SparkBook

Spark your creativity

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Idea
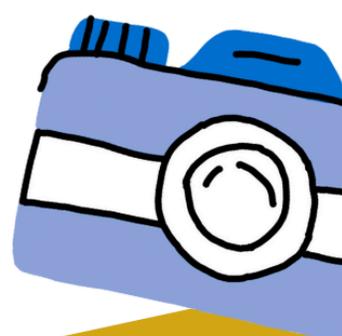
VALUE PROPOSITION

Spark your creativity

OUR TEAM

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THE PROBLEM

Artists **struggle to effectively and quickly store all of their various sources of inspiration** in a centralized and organized structure. This makes it harder for them to go back to these sources when they are creating art.

SOLUTION OVERVIEW

A digital notebook that **allows artists to store multimedia sources of inspiration** while smartly organizing them based on their chosen categories.

NEEDFINDING

Before beginning our needfinding process, we first discussed what interested us about this theme and what types of users we would be interested in learning more about. We realized that, because art is so broad, we wanted to explore the perspective of several different media. Because of this, we decided to focus on the process of creating and planning art.

We chose this domain because it can provide us with a rich insight into how an artist's mind works and what is important to them in a piece. Ultimately, in an age where AI is easily accessible and can rapidly generate content for users, the thought and planning that go into an artwork are what differentiate it from other pieces and are a pivotal step in creative expression.

We interviewed five participants with the goal of getting a diverse perspective from artists with different years of experience and types of art styles performed. The interviews were found primarily in mutual connections and in art-focused spaces (such as galleries and art studios). All of the participants agreed to be interviewed without compensation. For our interviews, we met with:

Chloe - longtime art hobbyist, having 20 years of experience in various types of art, such as printmaking, photography, and painting.

Where: Downtown Palo Alto

- "The best pieces just come out, especially with strong emotions and music"
- Goes on walks, and when she finds something inspiring, she takes a picture.
- Thinks that Art should not be so meticulously planned out; it should be a freeing process.
- Feels frustrated when she can't find a specific image she is thinking of.

Vanessa - Product designer at Adobe who dabbles in painting and vector art on the side.

Where: Downtown Palo Alto

- "Getting inspiration from human artists is best"
- Uses AI to remix art for inspiration and to see new ideas
- Thinks that AI can help with technical support during the creation process
- Feels inspired by nature and ideas she sees on Instagram and Pinterest

Stephanie - UX designer at Oracle, who also works in advocating the ethics of AI art.

Where: Coupa Café

- Multimedia artist who is passionate about creating beyond just the canvas and gets inspiration from the world around her
- "An idea can be expressed in many different ways and mediums, so I chose the one that excites me the most"
- "I get the most inspired and motivated when I'm surrounded by other people."

Keith - Commercial and freelance artist who has been working in VR, animation, filmmaking, and digital art for 25 years.

Where: Lawton Street (San Francisco)

- "I don't use a Pinterest board because I'm so sensation-oriented"
- Virtually scans real buildings and loads them into artworks.
- He prefers to avoid creative processes that feel tied to a desk.
- Feels inspired and sentimental towards places + people.

Willow - 20-year-old film student at UNCSA

Where: Zoom

- "When I get an idea, I IMMEDIATELY go to my notes app"
- Tracks ideas in notes app, but notes often get scattered and hard to organize since they don't always have context or keywords.
- Thinks it is helpful to keep track of ideas and inspiration when they come to you.
- Feels a very emotional connection to human-made art vs AI/tech-heavy art and Film.

Figure 1: The different places where we conducted our interviews. (From left to right) Downtown Palo Alto, Coupa Cafe, Lawton Street (San Francisco), and Zoom.

Synthesis

To analyze our findings, we organized each interview into empathy maps (recording what each participant said, thinks, feels, and does), allowing us to identify patterns and key insights.

Say   **Do**

Think   **Feel**

Say   **Do**

Think   **Feel**

Figure 2: Selected empathy map from our interviews with Keith (commercial and freelance artist) and Vanessa (product designer at Adobe).

When analyzing our empathy maps, we found several overarching themes, as well as contradictions, tensions, and surprises.

- **Finding inspiration through multiple mediums:** Artists find inspiration for their work in the world around them, working creatively across a variety of mediums.
- **Difficulty in organizing sources of inspiration:** Artists store their ideas and work across multiple systems, which can be difficult to keep track of.
- **Building human connections through art:** Artists believe that the foundation of art should be human. It is for them to connect and build relationships with other people.

Contradictions

- Vanessa says that the "fundamentals of art are inherently human", yet uses ChatGPT to help ideate projects and planning.
- Stephanie says that "I do not use AI in any art-making processes", but uses it to generate user cases for product design.

Tensions
- **Personal vs Professional workflows:** Personal workflows are more natural and grounded in sense. Professional workflows are highly iterative and tend to incorporate more AI as a means to expedite processes
- **Recognizing value vs ethics of Gen AI art:** Many realize the potential time savings of AI, but say a lot of the "frustration" or "effort" is what delivers value to the art.

Surprises
- Vanessa found it ok to help design AI products for Firefly, but feels guilty using it outside of work.
- All the artists seemed accepting of using AI to help with planning and organization.
- AI was seen as a way to figure out what tool to use next.

Overall, these interviews made us more curious about the different ways artists seek and organize their various sources of inspiration and how they continue to cultivate their art with different technological tools.

POVS

After completing the needfinding process, we framed our findings into POVs, allowing our team to consider the tensions and emotions behind some of the interviewees' pain points. We wrote POVs for Keith, Willow, and Fred because of their significant and unique pains. From each POV, we generated at least 10 How Might We (HMW) statements that served as launching points for developing solutions to the identified needs.

Keith

We met Keith, a professional in digital art with over 25 years of experience in the industry.

We were surprised to realize he finds new opportunities to direct his growth, as he is inspired by peers to explore new media.

We wonder if this means an emotionally stimulating environment would help him produce more meaningful artwork.

It would be game-changing to provide multiple media where he can feel inspired.

How might we…

| encourage artists to share ideas and inspiration with others? | help Kevin use his past work as a source of inspiration for himself? | help Kevin distill the exposure to different media? |

Willow

We met Willow, a 20-year-old film student at the University of North Carolina School of the Arts.

We were surprised to realize she had a system of noting down spontaneous sources of inspiration, but found it hard to decipher them later.

We wonder if this means she prioritizes accessibility and promptness over a structured, organized system.

It would be game-changing to find a way to organize her ideas with as little effort as possible.

How might we…

support a system of organizing the artist's unique sources of inspiration?	make organization feel creative and enjoyable?	suggest sources of inspiration instead of pulling from random instances?

Fred

We met Fred, a fashion house founder and designer.

We were surprised to realize he avoids spending extensive amounts of time planning, even in personal projects.

We wonder if this means he enjoys the trial-and-error aspect of creating art.

It would be game-changing to facilitate the process of creating new things while maintaining an organized system.

How might we…

make it easier for artists to come back to their old works that they have made over time?	facilitate setting goals and constraints?	make it easy to rapidly iterate while keeping an organized system?

Final HMW Statements
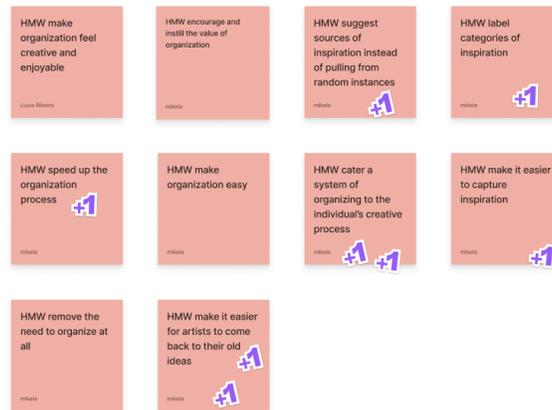
Figure 3. *Figjam board with group voting for top HMWs*

After compiling over 30 HMWs, we voted on the top three HMWs that we wanted to explore and design solutions for. From this process, we identified our top three HMWs:

- HMW encourage artists to share ideas and inspiration with others?
- HMW supports a system of organizing the artist's unique sources of inspiration?
- HMW makes it easier for artists to come back to their old works that they have made over time?

Overall, two themes that connected our most meaningful and plausible HMWs were exploring how we can facilitate a more streamlined method of organizing in the art planning process and how we can encourage a more collaborative creative process.

Top Three Solutions

By narrowing down our top three HMWs, we began to brainstorm approximately 10 viable solutions to each space.
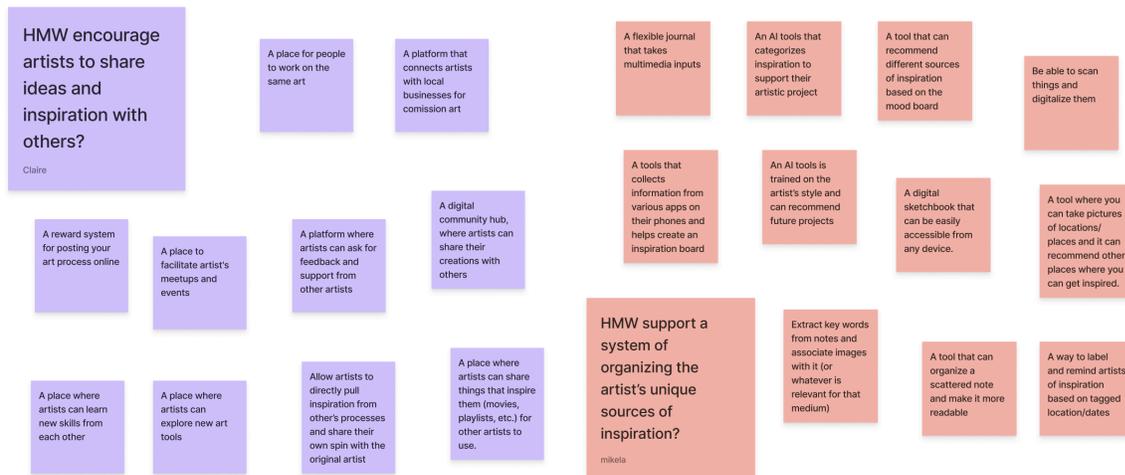
Figure 4. Brainstorming 10 Solutions per top HMW

After this exercise, we narrowed our ideas down to our top three based on viability and impact. Our final solutions were:

1. A place where artists can share things that inspire them (movies, playlists, etc.) for other artists to use.
2. A flexible digital journal that takes multimedia inputs.
3. A customizable archive of past works with smart searching (by medium, subject, etc.)

Experience Prototype

To move forward with our solutions, we created an experience prototype to test the underlying assumptions being made about our users and their behaviors. Testing these assumptions was crucial as they would identify any key misunderstandings we had about user preferences before investing time and resources into higher fidelity prototypes.

Below is an overview of our top three solutions and the corresponding assumptions we aimed to test through our experience prototypes.

Solution	Assumption	Experience prototype
A place where artists can share things that inspire them (movies, playlists, etc.) for other artists to use.	Creating art in a space with others takes the pressure off artists and allows them to create more freely.	Have artists create anything without any source of inspiration. Then, we ask them to create something else, providing them with different media to be inspired by, and have them compare their experience.
A flexible digital journal that takes multimedia inputs.	The user is willing to spend time documenting various sources of inspiration.	Ask an artist to document their sources of inspiration while they are creating an artwork in whichever form they choose
A customizable archive of past works with smart searching (by medium, subject, etc.)	Labeling each artwork by medium is the most effective way of organizing an artist's artworks.	Provide a set of photos (art pieces/inspiration) and ask artists to sort the pieces into categories of their choice.

Experience Prototype 1: Collaborative Creation
- Assumption: Creating art in a space with others takes the pressure off of artists and allows them to create more freely.
- Participants: 4 undergraduate students in a dorm who all practice different forms of art (printmaking, UI/UX design, creative writing, music, etc.)
- Set up:
  - Round 1: All participants in a room spend 1 minute independently drawing without any creation prompts
  - Facilitate conversation in the group for a 3-minute discussion about "music that inspires" them, and select one song
  - Round 2: Participants individually create a new drawing for 1 minute, while the selected song is being played

○ Debrief activity after with reflection questions:
- What factors played a role in what you created (in both first and second)?
- Which session did you prefer?
- How would you describe the mood?

