peek

HIGH-FIDELITY PROTOTYPE REPORT

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Value Proposition

Give and take inspiration.

Problem / Solution

Artists find collaboration rewarding and inspiring, but networking with other artists can get tedious. It takes effort to establish a network of artists to bounce ideas off of, and it takes time to get exciting feedback.

On Peek, collaboration and inspiration happen naturally when you create art. Peek inspires artists by encouraging them to create art based on other artists' work. Users take inspiration from artists to create their own masterpieces, which in turn will inspire more artists.

Needfinding Interviews

During the Needfinding phase, we interviewed the following five artists about their experiences creating art during the pandemic.

Makena

Makena is an Art major at UCSB. She specializes in digital art, and she has art accounts on Instagram, Twitter, and Tumblr.

We were surprised to find that although she wants to build a community with other artists online, she also wants to post her art *anonymously*, as she believes this prevents viewers from judging her art based on her identity.

She also explained that some platforms, such as Instagram, lend themselves to art theft (i.e. people reposting art without the artist's permission) because they do not provide an easy way of crediting artists when reposting their art. In fact, some of Makena's art has been reposted without proper credits in the past!

Fig. 1. Makena's Empathy Map

Veronica

Veronica is a printmaker, video game designer, and teacher.
We were surprised to learn that even though she is already an established artist, it is still important for her to find an expert to give her feedback when she is learning a new artistic skill.

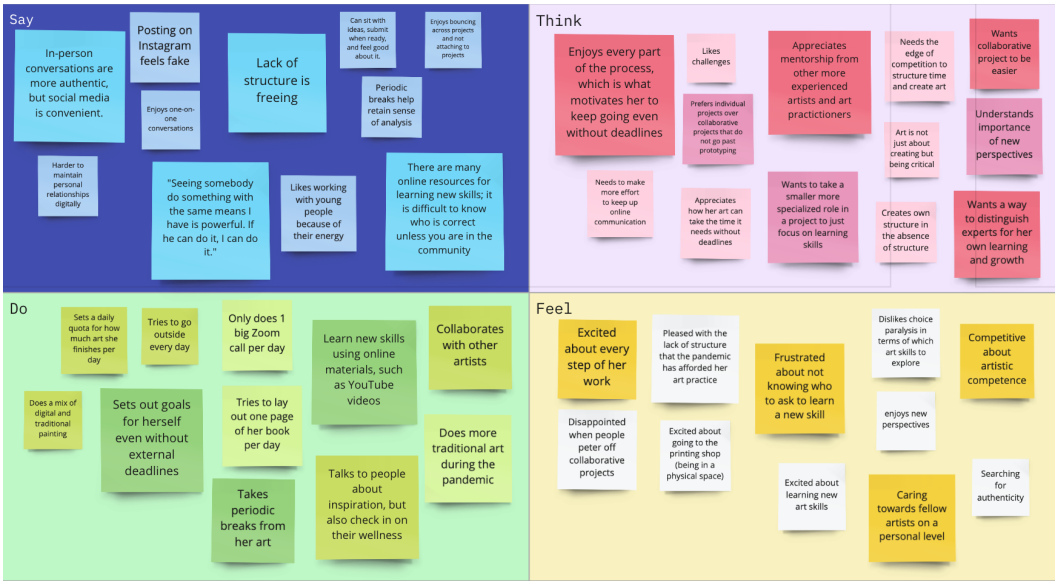


Fig. 2. Veronica's Empathy Map

Daphne

Daphne is a painter, children's book creator, and mentor of young artists.
We learned that she appreciates large commissions, but only if the client does not impose a strict vision on her.

Fig. 3. Daphne's Empathy Map

Brad

Brad is a musician, producer, and Stanford student.
Before the pandemic, he enjoyed going to open mics and other artistic events. He often spontaneously met people at these events and then started working with these people on musical projects. Unfortunately, due to the pandemic, these opportunities for collaboration don't come to him as frequently anymore.

Fig. 4. Brad's Empathy Map

Aristotle

Aristotle is a writer, poet, and MFA student at the University of Utah. He likes to keep books by other authors nearby to spark his creativity.
He writes poems for strangers at Farmers' Markets, and wishes there were a way to incorporate strangers into his writing community.

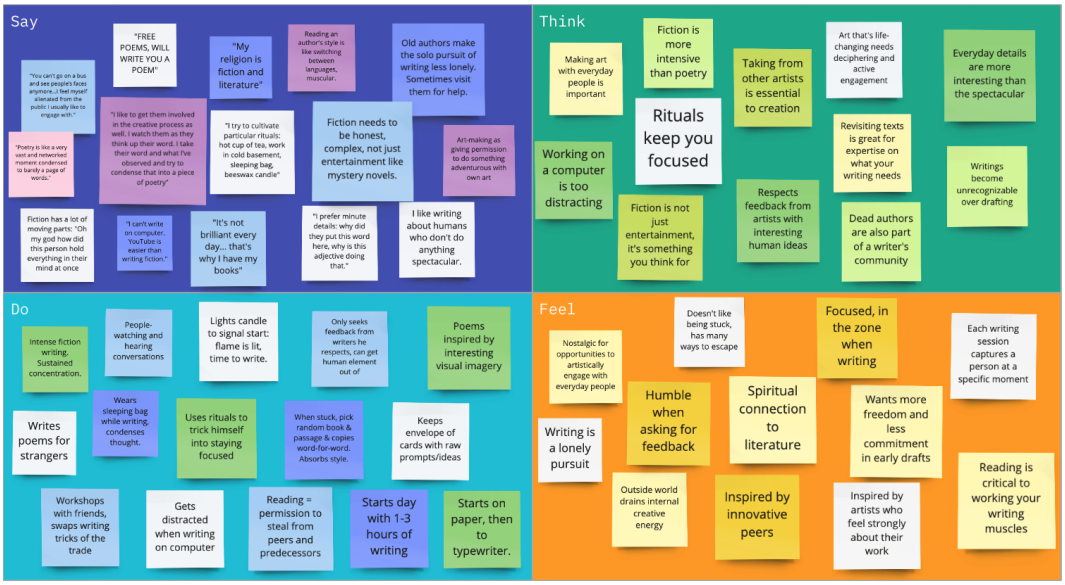


Fig. 5. Aristotle's Empathy Map

POVs and HMWs

POVs

From our needfinding interviews, we generated the following POV statements.

POV #1

We met Brad, a student producer who produces music for someone he met through chance circumstances.
We were amazed to realize that despite growing his music career through collaborating with artists he encountered by chance, Brad is reluctant to actively work to grow his network.
It would be game-changing to cultivate collaboration between artists who didn't previously know each other.

POV#2

We met Daphne, a visual artist who feels strongly about maintaining her creative vision.
We were amazed to realize that she appreciates big, structured opportunities, but only if she does not feel constrained by the client's vision.
It would be game-changing to make it easier for artists to get paid without compromising their creative freedom.

POV #3

We met Makena, an art student who posts her art anonymously online.
We were amazed to realize that she wants anonymity when sharing her art to preserve objectivity and prevent social biases, but she also desires credit and community.
It would be game-changing to preserve authenticity of art while crediting artists.

HMWs

We generated the HMWs in Fig. 6 based on these three POVs. We then chose the following three HMWs as the ones for which we would brainstorm potential solutions.

HMW #1 (from POV #1)

How might we make collaboration between artists feel more like play than work?

HMW #2 (from POV #2)

How might we help artists find commissions that best match their own visions?

HMW #3 (from POV #3)

How might we help artists grow their networks before revealing their identifying details?

Fig. 6. All HMWs with Heat Map Voting

Potential Solutions and Experience Prototypes

For each of the above HMWs, we brainstormed potential solutions. We then picked our favorite three solutions, considered the assumptions implicit in these solutions, and created experience prototypes to test those assumptions.

Solution #1 (from HMW #1): Create a collaborative platform where one user's art inspires the next user's art.

Assumption:

Building off each other's art is rewarding for artists.

Experience Prototype:

To test this assumption, we recruited three participants. We asked the first participant to create a piece of art based on a painting that one of us made. She wrote a piece of flash fiction. We then asked the second participant to create a piece of art based on this flash fiction. The second participant drew a picture, and the third participant wrote a flash fiction based on that picture. Finally, we showed all three participants the art that was inspired by their work and asked them what they thought of the experiment.

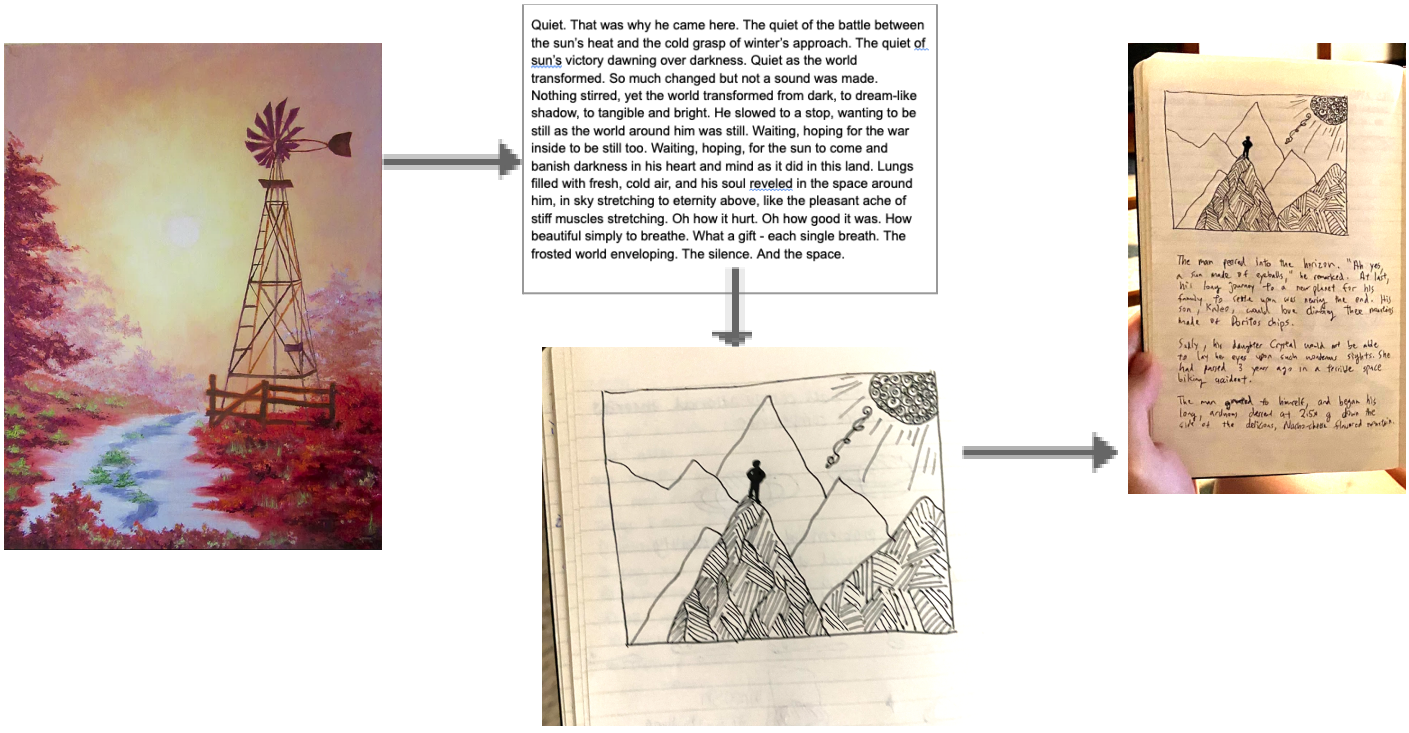


Fig. 7. Experience Prototype #1: Iterative Art

Results:

All three participants said they had fun, and that they wanted to get to know the artists whose work they were inspired by. Thus, our assumption seemed to hold. However, the participants noted that since we told them they could use any medium they wanted, they felt choice paralysis.

