



MUSE

MINDFUL **ART** FOR MOMS

Final Report

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Team Cybele

Athena Shiravi | Zoya Garg | Esha Gupta



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Project Name & Value Proposition

Project Name

MUSE

Value Proposition

Mindful art for moms!

Team Member Names and Roles



Athena Shiravi (she/her)
UX Researcher,
Figma Designer,
Backend Developer,
Pitch and Slides Contributor



Esha Gupta (she/her)
UX Researcher,
Figma Designer,
Frontend Developer,
Website and Slides Contributor



Zoya Garg (she/her)
UX Researcher,
Figma Designer,
Backend Developer,
Poster and Slides Contributor

Problem and Solution Overview

Moms juggle a lot, often foregoing their own emotional needs to make space for their families, errands, and careers.

MUSE is an interactive, online community mural for moms to doodle on with their loved ones and build a habit of introspection-powered creative expression as part of their support system. Optimized to fit into moms' busy schedules, MUSE is low-friction, quick, and meets moms where they're at. We want MUSE to offer moms a moment to bring their emotions to the foreground, through a playful, creative outlet turning moms' lived experiences into a source of artistic inspiration (hence the name!). We ultimately hope MUSE allows moms

Needfinding

Interviews

Mental health is an incredibly broad space. All three of us are close with our moms and have seen them navigate the zig zags of motherhood with such limited support, that we were motivated to focus on moms as our problem domain.

Our next step was to find and interview some moms. So we went where we knew moms would be — Trader Joe's and outside Green Library (where we've often seen Bay Area moms with their kids running around). We interviewed a total of six moms, with a variety of identities (some were immigrants, some were working moms, some were empty-nesters, and some couldn't even speak English well!).

For the first round of needfinding interviews we conducted, we interviewed 4 moms: Jane D. (working mom of 2), Anna B. (stay-at-home mom), Emma N. (foster city mom & extreme user), Ulla J. (working mom of a newborn). We asked these moms about their routines, pain points, and daily priorities. Our interviewees left us with findings that stuck with us — moms experienced severe anxiety as a part of their day-to-day experience, and that moms often feel lonely without access to a support network. Another observation was that these moms were so relieved to be asked about their experiences — our interviews regularly went 30 minutes to even an hour over what we initially expected, and some moms even began crying during the interview.

In this first round of interviews we learned how to speak with moms about their experiences, how to build trust while discussing emotionally charged conversations, and how to ask for a mom's time when they already lead such busy lives.

However, we noticed that moms face such broadly different experiences informed by their identities, so based on feedback we received in section



Figure 2: empathy map synthesizing findings from Empty Nester Mom interview

From these synthesis exercises, we learned a few key takeaways: 1) working moms are struggling with a loss of identity as they forego time for themselves and their own emotions to juggle home and work, and 2) working moms love turning to gamification as a quick, easy way to maintain familial and social connections.

POVs & Experience Prototypes

After analyzing our interviews and taking away our key findings regarding these moms' pain points and desires, we then developed POV statements for our most emotionally-charged and revealing interviews. Given how diverse the range of interviewees we spoke to was, these two POVs effectively captured the diversity of experiences and backgrounds moms may identify with.

For each POV statement, we quickly came up with 10+ "How Might We" (HMW) statements that focused on rapid, creative iterations of ideas over practicality. From this list of 30+ overall HMW statements, we chose 2-3 to highlight (shown in red), and used them as a foundation to brainstorm potential solutions.

This process led us to three potential solutions.

Empty-Nester Mom's POV:

We met J, a mom working part-time at the library and recently an empty nester. **We were surprised to notice** that playing and discussing the New York Times Spelling Bee game every week was a main method of digital communication for her and her recently graduated son.

We wonder if this means these games help them remain in communication over long distances.

It would be game changing if we could create playful, enjoyable interactions between moms and their children.

Which led to the following HMW statements:

- *HMW make speaking to their mom something children look forward to?*
- *HMW make it easier for children to reach out to their mom?*
- *HMW make it easier for moms to adjust to reduced contact after their kids move out?*
- *HMW distract moms after their kid moves out?*
- *HMW remove the need to move away from home for college?*
- *HMW make the distance between moms and their kids something exciting?*
- *HMW online interactions between moms and kids even more engaging than in-person ones?*

- *HMW keep families connected without constant communication?*
- ***HMW use shared interests to keep families close over long distances?***
- ***HMW leverage play to foster meaningful connections between family members?***
- *HMW give more things to talk about between mothers and children?*
- *HMW create more commonalities between moms and children?*
- *HMW make digital communication unnecessary?*
- *HMW make games more fun?*
- *HMW require children to communicate?*
- *HMW remove the distance?*
- *HMW encourage discussion every day?*
- *HMW help the communication feel less separated?*
- *HMW give moms other people to talk to?*
- *HMW give moms other forms of media to discuss?*

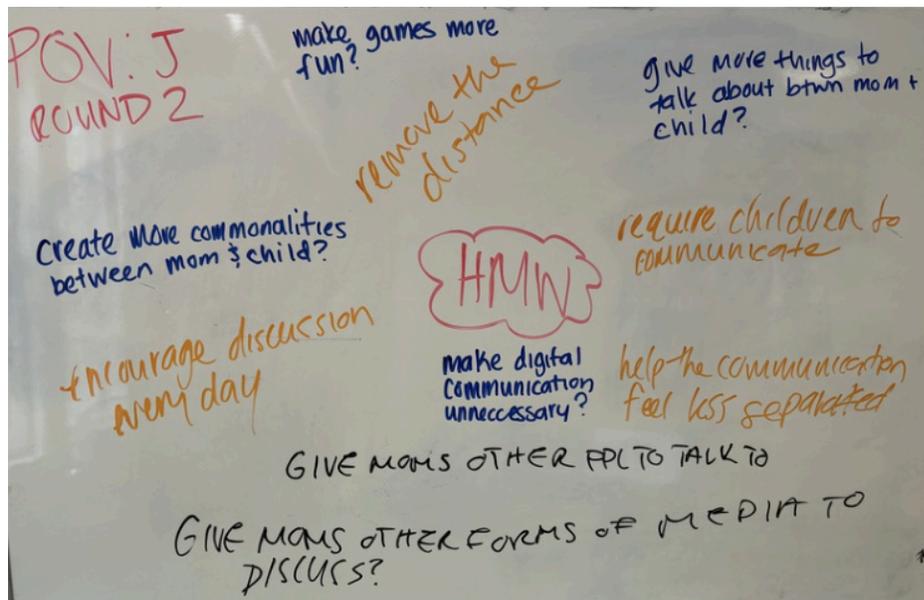


Figure 3: our brainstorm session for Empty-Nester Mom's HMW statements

Foster City Mom's POV:

We met a working mom of two young kids separated from her extended family who is all in China.

We were surprised to notice that despite living in Foster City for 5 years, she does not feel like she has a community there or in the larger Bay Area.

We wonder if this means she forgoes actively building relationships to prioritize child care.

It would be game changing to help her feel less lonely.

Which led to the following HMW statements:

- HMW make childcare more community-building?
- HMW help the mom find friends?
- HMW make childcare feel healing?
- HMW help working moms find community?
- HMW make relationship-building less time-consuming?
- **HMW make childcare and relationship building simultaneous activities?**
- HMW make it easier to find friends in a new neighborhood?
- HMW help people feel less lonely at home?
- HMW increase community among working moms?