Round 1			
Round 2			

Figure 5. Drawing creations by participants in rounds 1 and 2

Success: Participants found that the discussion and the music increased their creativity as it set a mood and allowed them to think about how different forms of art can be represented in various media.

- "Discussion created a new framing through a new medium–and through that found inspiration"
- "Drawing is something scary, and by debriefing and having a discussion about inspirations, it helped boost my mood."

Shortcomings: All of them had different music that they preferred to listen to when creating, thus some of the participants had to compromise and use others' preferred methods instead.

Implications: Our assumption is (half) proven. All artists preferred the mood of the second session with music, and after discussion, supporting our assumption that the collaborative environment eased their tension surrounding creating. However, there was a small conflict regarding the most appropriate music to satisfy individual preferences.

Experience Prototype 2: Documenting Inspiration

- Assumption: The user is willing to spend time documenting various sources of inspiration.
- Participant: College student who is a long-time art hobbyist who has experience in both analog and digital creation (watercolor, acrylic, digital art).
- Set up:
  - The participant must document and share inspiration along the entire creation process:
    - Search photo apps for images (scans through specifically nature-based images, as she doesn't like painting figures)
    - Find inspiration on Pinterest (search: "subject + medium")
    - Create
  - Debrief activity after with reflection questions:
    - How important were the reference images while creating?
    - Was it easy to find these references?
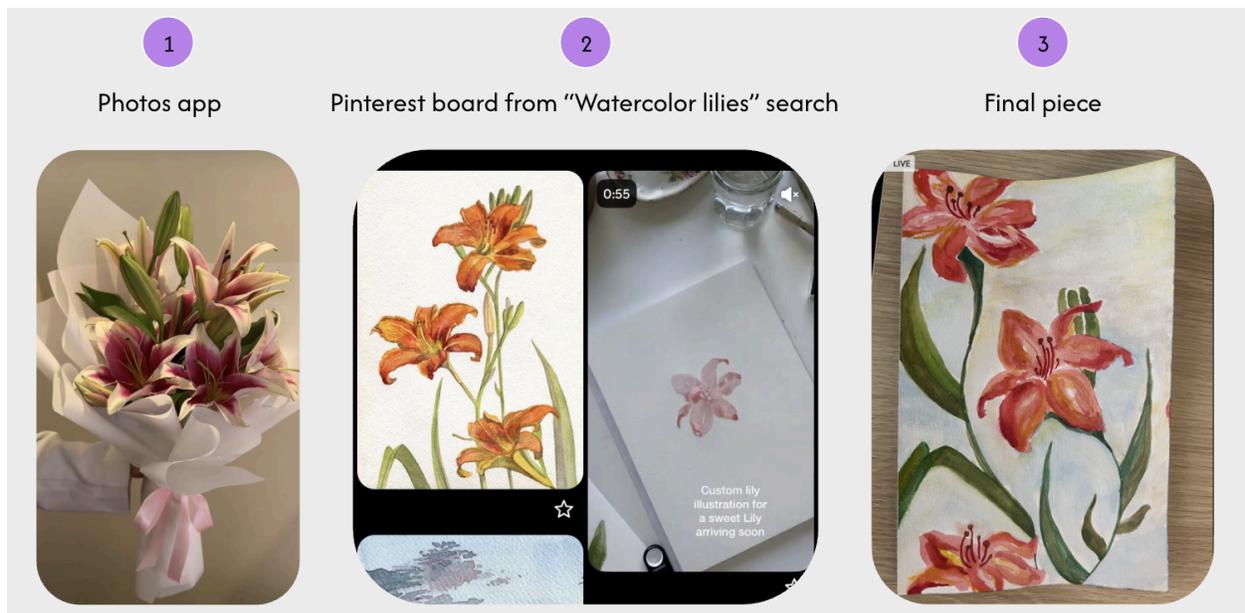
Figure 6. Documented process of watercolor lily painting

Success: Identifying keywords that enabled a unique curation of inspiration sources. She was able to compare and contrast different sources of inspiration through the Pinterest board.

Shortcomings: Scrolling through her photo album was tedious, as she knew she only wanted to paint natural still life, but had a lot of portrait photos to skim through.

- "It takes me a while to really find an image because I don't tag images or save them when I take them. So I spent a long time even finding an image to jump off of."

Implications: Our assumption is (half) proven. She heavily relied on collecting various reference pieces before painting, especially when looking at other artists' interpretations. However, she found it took too much time to identify the perfect base photo in her library.

Experience Prototype 3: Card Sorting

- Assumption: Labeling each artwork by medium is the most effective way of organizing an artist's artworks.
- Participant: 3 Undergraduate college students in a dorm
- Set up:
  - For each round, describe an image and record the time taken for the participant to find the image, given the conditions:
    - Round 1: Randomly scatter images and ask the artist to find a picture.
    - Round 2: Have the individual categorize the images and then find a picture.
    - Round 3: Categorize the images by medium and ask them to find a picture.

Findings:

	Time spent to find an image (seconds)			
	Participant 1	Participant 2	Participant 3	Average
Round 1: Random	5.3	3.8	2.4	3.83
Round 2: Custom	2.6	1.4	0.9	1.63
Round 3: Medium	3.7	1.7	1.5	2.3
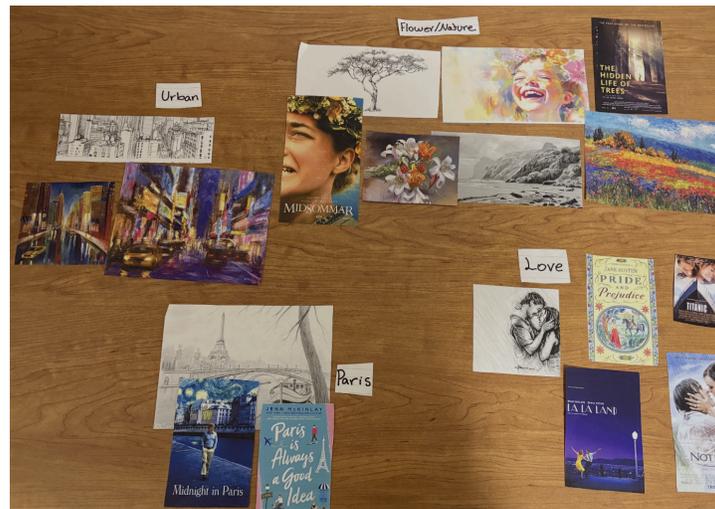
Figure 7. Card sorting with custom categorization by "Urban, Paris, Love, Nature"

Success: Users found images faster when it was categorized through the medium rather than randomly. They also noted that this organization made it easier to identify images.

- "It was definitely much easier to find the images once they were all organized into a certain category, even if it wasn't necessarily how I would categorize them. The simple fact of them being divided into cohesive categories made it much easier to find."

Shortcomings: None of the participants categorized the images by medium. They were also able to find the images faster through their own categorization.

Implications: Our assumption is challenged. While separating the images by mediums made it easier for artists to find them, the results show that it is not the most effective way of categorizing them. Each artist has their unique way of classifying images.

Design Evolution

Final Solution

Our solution stemmed from the findings gathered in our needfinding process. We found that most artists find inspiration from a variety of different sources — music, movies, locations, people, and feelings but they all shared a key frustration: they don't have a very organized and effective way of saving and storing these sources of inspiration. Additionally, a lot of our interviewees believe that art should be fundamentally human and if AI were to play a role in it, it should be for more automatic and mundane steps. With that in mind, we wanted to ensure that our solution provided the flexibility for artists to store all of their different inspirations and that AI's role would be to facilitate this process, without interfering with their creative flow, ensuring the human user has control over each step.

From our prototype 2 results, we inferred that users are willing to compile various sources of inspiration before creating their art, so a flexible digital journal that takes in multimedia inputs can support their creative process. Additionally, our prototype 1 result showcased how discussion and the process of sharing sources of inspiration with other people can increase their creativity as it allows them to think about how different forms of art can be represented in various mediums. This suggested that it would be valuable to provide a community feature where artists can share their sources of inspiration. Finally, our third prototype results demonstrated that while participants found images faster when it was categorized through medium rather than randomly, They were also able to find the images faster through their own categorization. This meant that an effective organization tool should give them the autonomy to choose how they want to arrange their sources.

With that in mind, we decided our final solution would be an application where users can organize multimedia sources of inspiration, see other artist's inspirations, and automatically organize these sources with AI.

Tasks

1. Simple: Upload a source of inspiration

This task is one of the core functionalities within the app and will be done by most users for the most time using SparkBook. Uploading and storing multimedia sources of inspiration is the app's primary functionality and the first essential step of using the app. The user will be able to add any type of inspiration they have, and select the Sparklette (or create a new one) that they would like to add it to.

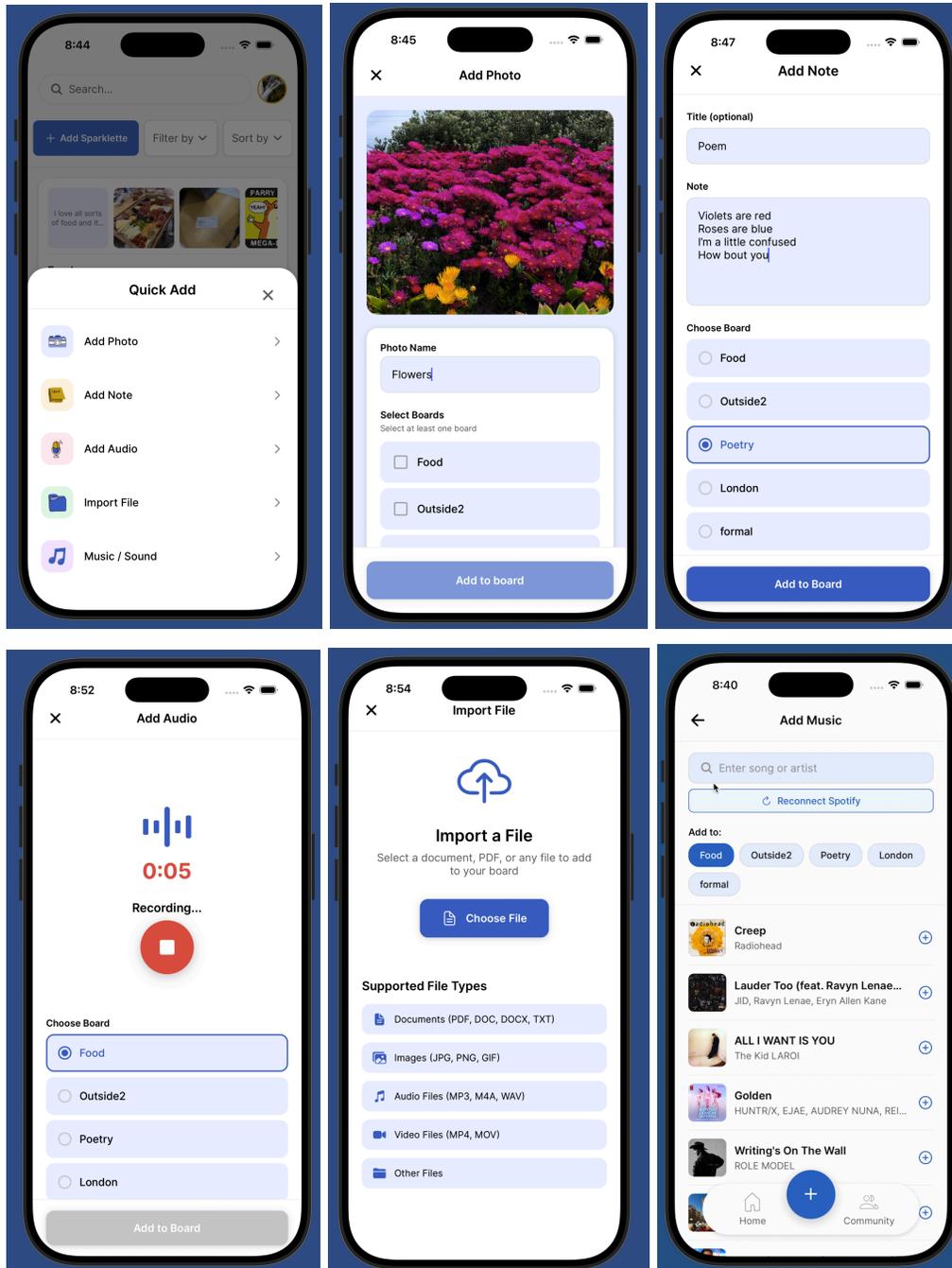Additionally, they will be able to name it, add a note, or delete it.

