RETUNE

Refresh your tunes

Final Report

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CS 147: Introduction to Human-Computer Interaction (HCI)

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Table of Contents

Project Name & Value Proposition

Project Name:

Retune

Value Proposition:

Refresh your tunes

Team Members & Roles

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Role: User researcher

Problem & Solution Overview

Problem

People want to be exposed to new kinds of music, but looking for it is often daunting and tedious.
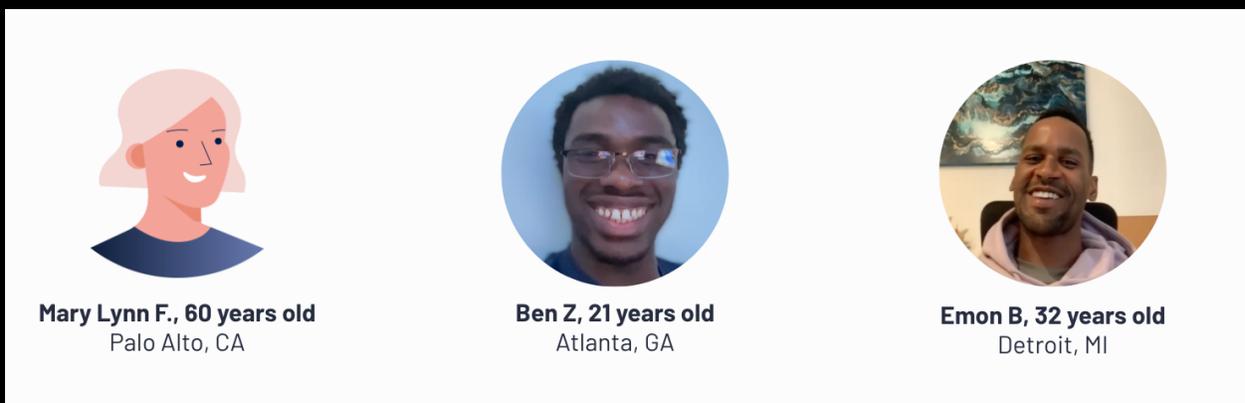
Solution

Retune aims to leverage community to help you find new music suggestions. We are a social media platform that allows you to see the music your friends are currently listening to or find new friends with music tastes that interest you!

Needfinding

Interviews

For our initial needfinding interviews, we were interested in hearing the experiences of casual, everyday music listeners. So, we relied mainly on finding random participants in the Palo Alto area. But our extreme user, Emon, was a music producer who was contacted through prior connections. We conducted a total of five initial interviews, focusing on three for our initial synthesis and presentation. Most of our interviews were in person, with Emon's interview being over Zoom.

Mary Lynn F., 60 years old
Palo Alto, CA

Ben Z, 21 years old
Atlanta, GA

Emon B, 32 years old
Detroit, MI

In the three interviews we focused on, we met Mary Lynn F. (a 60 year old woman living in Palo Alto), Ben Z. (a 21 year old student in Palo Alto originally from Atlanta, GA), and Emon B. (a 32 year old music producer from Detroit, MI). We asked them about their experience and memories with music, and how they like to enjoy music. But we mostly wanted to draw out personal stories and feelings, so we tried to allow participants to guide the discussion rather than having a strict list of questions.
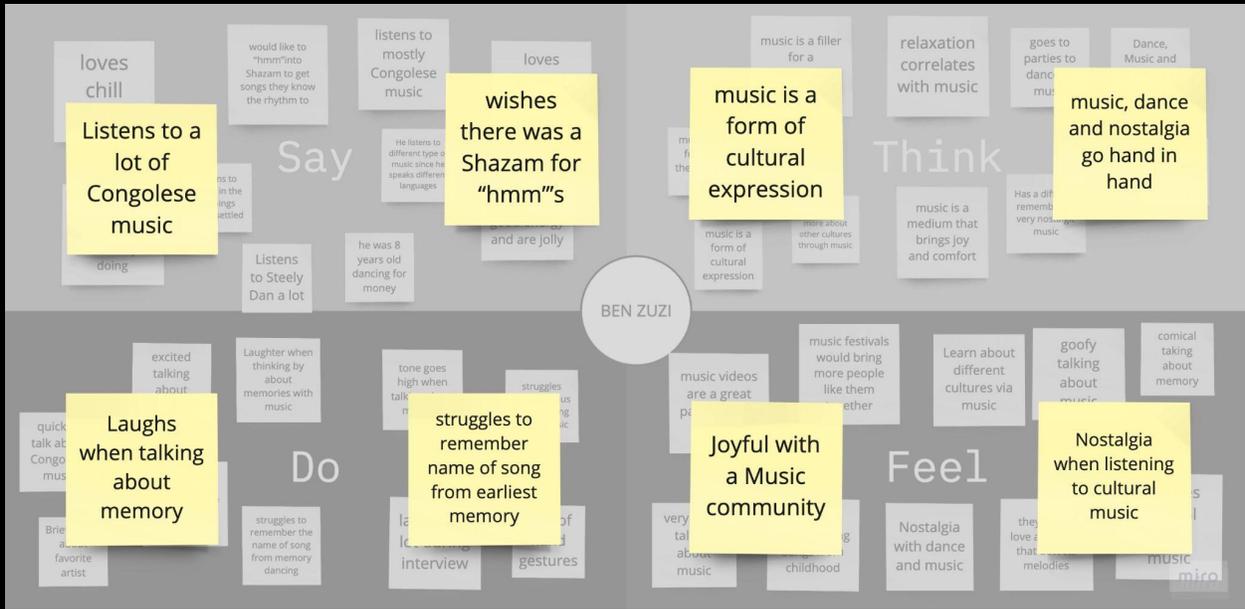
Synthesis

From our interviews, we constructed empathy maps and analyzed any surprising or standout points (see Figures 1-3). All of our interviewees seemed to have fond memories with music, but also expressed that there are sometimes barriers when it comes to interacting with music. Overall, we felt as if our participants expressed a desire to keep up with new kinds of music and to continue enjoying music, but found it difficult to do so in their everyday lives. A common need seemed to be to find a way to bring the 'fun' back into interacting with and finding new music. Following these initial interviews, we conducted two more interviews. We wanted to find out more about the feelings and needs of everyday, casual music lovers.

Figure 1: Takeaways from Mary Lynn's empathy map

Figure 2: Takeaways from Ben's empathy map

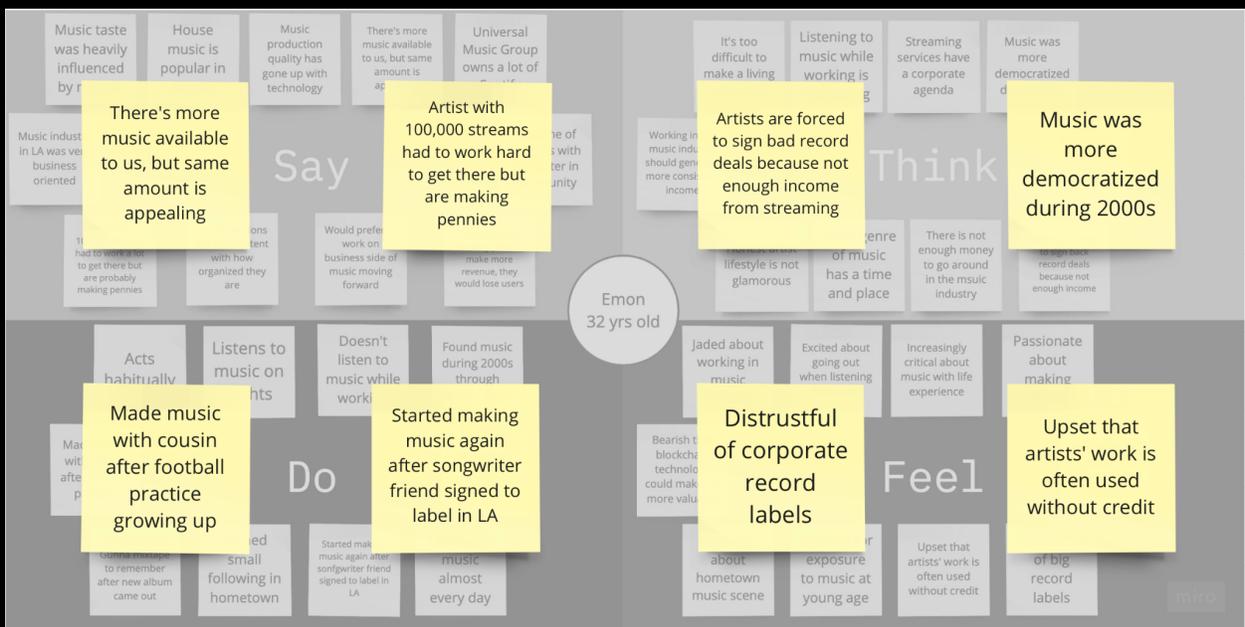**Figure 3**: Takeaways from Emon's empathy map

POVs & Experience Prototypes

POVs

Following our initial needfinding interviews, we met two new interviewees, Krystal Lau (a 25 year old author) and Miguel Rodriguez (a 20 year old student and DJ on the side). From all of our interviews, we chose the three most compelling ones to construct POV statements and HMW (How Might We) statements.