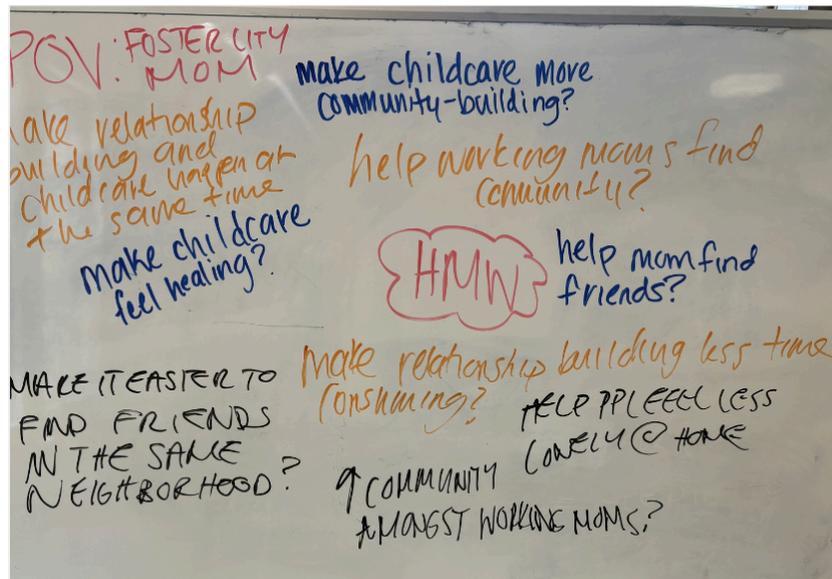


Figure 4: our brainstorm session for Foster City Mom's HMWs

These Top 3 HMWs Led to the Following Three Solutions:

Bud: An app inspired by the popular Rose-Bud-Thorn mindfulness exercise, allowing moms to draw the different parts of a rose and reflect on their days with their children through a daily reflection tracker.

Voice Pals: Storytelling app where family members voice note their days and it stays up for their family to listen to for 24 hours.

Puzzly: Group puzzle pieces reveal for families but each person has to do a mindfulness activity to unlock their portion of the picture everyday.

Experience Prototypes

To validate our solution concepts, we created three experience prototypes. We tested with local working moms found at Stanford and the local Palo Alto community, and with students to gauge both sides of a family connection mechanism.

Shared Rose-Bud-Thorn journaling improves people's mood



Figure 5: Rose Bud Thorn between a sister and her younger brother

People are comfortable sharing their day for a minute unprompted

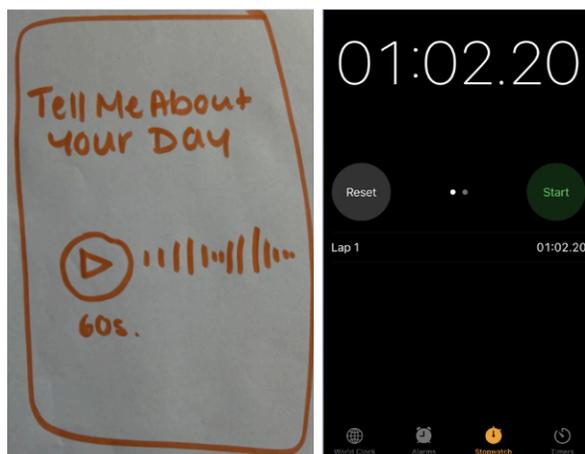


Figure 6: A student tells us about their day for allotted time span

Costs impede the ability of moms to see their loved ones

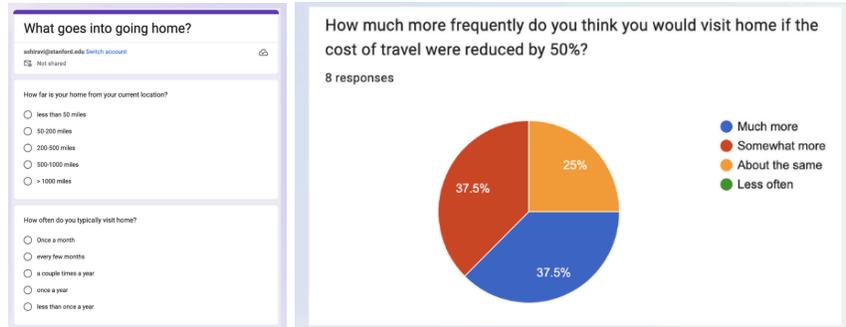


Figure 7: Survey of over 60 students revealed insights about their travels to and from campus

These Experience Prototypes Led to the Following Insights

Rose Bud Thorn: We were surprised how much he enjoyed drawing out the Rose, Bud, and Thorn versus writing the words out. The exercise also created engaging conversation including initiating one about basketball that day.

1 minute of sharing: It was difficult for the speaker to find things to talk about for the whole minute. The exercise was easier with a prompt initiation.

Travel budgeting: Over 37% of students delayed or skipped a trip home due to cost concerns. One quote we received was: "It's so far and so much money that I feel guilty when I go all the way back for just a week (like Thanksgiving) but I love my family so much I want to anyway."

Final Solution

Description

Our final solution is a community mural app that allows moms to reflect and draw on collaborative artwork.

Solution Rationale

Historically, murals have been a physical way for communities to come together and express their collective emotions. In cases of both hardship and celebration, art has been a cornerstone of human commemoration. We wanted to bring this physical space of reflection into a virtual one, allowing busy moms to connect over the same artistic principles that have connected our communities for centuries.

Furthermore, art therapy is a scientifically proven method to help people process their emotions and express themselves. The combination of physical and mental expression is shown to improve overall well-being.

By bridging art therapy with community murals, we aim to create a low-friction space where moms can leverage creativity and build community.

Target Audience

Moms with access to technology

Potential Excluded Audiences

Moms without access to a tablet or the internet would have difficulties using our platform since drawing requires a tablet and collaboration requires an internet connection. Moms with visual impairments would also have difficulty drawing or seeing the collaborative murals.

Ethical Implications

Privacy: Moms are sharing vulnerable emotions on our platform, keeping this data confidential is crucial, user data is private

Empathy: User interactions should be positive and constructive

Socially Acceptable Drawings: drawings should be clean and non-vulgar

Tasks

Simple Task – Doodling on a Mural

Art therapy is the crux of our app. Moms must be able to draw on the app to express their emotions. All users on our app will be drawing on the collaborative murals.

Moderate Task – Creating a Mural

Tailored reflection is a key component of our app. Moms should be able to get an emotional prompt that they resonate with and start a new mural with their community of choice. Creating a mural allows a mom to choose which identity to connect with, respond to emotional questions, receive a prompt, and draw on a blank canvas. This mural allows other moms to join in. More advanced users who are familiar with their identities and enjoy reflection will use this feature to tailor the experience to their own needs.

Complex Task – Sharing Our Art

Communal reflection and engagement is a key part of the reflective process. Moms can share final murals with loved ones, friends, and people in their community. This allows people to comment on the emotions expressed in the art and provides a starting point for vulnerable conversations. Sharing murals allows moms to invite other moms into the MUSE community, allowing moms to form new connections and meet people. These are power users who enjoy using MUSE and are looking for new moms to join. These users are frequent drawers and are adept at creating and finishing murals.

Design Evolution

Initial Sketching and Realization Explorations

Our initial conceptual exploration centered around the realization of our idea. After experience prototyping with pen and paper, we explored multiple virtual realizations to simulate the real-life experience. We explored AR, VR, mobile, and tablet realizations. We explored the following two realizations further:

Exploration 1: Virtual Reality

Our VR concept allows a mom to turn any space into a virtual mural. The mom would draw using gestures and see their art appear in real-time. Collaboration would be simulated by showing other users drawing in the same space.



Figure : VR sketching brainstorm of potential interfaces

Pros and Cons:

The unbounded spatial aspect of VR is conducive to full expression. Moms are able to draw and immerse themselves fully in the art. However, moms are unlikely to have access to a VR headset.

Exploration 2: Mobile App

Our mobile app allows moms to draw on a virtual canvas using a stylus or their fingers.