Solution #2 (from HMW #2): Create a platform for artists to pitch and mock-up location-based art projects.

Assumption:

Undecorated locations can inspire artists to generate new art.

Experience Prototype:

To test this assumption, we recruited one participant (a software engineer and actor). We showed her two different photos of undecorated locations and asked her several questions, including what type of art she would like to see in those locations and what type of art she is inspired by those locations to create. We then asked her to sketch her ideas for art she could make to decorate the locations. For the first location, the front yard of a house, she drew a path bordered by colorful glass flowers and found a photo of painted rocks that she would place by the flowers. For the second location, a blank wall, she drew the beginnings of a collaborative mural--her idea was that people passing by the wall could fill in the gaps in her drawing.

Fig. 8. Experience Prototype #2: Location-Based Art

Results:

We were struck by the fact that even when not prompted to do so, our participant looked for opportunities for collaboration. We found that our assumption was

correct--seeing blank locations generated lots of ideas for her. However, she felt that most of her ideas for location-based art were limited to certain mediums, like murals and sculptures.

Solution #3 (from HMW #3): Create a social media platform where anonymous artists connect and grow a following.

Assumption:

It's possible to make connections with people without revealing your identity.

Experience Prototype:

To test this assumption, we presented one participant with art of two kinds. The first kind was art made by anonymous people--the participant could only see their usernames. The second kind was art made by people whose full names and short bios the participant could see. We asked the participant how connected she felt to each artist, and whether each piece of art spoke to her.

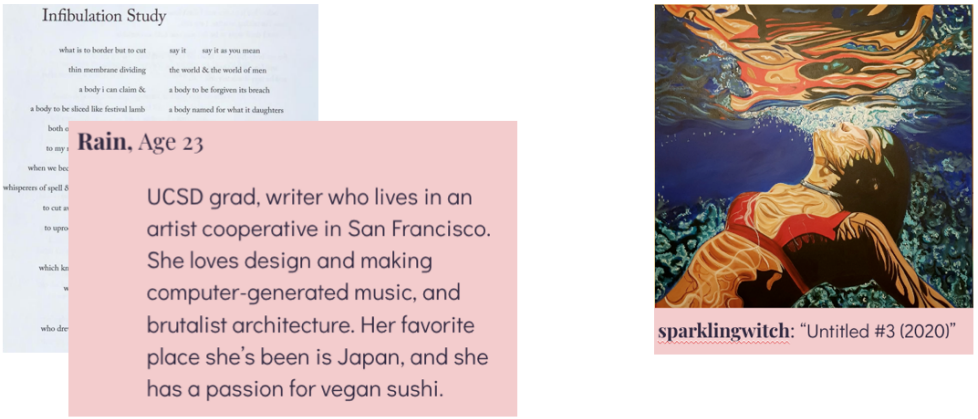


Fig. 9. Experience Prototype #3. Left: Poem with Artist's Bio; Right: Anonymous Art

Results:

She said that she felt connected to the artists on the basis of their work rather than their identities. Moreover, she said she would want to talk to the artists behind the art. Thus, our assumptions were correct. However, we were surprised to hear that when she could see artists' identities, she first developed initial interpretations of their art, and then read their bios and refined her interpretations accordingly.

Design Evolution

Solution

We chose to implement Solution #1.
The experience prototype from Solution #1 generated the most excitement from our participants. Moreover, even participants completing the other experience prototypes brought up the idea of collaboration during their sessions--the participant in the second experience prototype created a collaborative mural, and the participant in the third experience prototype said she wanted to get to know the anonymous artists.
Thus, it seems that artistic collaboration is a universal desire among artists. This, plus the fact that multiple people we interviewed during our needfinding process said that finding collaborators (especially during the pandemic) was a high pain point for them, persuaded us that Solution #1 would address the highest number of concerns that we had heard through our process so far.
Finally, we were excited by the idea of creating a collaborative artistic platform!

Tasks

We decided that the three main tasks of our platform would be:

1) Simple: Browse art from other users to gain inspiration.
   One of our main goals with this app is to help artists gain inspiration from each other. To find the art that excites them the most, users will likely need to browse through multiple art pieces, and/or specifically search for art on subjects they are interested in. We wanted browsing to be the simplest task on our app so that users can easily find inspiration at any time.
2) Moderate: Upload a creation of your own that was inspired by a piece of art on the app.
   We hoped that seeing work from other artists would actually inspire people to create their own art. We wanted to give users a way to showcase their new art immediately after creating it.
   Moreover, a main goal of our app is to allow users to inspire others. When a user uploads a piece of art to the app, other users will be able to find it and be inspired by it.
3) Complex: Create a collaboration group with other users.
   Finally, we hope that users, after being inspired by other artists and watching other artists become inspired by them, will naturally find people whose art they love. We wanted admirers of each other's art to be able to

meet and learn from each other and eventually create art together. We thought that allowing users to create collaboration groups on the app would be the best way to accomplish this. Since establishing these art connections might take time, we thought that this task would be mainly done by experienced users. Thus, we made this task our complex task.

These tasks were slightly tweaked to match each prototype's fidelity, but their main ideas have remained mostly the same since this point in our design evolution.

Low-Fidelity Prototype

We hand-drew screens to fit an iPhone X and uploaded the screens to Invision. Our prototype imitated a mobile platform, and we shared it online with participants. The display featured multiple pages and navigation panels, which we asked our participants to use to complete our tasks. Figs. 10-13 show the task flows that we asked participants to complete. These were, in order: 1) Bookmark an interesting picture by another artist (simple), 2) Navigate to the Computer Vision feature and find a piece of art on the app based on an object in your surroundings (simple), 3) Post a creation inspired by the art you just bookmarked (moderate), and 4) check notifications and create a private collaboration group (complex). Fig. 14 shows all screens of the prototype.

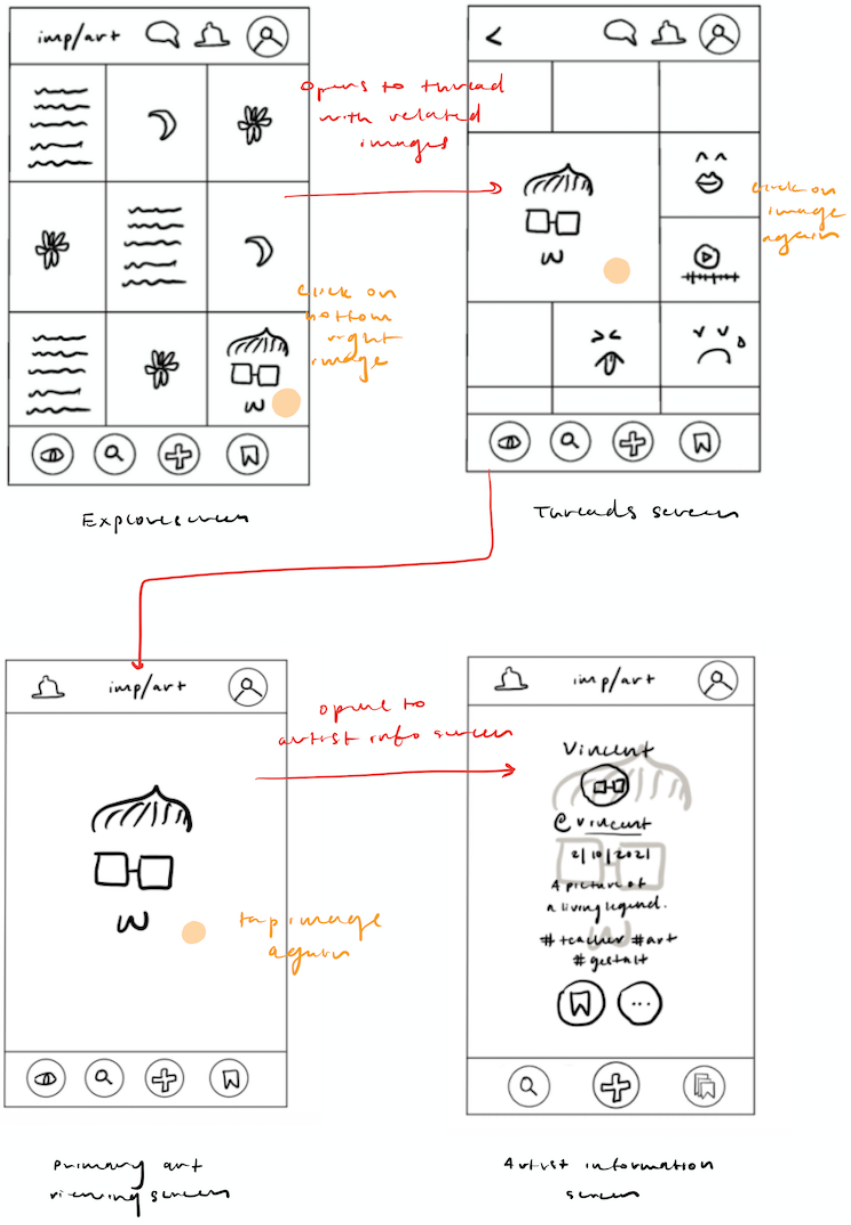


Fig. 10. Bookmark an interesting picture (simple task)