POV #1: Krystal

We met…

Krystal Lau, a 25 year old author and casual music listener in the bay area who listens to music while she writes.

We were surprised to realize…

That she relies on Spotify for music suggestions but doesn't like how it gives her "tunnel vision" by only recommending the same types of songs she already listens to.

We wonder if this means…

That she feels like she's missing out on new genres of music that she could enjoy but hasn't found yet.

It would be game-changing to…

Find a way for Krystal to get music suggestions that are both diverse and appealing to her.

Krystal's HMW Highlights:

How might we…

- suggest music that someone might like beyond just looking at what they already listen to?
- remove the redundancy of music suggestions?
- make the process of finding new music more entertaining/engaging?

POV #2: Mary Lynn

We met…

Mary Lynn, a 60 year old woman and casual music listener from Palo Alto who mainly hears about new music from her daughter.

We were surprised to realize…

She was excited and had a lot to say about her memories with music, even though she said it was hard to keep up to date with music on modern platforms.

We wonder if this means…

That her unfamiliarity with new technology makes it tedious for her to keep up with new music recommendations.

It would be game-changing to…

Find a way for Mary Lynn to learn new song suggestions in a way that feels inviting and fun instead of burning her out.

Mary Lynn's HMW Highlights:

How might we…

- make finding new kinds of music a fun activity instead of a chore?
- re-awaken people's excitement about music?
- make it so that it's easy to incorporate listening to music into everyday life?

POV #3: Miguel

We met…

Miguel Rodriguez, a DJ from New Jersey who listens to music in a variety of environments.

We were surprised to realize…

His favorite genre of music is Hip-Hop but his favorite album is from a different genre of music.

We wonder if this means…

That he likes to be open minded to finding different types/genres of music as a DJ who often interacts with music in social settings with diverse audiences.

It would be game-changing to…

Find a way to help Miguel find new music that aligns with his interest in the social spaces that music interacts with.

Miguel's HMW Highlights:

How might we…

- leverage the community-building and social aspects of music to help people find new music?
- encourage open-mindedness towards music?
- make finding new music a collaborative experience?

Experience Prototypes

From our POVs and HMWs, we came up with three solutions and corresponding experience prototypes to test our takeaways.

Solution #1: Personality Test for music

- Key assumption
  People like getting music suggestions in ways that are more personalized and interactive.

- Experience Prototype:
  The participant took a short quiz that asked them questions that tapped into their 'music personality'. For example, we asked questions like "how should a song make you feel?" and "what style do you like songs to be recorded in?".

Our goal with this prototype was to help people find new music in a way that feels more interactive and creative, rather than through an automatic algorithm.

Figure 4: Music Personality Quiz

- Takeaways:
  From our testing, we found that the participant thought the quiz was fun and she liked the suggestions that they received. However, she mentioned that her 'music mood' tends to change from day-to-day, so the music she feels like listening to today might not be what she wants to listen to tomorrow. From this, we thought that music suggestions should be flexible to account for someone's day-to-day mood.

Solution #2: Diversify the pool of music suggestions by expanding scope
- Key assumption
  People like to be exposed to new kinds of music that is different to what they already listen to, but don't always know how to find it.

- Experience Prototype:

In order to expand the scope of music suggestions that our participant received, we started by asking participants for three countries that they're interested in or would like to visit. We then constructed a playlist of the top songs from those countries and asked them to listen and give their thoughts.

Then, we asked them to list three genres that they liked. We then constructed a playlist of songs from genres that they didn't list and asked them to listen and give their thoughts.

Our hope with this prototype was to give music suggestions in new and unique ways. One way was to pull from interests unrelated to music to try to give suggestions. Another way was to give suggestions that were pointedly different from the music that a participant already listens to.
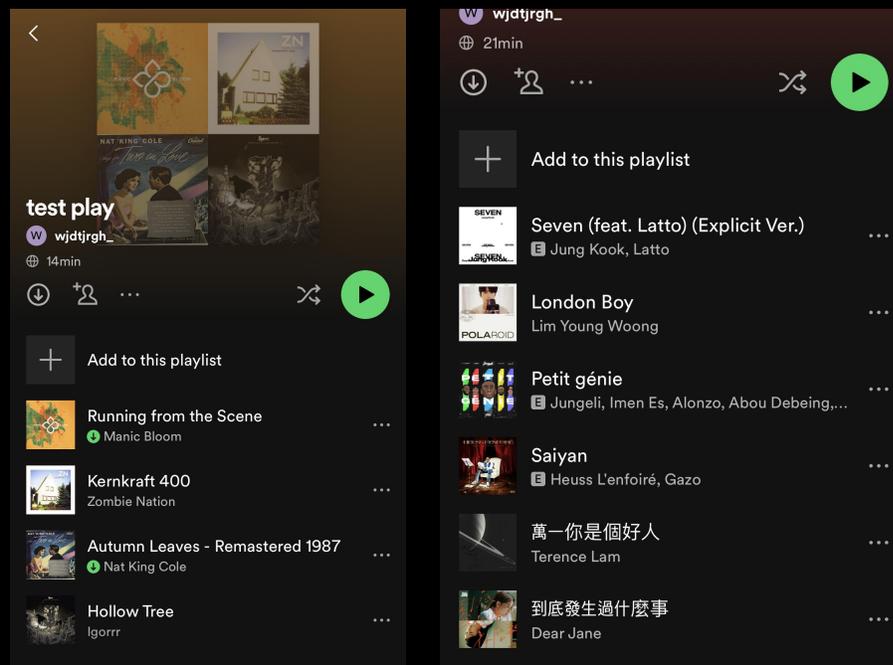

Figure 4: Playlists constructed from prototype testing

- <u>Takeaways</u>:
  From our testing, we found that our participant liked being open-minded about music, but expressed that since she often needs

time to warm up to a song, she wasn't sure whether or not she liked the suggestions. From this, we inferred that music suggestions should be given in a way that allows for more user freedom, and that it's often less intimidating to give a mixture of both familiar and new suggestions rather than everything being out of someone's comfort zone.

Solution #3: Music Matchmaking
- Key Assumption:
  People often find it more engaging to find music suggestions through friends or community than on their own.

- Experience Prototype:
  For our prototype, we tried to mimic a 'music Tinder' experience.
  The participant was shown a feed of songs taken from a friend's playlist, and were told to swipe right to add a song to their playlist and swipe left if they weren't interested. They could also swipe up to move to another friend's playlist. At the end, we gave them a playlist of the songs they swiped right on and asked them to reflect on their experience.