Figure 8: *First image showcases quick add menu; Rest of screens show what each option looks like in order: Add Photo, Add Note, Add Audio, Import File, and Add Music.*

2. Moderate: Sharing/finding inspiration from the community.

While users are uploading their sources of inspiration and seeking to find other inspirations around them, they will be able to go to the community page and see other user's inspiration and choose to save that to their own Sparklette. Additionally, they will also be able to share their own source of inspiration with the community, if they wish. This is an important feature of the app, since, from our prototype experience, sharing different sources of inspiration with other people has shown to promote creativity and engagement with the art piece.
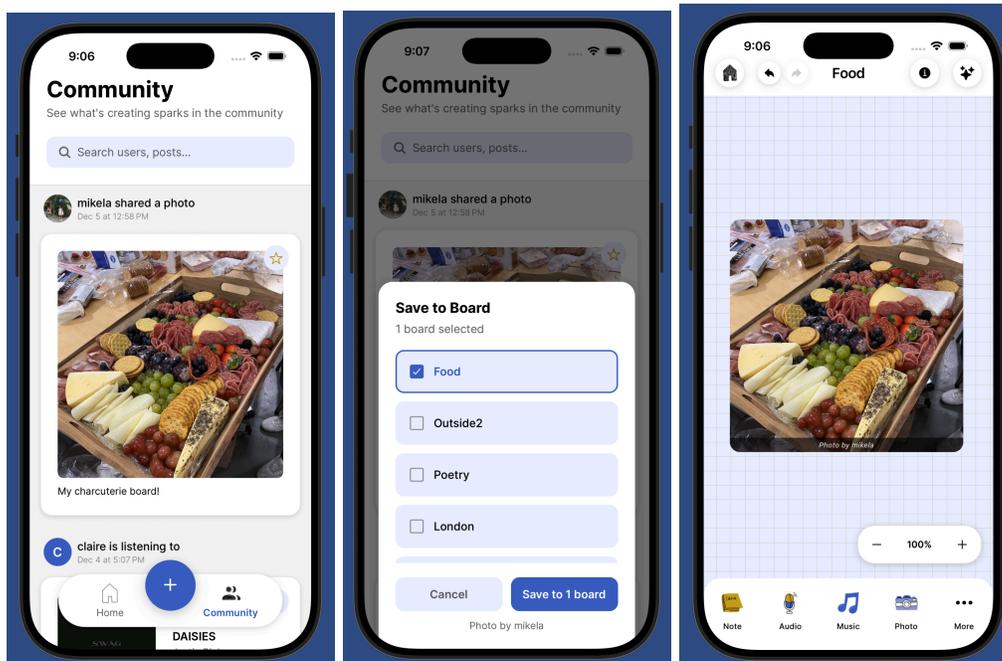
Figure 9: adding inspiration from the community to own board
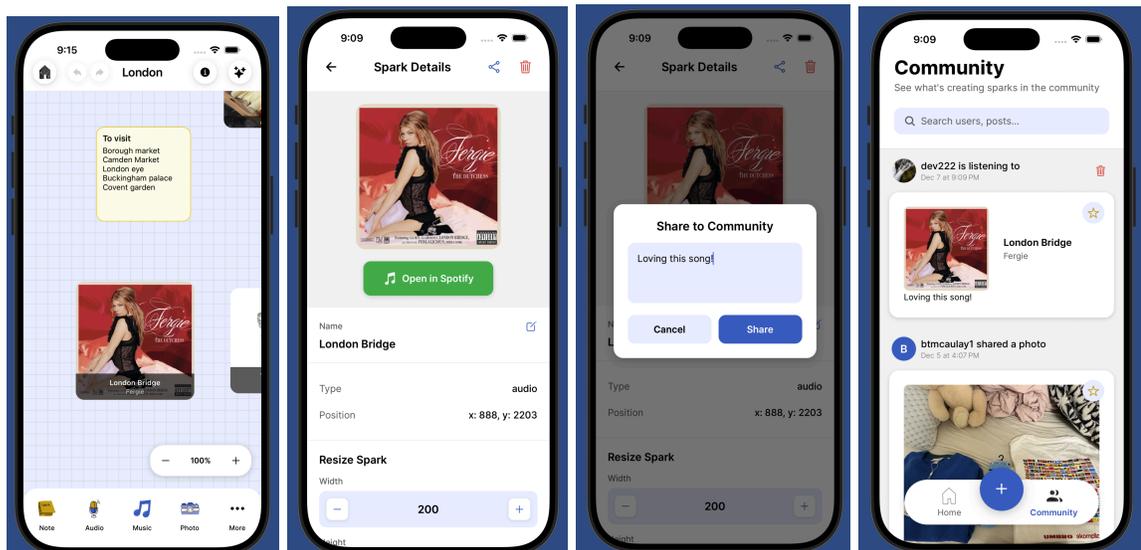
Figure 10: *sharing a spark from your own board to the community*
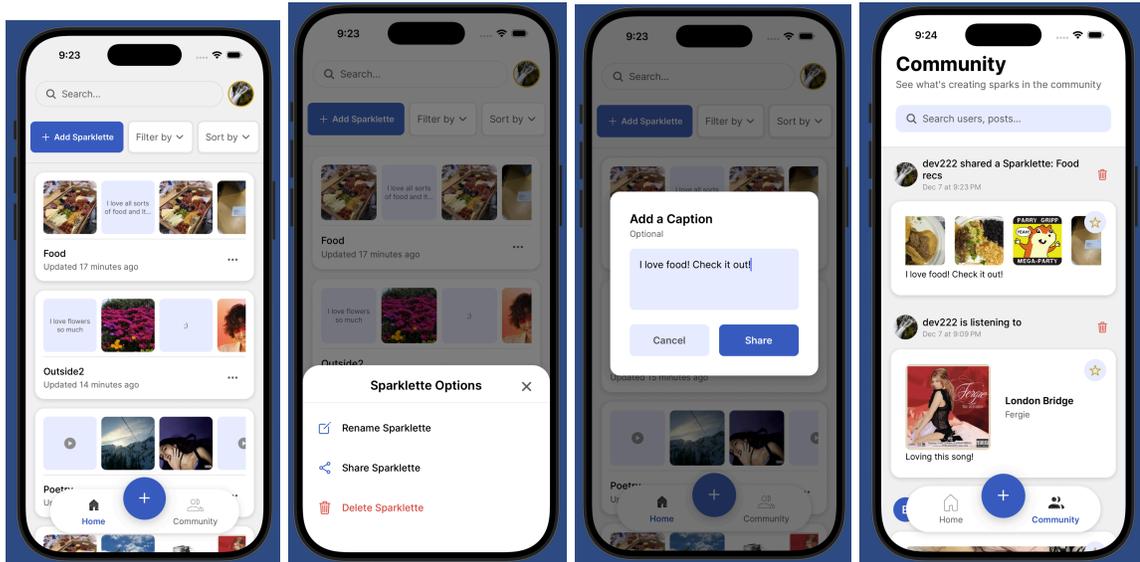
Figure 11: *Sharing your board to the community*

3. Complex: Compiling and organizing multimedia inputs

After users have gained more knowledge and experience using the app, they will be able to compile all of their different forms of inspiration into one Sparklette and be able to efficiently organize them with our provided tools. With our organization feature, they can select different ways for their board to be organized. This is a key feature for advanced users who have several sources of inspiration and want to easily organize them.
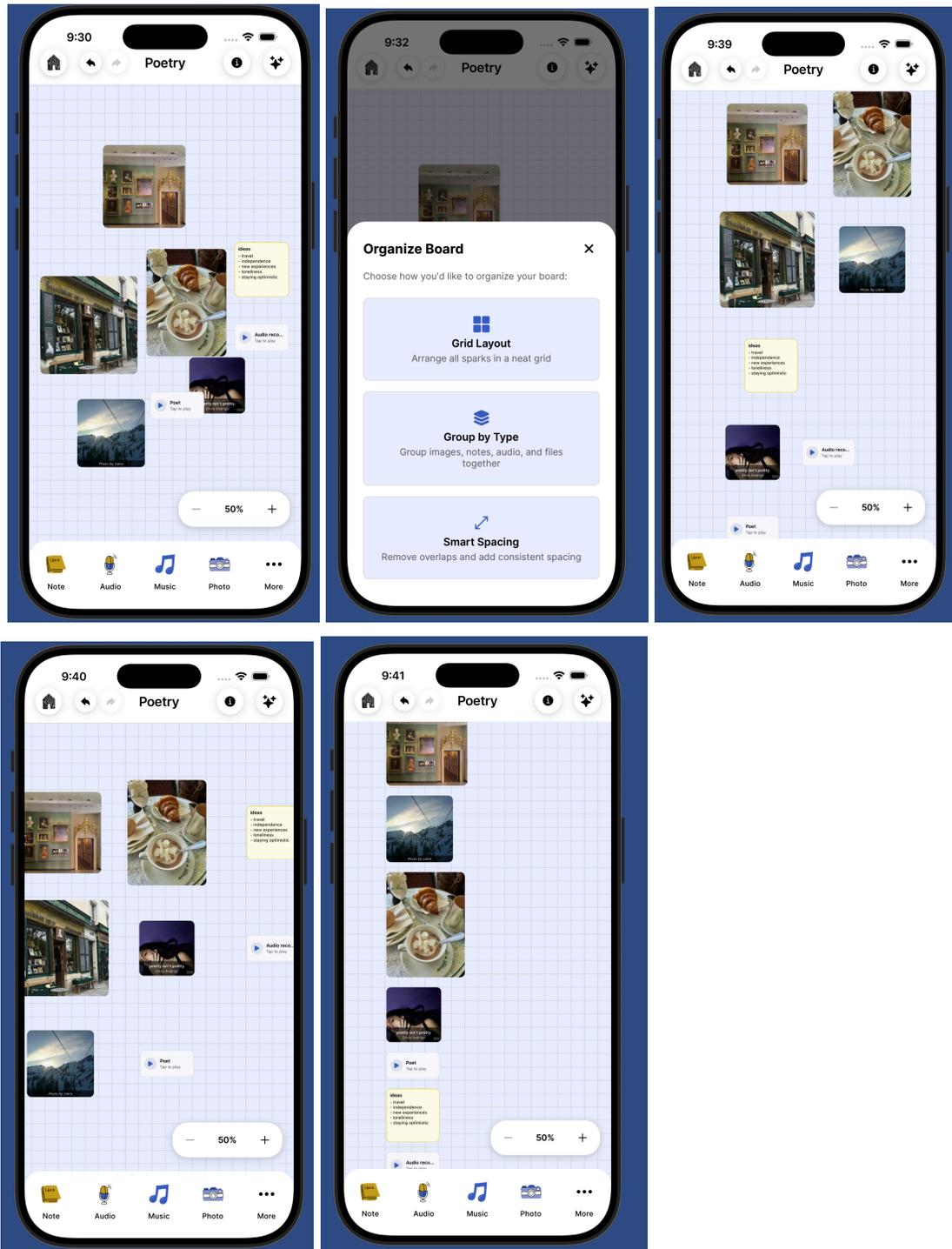
Figure 12: Screen flow of organization (screen 1 and 2) shown then each different organization type as follows: Group by type, Grid Layout, Smart Spacing