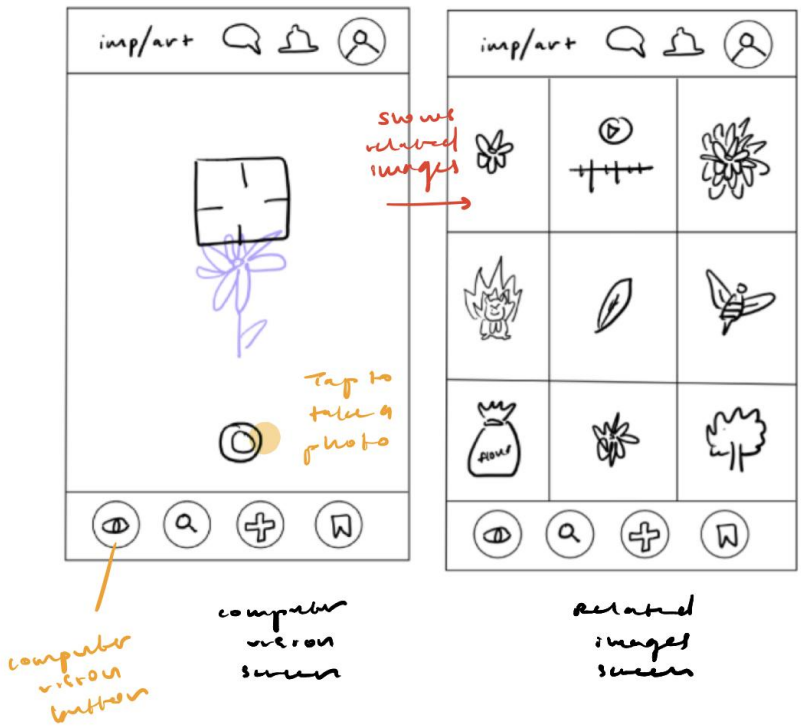


Fig. 11. Navigate to computer vision feature and find a piece of art inspired by an object (simple task)

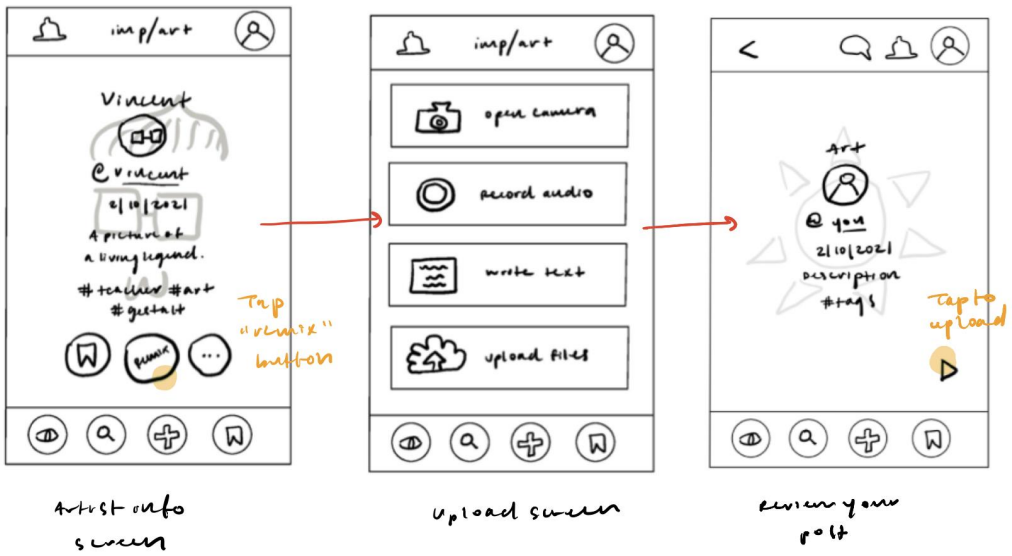


Fig. 12. "Remix": Post a creation inspired by the art you just bookmarked (moderate task)

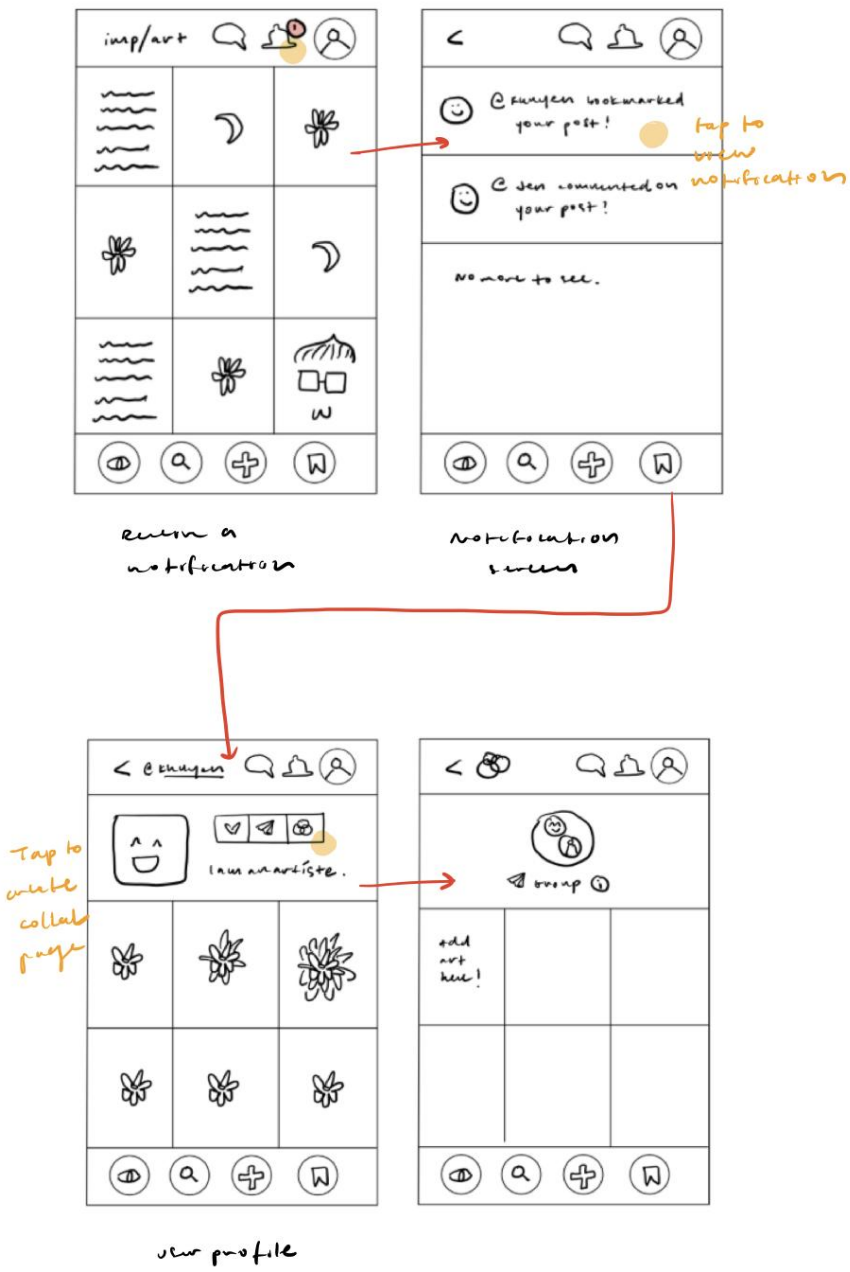


Fig. 13. Check notifications and create a private collaboration group (complex task)

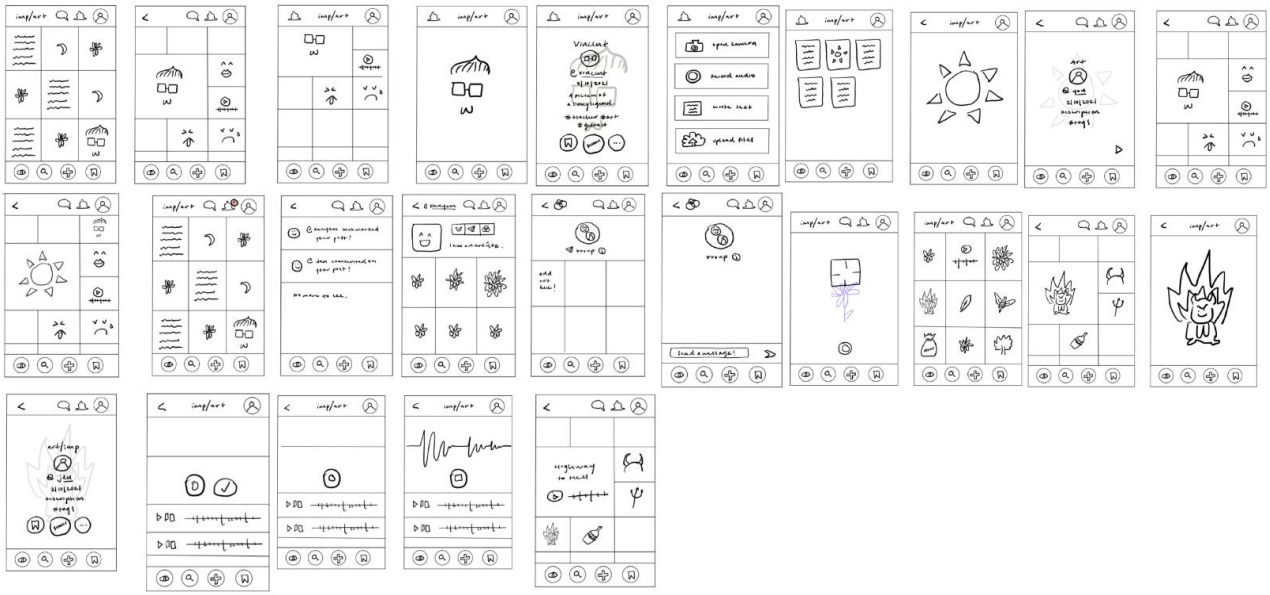


Fig. 14. All screens of the low-fidelity prototype

Design Changes from Low-Fi to Med-Fi

Three participants completed the tasks on our low-fi prototype while using the Think-Out-Loud method. From their comments during and after their use of the prototype, we learned that although the prototype was intuitive overall, it had several drawbacks. For our medium-fi prototype, we fixed what we considered to be the three biggest problems.

Change #1: “Post” feature

The distinctions between posting to a thread, posting to your profile without a thread, and posting to a group were confusing. The “post” button was found in places corresponding to all three possibilities, and users didn’t know which method of posting they should select at any given time and why.

We fixed this in our medium-fi prototype by creating a bright-orange, context-aware post button that would always be visible at the bottom of the screen. When clicked, a scrollup would appear with options for uploading a file, taking a photo to upload, and drawing on another piece of art. We hoped that if users always had the same button to tap when they wanted to upload anything, they would be less confused. We placed this button in the always-visible bottom

navigation bar because being able to post is fundamental to our vision of making remixing and sharing inspiration as accessible as possible.