  Our hope with this experience prototype was to emulate how it might feel to discover music through social media.
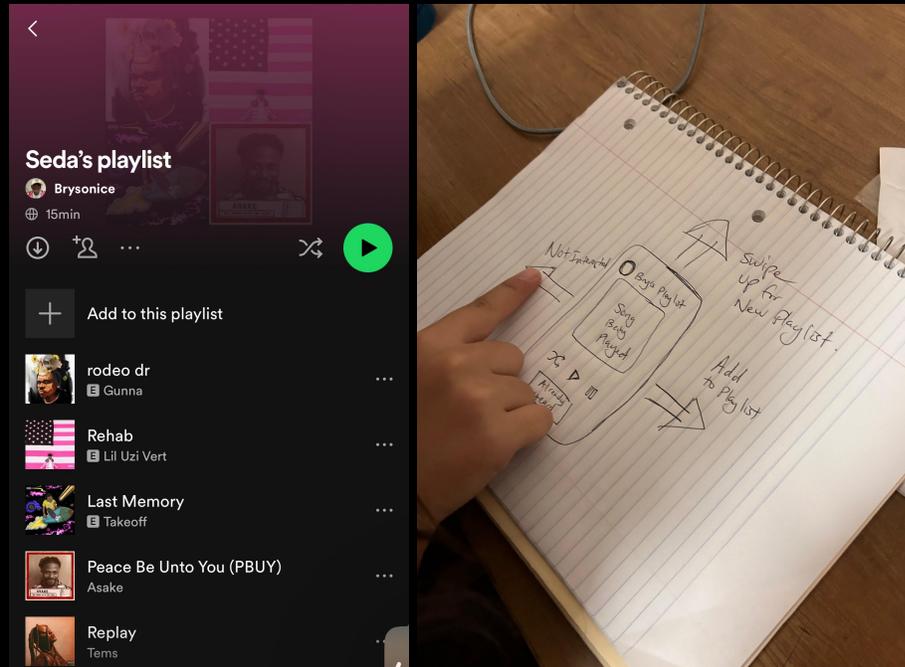
Figure 5: Music Tinder prototype

- <u>Takeaways:</u>
  Our participant found it fun and engaging to see their friends' music and find new song suggestions in a collaborative way. We found that they were receptive to the idea since they often like receiving new song suggestions from friends. This was consistent with our needfinding as well, since many of our participants expressed that the main way they enjoy finding new music is through friends. But one drawback to this idea is that people who are more private or shy might feel uncomfortable sharing their music on a large-scale social media platform.

Design Evolution

Final Solution

From testing our experience prototypes, we decided to go with the 'music Tinder' idea. Across both our needfinding and prototype testing, several of our participants expressed that they usually like to find new music through their friends. Furthermore, our participant for the 'music Tinder' prototype seemed more receptive to the song suggestions because they knew that their friends liked those songs, instead of it being an algorithm that generates song suggestions for them.

However, to make our solution more general, instead of the app being a dating app like 'Tinder' we've expanded the idea to be more of a general social media app where users can explore new people and new music.

Task Selection

Based on our solution, we came up with the following core tasks.

Simple task:
Find a song and add it to your playlist. We chose this as our simple task because our main aim of the app is to help people find new music, and we felt like this should be the most intuitive task to execute.

Moderate task:
Find a new friend to add. We chose this as our moderate task because another feature of the app is for people to find new friends with music that they're interested in.

Complex task:

Add one of your new friend's songs to your playlist. We chose this as our complex task because we wanted our users to be able to learn from their new music suggestions and go back to them.

Initial Design

After brainstorming our tasks, we started by doing 'Crazy 8' sketches, getting as many ideas on paper as we could (Figure 6). We then came up with two realizations (Figure 7). One was a feature for people to request their friends/followers to make playlists for them. Another was an explore feed for people and music, where people can swipe right to add a song to their playlist or to follow a friend. We decided to go with the explore feed idea, because this was more in tune with the theme of social connection that we wanted to integrate into our app.
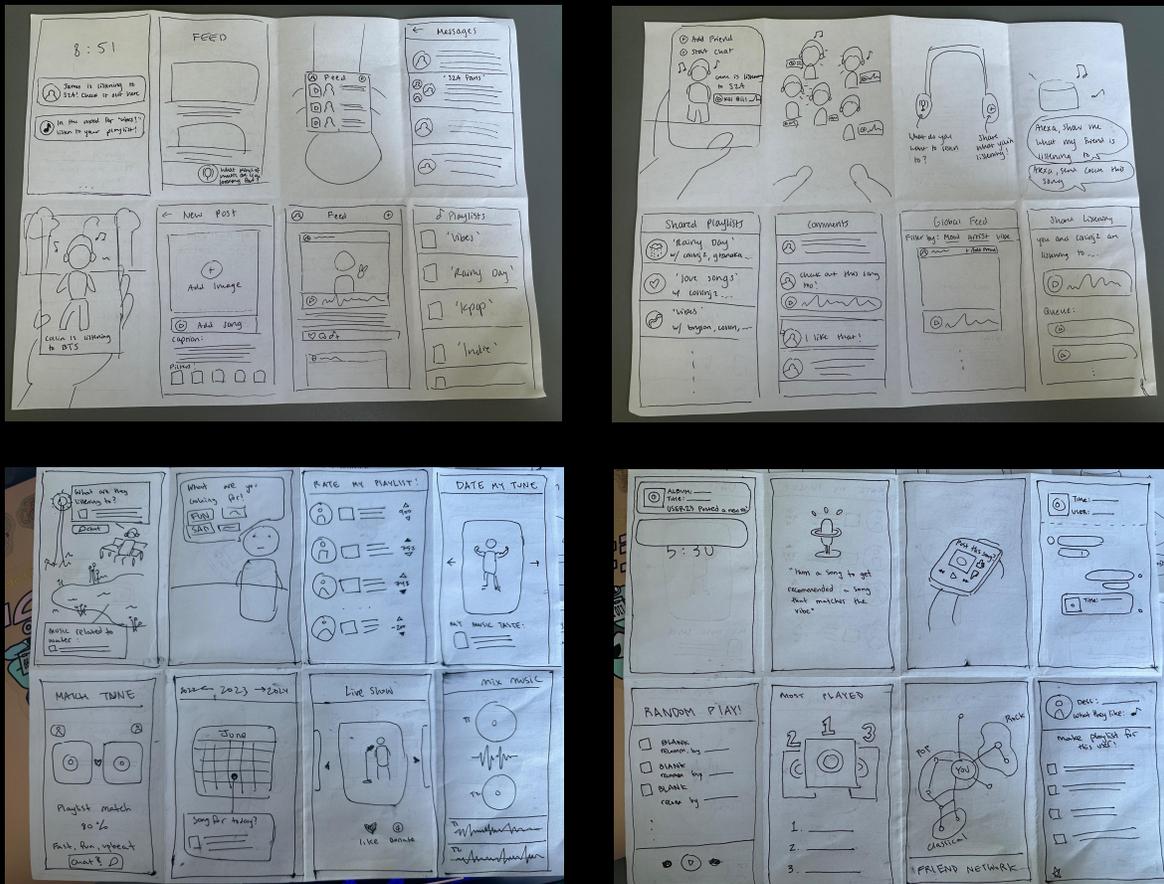

Figure 6: Crazy 8 sketches

Figure 7: Our two realizations– playlist requests (top) and explore feed (bottom)

With our final realization, the explore feed, we then did sketches of our task flows (Figures 8-9).

