

MERGE

Don't just listen to music; listen to people

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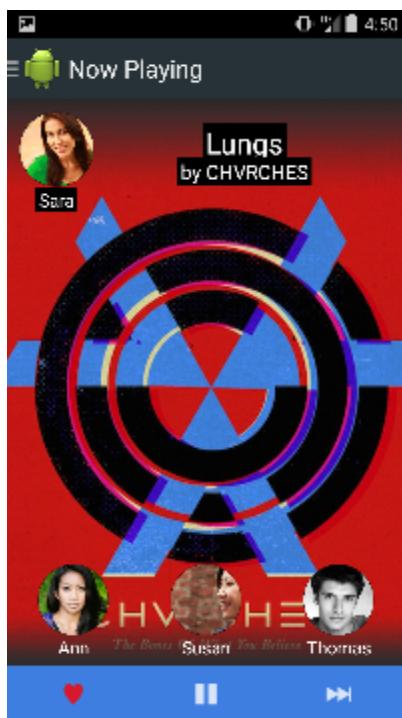
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Problem and Solution Overview

The advent of digital music has brought with it plenty of tools for discovering new music. From online music blogs to crowd sourced recommendation services, modern music lovers have no shortage of resources for seeking out new tunes and old favorites to listen to wherever they are. However, current music discovery tools do not address a significant aspect

of the music discovery process; music is an incredibly social form of art that connects users. The social element of music discovery is so inherent to the process of music discovery that some users only listen to new songs or artists on the suggestion of a trusted friend. Currently, the only tools that users have to facilitate this social music discovery require users to actively participate in this process. Merge's primary mission is to provide a platform that aids people in the process of discovering and sharing music. Music is a powerful tool for creating and fostering relationships, and we aim to provide ways to encourage people to connect with friends and acquaintances through music.



Tasks & Final Interface Scenarios

Simple: Discovering new music

The first task is the main focus of our entire app. This task is initiated just by opening the app. Upon opening, the app either presents the user with new recommendations from friends or generated ones based on past listening habits and taste. A new song immediately begins playing for the user. The user can also swipe through the currently playing playlist or recommendations. Finally, the user can browse other user profiles and view the playlists of those users.

Medium: Sharing new music

This task has also been built into the main screen of our interface; in order to share a new song, the user just has to swipe a user picture up to the playing song. As soon as a user begins swiping on a picture, a circle appears on top of the album art to prompt the user to swipe the picture there to share.

Complex: Discovering users/forming new relationships

The process of forming new relationships is facilitated by any interaction with our app. The goal of Merge is to introduce users to the music tastes of their friends and acquaintances. This happens through the recommendation and now playing functionality of the app. In addition, we allow users to search for other friends and acquaintances by using a search bar at the top of the screen. The user profile also contains an option to message the user. By helping users become familiar with the music tastes of their peers, we are helping build bonds that will lead to new and strengthened relationships with friends.

[[final interface images with walkthrough of the task]]

Major Usability Problems Addressed

1. [H2-7 Flexibility and efficiency of use] [Severity 4] (1)

The violation revolved around the limited function of the music playback bar at the top of the “Now Playing” screen. The evaluators wanted controls for common actions like play/pause and skip, which we ended up implementing in our final design in order for the experience to be more intuitive and visible to the users. We split up our previous top bar into two parts: the play/pause, skip, and favorite buttons are not at the bottom of the screen, while the rest of the information is still at the top. We felt this design fit better with what users are used to seeing in music apps. We also made this change to fit well with the new look we wanted to achieve.

Old Design:



Revised:



Floating top bar
to not take
away from
album art focus

Very simple
design that
only
displayed
play bar and
song info

Liberal use of
white space
without many
"extra"
features

Dedicated
playback buttons
at the bottom of
the screen for
easy use

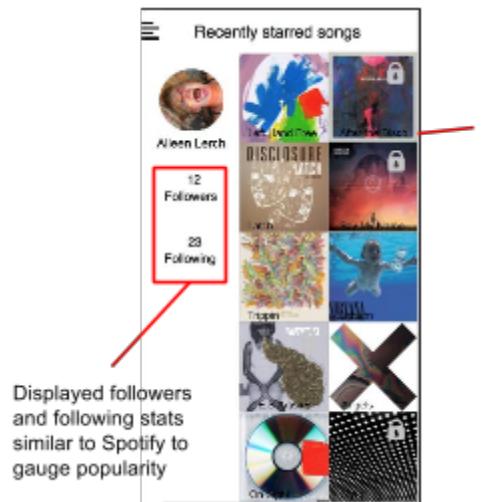
2. [H2-7 Flexibility and efficiency of use] [Severity 4] (6)