Design Evolution Visualization and Rationale

Initial Sketches

To begin brainstorming, we sketched several potential ideas such as VR headsets, smart watches, games, and mobile applications. Following this, we chose our top 3 realizations: a smart watch, mobile app, and augmented reality.
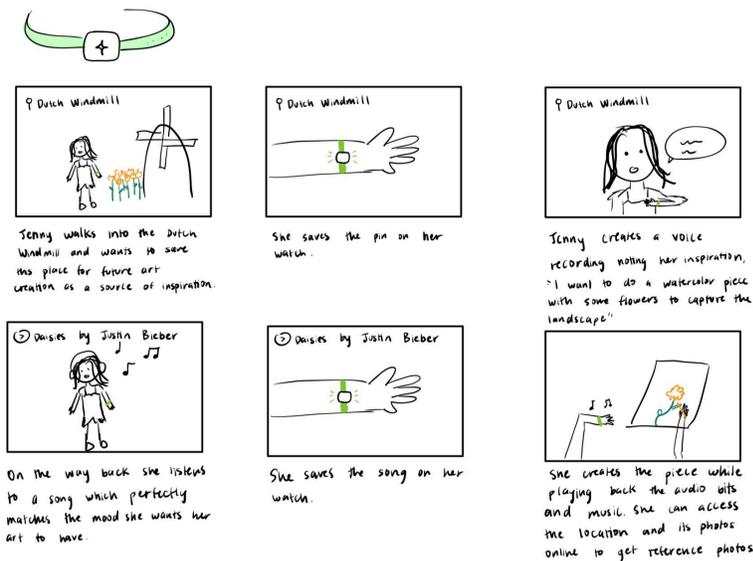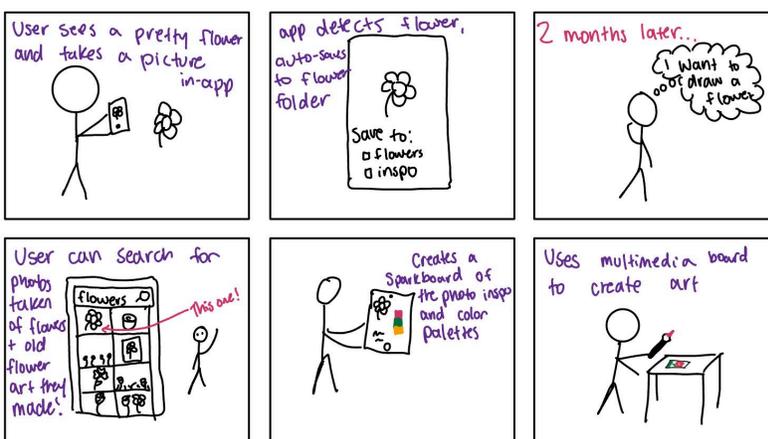

Figure 13: *Smart Watch concept sketch*

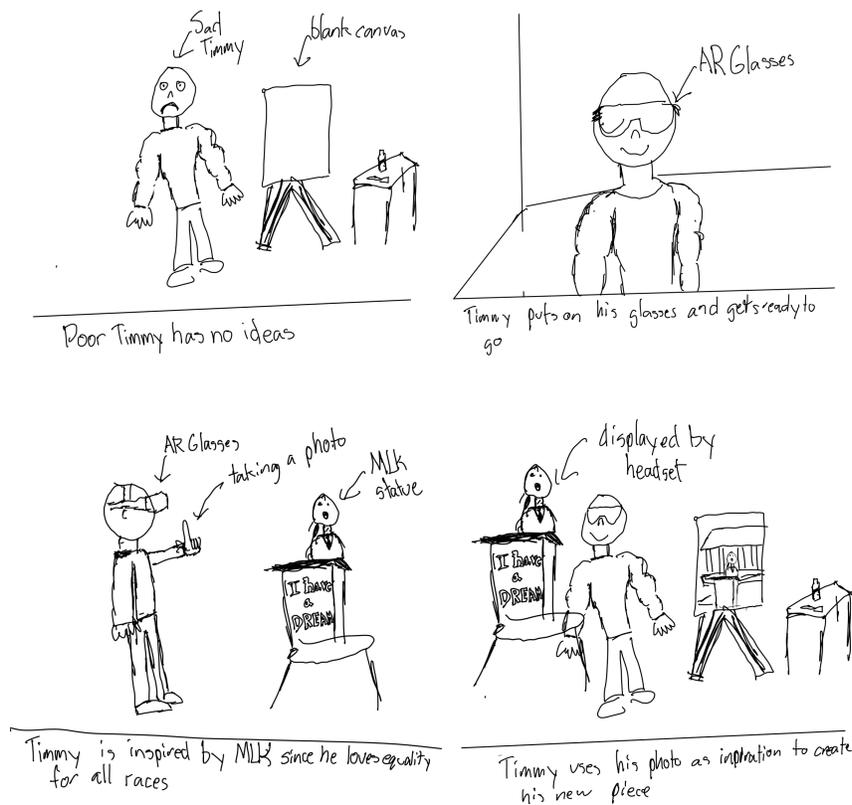**Figure 14:** *Mobile App concept sketch*

Figure 14: *Augmented Reality (AR) concept sketch*

We selected our top two realizations to be the AR and mobile application. After further developing the idea and concept for each we noted down their pros and cons:

Mobile Application

Pros

- *Lightweight and highly accessible*
- *Accepts multimedia inputs (photo, audio, video, text)*
- *Syncable with other ecosystems (ex. Spotify for music)*
- *Meets users where they're at*

Cons

- *Limited screen space to organize ideas*
- *Grounded in 2D space, which hinders artists ability to be immersed in their environment*
- *Overload of alternate mobile applications*
- *Hard to scale down some inputs like films into an app*

Augmented reality

Pros

- *More immersive and can replicate original experiences/emotions more closely*
- *High degrees of customization in the creative/organizing space*
- *Allows user to capture higher fidelity visuals*
- *Can help artists with limited access to space feel more free*

Cons

- *Not accessible (requires special equipment)*
- *Steeper learning curve and less intuitive as this is a more novel solution*
- *Artists are apprehensive about new technology and have established habits*
- *Harder to document spontaneous moments*

With these points in mind, our selected solution was the mobile application. We chose this because the argest pain point for our users deals with accessibility over immersion. It would be much more accessible for artists to have an application on their phones than to have an AR headset. Another large pain point is the ability to add different mediums and mobile phones tend to this as it is most people's primary means for media consumption (music, social media, photo-taking). Additionally, our solution must be intuitive for the artists to quickly upload content, with the mobile app having a friendlier learning curve. Not only this, but artists tend to be averse to technology, so an extreme solution is not appropriate for our user demographics.

Having our solution picked, we developed the storyboard detailing its key functionalities and flow:
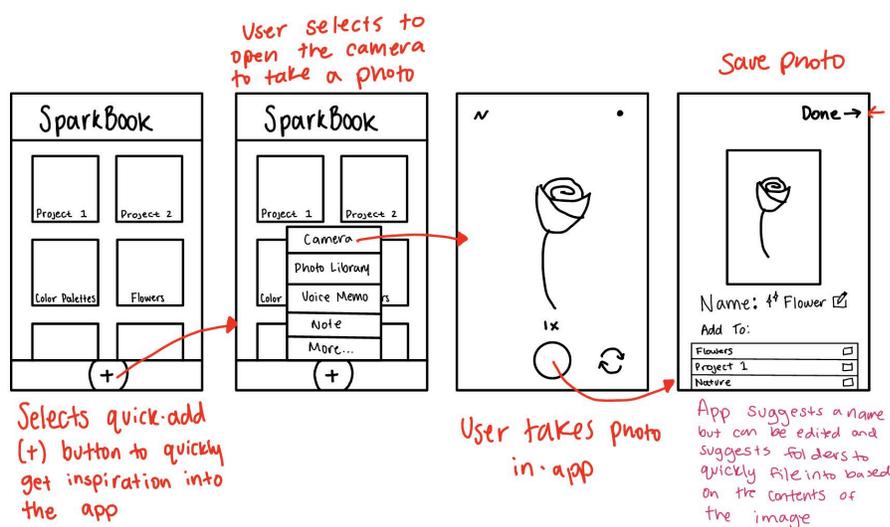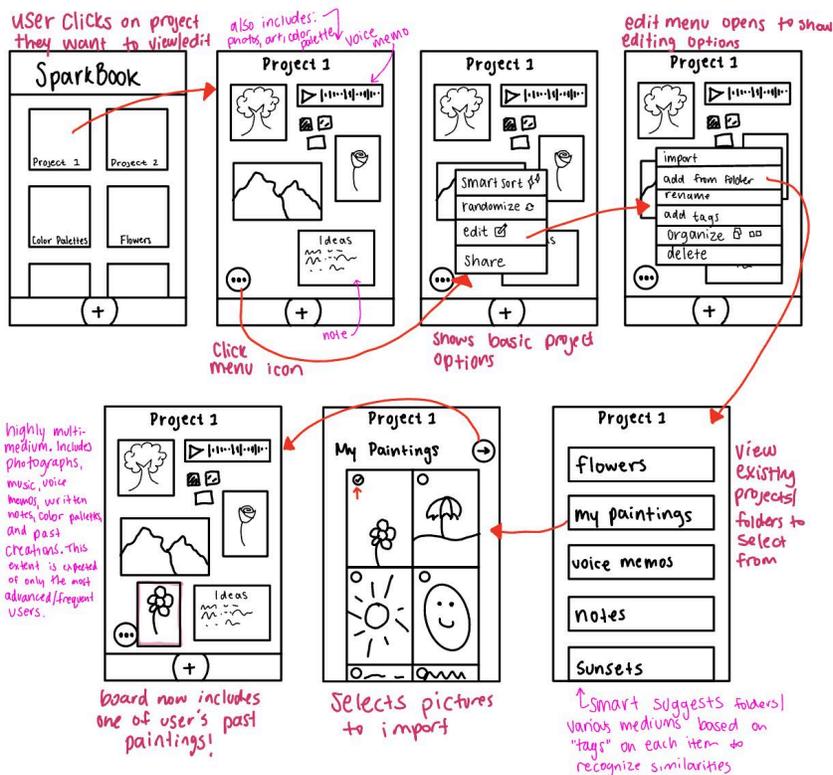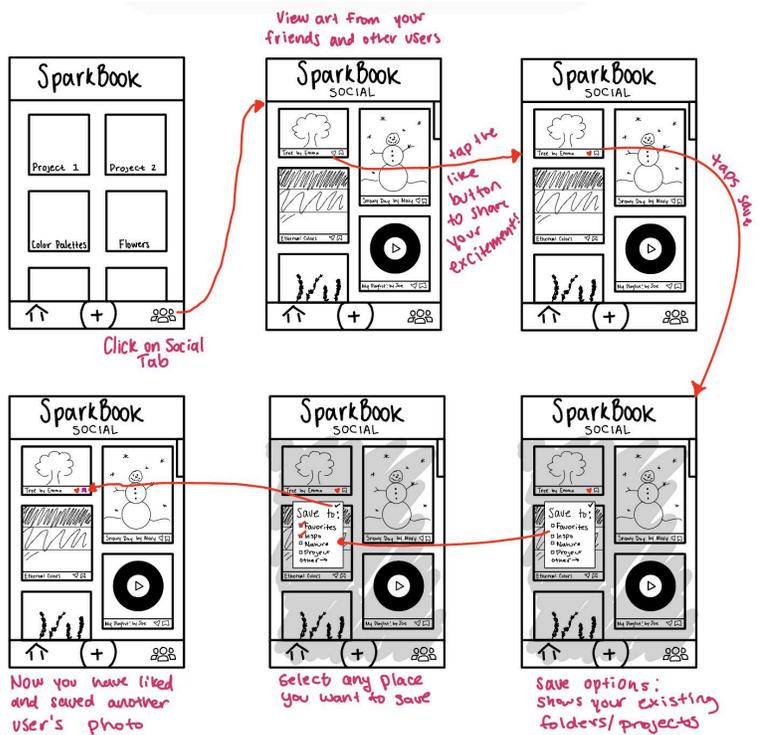

Figure 15

View art from your friends and other users

SparkBook

Project 1 Project 2
Color Palettes Flowers

SparkBook SOCIAL

tap the like button to share your excitement!

taps save

Click on Social Tab

Now you have liked and saved another user's photo

Save to:
Favorites
Inspo
Nature
Project
Other

Select any place you want to save

Save options: shows your existing folders/projects

User clicks on project they want to view/edit

also includes: photos, art, color palettes, voice memo

edit menu opens to show editing options

SparkBook

Project 1

Smart sort
randomize
edit
Share

import
add from folder
rename
add tags
organize
delete

Click menu icon

note

Shows basic project options

highly multi-medium. Includes photographs, music, voice memos, written notes, color palettes and past creations. This extent is expected of only the most advanced/frequent users.