Figure 8: Task 1 - Find a song to add

Low-fi prototype

We then polished all of our task flows into a low-fi paper & pen prototype that we used for testing. Figures 10-13 show our low-fi prototype.
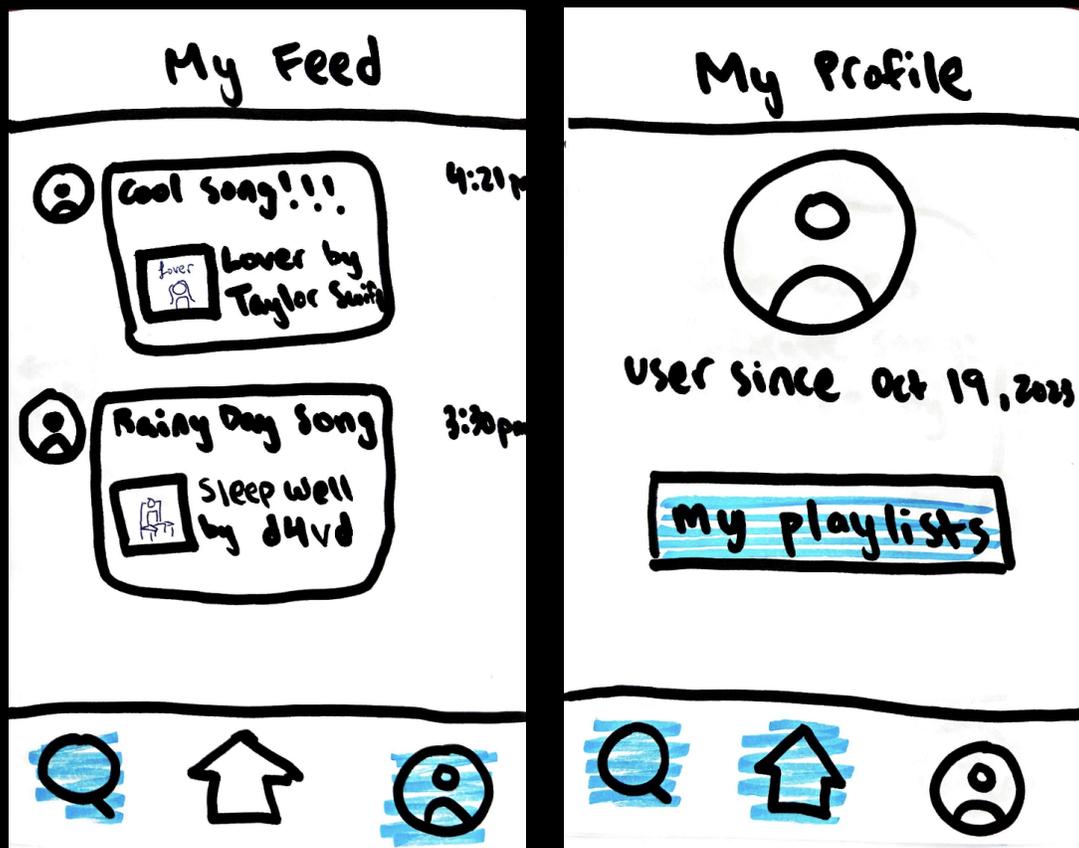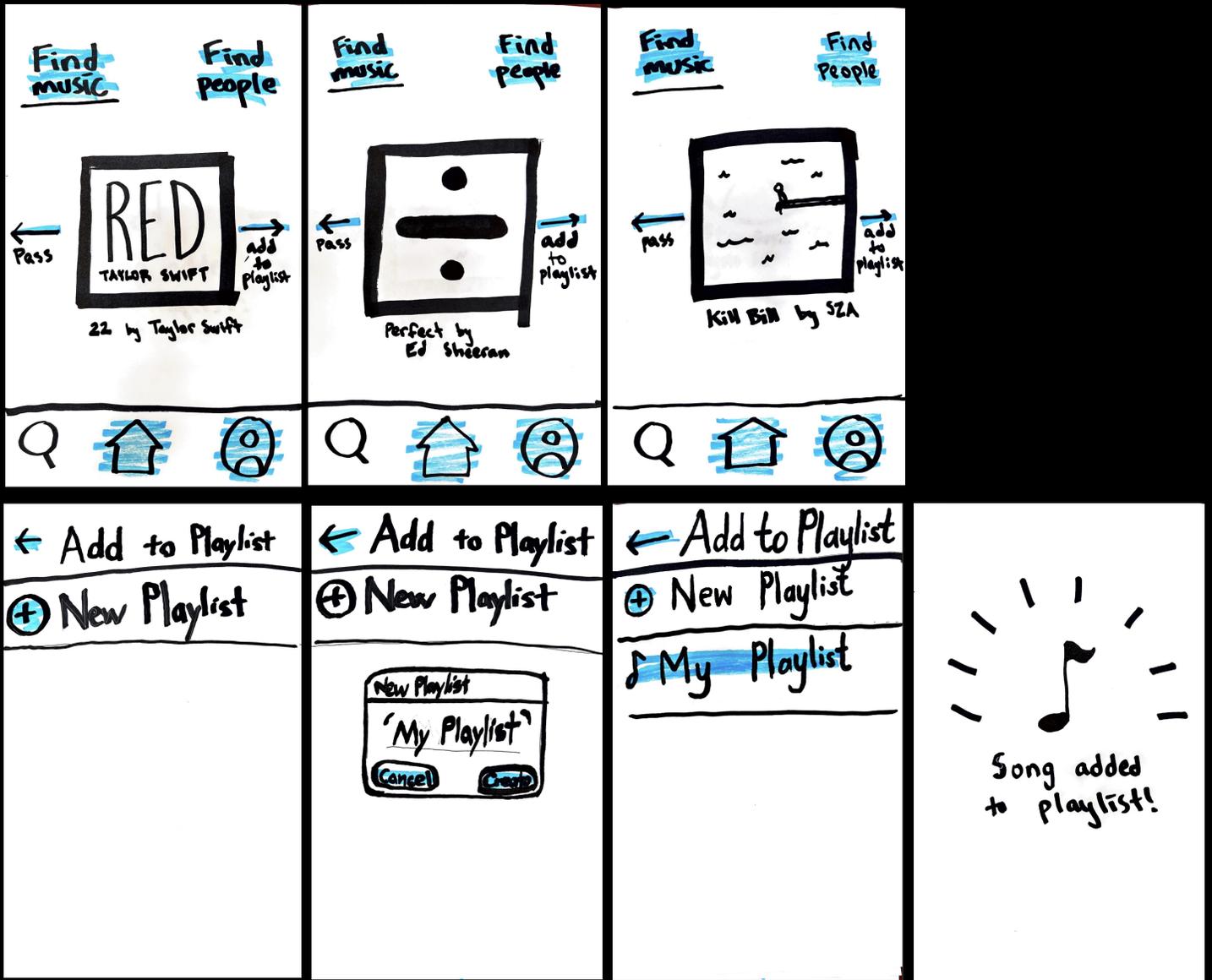

Figure 10: Home / profile pages

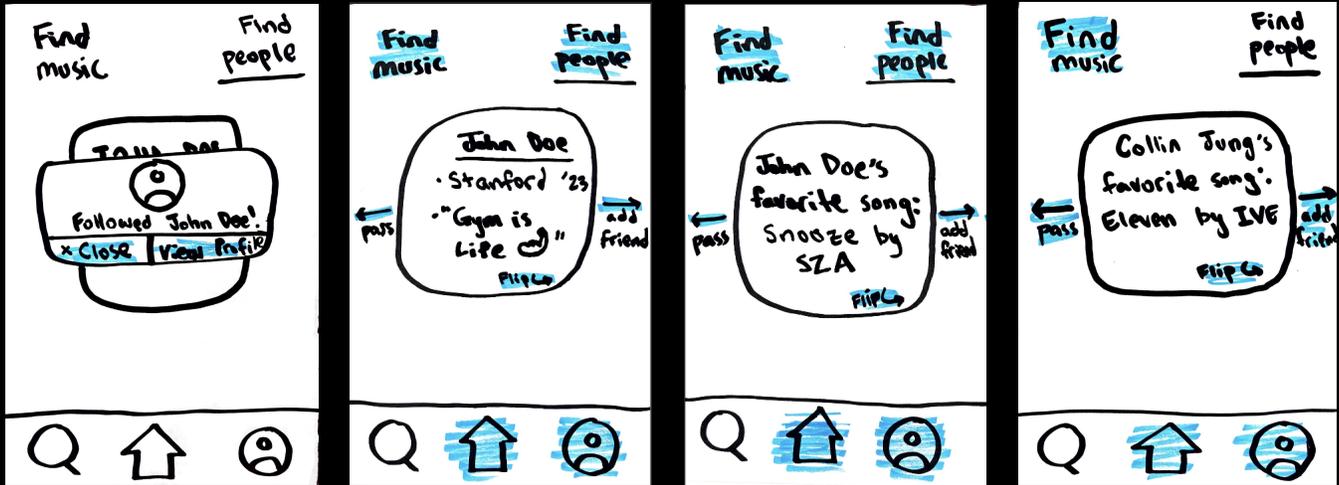**Figure 11:** Task flow 1 - Find a song to add to your playlist

Find music — **Find people**

Followed John Doe!
× Close | View Profile

Find music — **Find people**

John Doe
· Stanford '23
· "Gym is Life 🌙"
Flip ↺
pass ← | → add Friend

Find music — **Find people**

John Doe's favorite song: Snooze by SZA
Flip ↺
pass ← | → add friend

Find music — **Find people**

Colin Jung's favorite song: Eleven by IVE
Flip ↺
pass ← | → add friend

Figure 12: Task flow 2 - Add a friend

← John Doe's Profile

"·Stanford '23 ·Gym is life 🌙"
View playlists

← 'Vibes'
☐ 'Snooze' SZA ⊕

← 'Vibes'
☐ 'Snooze' SZA ⊕
Add 'Snooze' to playlist?
(Cancel) | (Add)