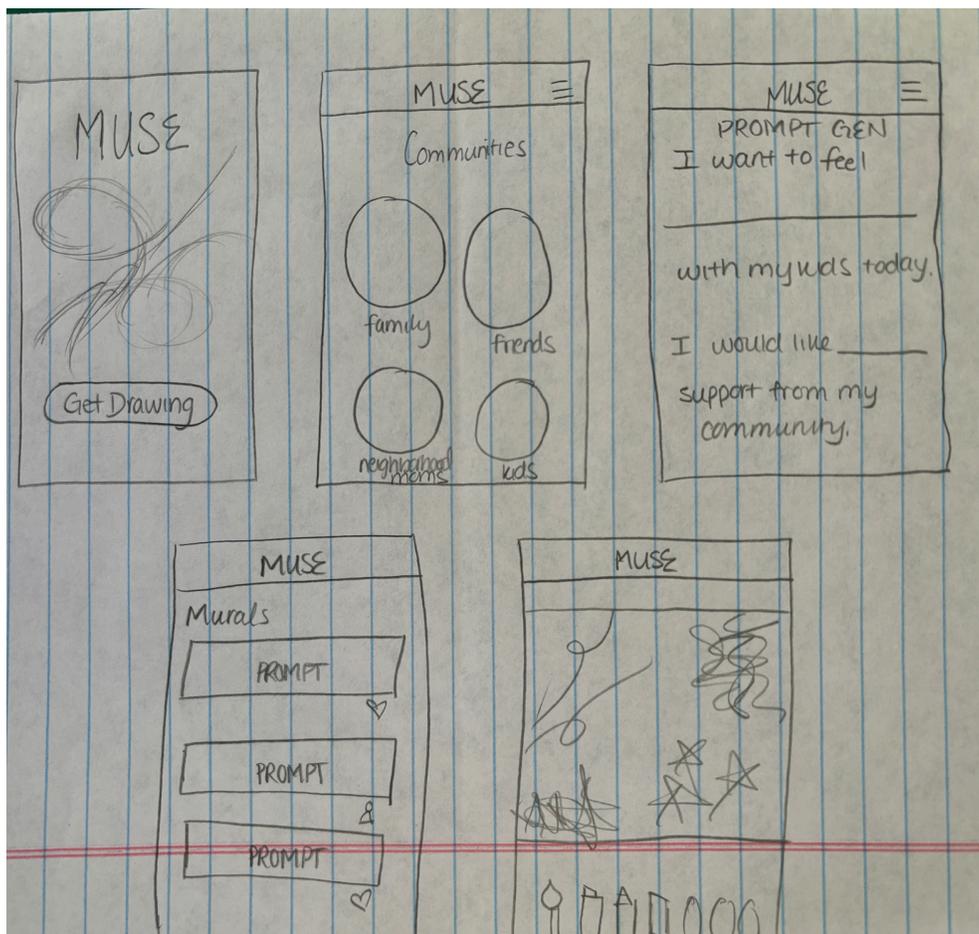


Figure : Tablet App sketching brainstorm of potential interfaces and screen flow

Pros and Cons:

Most moms have access to a tablet. Working moms are also likely to have a tablet for work, allowing them to use our app on the go. However, the drawing aspect is confined to the dimensions of the smartphone

Decision Rationale

We decided to explore the mobile implementation to create an accessible platform for our user base and simulate a realistic drawing experience. Moms are likely to have a smartphone with them at all times.

Low-Fi Prototype

Our first design implementation was a paper prototype with our three initial task flows.