Project 1

Ideas

board now includes one of user's past paintings!

My Paintings

Selects pictures to import

Project 1
flowers
My paintings
voice memos
notes
Sunsets

View existing projects/folders to select from

Smart suggests folders/various mediums based on "tags" on each item to recognize similarities

Low-fi Prototype

Creation

Following our sketching and storyboarding, we created a low-fidelity prototype using pencil and paper. This prototype included the three main tasks of the app, excluding the need to set up the account. This creation process allowed us to focus on the key features of our solution without focusing too much on the visual details. We also took into account the 4 components in Snyder's method:

- Roles in the test: During the paper prototype usability test, the facilitator, computer, and note-taker roles were assigned.
- Prototype materials: Prototype was handmade (paper) and had cutouts to display pop-ups & menus. We drew the user's inspirations on the spot and adapted during the session (e.g. they wanted to add a quick note within the board).
- Testing procedure: We prepared an example scenario (with our three tasks) and debriefed and discussed with the user to gain a better understanding of their experience
- Data gathered: We gathered: quantitative (error counts & succession rates), qualitative (user confusion & comments), and usability insights
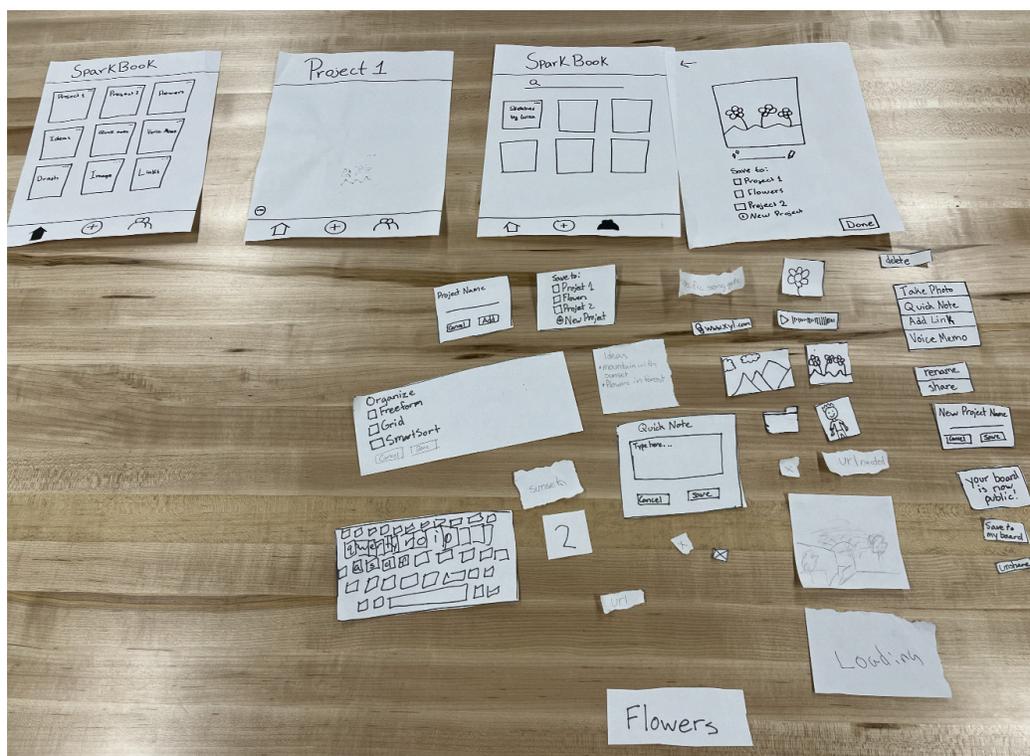
Methodology

To get feedback on our initial prototype, we conducted in-person usability tests with artists of different experience levels and art mediums. Our first participant was an Art history and English double major, our second was a pottery and ceramics hobbyist, our third created physical design prototypes and our fourth would write poetry.

In the test, we first gave users more context behind SparkBook, explaining our solution idea and the problem we wanted to solve. After that, we asked them to "talk through" their thinking, constantly saying why they were doing each action and choice throughout the prototype. Throughout the testing we would provide hypothetical scenarios of actions we would like them to perform (associated with our three main tasks). When the test was over, we assessed how easily users did tasks and then gathered thoughts on overall app use.

Results

To analyze the results we had three key metrics: intuitive navigation (measure # of misclicks in performing a task), ease of execution (how difficult it was to navigate the app on a scale of 1-10), and eagerness to use the app (how likely they are to use different features of the app on a scale of 1-10). We also set two usability goals and measured their success with process and bottom line data:

- Flexibility: It is adaptable to different sources of inspiration and organization preferences.
  - Process data
    - What types of inspiration sources were added
    - How users choose to organize their work (gird, free form, smart sort)
  - Bottom line data
    - How many users were successfully able to add their inspo source.
    - How many users used the organization features
- Efficient: The user is able to easily perform key tasks throughout the app
  - Process data
    - User hesitation/confusion points
  - Bottom line data
    - Error rate

There were a total of 6 miscliks and users evaluated the difficulty of navigating the protopye as a 3/10 (with 10 being the most difficult) and the likelihood of using the app as a 7/10 (10 being the most likely.

To assess our first usability goal, flexibility, we noted how many different sources of inspirations were added. We were pleased to see that all of our users imputed different types of mediums within the app: participant 1 searched the internet for a cartoon she enjoyed, participant 2 went to a website to see the vases she liked, participant 3 scrolled through her photo gallery and found a sunset , participant 4 found a song that she

enjoyed listening to. However, we also noted that only one participant was able to easily identify the button to organize their board and none of them chose the "Smart sort" feature.
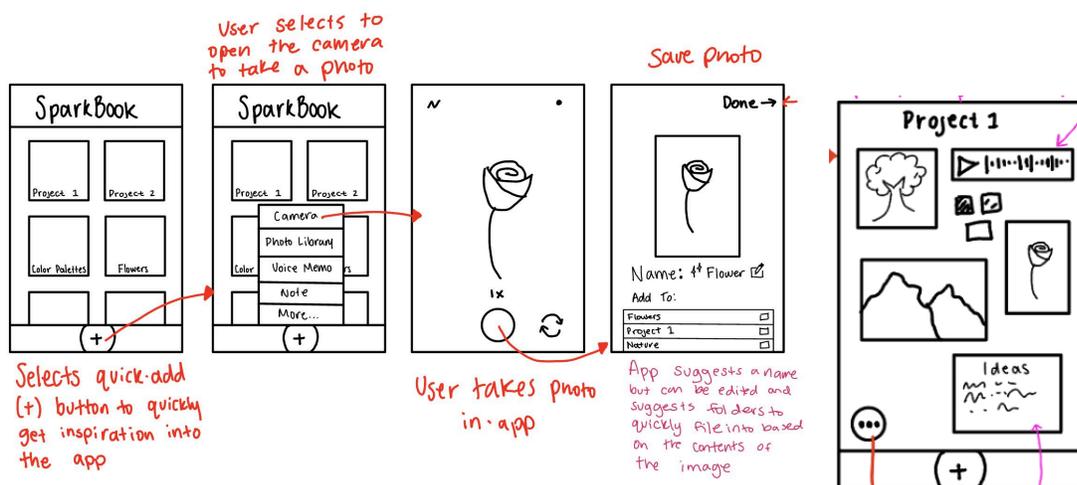
To assess our second usability goal, efficiency, we noted the user's hesitation and confusion points. There was some confusion in trying to share your board to the community. Many users thought that all of the community related activities would be in the community page. One participant was confused about adding an inspiration when they are already inside the board. We then assessed the error rate and found that the first task had the highest success rate (it was more clear for users to know how to add an inspiration source) and the second task had the most misclicks (users were confused as to how to share their own board within the community).

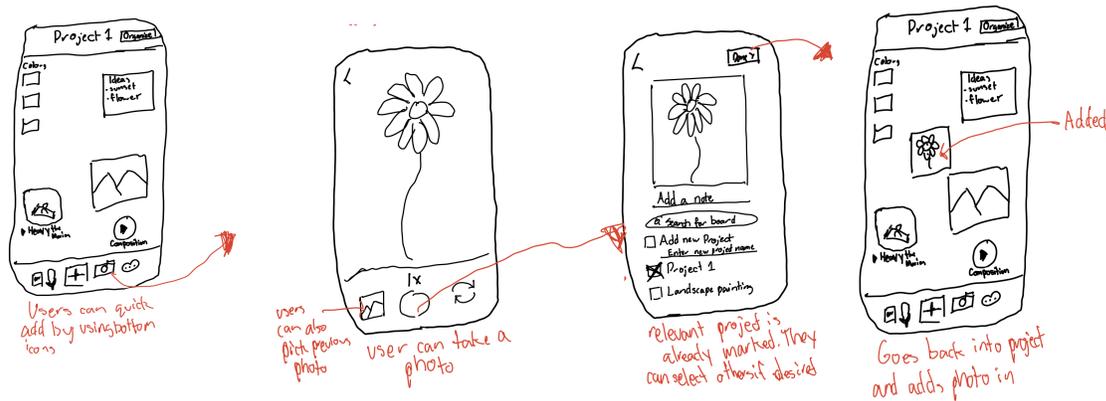**Major design changes: Low-fi prototype to Medium-fi prototype**

Changes in Design 1 (Adding spark within board): Artists are now able to easily add a spark directly into a project with less steps.

Previously, users could only use the add button at the bottom of the screen to add a spark. This meant they had to first click the plus and then select the media type. They had to select what project to add the media into even if they were already on the board. Users expected the "Add" button to let them add media more quickly than using the Home screen. One user was confused about why they had to re-select the project when saving to their board, since they had already navigated into that project before tapping Add.

Before:
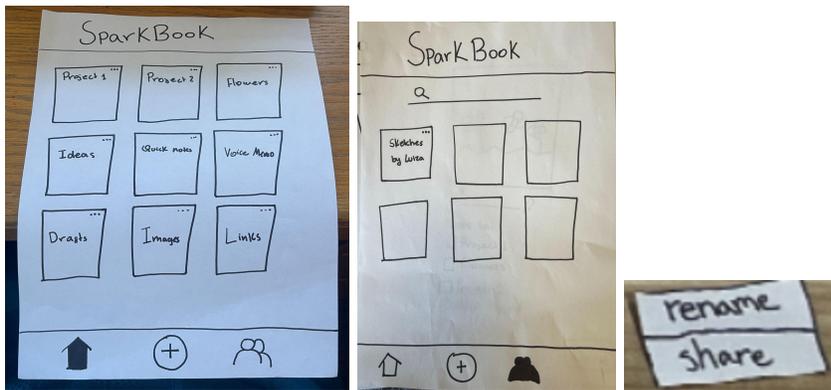

After:

Project 1 [Organize]

Colors
Ideas
.sunset
.flower

Heavy the Rain

Composition

Users can quick add by using bottom icons

1x

users can also pitch previous photo

user can take a photo

Add a note

Search for board

☐ Add new Project
Enter new project name
☒ Project 1
☐ Landscape painting

relevant project is already marked. They can select others if desired

Project 1 [Organize]

Colors
Ideas
.sunset
.flower

Added

Heavy the Rain

Composition

Goes back into project and adds photo in

How these changes help:

During user interviews, artists emphasized the importance of efficiency when organizing their work. They want to spend the most amount of time creating, not documenting inspiration. Our changes aim to condense the documenting process as icons at the bottom of the project make it extremely easy for artists to identify which media type they need to add. Additionally, the new process eliminates the step of hitting the add button before the media type when in a project. This change also addresses the confusion our user felt when having to reselect the project as it is now automatically selected and goes back to the same board at the end.

Changes in Design 2 (Community Page) - Artists are now able to share by using the community tab instead of only having the option of sharing through the home page

Previously, users had no option to share on the community page. The only way for a user to share was to go to the home page and select the three dots and an option to share would pop up. We found that users tended to go to the community page when tasked with sharing a sparklette. It wasn't an intuitive connection to share from the home page rather than the community page. One user specifically said they wanted to share from the community page.