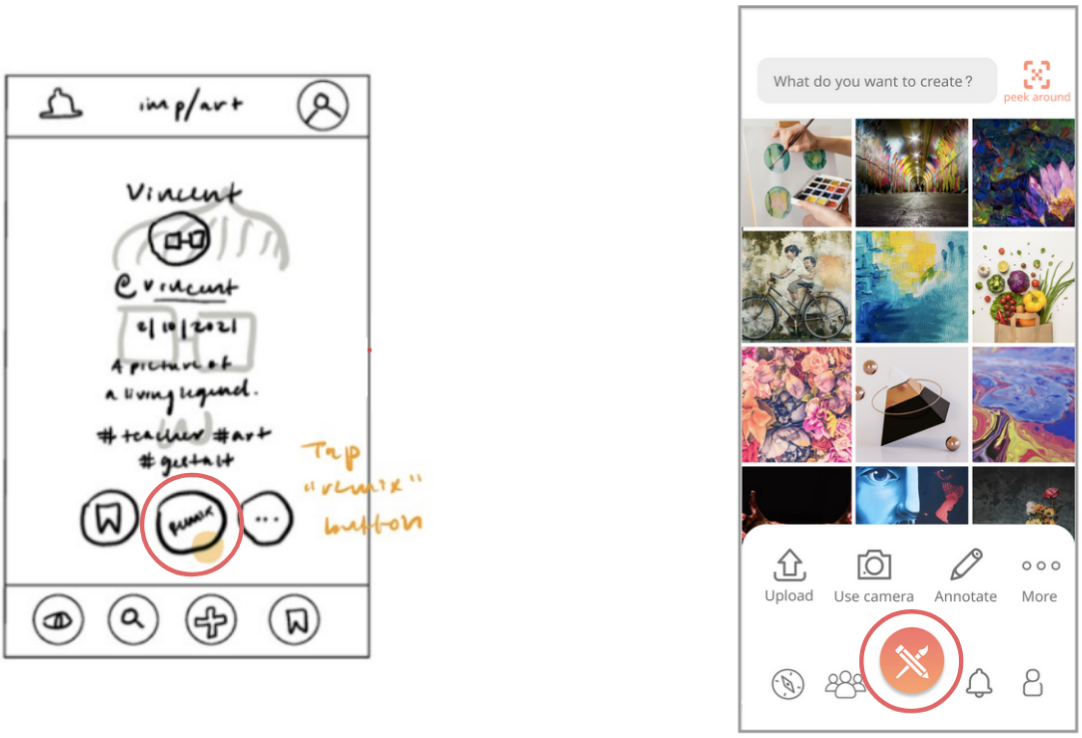


Fig. 15. Low-fi (left) vs Medium-fi (right) designs for posting to Peek, with the post buttons for each prototype circled in red.

Change #2: “Bookmark” action vs “Bookmarks” page

Our low-fi prototype had a Bookmarks button that was always visible in the bottom bar. This button would take the user to her page of already-bookmarked art. The button for bookmarking a specific piece of art appeared when the user tapped a specific piece of art. However, the two buttons were otherwise identical. All users tried to tap the “Bookmarks” button on the bottom bar when we asked them to bookmark a specific piece of art.

We fixed this by first taking the “Bookmarks” button out of the bottom bar and instead making it accessible from the user’s profile, so that it isn’t so tempting to the user. We then differentiated the “Bookmark” action and “Bookmarks” page buttons, so that the “Bookmarks” button was multiple bookmarks instead of a single bookmark.

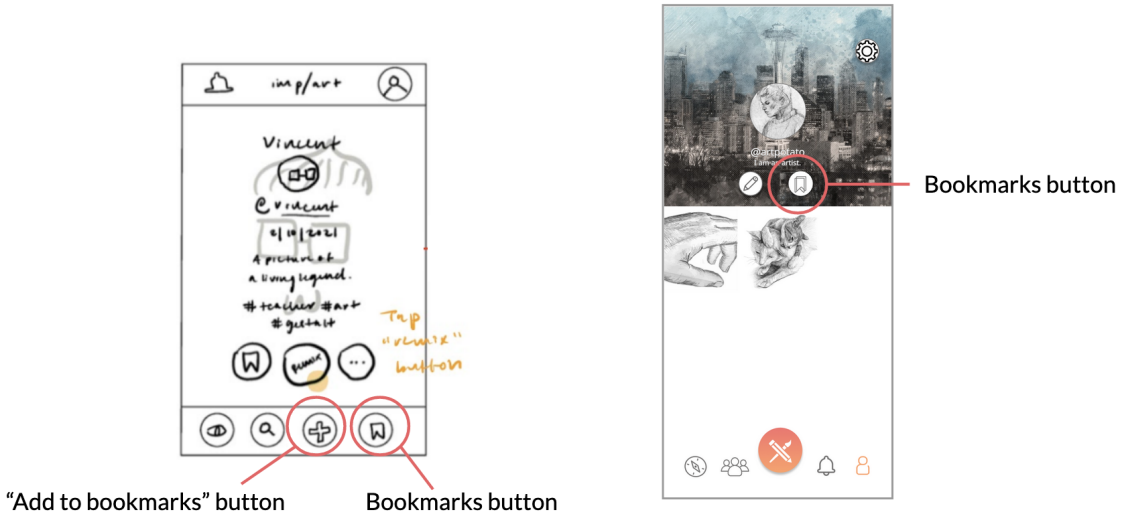
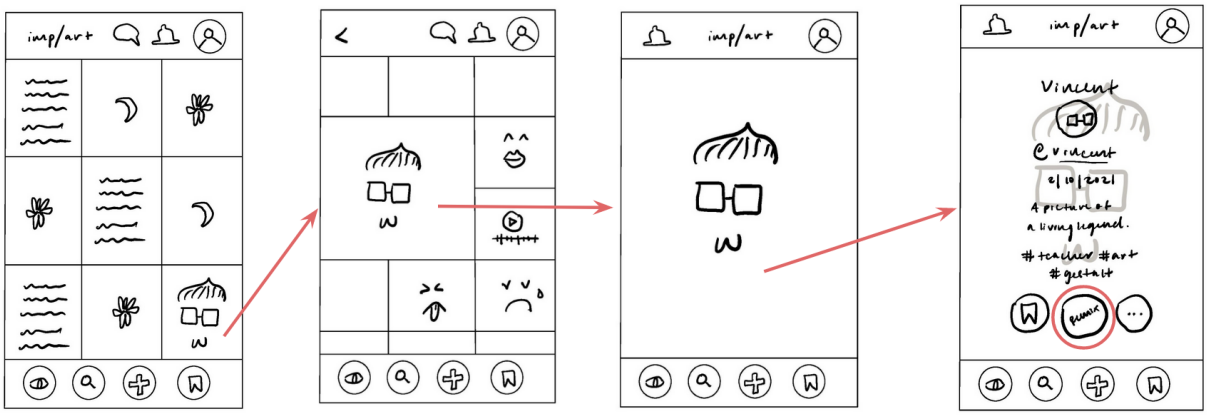


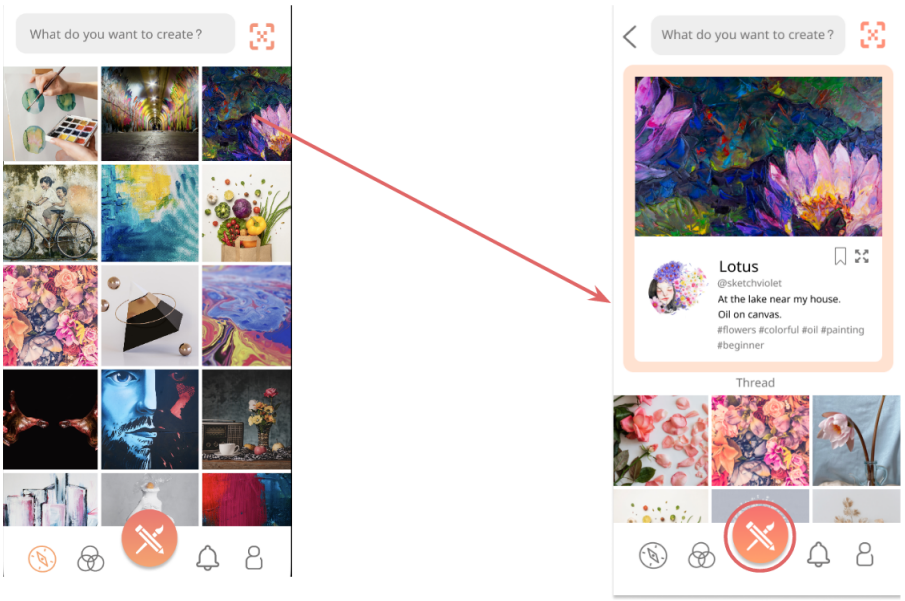
Fig. 16. Low-fi (left) and Medium-fi (right) designs for separating "Bookmarks" and "Bookmark" buttons.

Change #3: Efficiency of Remixing

Remixing, a key feature of the app, took four taps minimum to complete. Users felt this was cumbersome and unintuitive.

To fix this, we eliminated multiple screens in the process of remixing a piece of art. In the medium-fi prototype, users could click on a piece of art from the explore page and immediately click on the previously-mentioned context-aware post button to remix that piece of art.





1. Choose artwork on Explore page

2. The next screen shows artwork's information and its thread. Click on context-aware post button (described above) to start Remixing

Fig. 17. Low-fi (top) vs Medium-fi (bottom) designs for remixing a piece of art. The number of steps is shown under each schematic.

Medium-Fidelity Prototype

We used Figma to build our Medium-fi prototype. Figma made transitions and animations easy, which allowed us to get a "feel" for our design. Although we could not implement certain core aspects of our design, such as uploading art and user-to-user interactions, with Figma, we created our design based on the user needs that we gathered during our low-fi prototype evaluations. Figures 18-20 explain the main three task flows of the medium-fi prototype: 1) Browse for inspiration, 2) Remix and post artwork, and 3) Create collaboration groups. Figure 21 shows all screens and interactions in the medium-fi prototype.

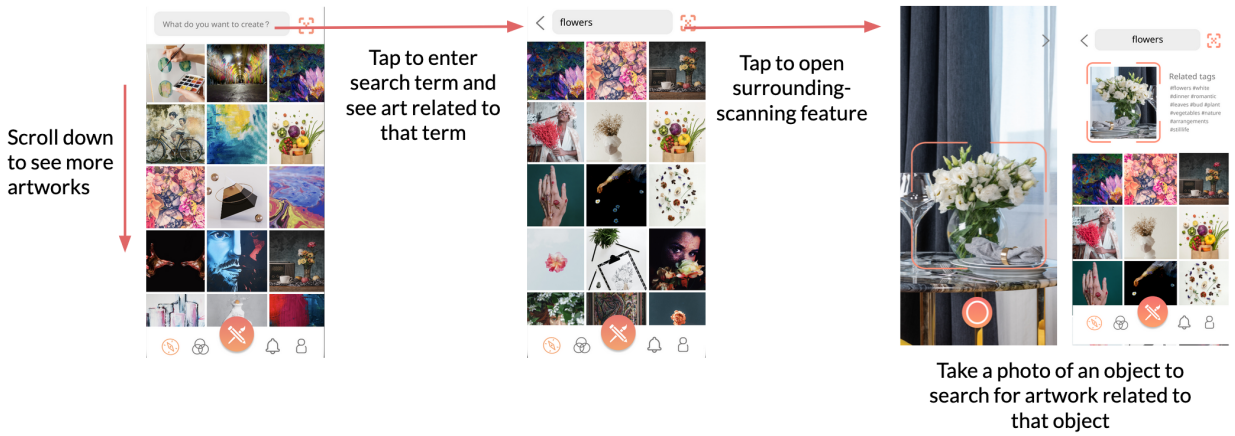


Fig. 18. Med-Fi Task 1: Browse for Inspiration. On the explore page, the user can scroll down to see more art, or search by tags. The user can also browse via the Computer Vision feature, where she can take a photo of an object in her surroundings and let Peek scan it to find artwork related to that object.