Low-Fi Simple Task - Doodling on a Mural

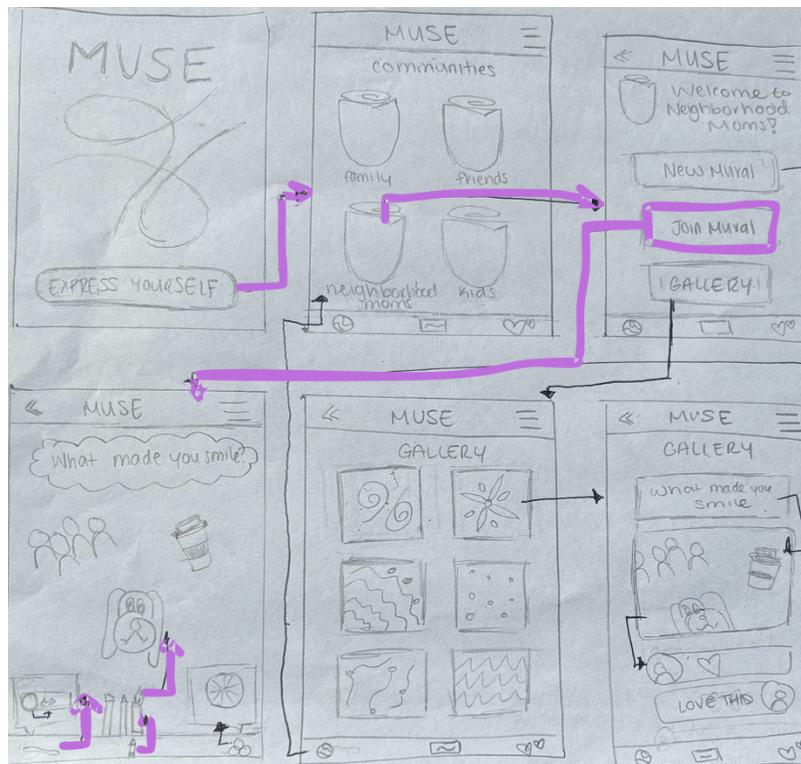


Figure : Highlighted task flow allows moms to pick a community and start drawing

Low-Fi Moderate Task – Creating a Mural

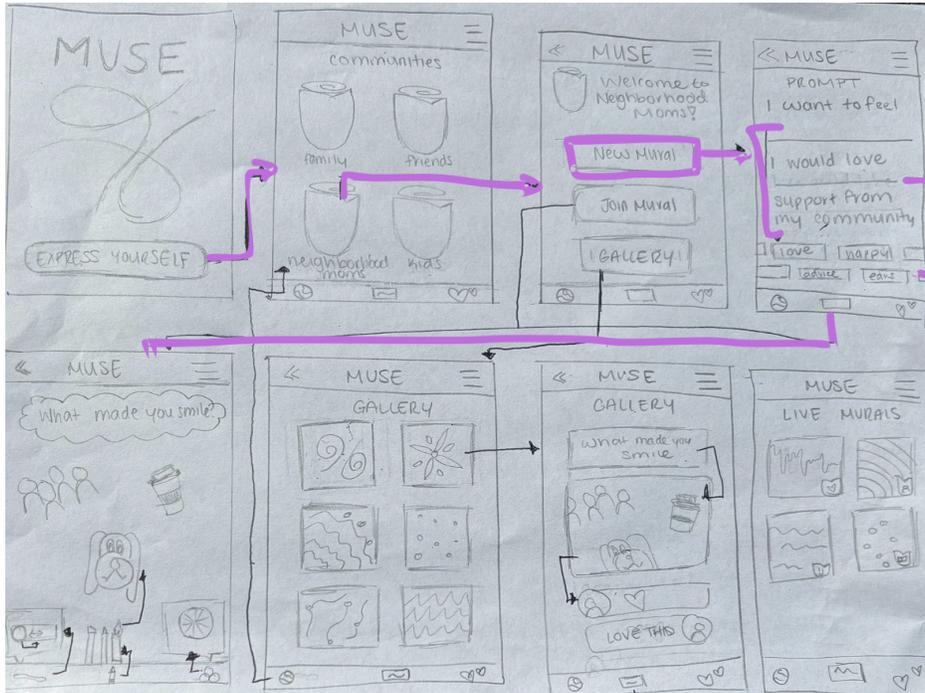


Figure : Highlighted task flow allows moms to create a mural from a community

Low-Fi Complex Task – Building Community and Sharing a Mural

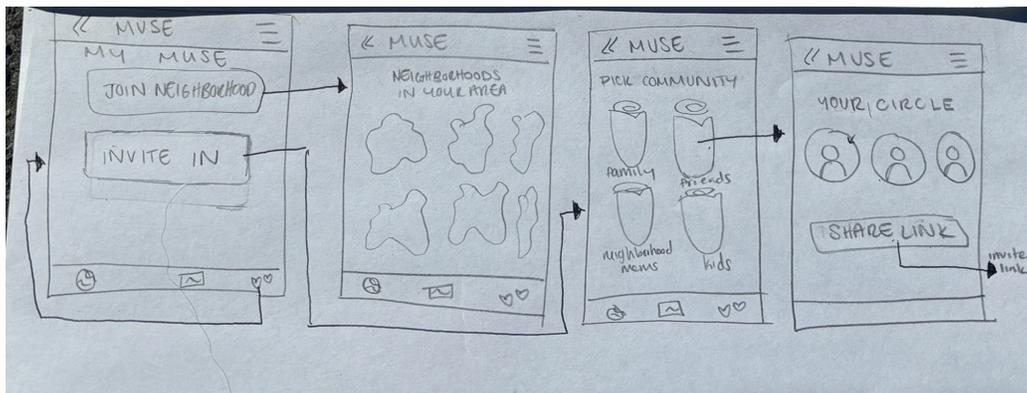


Figure : Task flow allows moms to join or invite people to Muse by sharing a mural

Usability Testing

We tested these task flows with a low-fi prototype on 3 moms found on the Stanford Campus. We asked these moms to test our app, and simulated screen switches when they pressed marked “buttons” on the screens. Moms were handed a pen to draw on the mural when they navigated to it.

We had two key measures of our prototype: the time it took to navigate through the app, and whether the mom felt supported after drawing.

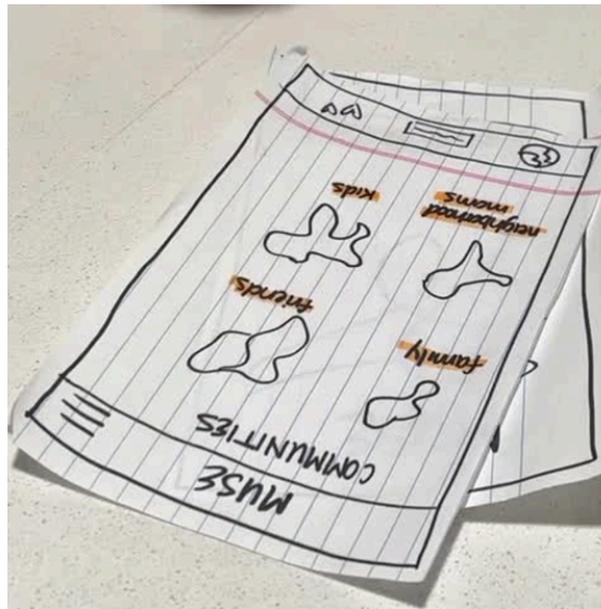


Figure : Low-Fi Prototype screens

Participant Insight

- All three moms first navigated to the gallery instead of creating or joining a mural
- One mom was confused about what “communities” entailed and kept navigating back and forth
- One mom wrote in her own prompt words instead of using our preselected choices
- The last mom interviewed expressed verbal enthusiasm for a previous interviewee’s coffee drawing

Key Takeaways

1. Our navigation flow from communities to the secondary homepage left moms confused about whether we were a mural app or a gallery app
2. “Communities” is an unclear grouping that left moms wondering if they were pre-determined or their own space
3. Moms loved seeing other people’s doodles and commenting on them

Design Revisions For Med-Fi

- Move the “gallery” feature to the NavBar
- Remove “neighborhoods” to minimize confusion with “communities”
- Frame our app’s purpose in the homescreen
- Switch to a tablet interface to leverage the larger surface area for drawing. Mobile screens are simply too small to allow for large scale drawings.

Med-Fi Prototype

Our medium-fidelity prototype was constructed on Figma to provide detailed UI and interactions.