Before:

After:
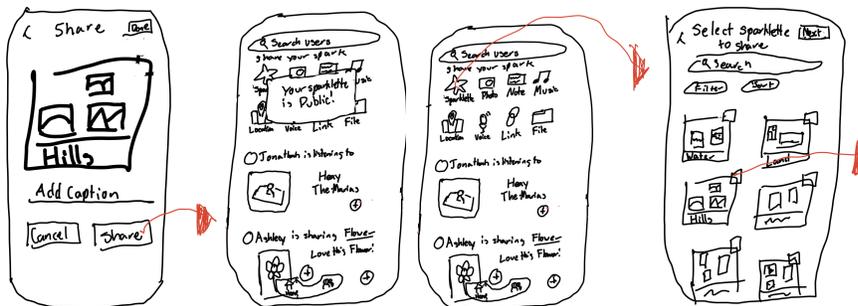
How these changes help:

Since most testers went to the community page first when attempting to share, this new change would solve this connection issue since the community would now allow a user to share their own work. This also directly addresses the suggestion from one of our testers for an ability to share from the community page. It also adds a new intuitive connection to make our app easier to use. This change is also consistent with our ease of use as now a user can see how to share all forms of media in a very easy to understand way

Changes in Design 3 (Organize Button) - Organize button changed to clearly be labeled and at top of project. It also clearly uses AI to organize as it only requires a prompt.

Previously, the button to reorganize was labeled with three dots. This button was located in the corner of the project and brought up a menu with several options. It wasn't very clear why it was useful compared to organizing it manually. Only one user found the organize button without any additional prompting and two users didn't click it at all during the test. They thought the only option was to organize it by hand since the button was not clear to them.

Before:
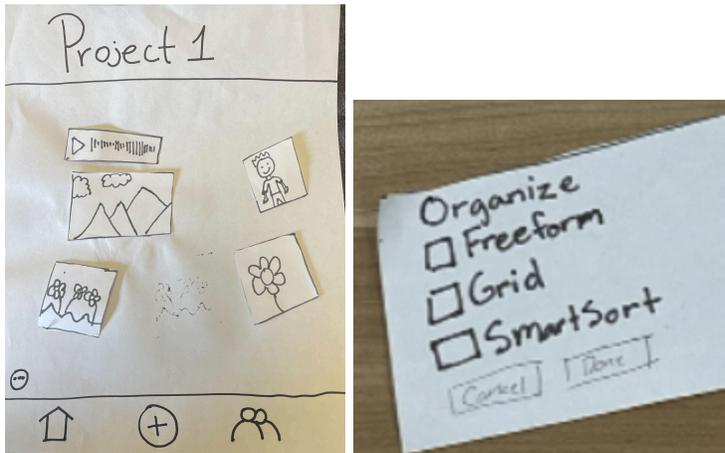
*After:*
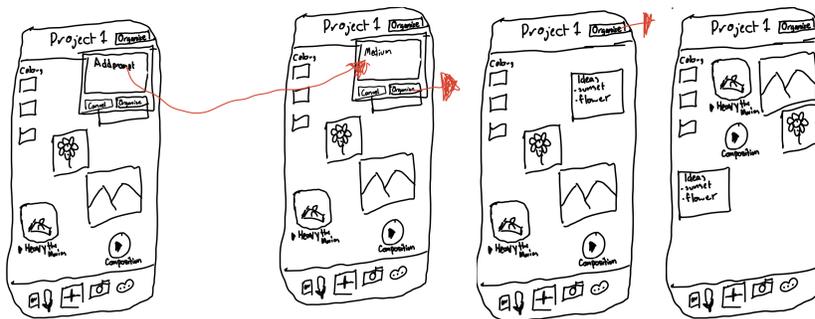
How these changes help:

This change would make the organize button very clear to see as it would just be labeled organize which was a huge issue during testing as no one could find it. If users were tested with our new prototype, they would easily be able to find this button if asked to organize as it is much easier to see and figure out what it does than the dot design. The new way to organize helps emphasize that ai can be used to organize a project, saving artists time and energy.

Medium-fi Prototype

Following our low-fi prototype, we developed our medium-fi prototype using Figma for the UI and wireframes of our application.
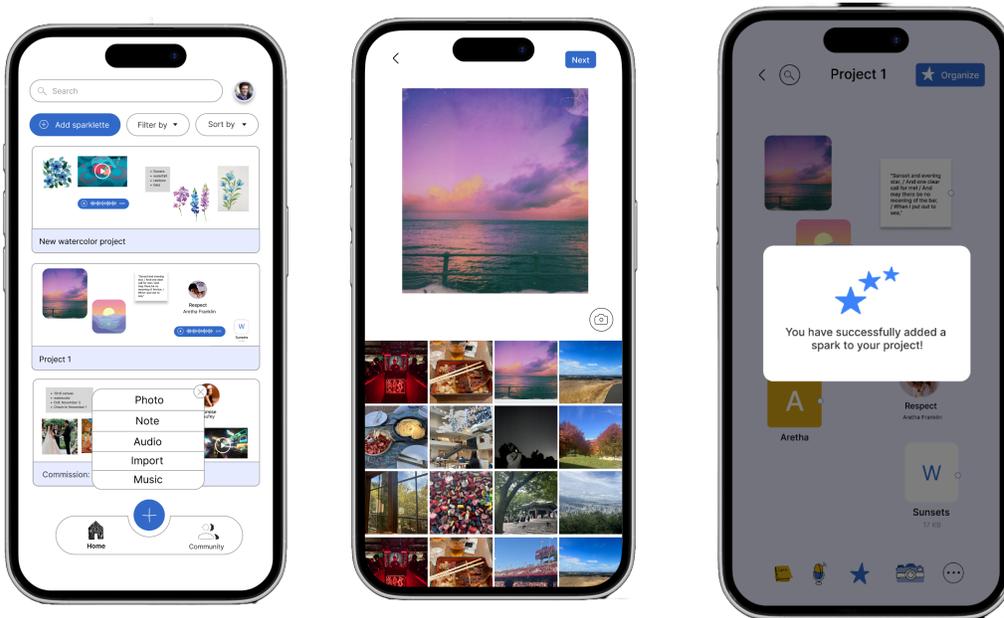
Simple task: This shows the user completing the first task, uploading a source of inspiration into the app.
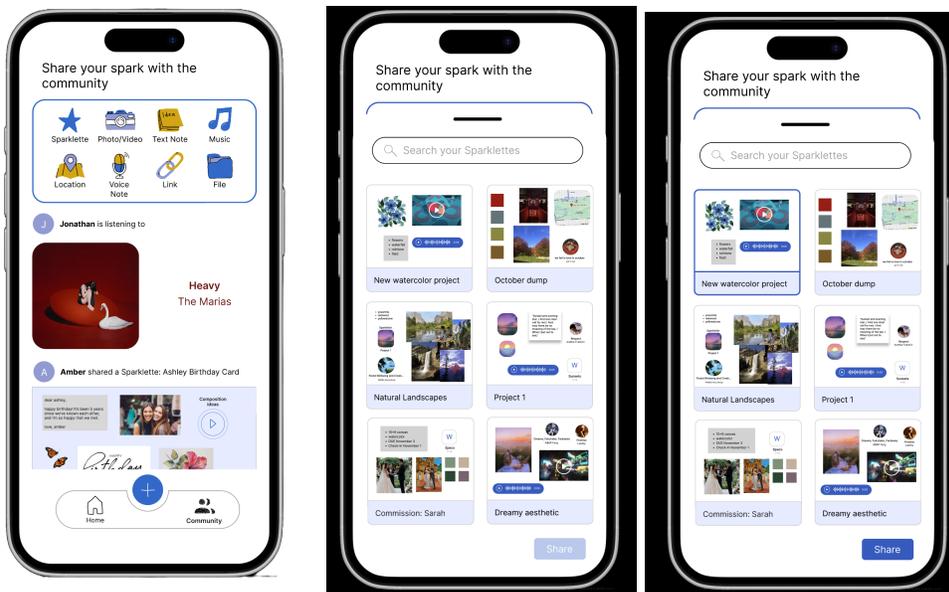
Moderate task: This shows the user completing the second task, sharing their spark with

the community

Complex task: This shows the user completing the third task, compiling and organizing multimedia inputs.

High-fi Prototype

To refine our medium-fi prototype into our high-fidelity project, we received a heuristic evaluation from our fellow classmates. In summary, we had 96 total violations. Most of them were of severity 2 and H4, H6, and H8 had the most violations.

Severity overview:

- Severity 1: 17 violations
- Severity 2: 37 violations
- Severity 3: 29 violations
- Seveirty 4: 13 violations

The primary issue was in H4, a lack of consistency in visual aesthetic and terms. This appeared in the prototype in instances such as:

- Terms like Sparklette, Board, and Connection were inconsistently defined

- Visual inconsistency of sparks on the community page
- Buttons labels varying from "Add" vs "Next" vs "Save"

Additionally, there were issues of user control and flexibility (H3 + H7). Throughout different workflows, there is a lack of back, cancel, and delete options. Workflows that need revision are:

- Deleting a Sparklette
- Undoing a change on the Sparklette
- Making a spark public

3-4 Rated Heuristic Violations

For our heuristic evaluations, we prioritized the issues of severity 3-4 as they dealt with more critical aspects of our app while severity 1-2 were more easily addressed as they were related to aesthetics or easier functionality fixes. Below are the issues identified and our proposed solutions.

Issue 1:

H1 - Severity 4

- _Problem:_ There is no indication whether a text is editable or not. Giving a recording a name when adding a recording has no indicator that the name of the recording is editable
- _Solution:_ Added a line under the default text. This makes it clearer to the user that the text can be edited while still maintaining a clean aesthetic.
- _How it aligns with our goal:_ This aligns with our goal of flexibility. Users are able to edit the names of their multimedia sources.
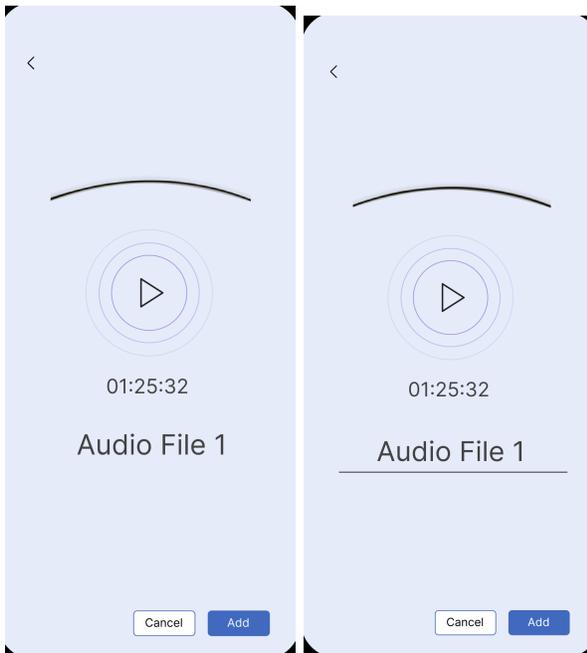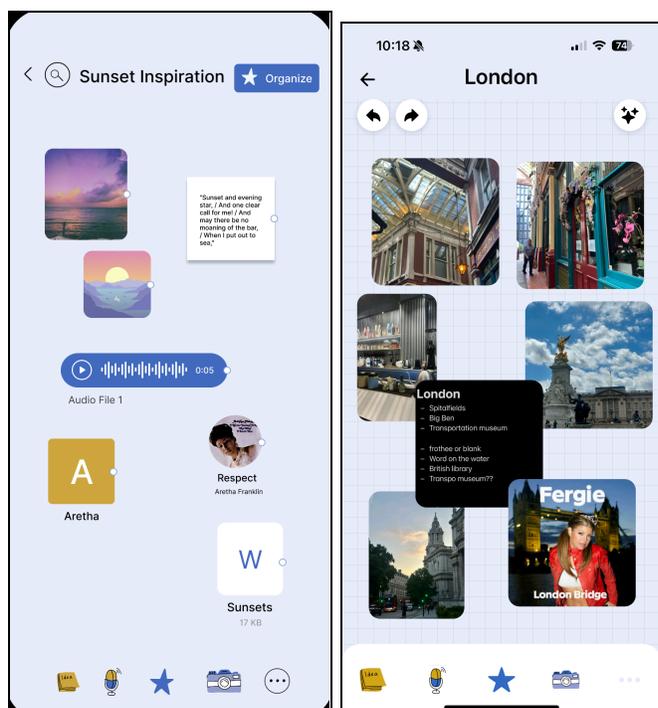
Before   After