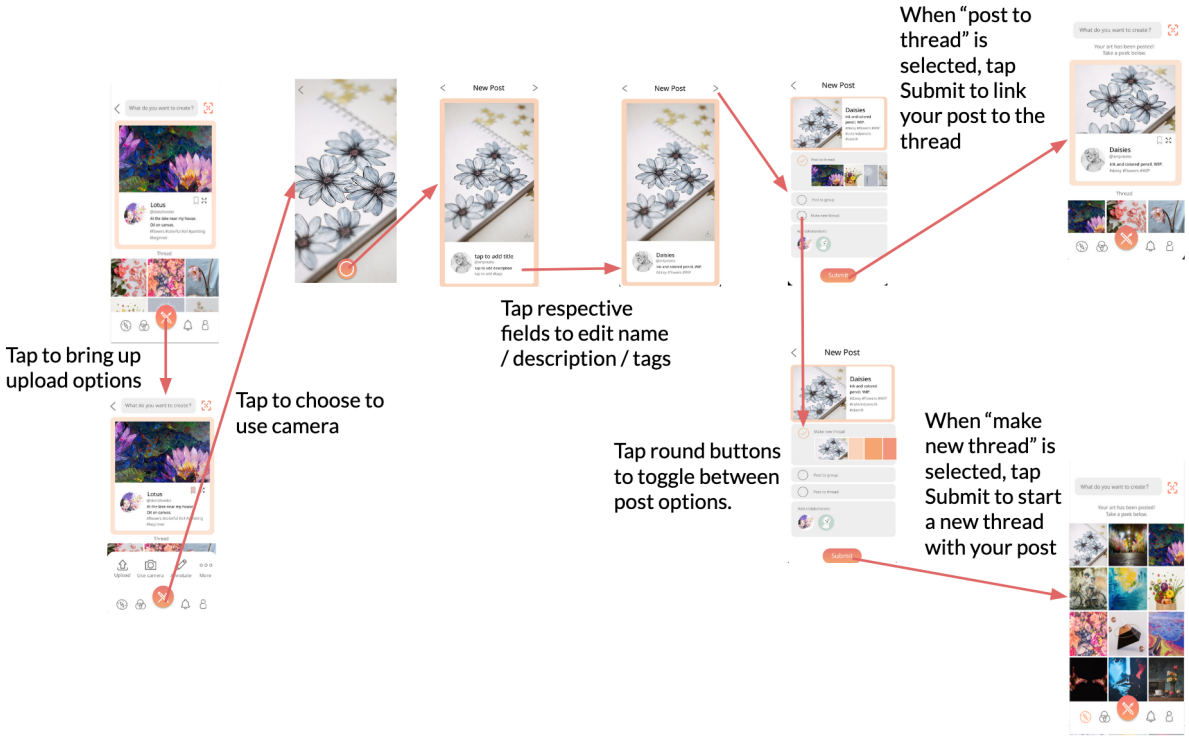


Fig. 19: Med-fi Task 2: Remix and Post Artwork. Here, the user searches for a piece of art related to flowers, chooses her favorite, and uploads her own drawing to the thread of the piece of art she chose. If she wanted, in the second to last screen, she could have chosen to create a new thread or upload to one of her collaboration groups instead. Threads page is used for this example, but this task flow can be carried out almost everywhere on the app.

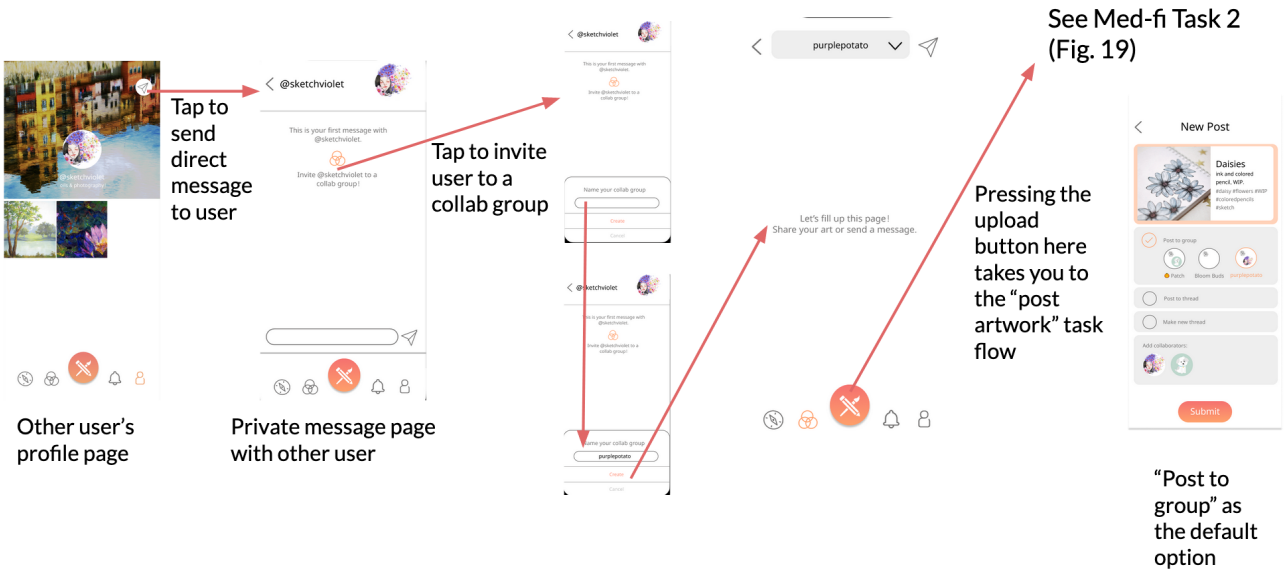


Fig. 20. Med-fi Task 3: Create Collaboration Groups.

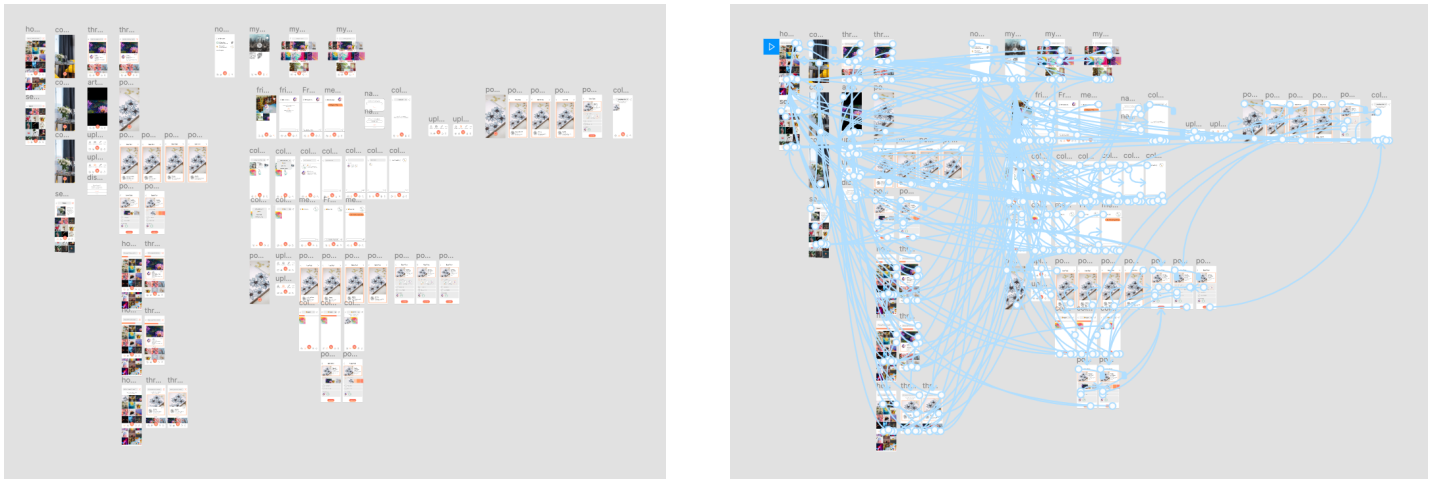


Fig. 21. Our medium-fi prototype's screens (right) and interactions (left)

Design Changes from Med-Fi to High-Fi

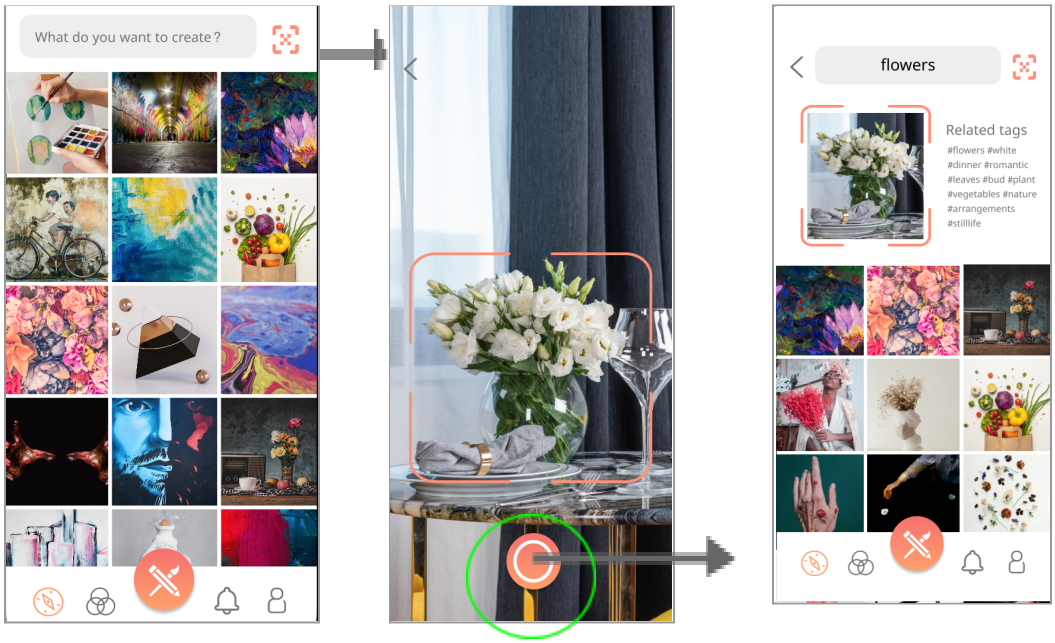
The evaluators of our medium-fi prototype found 18 heuristic violations of severities 3 and 4. Most of these violations came from Heuristic 3 (User Control and Freedom), Heuristic 4 (Consistency and Standards), and Heuristic 6 (Recognition, not Recall). All 18 violations were addressed by the following eight design changes. (Green circles indicate differences between before and after pictures.)