Med-Fi Simple Task – Doodling on a Mural

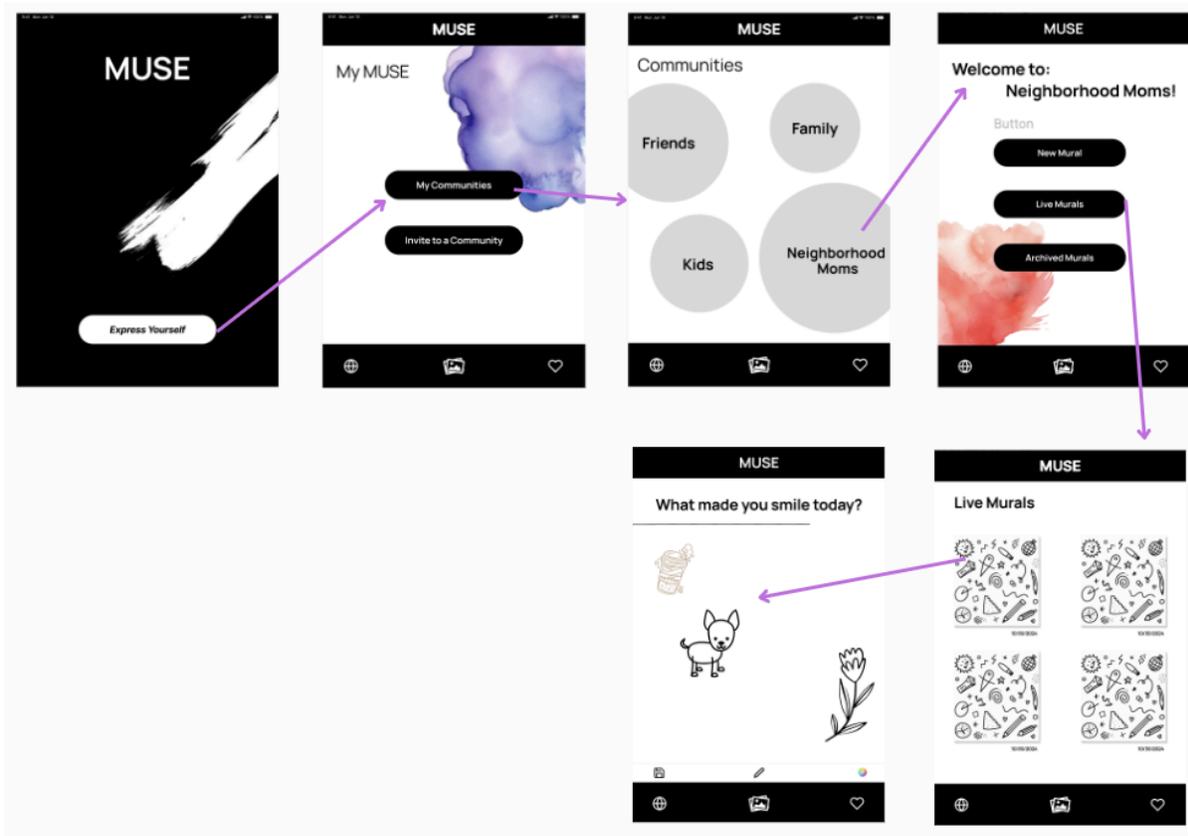


Figure : Navigating from home screen to joining an existing mural

Med-Fi Moderate Task – Creating a Mural

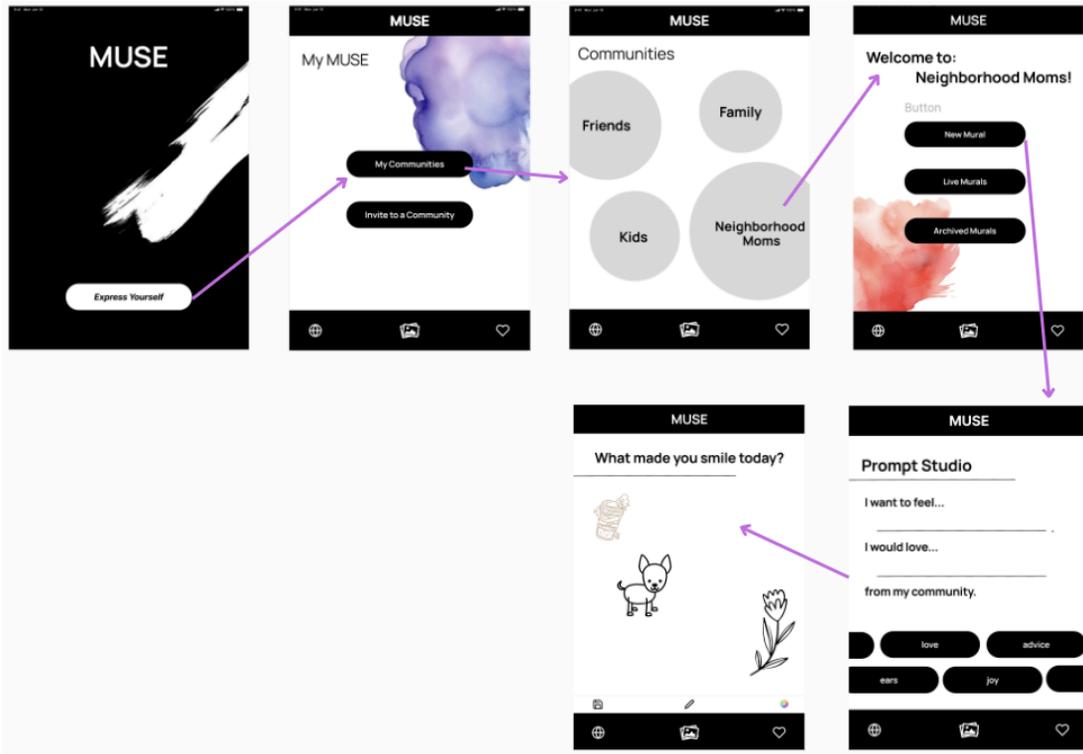


Figure : Navigating from the home screen to creating a new mural

Med-Fi Complex Task – Building Community and Sharing a Mural

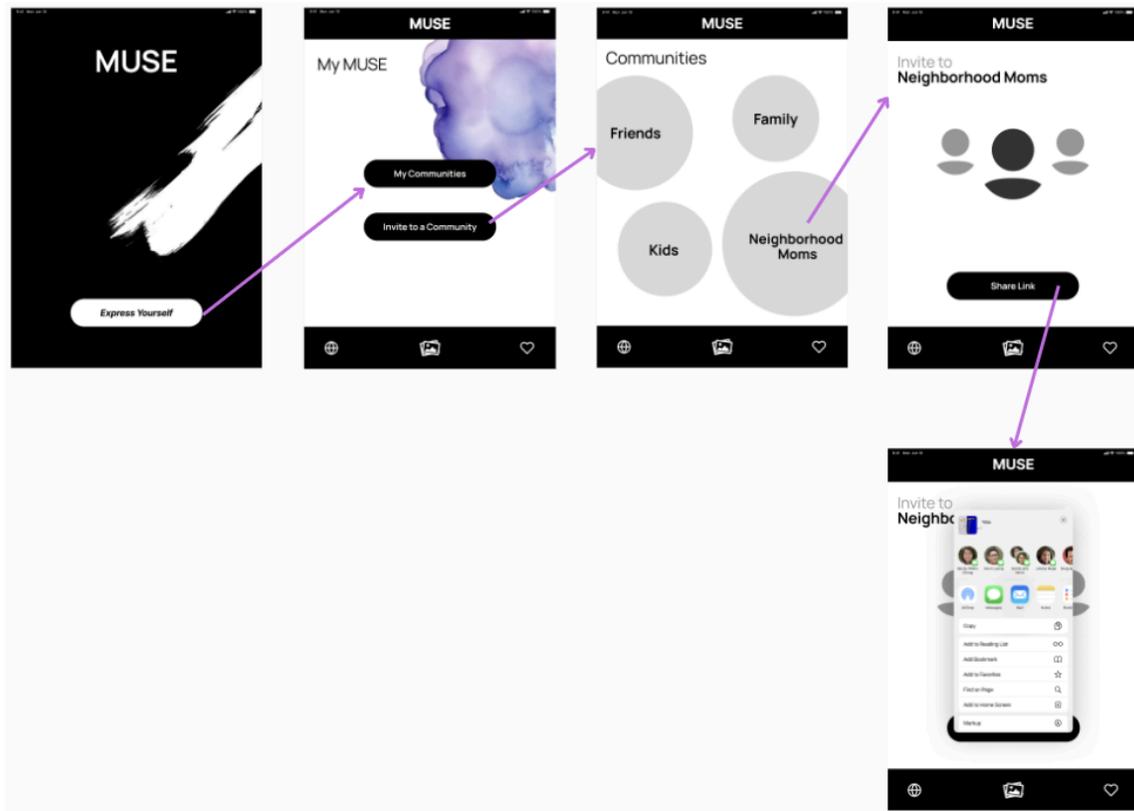


Figure : Inviting a mom to MUSE from the communities screen

We gave our Med-Fi prototype to another team for a heuristic evaluation of our design.

Heuristic Evaluation

We received 67 total violations from our heuristic evaluation. Our most common violations fell under the following heuristics:

- H2: Match between the system and real-world
- H3: User Control and Freedom
- H4: Consistency and Standards

Of the 67 violations, 11 were Severity 3 (S3) and 4 were (S4). We focused S3 and S4 violations.

S3 Violations

H1: Visibility of System Status

- The prompt does not mention the tags that the user chose

H2: Match between the system and real-world

- Cannot Erase Content
- The heart button in the NavBar is counterintuitive for communities

H3: User Control and Freedom

- No option to save progress without publishing as a Live Mural
- There are no back buttons
- The NavBar icons do not navigate mid-flow

H4: Consistency and Standards

- No Finish button when users are done drawing

H5: Error Prevention

- It is possible to view live murals before selecting a community

H11: Accessible Design

- Save and Draw buttons are small

H12: Value Alignment & Inclusion

- The communities do not indicate that the app is for moms

S4 Violations

H2: Match between the system and real-world

- Cannot contribute to an existing doodle

H4: Consistency and Standards

- No functional difference between archived and live murals
- The invite feature is only accessible from inside a community
- Globe and heart icons navigate to the same page

Key Takeaways

From our heuristic evaluation, we realized that we needed to fix our navigation functionality, simplify our screens, and clarify our branding. For functionality issues like drawing and navigation, we addressed these when coding our interactive Hi-Fi prototype. For the design and usability issues, we implemented changes to create a revised prototype that addressed the S3 and S4 violations