This violation comes as a result of the limited prototype we created, which is that it was difficult to get to the next song. One fix mentioned was to have a button or be able to swipe, and we did have the swipe in the medium-fi design but not implemented in the prototype. This change also relates to the one above, where we decided to implement a skip button as well, so there is no specific change for this violation.

3. [H2-3 User control and freedom] [Severity 3] (7)

The evaluators mentioned that the user profile pages lacked in functionality and displayed limited information about friends. There was also a complaint about not being able to get back to the playing song easily from the profile. We actually wanted a limited user profile interface that encouraged interaction between the user and the person in the profile without much distraction. The recently starred songs are there to constantly rotate and make up the user's playlist that other people hear, so we didn't change that aspect of the app. However we did add functionality to get to the currently playing song so that user's aren't as confused about navigating the app.

Old Design:



Displayed followers and following stats similar to Spotify to gauge popularity

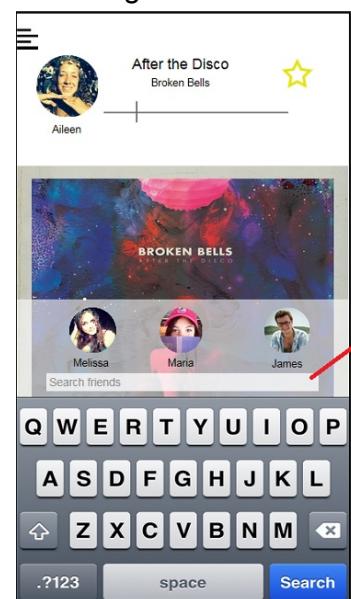
Revised:



4. [H2-6. Recognition rather than recall] [Severity 3] (15)

We originally and still currently only display 3 friends at the bottom of the screen, which are the friends most likely to enjoy the music the user is listening to so that they can share the song. This is to urge sharing between users that have similar tastes and hopefully start relationships. We also had a search bar at the bottom that a user could swipe up to use and find friends to share the song with that we had not recommended. In the revised design we placed the search bar in the menu options to become more Android-standard, but we don't agree that we need to have a separate page dedicated to listing friends in alphabetical order. If a user has a friend in mind, they will know how to search for them. We currently do not have the actual search function implemented at this stage.

Old Design:



Swiping up from the bottom of the screen allows users to search for other friends if they don't like the one's we recommended

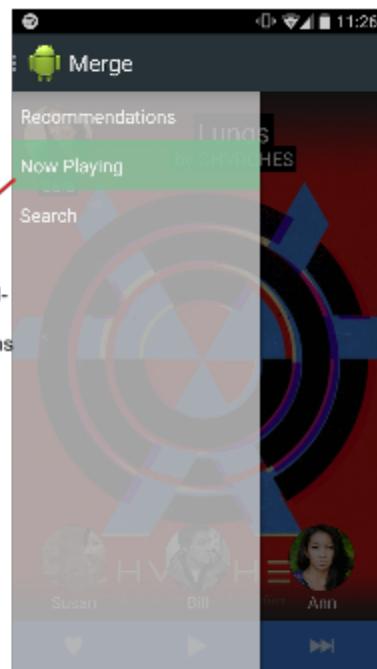
5. [H2-4. Consistency and standards] [Severity 3] (17)

The violation stated that our side bar seemed very empty, and that by platform a side bar was only needed when it is the only format available to fit a variety of options. We decided to implement a menu standard to Android, where it still comes in from the side, but we placed all of the options closer together and removed the empty space separating them. Deciding to keep this design makes sure our app is standard to the Android platform and familiar to those users.

Old Design:



Revised:



6. [H2-6 Recognition Rather than Recall] [Severity 3] (18)

In our medium-fi prototype we tried to implement too many gesture functions on the faces of people at the bottom of the now playing screen. This could have introduced a variety of problems when users attempted to interact with them and ended up performing an incorrect action. In the new iteration we decided to only have 3 people appear at the bottom to remove the swipe left and right action and reduce the chance of making an error. We also only implemented two types of interaction with the faces: drag to share and tap to view profile. This simplifies the UI to benefit the user.