Change #1: Computer Vision View

The function of our Computer Vision view was confusing. Users had a difficult time figuring out that clicking the camera button in the computer vision view would prompt the app to scan the subject of the picture and search for art that was related to that picture. Users said that having the camera button implied that the user was capturing an image to share.

We fixed this by removing the camera button. Now, the computer vision view scans the first subject that the user focuses their camera on. The user is then taken to a page with artwork related to that subject.

Before:

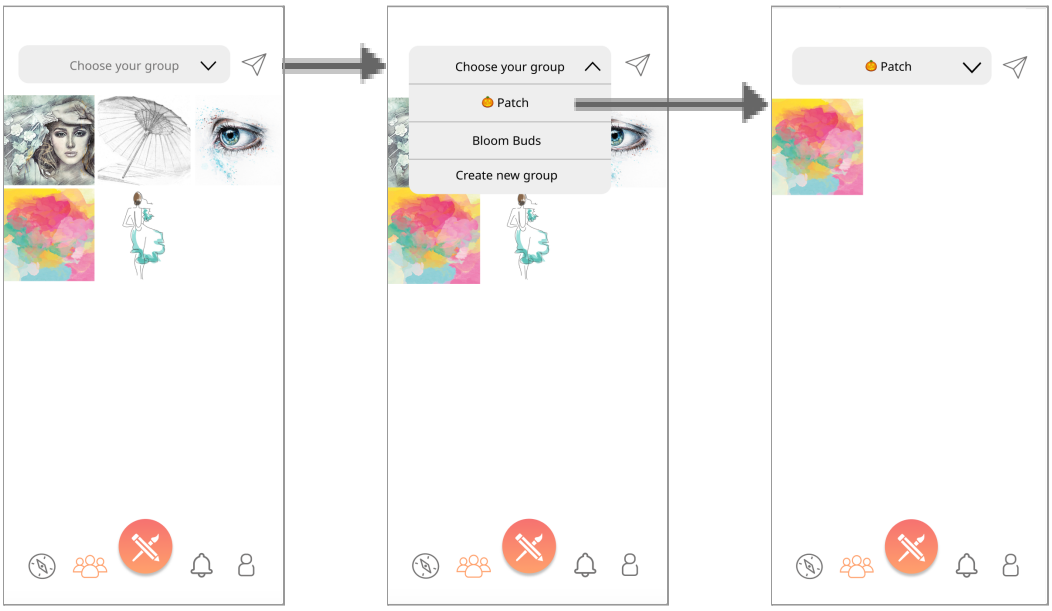


After (second screen → third screen transition happens automatically):

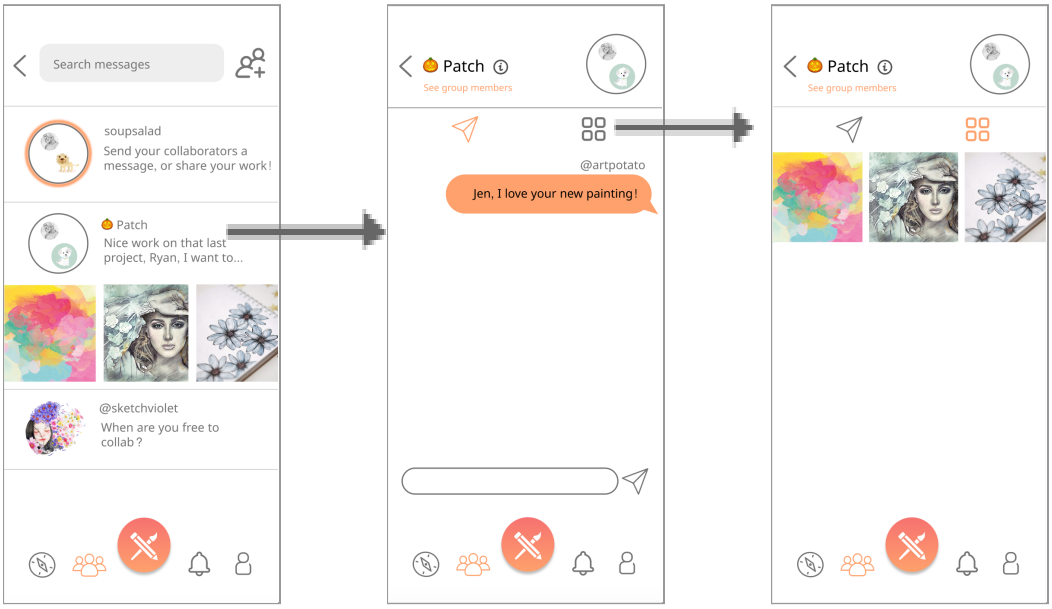
Change #2: Purpose of Collab Page

Because the Collab tab opened onto a “feed” view that was similar to the explore view, the difference between the Collab tab and the Explore tab was not clear. Users also noted that they had to navigate to another user’s profile to find their messages together.
We fixed both of these violations by combining the functionalities of the Collab tab and the individual messaging feature.
The Collab tab now opens on a messages page. Users click into a specific group or individual to see the messages and art that they have with that group or individual. This way, all feeds that the user sees in the Collaboration tab are tied to one particular group, as well as the conversations going on in that group. This differentiates it from the Explore tab.
Moreover, individual and group messages are now centralized in the Collab tab. This fixes the problem of having to search for messages in other users’ profiles.

Before:



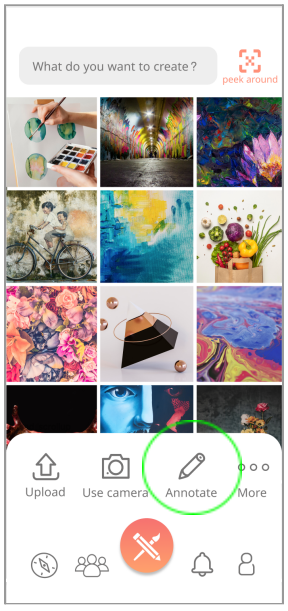
After:


Search messages
soupsalad
Send your collaborators a message, or share your work!
Patch
Nice work on that last project, Ryan, I want to...
@sketchviolet
When are you free to collab?
Patch
See group members
@artpotato
Jen, I love your new painting!
Patch
See group members

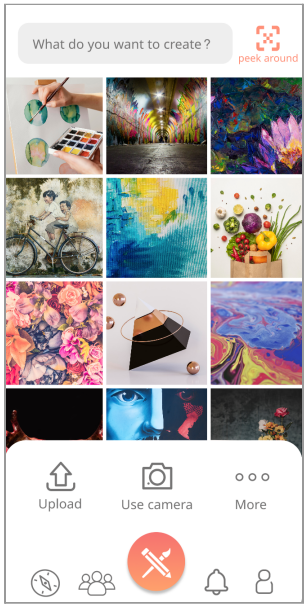
Change #3: The “Annotate” Feature

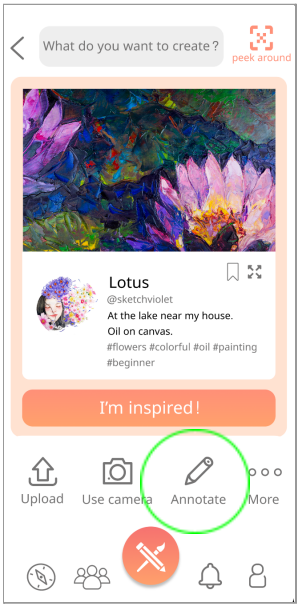
Our medium-fi prototype had an “Annotate” feature that was enabled even when the user tried to upload their own original artwork. Thus, the function of “Annotate” was confusing.
We fixed this by making the annotate feature only available when the user is viewing one specific piece of art-- “Annotate” allows the user to draw directly on that piece of art.

Before:



After (the first screen does not have the annotate option):





Change #4: Context-Aware “Upload” Button

Our Med-fi prototype had an all-purpose “Upload” button for new posts, posting to groups, and posting to threads. It was unclear to users that they should use this button when uploading artwork that they made in response to a particular piece of art on the app.
To fix this, we added an “I’m inspired” button under all individual art pieces. Now, the user can tap this button to upload their artistic response to the appropriate art piece, instead of relying on an all-purpose upload button. Since the new button is directly underneath the art piece that the user is responding to, it is more obviously related to this art piece than the all-purpose button is.

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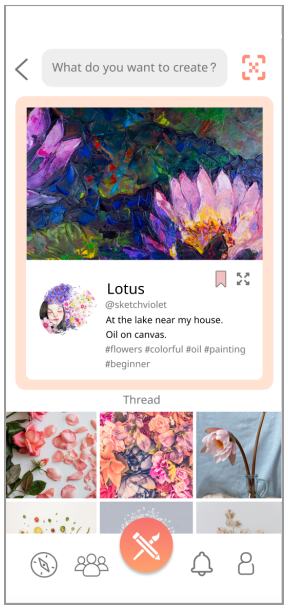
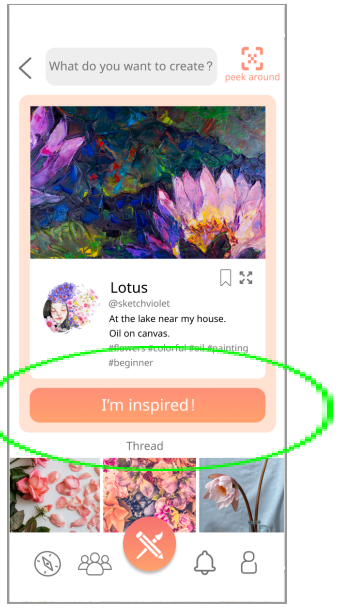