← John Doe's Playlist
☐ Vibes

← Add to Playlist
⊕ New Playlist
♪ My Playlist
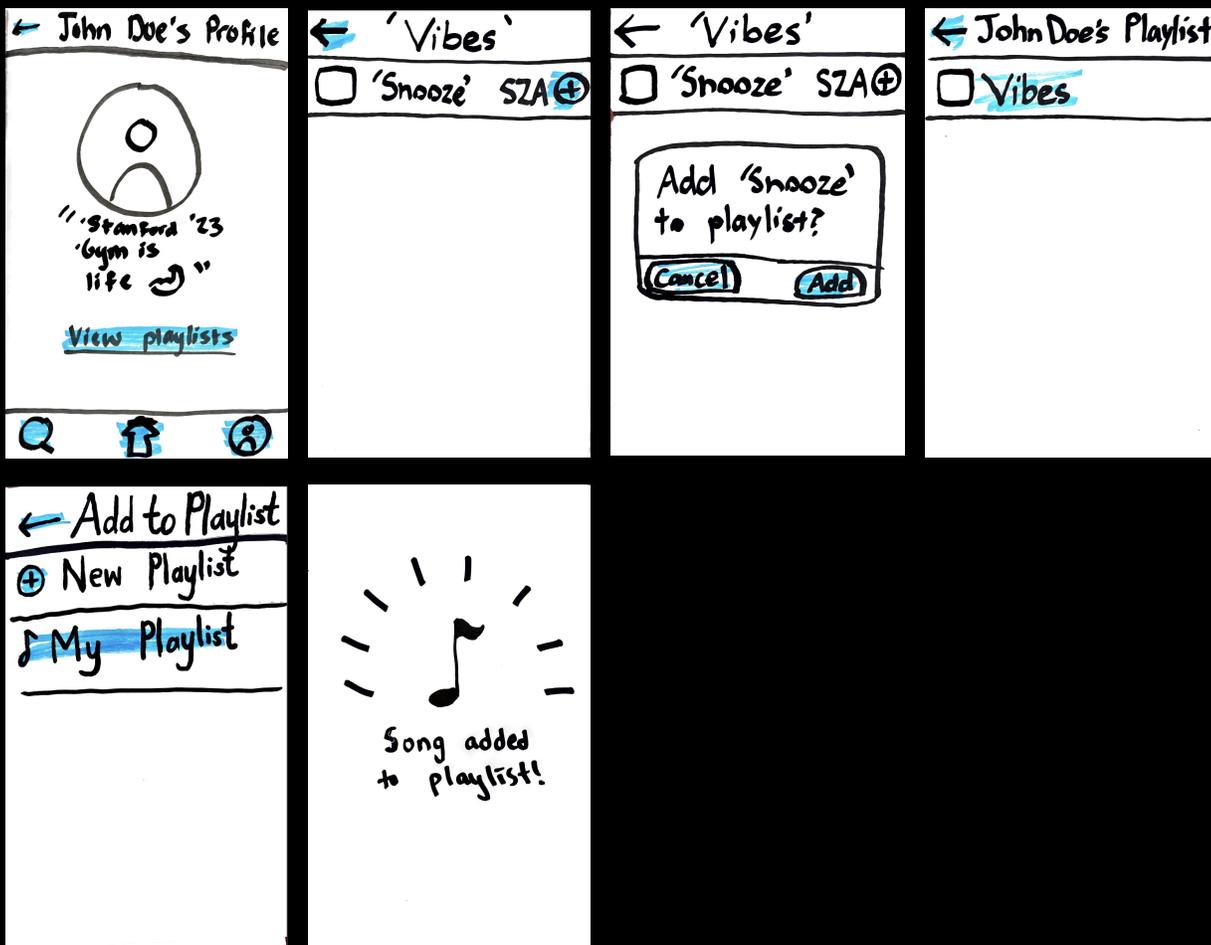
♫

Song added to playlist!

Figure 13: Task flow 3 - Add your friend's song

Low-fi Prototype Testing

We tested our low-fi prototype on four participants, who were found randomly and also through connections. We asked them to 'think out loud' as they explored the prototype, and gave them our three tasks to carry out. Our usability goals were for the prototype to be learnable and efficient.

We found that the tasks were generally easy to understand, but several participants needed hints to guide them along the way. We also needed to make our interactive features clearer since participants would sometimes get stuck and not know where to click. Some users also got confused on the explore page, since they didn't realize they could switch between 'Find people' and 'Find music'. Another point of confusion was the process of adding songs to a playlist. Since there were several steps in the process, it seemed that participants would sometimes get stuck or unsure of what stage they were at. Because of this, our simple and complex tasks actually took longer to execute than we expected.

Another big takeaway from our testing was that participants seemed most excited by the social aspect of the app. Several of them mentioned that they liked the idea because they find it more fun to receive music suggestions from their friends rather than auto-generated suggestions from music apps. They also liked how the explore page brought in a factor of 'randomness' since they didn't know what kind of music or people they would be getting. From all of our findings, we revised our design for our Med-fi prototype.

Med-fi prototype

Our first major change for the med-fi prototype was to get rid of the playlist functionality. This was for several reasons. One, it seemed like the playlist

feature actually took the longest and felt the most tedious during our low-fi prototype testing. This felt unaligned with our goal of making music exploration less tedious in the first place. Two, we reflected back on our needfinding. Many of our needfinding interviewees mentioned that they rely on one platform (like Spotify or Apple Music) for their playlist curation and music streaming, so it seemed unintuitive to make them reconstruct playlists from scratch to be able to use our platform.

A second major change was that we streamlined the explore page. Instead of people having to switch between 'Find music' and 'Find people' we integrated the two features by displaying a person and their favorite song at the same time. This also felt more in line with our goal of placing music at the heart of social connections.

Given our changes, we updated the four main functionalities of our app to be a home feed for friends, an explore feed for random people, posting, and a profile page. With these updated functionalities, we also updated our tasks to be:

Simple task:
Find a new friend to add. This felt like the most basic and core functionality of our app, since we wanted to highlight social connection.

Moderate task:
Check out the music your friends are into. This is our moderate task because another core goal of the app is for people to explore their friends' music tastes.

Complex task:
Make a post of your own! This is our complex task because we want people to be able to share their own experiences and music for their followers.

