brainstorming wide range of ideas, narrowing them down with research, task analysis, and wireframes all helped us learn more about the user and our validity of our solution. Then, we found though utility tests more design gulfs and received helpful user insights for ways to improve our app. Though this methodical process, we were continuously surprised by the room for improvement.

In the end, we are happy with how our idea had developed through our collaboration with team members, the feedbacks we received, and insights from users.

Appendix

Github: https://github.com/joewychen/revitalization/tree/master
Slides: https://docs.google.com/presentation/d/1sZokaD4MrCI9UIFlN-kCA-SSJ9rEAgr10TMEcQ3Q_vE/edit?usp=sharing
Final video: https://youtu.be/q5fxzMJ3Ln0
Poster: https://drive.google.com/file/d/1ys73ZtBN5p1ExZ0e0eUXGyvotfO5i26K/view?usp=sharing