Old Design:



Tap and hold to bring up a menu, or tap once to view profile

Revised:

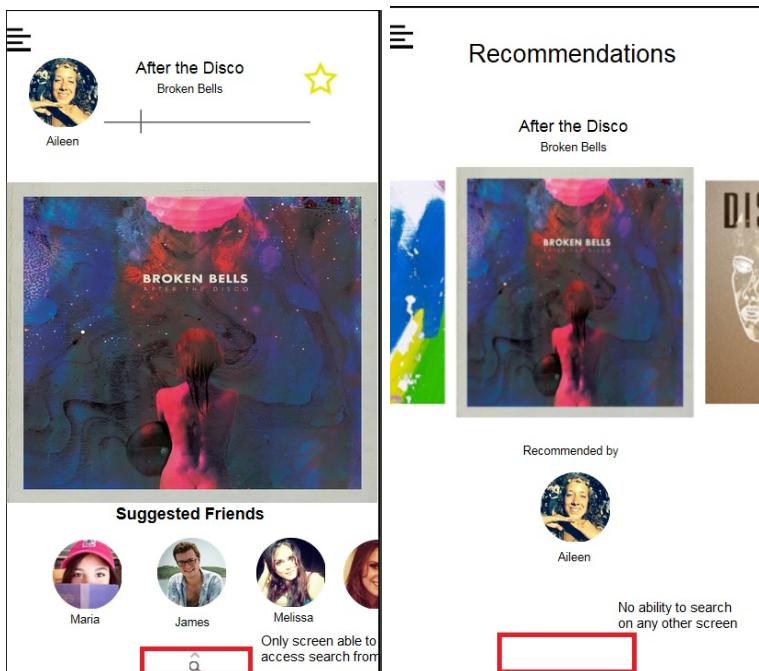


Tap a single time to view profile, and no swiping left or right

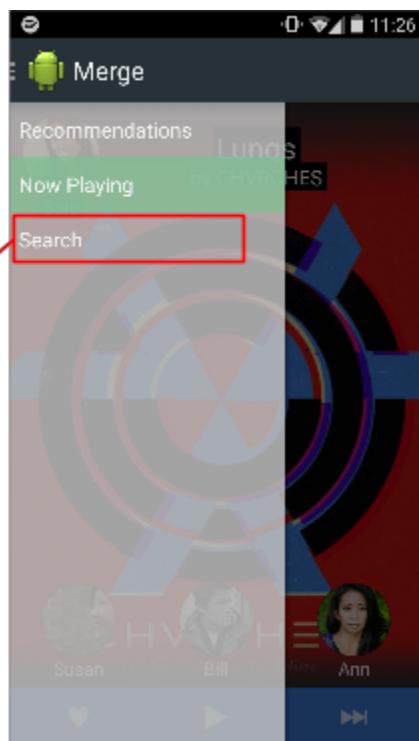
7. [H2-2 Match Between System and Real World] [Severity 3] (22)

Not entirely sure what the evaluators are talking about in this violation (don't mention the screen or helpful information), but what we interpreted the feedback as is that finding people from any screen should be easier. We implement this in the revised design by including a search menu option that will allow the user to search and access the menu from any page within the app. This way the user will not have to navigate through multiple screens to get to the search function.

Old Design:



Revised:



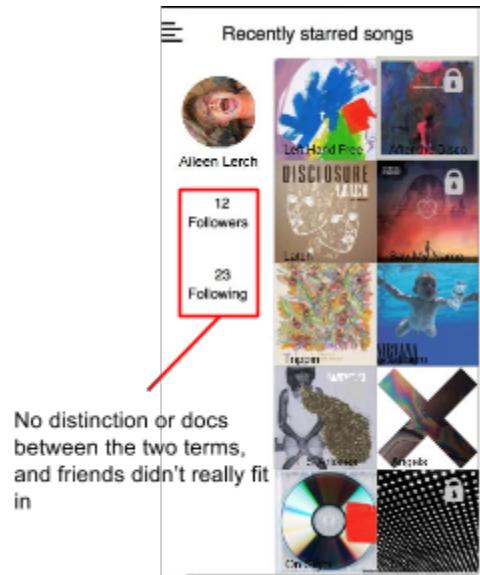
The search option can now be found from any page using the menu