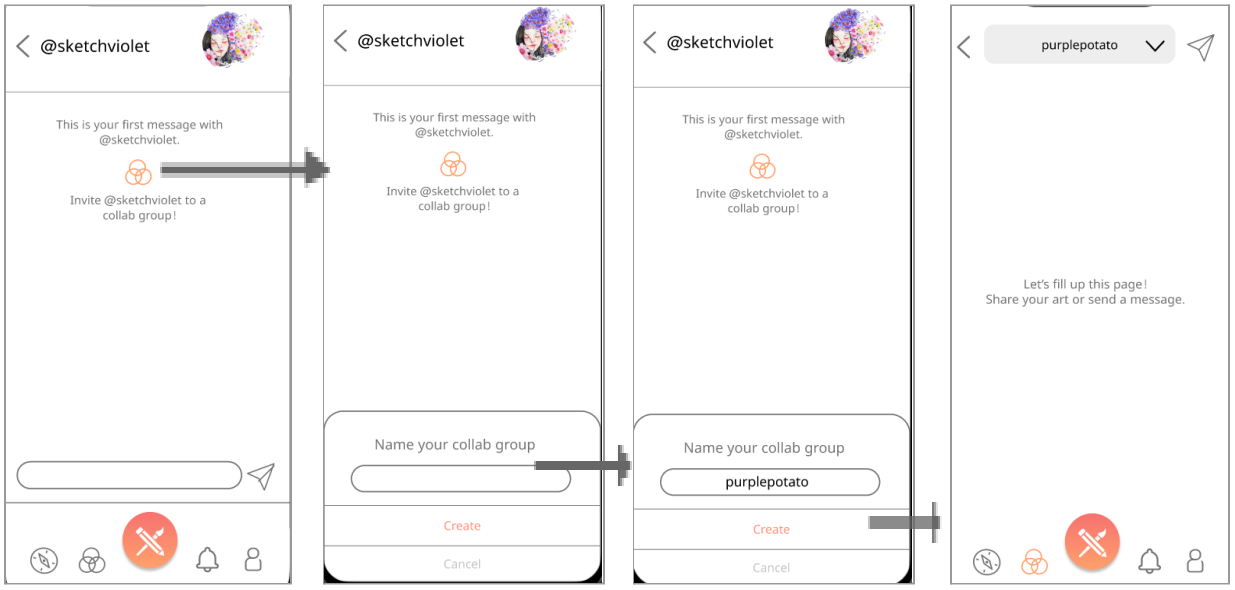
After:



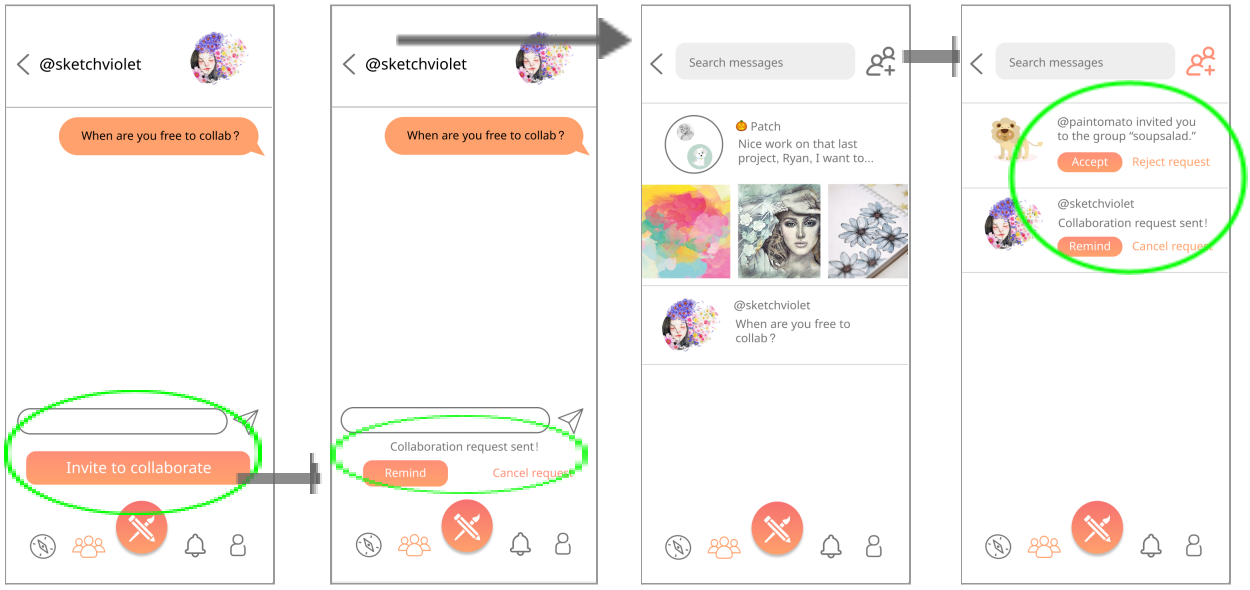
Change #5: Invite to Collab

When User A invited User B to collaborate, there was no way for User B to reject the invitation.
To fix this, we implemented a feature where User A sends a collaboration invitation to User B instead of simply creating a Collab group with User B. We then implemented a notifications button inside the Collaborations tab, in which User B can decide whether to accept or reject the invitation, and User A can monitor the status of the invitation.

Before:



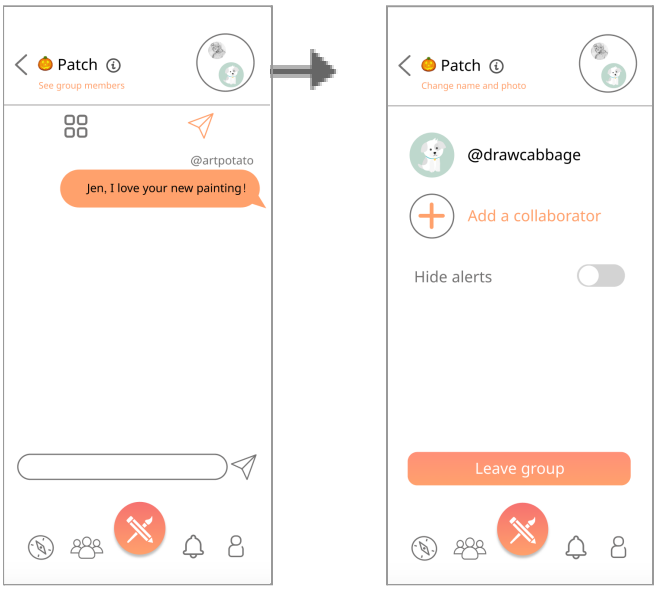
After:



Change #6: Collab Group Transparency

Users could not leave a group they were already in, invite more users to an existing group, or view members of a group.
To fix this, we implemented an “information” button beside each group name. Inside that information is the option to leave the collaboration group as well as the names of the other group members and the option to add more collaborators to the group.

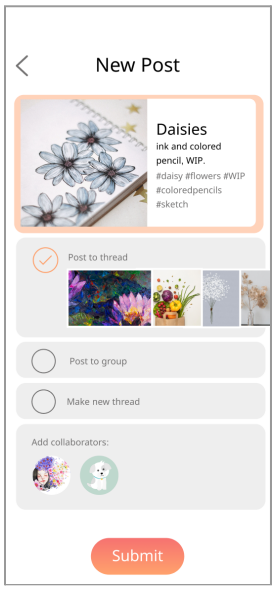
After:



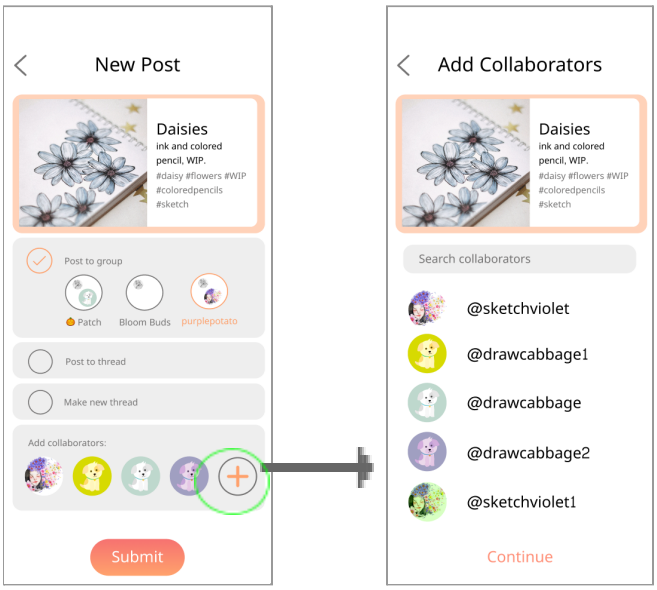
Change #7: Add Collaborators to New Post

When posting a new piece of art, the user could add collaborators to that post by scrolling through their collaborators. However, this could get messy if the user had many collaborators.
To fix this, we implemented an “Add” button that allows the user to search for collaborators by typing their names.

Before:



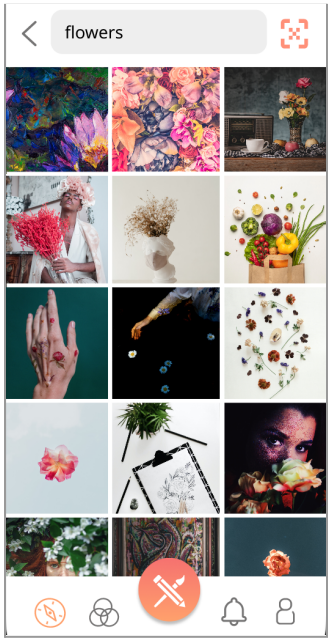
After:



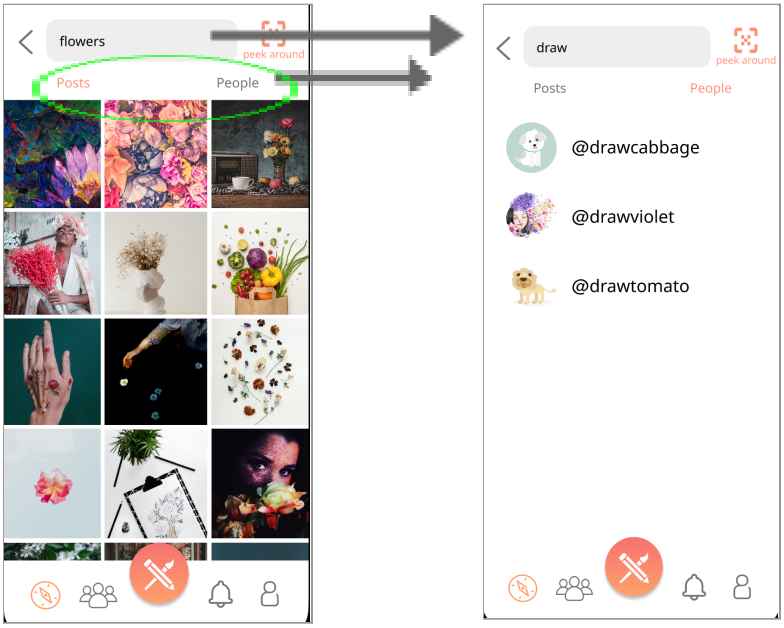
Change #8: Search for Users on “Explore” Page

There was no way to easily search for users by name on the app.
To fix this, we have split the Explore page into a tab for art posts and a tab for people.

Before:



After (user taps “People” and types “draw”):



No Change: No Place for User's Real Name

Our evaluators mentioned that user profiles only show a username, and there is no dedicated field for users' real names.
Since we learned in our needfinding interviews that artists value anonymity, we decided not to create a dedicated field for real names.
If users want to display their names, they can do so in their usernames or bios.