Revised Med-Fi Simple Task – Doodling on a Mural

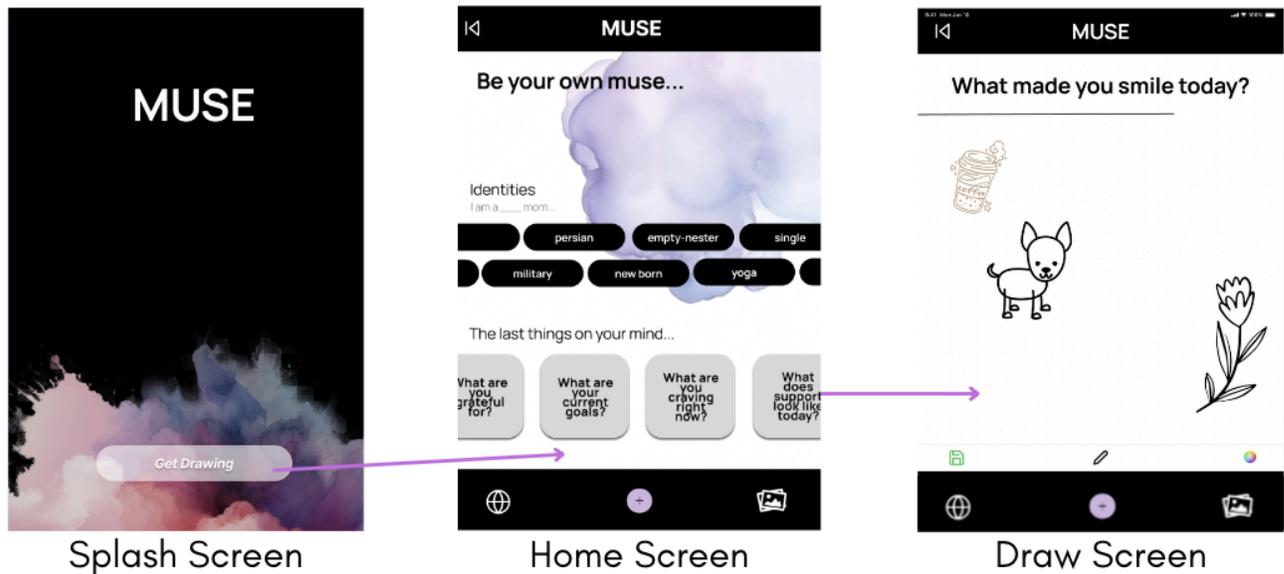


Figure : Revised simple task flow with fewer screens

Design Revisions

- The NavBar confusion
 - Removed the heart icon for favorite murals
 - Took creating a mural out of communities and made it its own flow with the plus icon to allow for quick mural creation
- Communities HomeScreen
 - Removed the “communities” entirely and renamed it to “identities” for clarification
 - Removed the “communities” page and consolidated identities onto a home screen. This allows for easy navigation between identities and murals.
 - Optimized the button selection with the horizontal slider instead of abstract circles
- Back Buttons
 - All transitional screens now have a back button in the top left corner
- Clearing Drawings
 - Added a save and erase button to the drawing screen
- Branding for Moms
 - Added color to the splash screen to create an inviting atmosphere
 - Clarified that each identity is for moms by adding “I am a __ mom” underneath identities
- Save Button
 - We did not add a save button because we want to encourage moms to publish how they feel with quick doodles. A save button could foster overthinking, and we believe that a publish button would allow for quick reflection

Revised Med-Fi Moderate Task – Creating a Mural

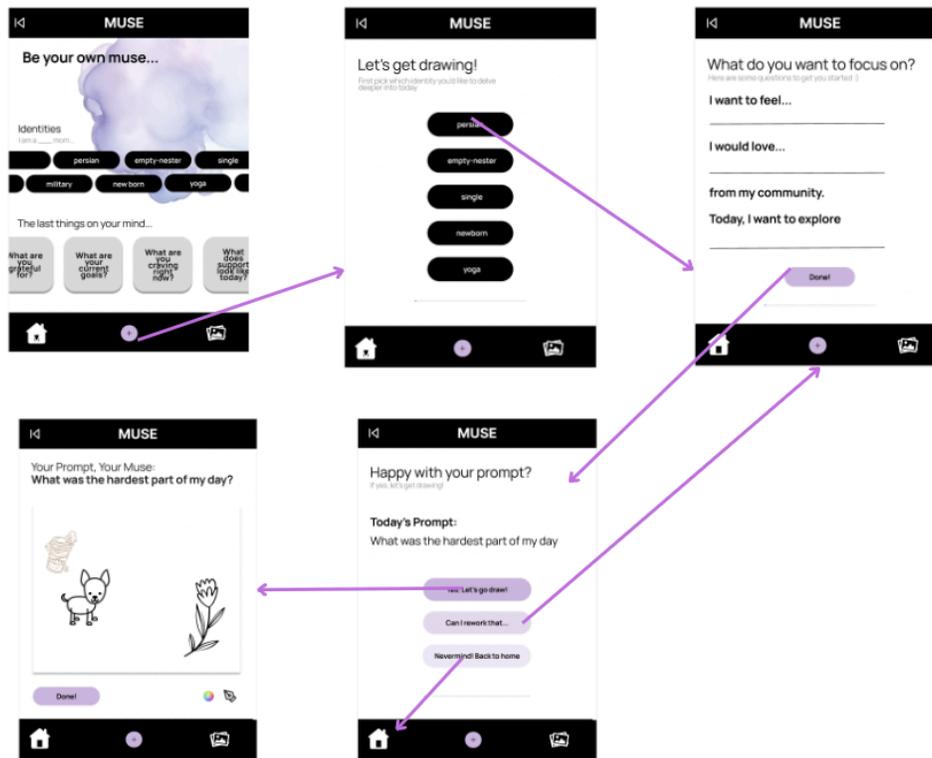


Figure : Revised flow from the home screen to creating a new mural

Design Revisions

- Centralized mural creation
 - Murals are created from the homescreen, where users then specify which identity it should be tagged with. This allows the task to follow the same navigation flow rather than requiring users to enter different screens depending on the community
- Tags limit user freedom
 - Switched to text input to allow full user autonomy for prompt generation
- Flexibility between user input and final prompt generations
 - New prompt acceptance screen that allows users to change the prompt, go back, or get drawing
- Finish buttons
 - Larger “done” buttons on the drawing screen and prompt screens

Revised Med-Fi Complex Task – Sharing a Mural

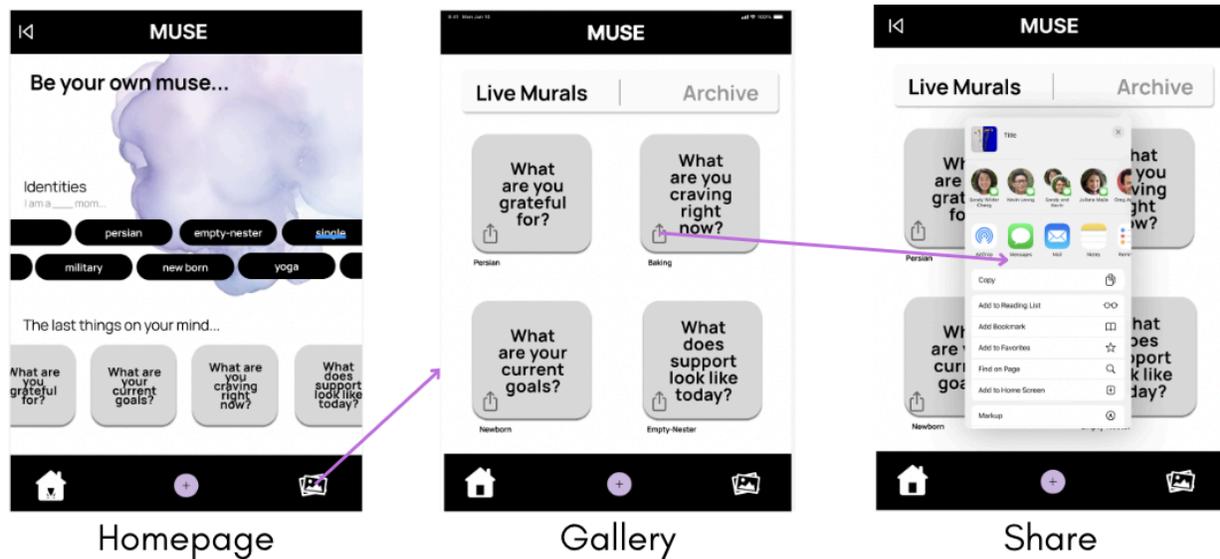


Figure : Inviting a mom to MUSE from the gallery screen

Design Revisions

- Live and Archive Murals no longer appear the same
 - Changed the display to show the prompt rather than a snippet of art so that each mural is easily identifiable
 - Added a gallery view that toggles between live and archive so that it is clearer which ones are being viewed
- Invite is no longer community-specific
 - Moms are now able to invite people to specific murals from the gallery page rather than from the community homepage. This allows moms to quickly invite people and allows them to invite moms to different projects from the same screen instead of navigating to different pages to perform the same task.