After updating our tasks, we then constructed our med-fi prototype using Figma (Figures 14-16).
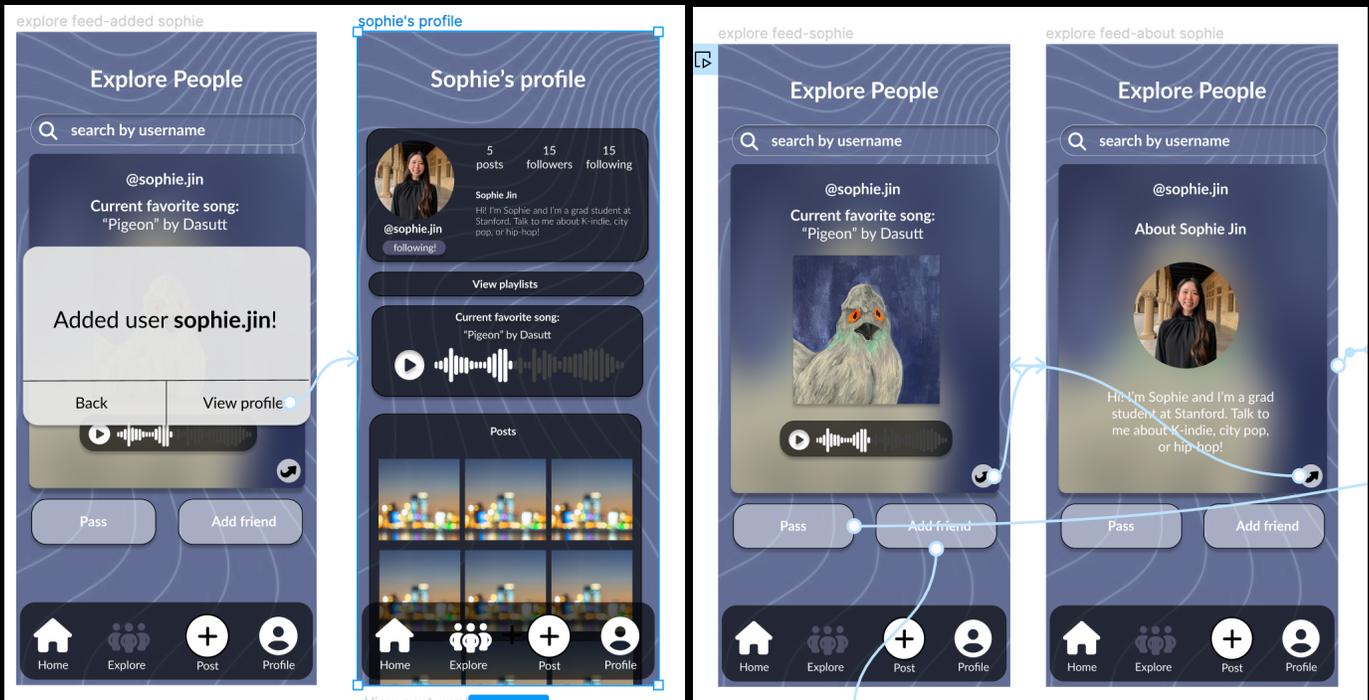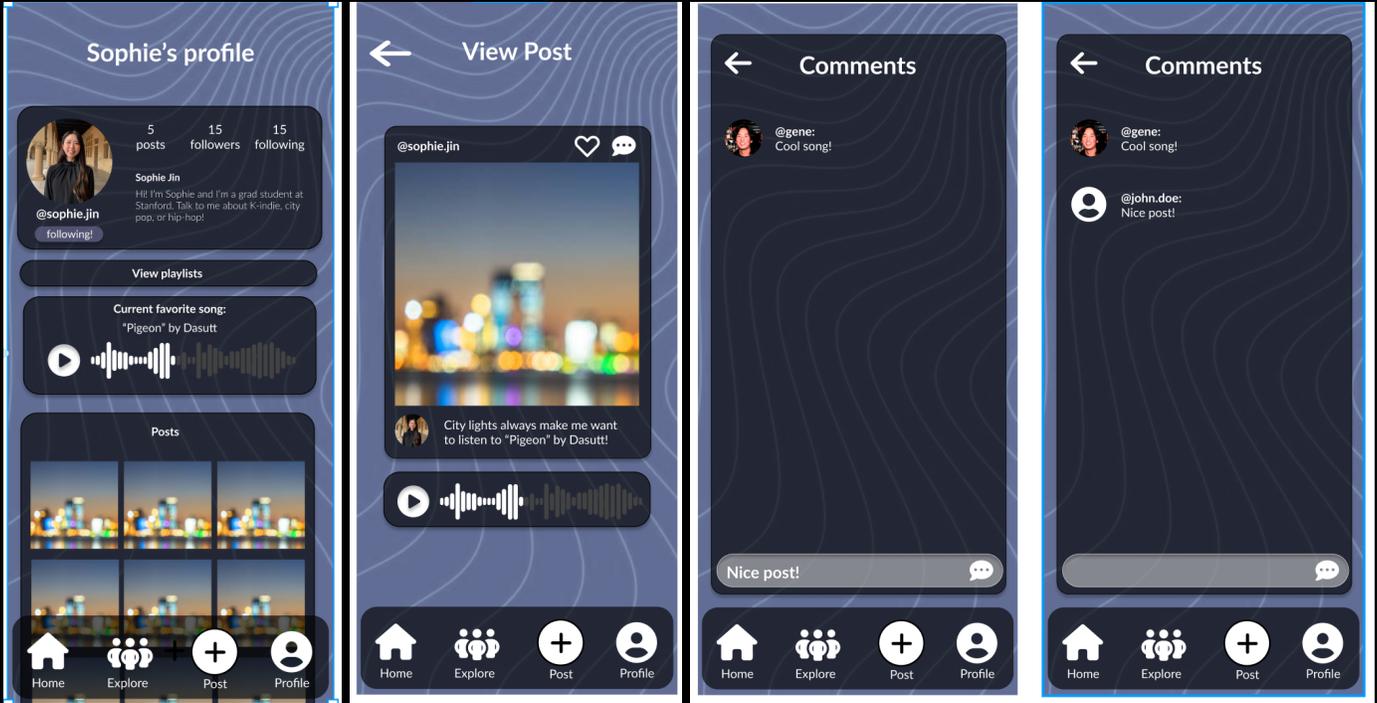

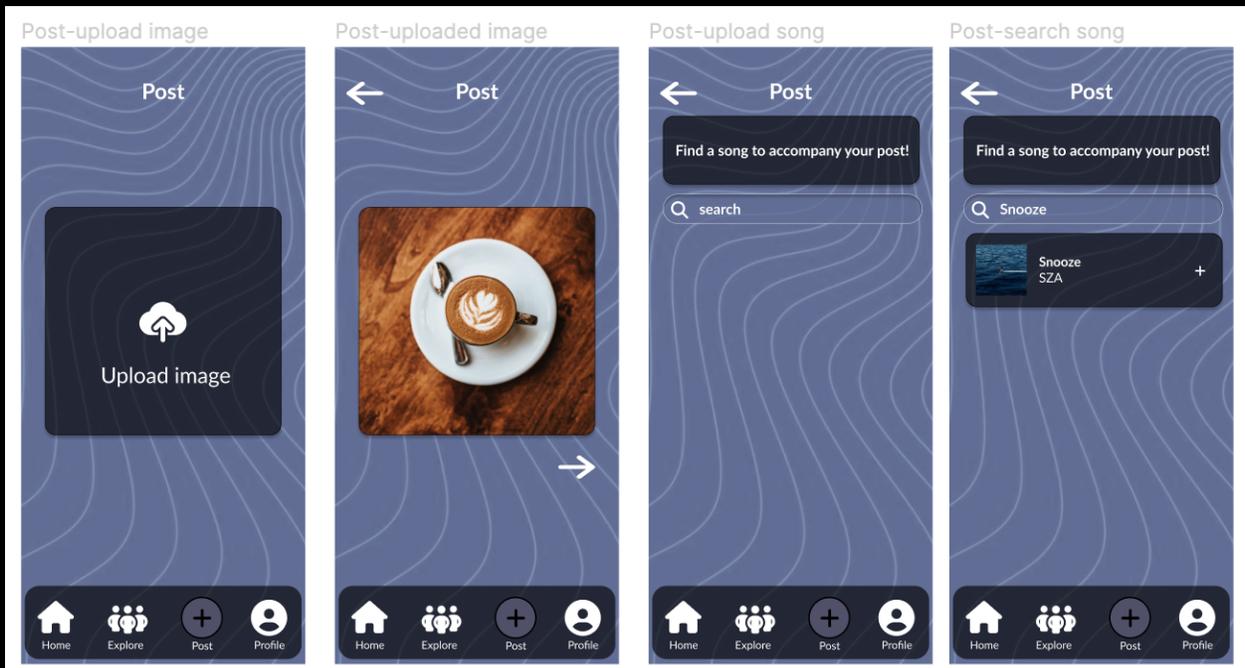**Figure 14:** Task flow 1 - Find a friend to add