Issue 2:

H1 - Severity 4

- Problem: No ability to undo/cancel. Users are not able to cancel/undo actions that they do within the sparklette (such as organizing with AI).
- Solution: Added a back and forward button. This makes it easy for users to undo their actions within the sparklette.
- How it aligns with our goal: Aligns with our goal of flexibility. Users are able to easily go back and forth between their actions within the
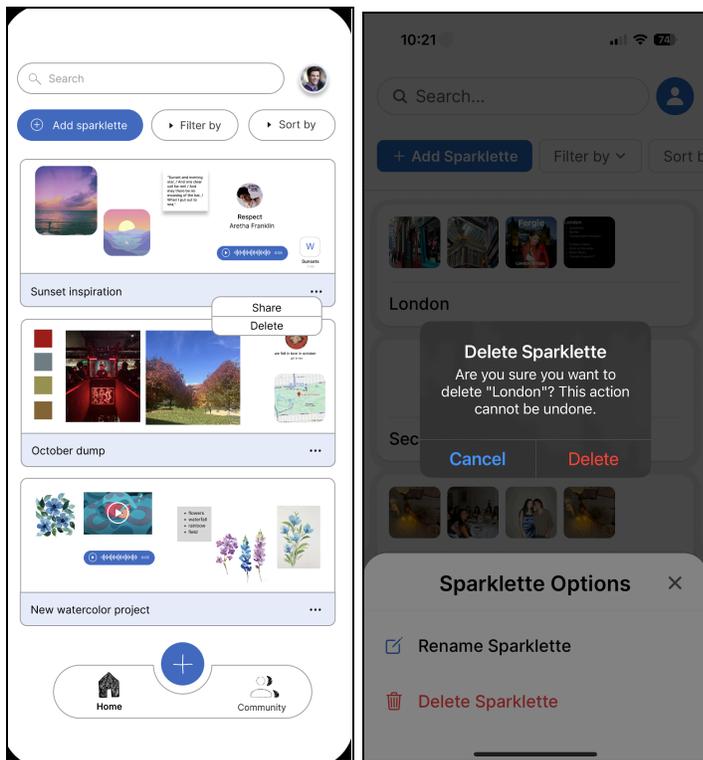
Before   After

Issue 3:

- Problem: Delete feature. Doesn't allow users to delete Sparklettes they don't want to keep
- Solution: Added a delete option in the sparklette. Allow users to delete the sparklette and ask them to confirm their action.
- How it aligns with our goal: Aligns with our goal of flexibility: Users can decide what sparklettes they want to keep or not.
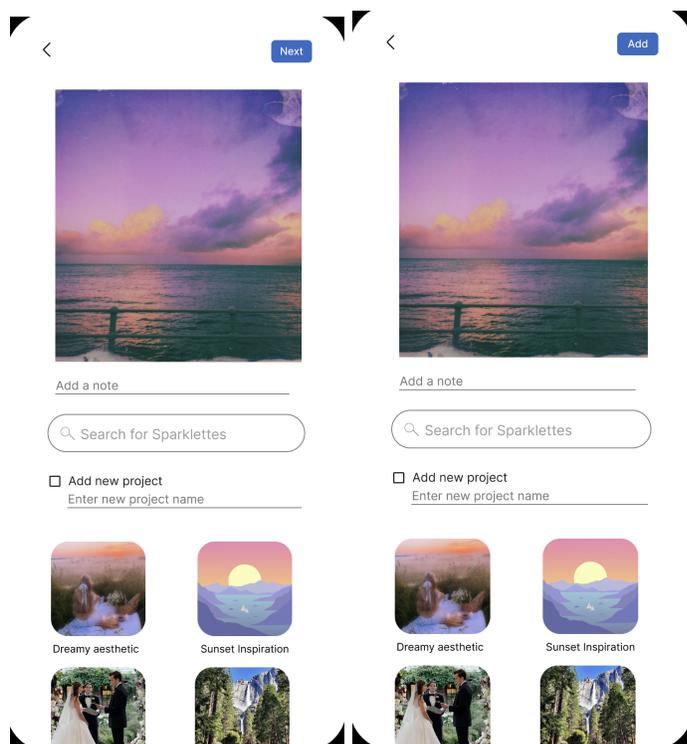
Before   After

Issue 4:

- Problem: Inconsistent text when adding an inspiration source. From within a sparklette, adding a photo uses "Next" to submit it, whereas other media forms use "Add" buttons to submit
- Solution: Changed the "Next" and "Save" button to "Add". This makes the app more consistent and cohesive.
- How it aligns with our goal: Aligns with our goal of efficiency. Users can understand how to add an inspiration source without being confused at the difference in wording.
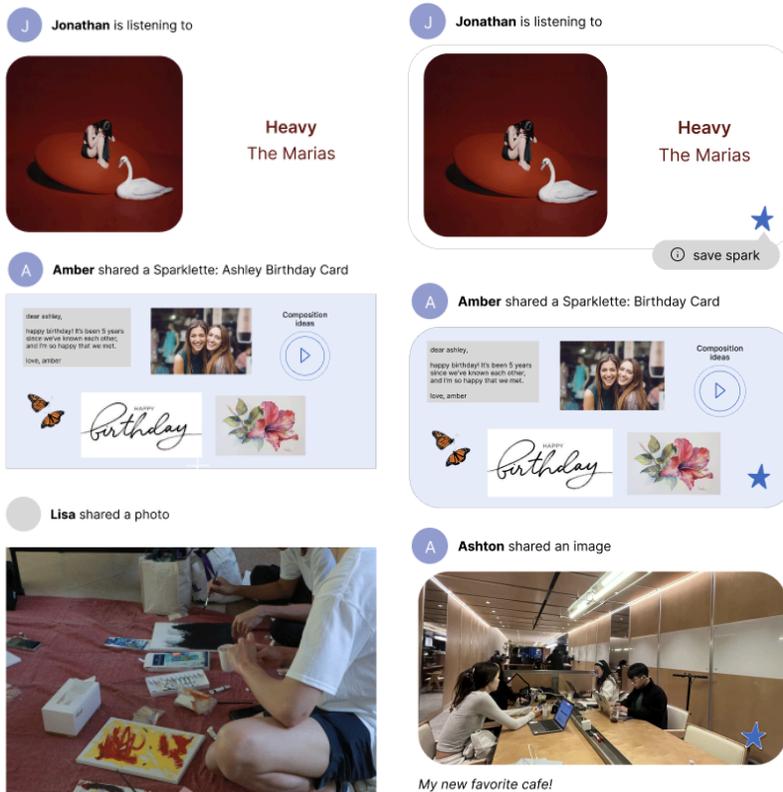
Before   After

Issue 5:

- Problem: Visual consistency in the community page. There is a lack of consistency between the different updates on the feed and it can be confusing to understand that all updates on the feed serve the same purpose.
- Solution: Consistent rounded corners and visual cues across inputs. This allows for clear recognition of a post made in the community as all types of media are bound by a rounded rectangle. It also improves aesthetic and recognition for users
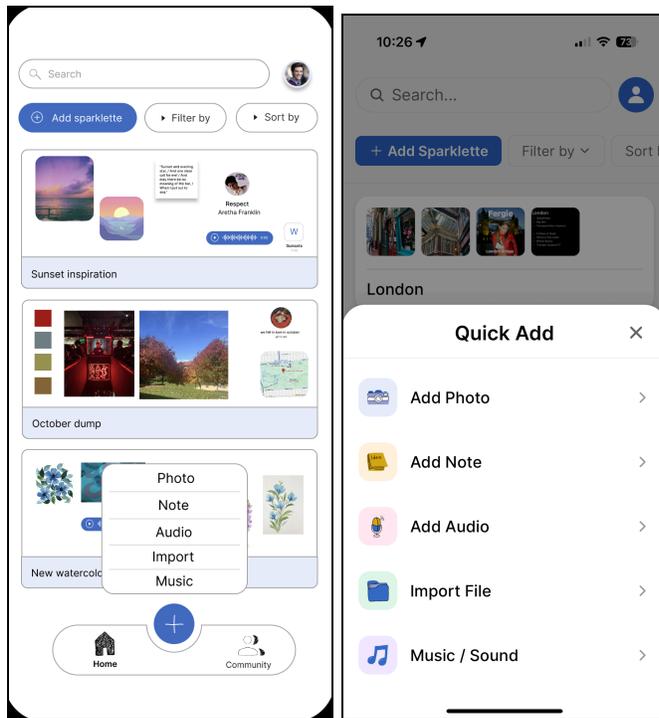
Before   After

Issue 6:

- Problem: The add menu does not have all of the input options available + too many words. When clicking the add button, a menu with the input options appears, but it does not have all of the options that are provided in the app, and it is text heavy.
- Solution: Changed the overlay to display the icons and text. This is now consistent with all of the media options users can add to the app. It is also easier and quicker to see which input you want to add because of the visual cues (icons).
- How it aligns with our goal: Aligns with our goal of efficiency. Users are able easily and efficiently add their sources of inspiration.

Before   After

Issue 7:

- Problem: Saving a public spark to your own Sparklette. It's unclear how to save media from the community in a way that's more efficient than screenshotting/recording.
- Solution: Added a quick save spark button to the community page. This introduces a quick way to save a spark to your own Sparklette in a few clicks. Having a clear pop up for onboarding to show what the icon means, will allow for recognition over recall
- How it aligns with our goal: Aligns with our goal of efficiency. Users are able to easily and efficiently save sparks from others.
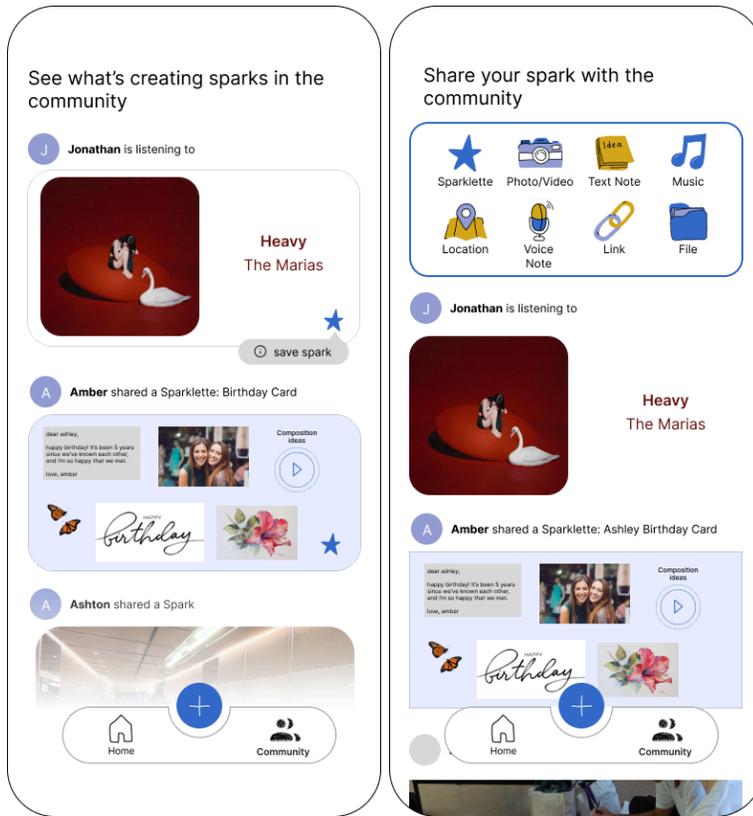
Before   After

Values in Design

While creating SparkBook, we focused on three values that guided our design decisions and how features would be implemented: flexibility, community, and spontaneity. We believe these three values encapsulate the goal of the app — to create a space where artists can easily and efficiently compile their different sources of inspiration.