Hi-Fi Prototype

We paused our implementation process for our hi-fi prototype to redesign our app again! Our UI was still missing the mark on branding. It was unclear that our app was targeting moms, and the homescreen was overstimulating for a mental health app.

Revised SplashScreen and HomeScreen

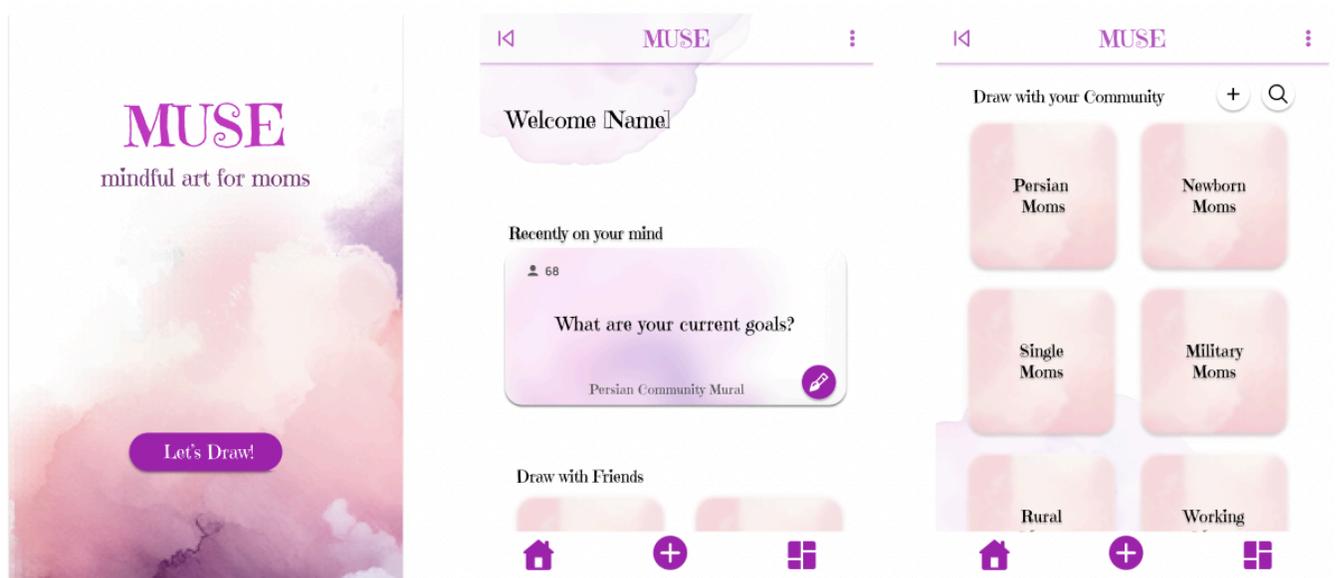


Figure : Updated Splash and Home Screen UI

Design Revisions

- Color Scheme
 - Switched from a black to white background primary color to foster a light and airy atmosphere rather than a jarring, bold experience.
 - Pivoted from black and gray to pink and purple. The pink and purple color scheme creates a colorful pop to stimulate creativity. We leaned into the artistic aspect of our app and made our UI resemble paint strokes. All major UI elements were redesigned to be like a watercolor, while our buttons were purple-tone.
- Font
 - Our original all-caps block font was high-contrast and striking. Given that our app was about playfulness and creativity, the font did not contribute to the theme
 - We switched to a curly, creative font for all of our headers to indicate that this is an artistic expression app.
- SplashScreen

- Switched to a watercolor pink and purple aesthetic. We used the Splash watercolor as the building block and sourced the backgrounds for the identities and murals from this original watercolor, ensuring that our app is cohesive.
- Added the tagline to the page to convey what our app was about
- Home Screen
 - Only the most recent mural is on the home screen. We did not need to recreate the gallery view!
 - Made identities a gallery-like view rather than a horizontal scroll.
 - Welcome message to greet users to our app
- Scroll View
 - We wanted to minimize the amount of elements on our home screen. By making identities a scroll screen, we could still include all of our features but at a digestible rate for the users