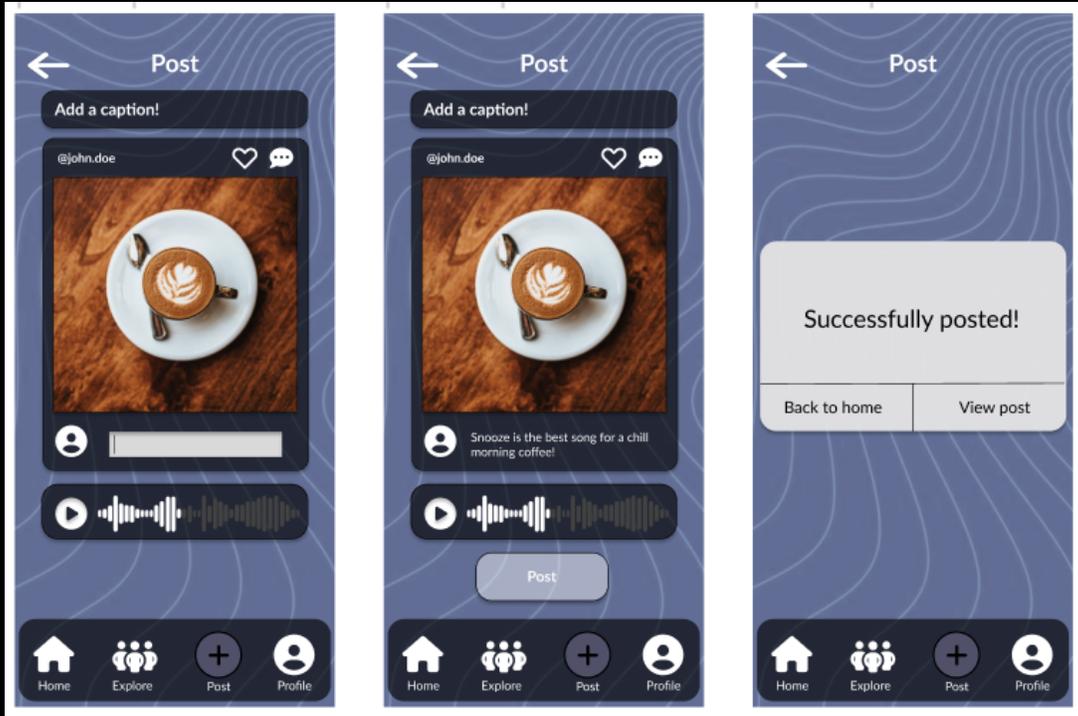**Figure 15:** Task flow 2 - Check out the music your friends are into

Figure 16: Task flow 3 - Make a post of your own

High-fi Prototype

After receiving our heuristic evaluation synthesis for our Med-fi prototype, we made several big changes. We had a total of 45 violations, with 2% being severity 0, 42% being severity 1, 36% being severity 2, and 20% being severity 3.

One of our main comments was about user freedom when it comes to exploring the functionality of the app. The evaluators found it frustrating when they couldn't move back and forth between pages when making posts, or that they couldn't scroll freely on the home feed. Our fix for this was to streamline the transitions between all of our different screens, and add back buttons that allow the user to make revisions when needed.

Another comment was that a few elements of our design were inconsistent. For example, it wasn't always clear when things were supposed to be clickable because the styling was unclear, and there was inconsistent wording that caused confusion. Moving forward, we planned to have standardized styling and wording for the components of our app in order to ensure consistency, and also simplified the use of color.

One of the last overarching comments was about the intended use of our app. It seemed confusing to some of our evaluators that they couldn't make playlists and save songs within the app. This is a feature we considered earlier, but we wanted to clarify why we're not adding this feature in our app. Our reasoning comes from our needfinding interviews and our low-fi prototype testing. Some of our needfinding participants mentioned how it can get overwhelming when there's so many music streaming apps coming out. Many of them rely on one app (like Spotify or Apple Music) for all of their playlists and streaming, and don't show any interest in switching to another app since they've already invested so much in what they currently use. Furthermore, when testing the playlist feature in our low-fi prototype, constructing playlists seemed to be a bit of a tedious task for our participants. This is why we want our app to focus on leveraging the community to hear new song suggestions, instead of being an app where you have to build or rebuild playlists from scratch. Our hope is that people will come to our app to socialize and find new music suggestions, and then integrate these new suggestions into the music apps that they're already comfortable using.

After reflecting on these higher-level comments, we then addressed the specific violations, focusing on the severity 3 violations. Here are some more details about our severity 3 violations, as well as visuals for our revisions. One note is that we've only included violations that we thought were addressable within the scope of the project; for example, some privacy concerns came up but we haven't included them because although they're important

considerations, we didn't believe they were a priority yet since we were only presenting the app with testing data.

| Violation	Fix
There is no back button if one passes on a person in "Explore People"	Users will be re-shuffled into feed even if you pass the first time, and will also be searchable by username
Home page with feed unable to scroll properly	Scroll view for home feed
Different wording between "following" and "add friend"	Standardize wording
Not clear that the username is a button	Standardize button design
Have song name with the audio clip	Updated song component to include song info
Be able to do something with the music you see	Addressed earlier
User can't go back after choosing a song	Implemented revision capabilities for all task flows
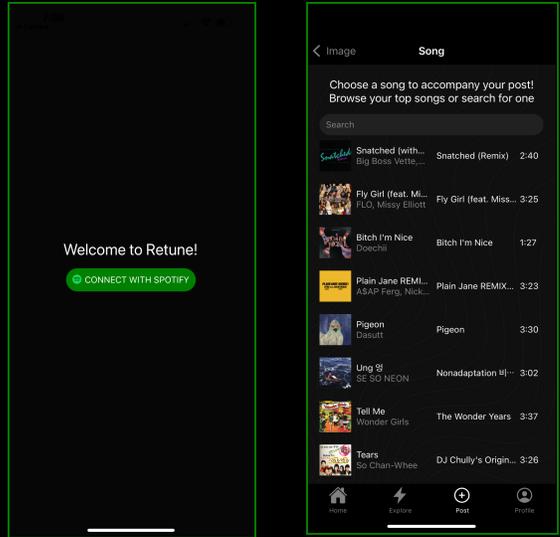
Figure 18: We decided to integrate our app with already-existing music streaming platforms (in this case Spotify) instead of building in playlist functionality
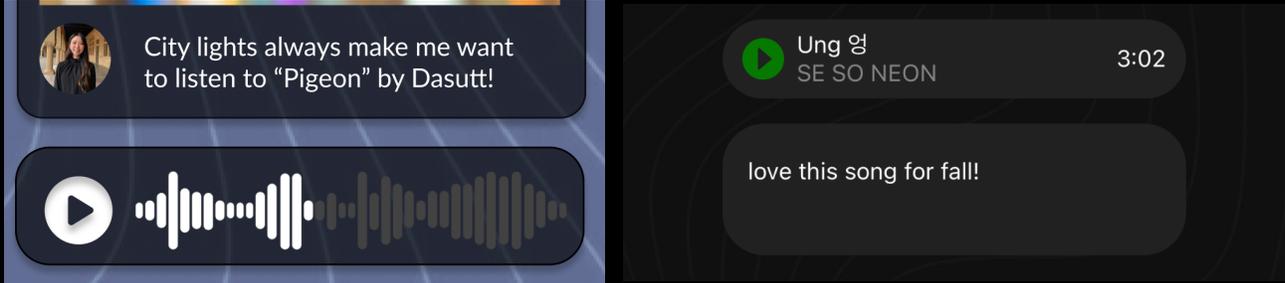

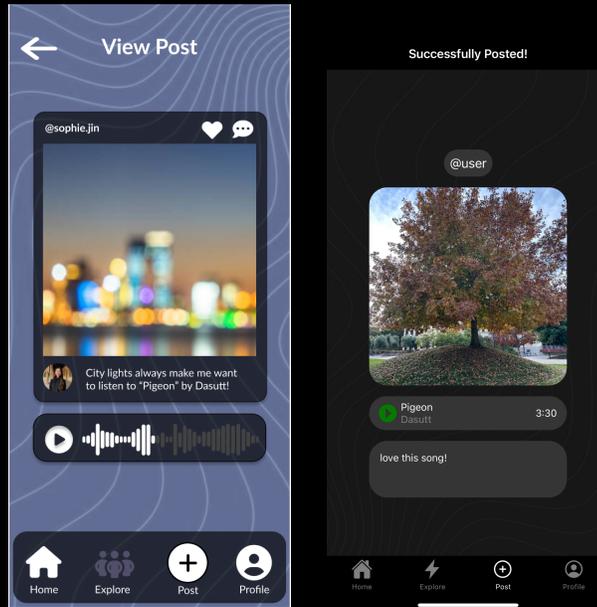**Figure 17:** Before and after, made song component more detailed