Flexibility

One of SparkBook's core functionality is to allow artists to input various types of multimedia sources of inspiration and choose how to best organize them. It is key that they have the flexibility to decide what and how they want these inspiration sources to be displayed, as we want to support their creative process as much as possible. The following app features/functionalities embody this value:

- The sparklette page allows artists to add multiple mediums: images, files, notes, audio recordings, music, and a Sparklette.
- The organize button allows artists to write exactly how they want the AI to organize their projects. They can manually arrange their sources themselves and make connections between them.

Community

We wanted SparkBook to promote community and engagement to further support users in their creative process. In the app, artists can share their inspiration and their finished works with others and view what others have shared. The following app features/functionalities embody this value:

- The community page allows artists to view others' works and inspiration and share their own.
- Artists can view everything they've shared through their profile.

Spontaneity

Throughout our interviews, artists said that the process of creating art should be spontaneous and free — not necessarily a very methodical process. Therefore, in SparkBook, we wanted to capture the spontaneous nature of creating art. The following app features/functionalities embody this value:

- The "Quick Add" button allows users to easily take a picture, record a note, record a voice memo, or use record any other source of inspiration they think of spontaneously
- After documenting something, Sparkbook analyzes the contents of the media and suggests folders/projects to organize it into, or easily search for where to store it

Values Tensions

Flexibility + Spontaneity

In our app, we aimed to account for multiple preferences and workflows, but doing so made it challenging to keep the app minimal and maintain the ease of use that enables spontaneity. In our prototype, we prioritize information in a hierarchy to make most common options accessible with alternative options secondary (as drop downs).

Community + Spontaneity

To build community within SparkBook, we seek to foster a space where people can share ideas and grow together over time, but we also want the user to be able to quickly achieve their goals in spontaneous moments. To balance this tension, we decided to separate the community page from the functionalities of Sparklettes.

Community + community

One of the main values of artists is protecting the rights to their creation, however, this can be difficult to reinforce when they are sharing their creations with the community. To overcome this challenge, our app will ensure that every shared Sparklette/Spark is

properly attributed and credited throughout the entire usage of the platform. So, if a user wants to save the work of another artist in their own Sparklette, their name will be attributed within that space.

Final Prototype Implementation

Tools Used

We built our final high-fidelity prototype as a working React Native app with a real backend and third-party integrations:

- **React Native + Expo + Expo Go**
  - **Pros:**
    - Fast iteration with hot reload during studio and user tests.
    - Expo Go let participants run the prototype on their own phones (cross-platform) just by scanning a QR code.
  - **Cons:**
    - Occasional performance + loading delays, especially when fetching images or larger audio files.
    - Some platform-specific UI patterns (e.g., camera and file picker) are constrained by Expo's abstractions.

- **Supabase (Authentication + Database)**
  - **Pros:**
    - Gave us "real" accounts and persistent data: users could sign up, log in, and see their sparks/projects across sessions.
    - Simple row-based data model mapped well to projects, sparklettes, and individual sparks (images, notes, links, etc.).
  - **Cons:**
    - Noticeable latency when loading projects and media, which surfaced as "slow load times" in our limitations.
    - Requires careful seeding and migration for test data (demo accounts, community content).

- **Spotify API**
  - **Pros:**
    - Enabled a realistic "add a song" flow rather than faking music inputs.
    - Matched our needfinding insights about music as a core source of inspiration.

- ○ **Cons:**
  - Added authentication and rate-limit complexity; we scoped to a simple "search + attach track" flow rather than deep integration.
  - Constraints on Spotify API do not allow you to playback a song within your own product, so we had to reroute users to the Spotify app when they click a song that is in their board

- **Expo Router (stack navigation)**
  - ○ **Pros:**
    - URL-like routes made it easier to organize screens (home, project view, spark details, community, profile).
    - Stack navigation gave us predictable back behavior for most flows.
  - ○ **Cons:**
    - Some nested routes (such as: inside a Sparklette → add media → share) became hard to reason about, and we had to debug a few "back arrow jumps too far" issues flagged in our heuristic evaluation.

How the High-Fi Prototype Evolved

We started the high-fi version as a direct implementation of our mid-fi flows (Quick Add, Sparklette boards, AI organize, community feed), then iterated based on:

- **Mid-fi heuristic evaluations**

- **High-fi checkpoint critique** (feedback about button size, labels, and overuse of confirmation modals).

At a high level, our changes focused on **clarity**, **consistency**, and **reducing friction**:

1. **Making actions and navigation clearer**

   - Added or improved **text labels on key icons** (e.g., share, add, organize) so users don't have to guess from visuals alone.

   - Ensured consistent phrasing of features such as **Sparks** and **Sparklettes**

   - Refined tab bar and in-screen headers so it's more obvious whether you're on **Home vs. Community** vs. inside someone else's board.
2. **Reducing reliance on confirmation modals**

   - In the mid-fi we leaned heavily on "Are you sure?" dialogs for delete/share actions. For the final prototype we:

- Removed or consolidated some confirmation dialogs, particularly for low-stakes actions that can be rectified with an "undo" button
- Introduced **lighter-weight feedback** (like "Spark deleted" + the possibility of an undo pattern) to preserve efficiency while still preventing catastrophic mistakes.

3. **Improving consistency and button affordances**

   - Standardized the **primary action styling** (size, color, rounded corners) across add, share, and organize flows with a style guide

   - Cleaned up the **"Add" vs "Save" vs "Next"** language so adding media uses more consistent verbs across entry points.

   - Reworked the **star "Save" icon** in community to look more like a proper button (larger tap target + clearer label) instead of purely decorative.

4. **Accessibility and tap-target fixes**

   - Increased tap area for smaller icons and adjusted spacing to improve tap accuracy

   - Started addressing color contrast and overreliance on blue as the only signal for interactivity.

5. **Structure for AI features, even when algorithm is simple**

   - For features like **AI organize** and **Quick Add suggestions**, we fleshed out the full UX even though the underlying behavior is still rule-based preset. This let us test how artists *want* to interact with "smart" tools before investing in a full ML backend

Together, these changes turned the high-fi from "pretty but sometimes confusing" into a more cohesive, shippable-feeling product while still exposing the intelligent features we wanted feedback on.

Wizard of Oz Techniques

Several "intelligent" or social behaviors in SparkBook are **simulated or constrained** behind the scenes so we could observe user reactions without building full infrastructure:

- **AI Organize as WoZ / partial simulation**

  - **What users see:** A sparkle/"Organize" button, that says how their sparks will be "smart" organized, suggesting AI sorting

  - **What's actually happening now:**

    - We apply one of three **predefined layouts** (Grid, Group by Type, Smart Spacing) based on simple rules or a menu choice, rather than a free-response prompt. These layouts do work properly, but they don't do the metadata/semantic sorting yet
      Quick Add → "Smart suggestions"

  - In the future design, Quick Add would analyze content and suggest a destination project.

  - In the prototype, suggestions are **scripted rules** (e.g., defaulting to the most recent Sparklette or a small set of hard-coded "suggested" boards) that simulate what an intelligent recommender might do.

- **Community engagement**

  - The **community feed** looks like a live social space (multiple users, different types of shared sparks), but much of this content is **seeded by us** rather than coming from a large, organic user base.

  - This allowed us to observe how participants browse, save, and interpret shared content without needing a big real community yet.

Using these WoZ techniques let us test behavior and desirability of social and organization features while maintaining a believable end-to-end flow.

Hard-Coded Behaviors

To keep the system reliable during user studies, we intentionally hard-coded several parts of the experience:

- **Preset organization layouts**

  - The three organization modes—**Grid Layout, Group by Type, Smart Spacing**—are implemented as explicit layout algorithms in the client, not AI models.

- ○ This gives consistent, predictable results while still expressing the concept of "automatic organization."

- ● **Seeded demo data and accounts**

  - ○ We created specific **demo accounts** (`dev@sparkbook.test`) and **pre-populated Sparklettes and community items** in Supabase.

  - ○ This ensured that when participants logged in, they immediately saw rich example content instead of an empty state.

These hard-coded behaviors gave us stability and control: we could focus evaluation on the interaction patterns and values (flexibility, community, spontaneity) rather than debugging complex AI or recommendation logic.

AI Tools in Our Design & Development Process

Throughout the quarter, we used general-purpose AI tools (large language models like ChatGPT, Cursor, Github Copilot) as **scaffolding** for our workflow, while deliberately keeping all core design decisions human-driven and grounded in our user research.

Concretely, we used AI tools to **clarify technical questions**, such as debugging React Native / Supabase issues or understanding unfamiliar error messages more quickly. Using code-assisted AI tools allowed us to focus our efforts on creating a user-friendly product, rather than spending hours getting stuck debugging back-end problems, which we were not as well-versed with.

Equally important is what we **did not** delegate to AI. All **interaction flows, information architecture, and visual design** (including the layout of screens, navigation, and hand-drawn icon style) were created by our team, directly informed by our interviews, empathy maps, POVs, and prototype findings. We chose not to use AI for wireframing or visual design generation because we wanted the final product to closely reflect the needs, language, and mental models of the artists we spoke with.

This mirrors our studio theme: we treated AI as a **supporting assistant** for tedious or generic tasks (structuring, debugging, light copy editing), while the **creative and conceptual decisions remained entirely human-led**.

Reflection and Next Steps

Key Learnings About the Design Thinking Process

Going into the needfinding process with the skills and teachings provided to us was incredibly valuable. By not having a solution in mind and focusing on creating open-ended questions where artists could freely share their experiences and talk for most of the interview, was instrumental in helping us find a common thread and issue that these artists face. Additionally, by focusing on gathering as many varied users as possible, we were able to gain a richer understanding of each of their problems in various different lenses — helping us develop a solution that was as comprehensive as possible.

Having synthesized our findings, it was helpful to rapidly think of solutions based on the "How Might We's" developed. With the POV's created, allowing us to further empathize and understand each of the artists we interviewed, it allowed us to more easily develop solutions while still remaining grounded in the issues we identified. Not only this, but by framing the question as "how might we", deviated judgement and allowed us to be more creative with our responses.

We also found it helpful that the iterative process of design was still implemented, even with the tight deadline. Receiving feedback from users in both the low and mid fidelity prototypes allowed us to consider gaps in our interface that we might have not previously noticed due to our inherent bias of having created the app and knowing what all of the functionalities are intended to do. Additionally, by getting feedback in the low-fidelity prototype, we were able to first ensure that the key functionalities within the app were strong and easy to use. In the low-fidelity prototype, users found that some features were hard to find such as the AI organization tool and that other features weren't as intuitive, such as sharing their inspirations with the community. The feedback we received from the mid-fidelity prototype was also valuable, and allowed us to further focus on the flow, aesthetic, and consistency of the interface.

Key Learnings About the Studio Theme

Our studio theme focused on intelligent creative tools and developing GenAI tools that act as collaborators instead of replacements. Therefore, it was important to consider how AI features can empower and support someone's creative process without fully taking over.

We learned that most artists did not want AI to interfere with their creative process but would be open to using it if it helped them with the more mundane and automatic tasks. This was important to learn as it guided our decision for how the AI tool would be implemented in our app — focusing on organizing their sources of inspiration, but still

allowing them to choose how they wanted it to be organized. By doing this, we ensured that the pain point of these artists was still addressed while still allowing them to make the creative decisions and be in full control of their own creative process.

An important insight we had is that it is important for artists to be able to choose how their work is used and shared by others — especially in an age where AI art generators use several copyrighted artworks without permission. Therefore, it was important that SparkBook created a space where artists felt comfortable sharing their work, if they wanted, and be transparent in how our AI feature is implemented.

Key Learnings About SparkBook

We learned that it was essential for SparkBook to accommodate users' various interests and sources of inspiration — providing them with the flexibility to import as many different mediums as possible. At the same time, we wanted to ensure that, while the app remains as comprehensive as possible to the user's needs, it was still simple to navigate and efficient to use (especially given that we wanted to address the challenge artists have with organization. Moreover, we learned the importance of capturing the app's mission and values through our design choices. By hand-drawing most of the icons and design of our app, SparkBook is able to visually communicate what it stands for — a space where human artists can be creative.

SparkBook taught us how feedback and iteration is an invaluable process in design. Listening and empathizing with other experiences allowed us to create a product that keeps the user's needs at the forefront of its design. Not only this, but establishing our goals and values early on, ensured that every design choice and feature implementation had a clear mission and purpose within the app.