Final Hi-Fi Task Flows

Final Simple Task – Doodling on a Mural

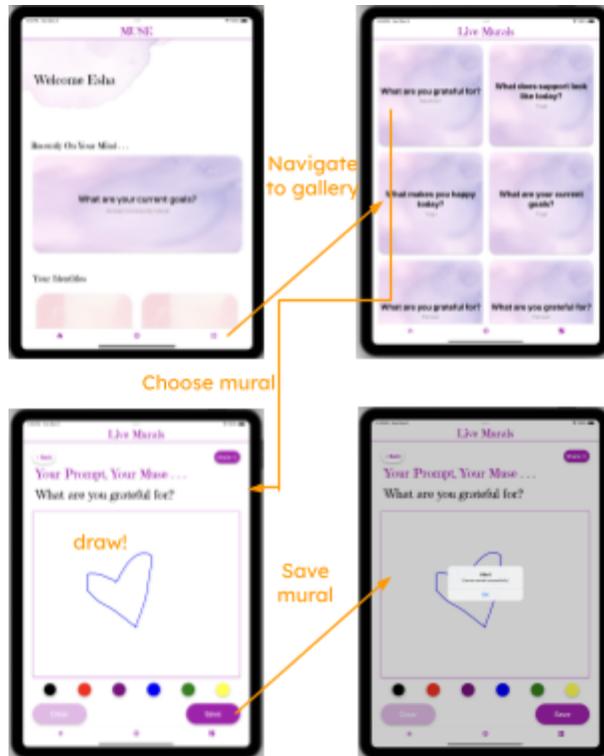


Figure: Final doodle flow

Final Moderate Task – Create a Mural

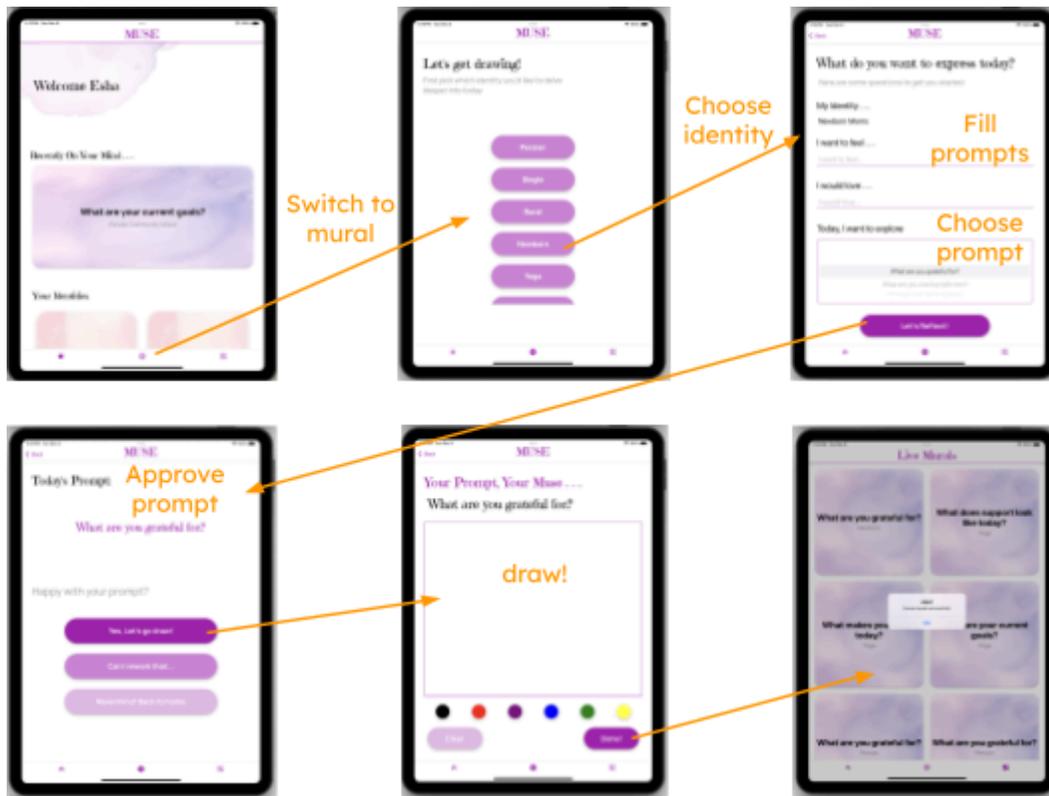


Figure : Create a mural flow

Final Complex Task – Share a Mural

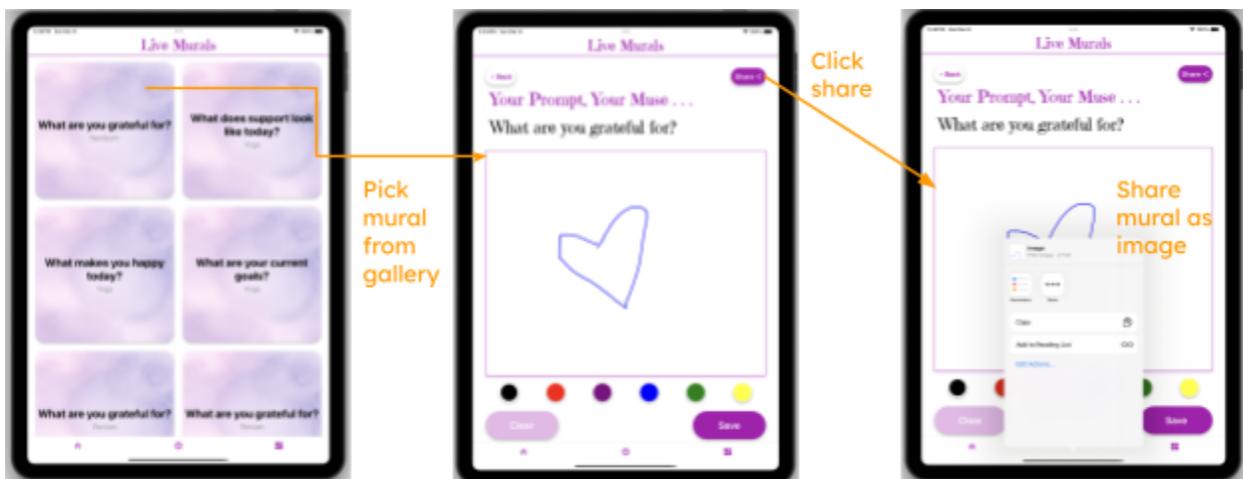


Figure: Share a mural flow

Values in Design

Especially given our problem domain, moms and their mental health, we took extreme care to consider the values we were incorporating into our design. There were four key values we discussed as a team and identified as our product priorities.

1. Autonomy
2. Creativity
3. Convenience
4. Community

Autonomy

We wanted to empower moms to look within and first reflect on and identify their own needs through prompts, and then express themselves through art. MUSE's inspiration was to give moms a few seconds in the day to put their experiences first — we wanted to ensure we were offering them just that.

Creativity

Moms are busy, and creative engagements are almost always the first to go to free up time in their schedules. We wanted to prioritize offering moms what so many of them view as table stakes — a chance to reconnect with their creative side. We see creativity as a form of growth, development, and joy, and wanted to make sure moms have a chance to lean into what so many of them have learned to forego.

Convenience

From feedback we received from both moms and our peers in section, we made the design decision to implement Muse as a tablet app. This was inspired by our core value of convenience — we wanted to ensure that we were meeting moms where they're at, in a convenient and portable experience that offers them the most

suitable, approachable experience for drawing. Forcing them to cram their designs into a mobile app means more frustration — the last thing we want for our moms!

Community

We saw moms in tears over not having community and support systems — we wanted to give them what so many were near-begging for. In our design, we added identities, a Share Mural feature, and decided on a communal mural idea to offer moms the ability to connect with and receive support signals from their peers.

Final Prototype Implementation

We use a range of techniques to build our hi-fi prototype. Details of this technical implementation process are below.

Hard-Coded Data & Limitations

We were able to implement all three primary tasks of our application — doodling on a mural, creating a new mural, and sharing a mural. These tasks assume a user profile already exists and other moms may join the platform to contribute a doodle. Because of this, we decided to hard-code several of these initial components. This includes:

- **User Profile:** A preloaded test user with fixed details such as name, image, and profile information. Users cannot yet create, delete, or modify profiles.
- **Community Invitations:** While users can invite others to their murals, the app does not support database storage or real-time user account creation.
- **Live Drawing:** Simultaneous collaboration with live updates from multiple users is not implemented due to the absence of real-time backend support.

- **Device Compatibility:** While Muse is optimized for iPads running iOS 18.0, functionality on other devices may not deliver the intended experience, particularly for drawing features and UI layout.

Wizard of Oz Techniques

Several features of Muse rely on Wizard of Oz prototyping to simulate future functionality:

1. **Prompt Generation:** Reflection prompts are currently selected from a predefined database instead of being dynamically generated based on user input or AI.
2. **Recent Murals:** The "Recently on Your Mind" mural is hard-coded to the same example mural for demo purposes, simulating the concept of personalized murals.
3. **Preloaded Identities:** Community groups and shared murals displayed on the home screen are fixed samples to illustrate the platform's vision of fostering connections between moms.

Key Learnings and Reflection

We went through *tons* of iterations through the design thinking process. Moving forward in our careers as students studying HCI, there are three key lessons that stood out to us:

1. Understand Your User

We spoke to a wide range of moms — empty-nesters, immigrants, women whose first language is other than English, working moms, and more. The challenges and emotions they shares with us drove our purpose and commitment to MUSE. We not only uncovered key needs, but unexpected insights (ex: moms use the NYT Wordle or iMessage games to connect with other moms and their kids!). These conversations shaped Muse's mission and our approach.

2. Use Feedback to Iterate

We overhauled our Figma prototype ultimately four times. The

usability testing and feedback from moms and the other students in our section played a critical role in shaping Muse. We improved features like mural creation and removed “community” language to refine our app to be intuitive without losing its substance.

3. **Simplify**

Editing was our biggest aid toward the finish line of our app. Whenever we removed a screen or reduced friction for the user to make it to the “reward point,” our app’s clarity and usability improved significantly. Keep it simple, stupid really is true!

Final Remarks

The journey of building Muse was challenging, but deeply rewarding. Between needfinding for users with little to no time on their hands (moms), developing uniquely complicated features to enable drawing capabilities, and overhauling our Figma four times, we are proud of what we built to help meet moms where they’re at.

Empowering people to reflect, connect, and find moments of peace is an endeavor in itself and the road to accomplishing it online is still ongoing and long. As such, we are so grateful to Professor Landay and our CA Gray for supporting us in taking the first steps, as well as the entire teaching staff and our fellow studio students.

Thank you!