Other Design Changes

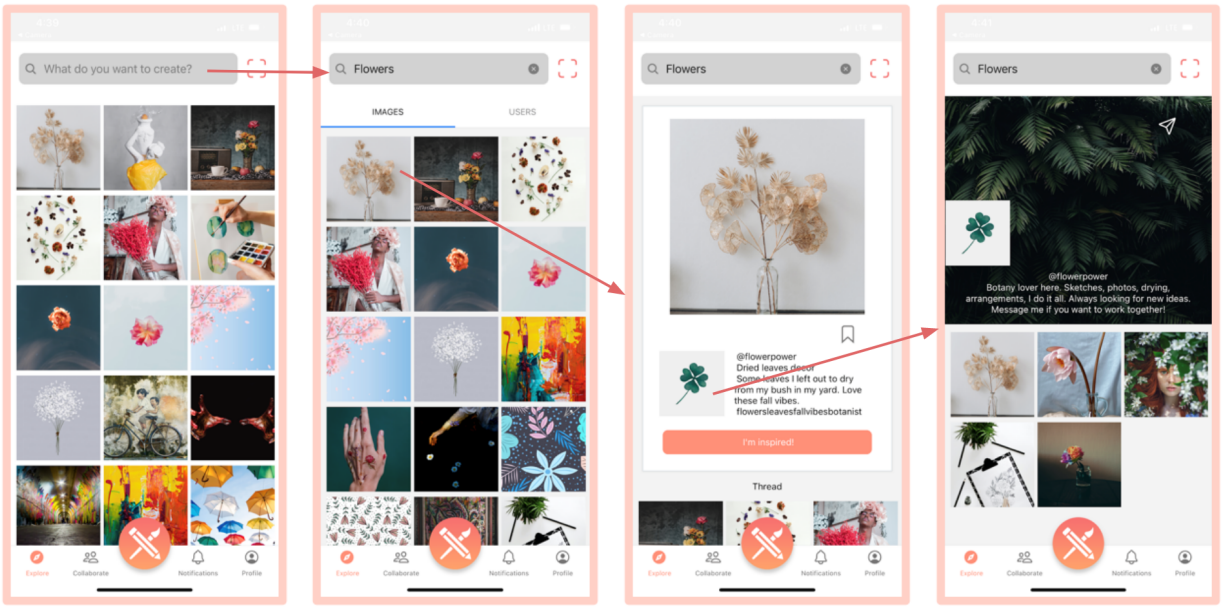
We made the following changes in response to the lower-severity heuristic violations that our evaluators found.

1. Added back buttons to all screens (except home screen) for more user navigation freedom.
2. Made "Invite to Collaborate" button more noticeable as this is one of the core tasks we want users to be able to do.
3. Added functionality to collaborate group settings (add collaborators, leave group, etc.) for more user freedom and error repair.
4. Added an About section (including FAQ page) to introduce our app.
5. Made icons accurately reflect system status (bookmarked artwork vs unbookmarked, correct tabs highlighted to indicate where users are in the app).

Final Prototype Implementation

Final Prototype Tasks

1. Browse art from other users to gain inspiration.



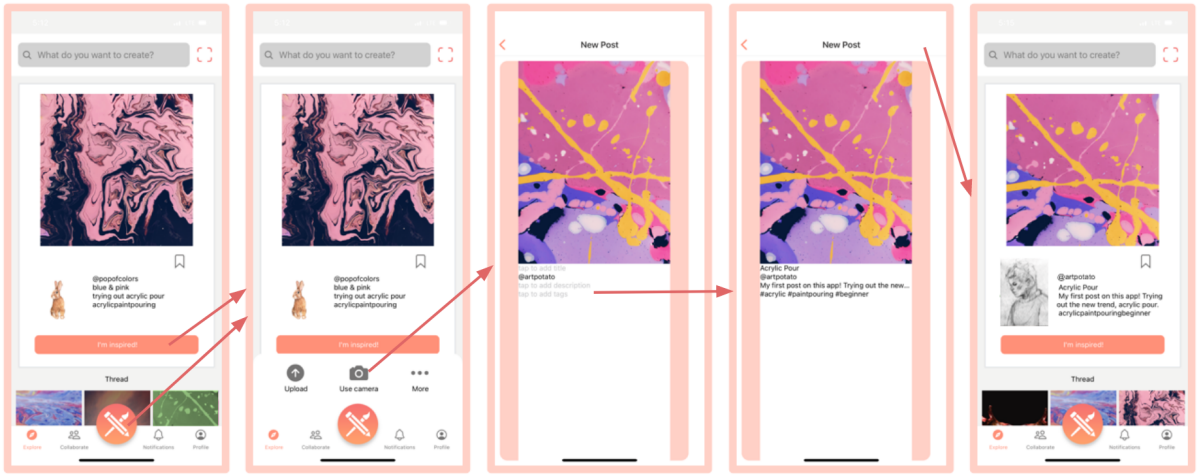
Scroll through the feed on Explore page, or type in a search term.

Peek shows you artworks related to your search term.

Selecting 1 artwork takes you to the Detailed view for that artwork. You can also scroll down to view the Thread of art inspired by that artwork.

Selecting the artist's profile picture or username takes you to their profile page, where you can view more of their work.

2. Upload a creation of your own that was inspired by a piece of art on the app (see Appendix I)



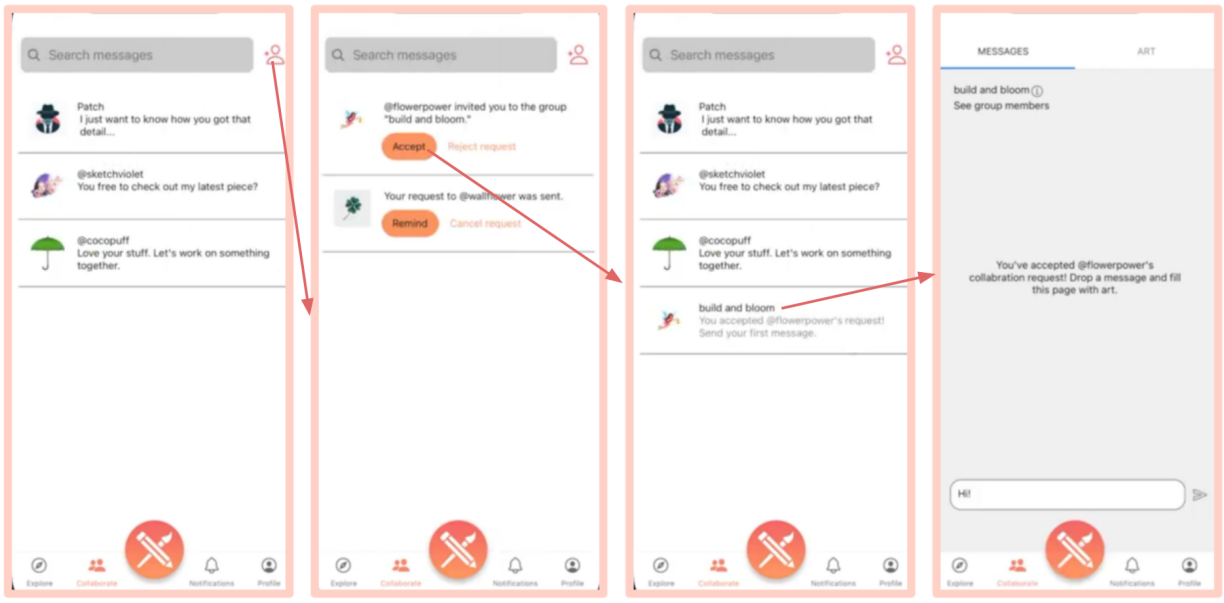
Click on either the "Post" button, or the "I'm inspired!" button

Pop-up scrolls up, where you can choose how to upload your artwork

Enter details of your artwork, such as title, description, and tags

After the upload process, your art is posted.

3. Create a collaboration group with other users (see Appendix II)



Click on the Request button to see all your collaboration requests (sent and received)

On the Request page, you can choose to Accept requests, or Remind other collaborators of your request.

Choose a group to get to Group page.

You can navigate between Messages and Art for each group.

Tools Used

We used React Native with Expo to code our high-fidelity prototype, npm to manage our dependencies, and Firebase to manage the backend. GitHub served as our revision control system between developers.

Pros:

React Native and Expo provide cross-platform support and flexibility. In particular, Fast Refresh delivers instant visual feedback, critical to adapting a carefully thought-out design into a working app. npm allowed us to import new features with little hassle, and Firebase's Cloud Firestore provided the intuitive, lightweight database fitting for a hi-fi prototype. GitHub was helpful for merging our separate work and conflicts, especially since developers were coding remotely.

Cons:

React Native uses elegant features such as hooks and contexts whose front-end design can be more elaborate than expected. Expo only allows us to build and deploy the app using the publisher's login, which is inconvenient for fast and easy testing with multiple users. As newcomers to GitHub, we found the onboarding process tedious, and we experienced plenty of trial-and-error with branch management and merge conflicts.

Wizard of Oz Techniques

1. Computer Vision feature: On the finished app, you would be able to take a photo of your surroundings and have Peek scan the photo to find similar-looking pieces of art. In this prototype, the photo that "you" have taken is hard-coded, and the related art that the Computer Vision feature finds is pre-loaded.
2. Uploading feature: On the finished app, the uploading feature gives you options to take a photo of your art with your camera, or choose an existing photo to upload. In this prototype, the photo that "you" have chosen to upload is hard-coded.

Hard-coded Data

1. All pieces of art and user profiles on the app are hard-coded (stored in Firestore). This includes your own profile, which contains art that "you" have uploaded in the past.
2. The Collaboration page also contains groups, group art, and messages that "you" have created in the past.

Summary and Next Steps

Main Learnings

1. We learned that the best ideas do not come from designers brainstorming by themselves, but from designers going out into the world and talking to real people about their needs.
2. We also learned that during brainstorming, quantity of ideas is more important than quality of ideas to get to interesting and insightful ideas.
3. We learned that multiple iterations of design is important to improve on designs. Additionally, we learned that both user testing and heuristic evaluations from design experts can be helpful to improve our design.
4. Designing a mobile app is difficult, but there are a lot of online resources and components that are helpful for mobile developers.
5. Learning how to present our ideas accurately and concisely is just as important as coming up with those ideas.

Future additions if we had more time

In the future, we would love to implement the Computer Vision feature. We are not aware of a feature like this existing on any other app, and we believe it would encourage users to create art inspired by their surroundings, wherever they are.
Due to personal limitations from one of our developers, we could not finish the upload screen (see appendix for breakdown of contributions). Because of this, notifications and collaboration pages were also implemented last minute by another developer, and are hardcoded with messages and hardcoded screens. Therefore, the high-fi prototype is not to the fidelity that we wanted it to be.
We look forward to sharing our high-fidelity prototype with the participants we interviewed for all stages of this process, and seeing what they think of our final product!

Appendix

I. For personal reasons, Ryan could not finish the code for the upload task in time for the hi-fi prototype deadline.

II. Jen coded the entirety of the hi-fi prototype's collaborations page, explore page, profile page, and notifications page, search pages, and thread pages. Ryan originally intended to implement the collaborations feature, but for personal reasons had to limit his workload as the hi-fi prototype deadline approached.