Figure 18: Before and after, simplified the use of color to make key features/functionalities stand out more
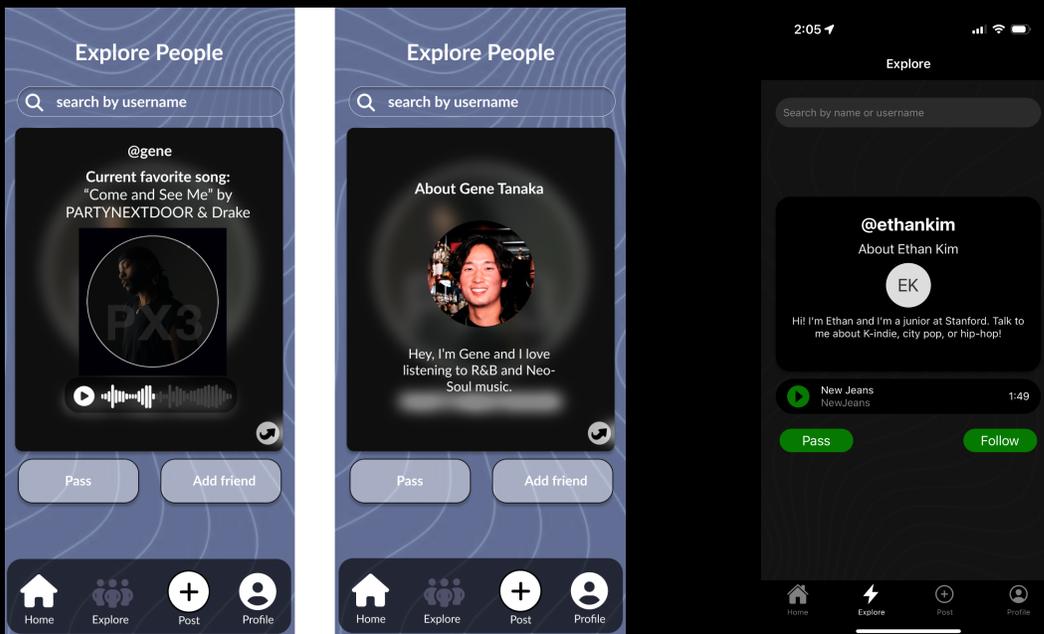

Figure 19: Before and after, made user information more immediately visible by displaying all relevant info at once
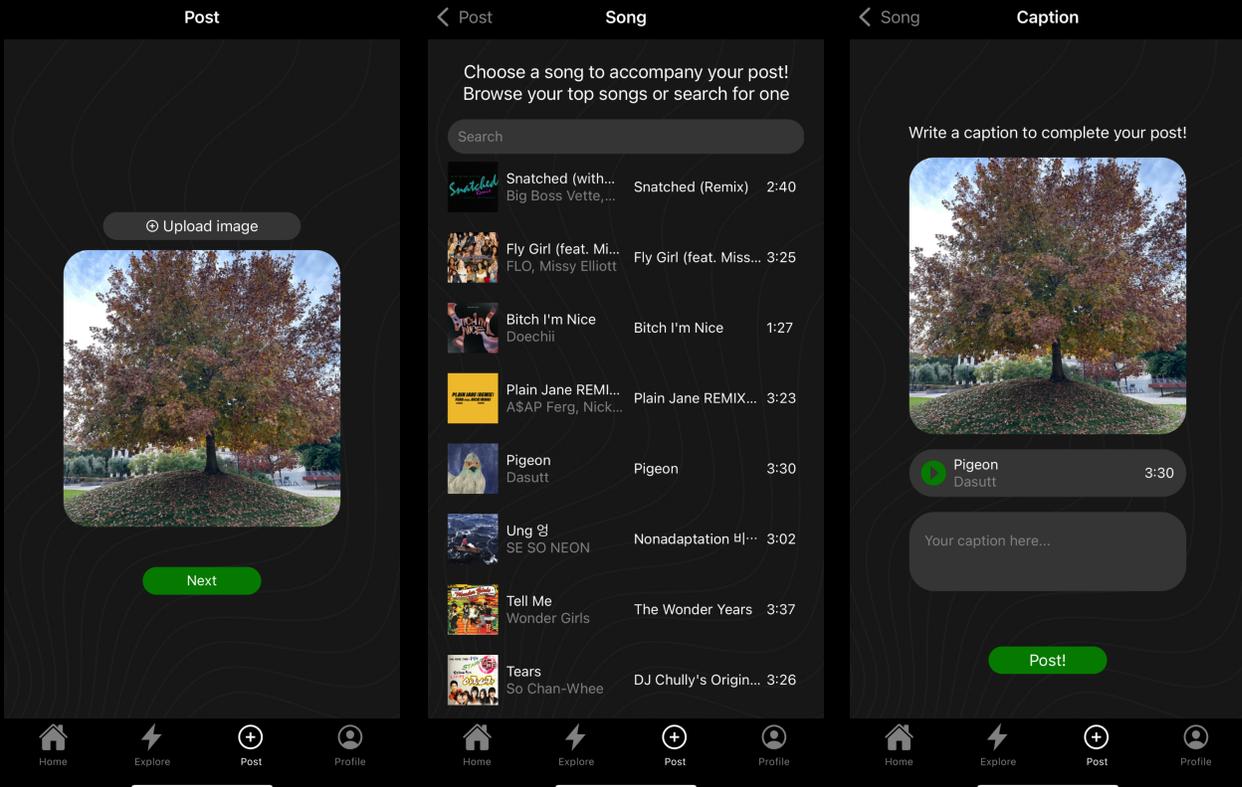
Figure 20: Implemented more user freedom with task flows

Values in design

Our four design values were individuality, inclusivity, fun, and ease of use. There were a couple of value tensions that we noticed. One is that if we allow people to express their individuality through posting and commenting, it may lead to less inclusivity when there's difference in opinions. In addition, If we focus too much on making the app a fun and social experience, we may isolate certain kinds of users who are more shy or private. Also, if we implement individuality by making many features customizable, it makes them more complex to navigate through, which may be less intuitive for non tech-savvy users.

As we finalized our prototype, we tried to address some of these value tensions. We tried to make 'clickable' objects as clear as possible so that all

users would be able to know where to navigate next, even if they're not as tech-savvy. For the other tensions, we believe that they will be important to keep in mind if we ever develop the app further. For instance, if we were to release the app to more people then we would likely allow for private accounts and also implement comment or post reporting. But since our prototype was mainly to show our functionality, we weren't able to address the remaining value tensions explicitly.

Final Prototype Implementation

Tools used

For our final high-fi prototype, we used Github for collaboration, react native/expo for developing, and Supabase for our backend. We also used the Spotify API for song searching and audio preview capabilities. A downside to using the Spotify API is that users must have a Spotify account in order to be able to use the app.

Limitations

There are several current limitations with our high-fi prototype. The first is that users will be automatically logged in to a premade account. Although they will be able to navigate freely on the app, such as following users or creating posts, they will not be able to switch accounts or customize the username/user information (except for the favorite song option). Relatedly, since our app has not been released to the public, the other users on the app have also been manually added to simulate the social experience.

Another limitation, mentioned earlier, is that our prototype is currently connected with the Spotify API, so a Spotify account is necessary to use the prototype. Both free and premium accounts work.

In addition, certain songs on Spotify do not have an audio snippet available. Since we are relying on the Spotify API for our audio snippets, this means that some songs will not be playable. We've indicated when a song is not playable by graying out the play button.

Wizard of Oz techniques

As mentioned earlier, we've manually added users to the app to simulate the experience. We've also pre-populated the user's profile information.

Hard-coded elements

Most of our app isn't hard-coded because we have backend capabilities. But profile pictures and bios are currently hard-coded, as well as usernames.

High-fi Prototype demo

You can see us walk through all of our task flows on our high-fi prototype here:

▶ Retune Video Demo

Reflections & next steps

Our main takeaway from the quarter is that the design process is iterative. There were many times when we had to learn to not be afraid to make big revisions. We also had big changes in design as we moved through our prototypes, but were happy with our end result. We were proud of how both our design and our concept changed throughout the quarter, and we think that we landed on an idea that people found exciting and interesting. The process taught us that oftentimes the initial concept won't be the final concept, and that sometimes making hard decisions and changes lead to a better result in the end. We're glad that we were able to get feedback from studio and in our testing, and it really helped to make our idea even more novel and engaging.

If we had more time, we would probably implement onboarding and profile customization capabilities. We would also probably add safety features if this were to get released to a larger audience, such as reporting or blocking capabilities. It would also be fun to rework the design and try to get it as professional-looking as possible. It would also be exciting if we were able to integrate the app with multiple streaming platforms, like Apple music and Youtube music too.