8. [H2-10 Help and Documentation] [Severity 3] (23)

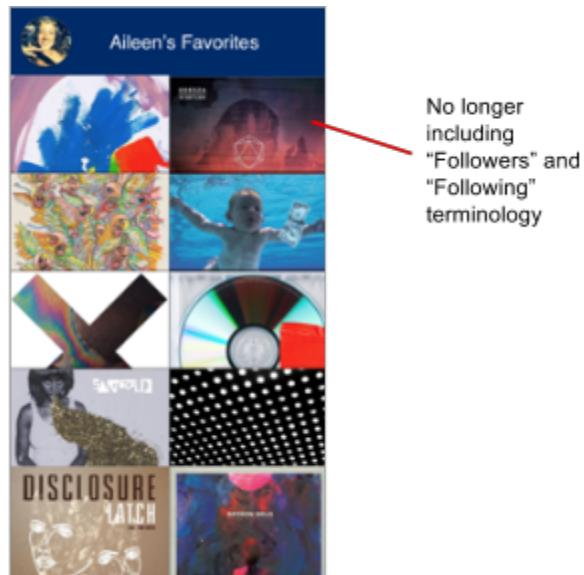
The confusion in this violation was because of how we implemented followers, and there was no distinct difference between a friend and a follower. To remedy this, we

decided to scrap the follower/following labels and simply be able to message someone from the app and become a Facebook friend. This way there is only one type of relationships users can have with each other, making it less confusing and more in line with what users are used to.

Old Design:



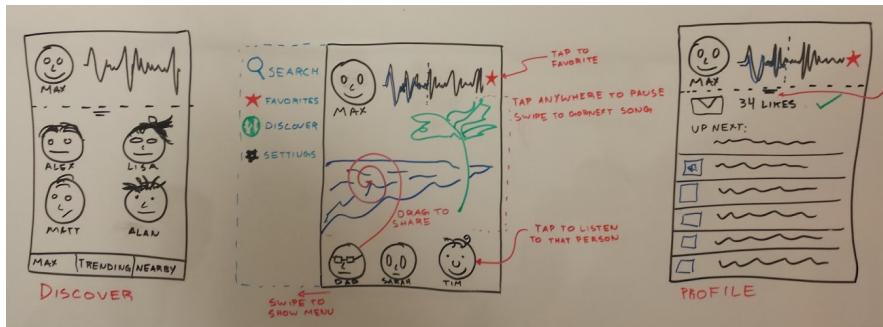
Revised:



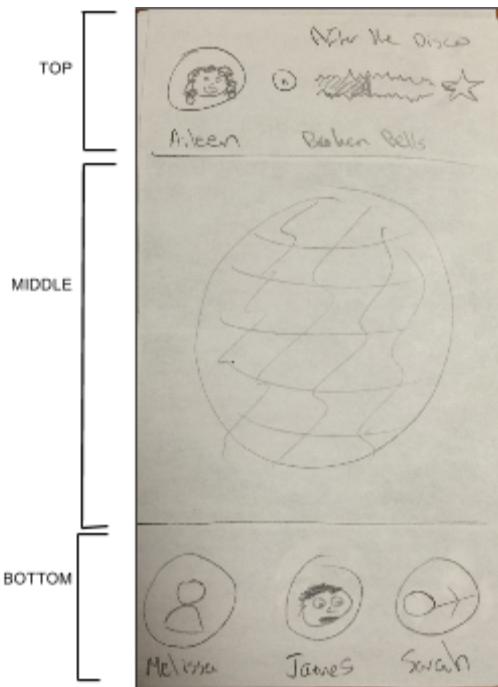
Some other major design changes we implemented dealt with the overall design of the app. Most notably, instead of using a ton of white space across all screens, we wanted to have a unified color scheme and clear look. This meant using colored backgrounds and making the album art a larger focus of the different pages in the app. Changing this aspect made the app more interesting and inviting for users, and allows them to be immersed in the experience of Merge. Other than major aesthetics, we only took into account the heuristic violations as outlined above.

Design Evolution:

Original Sketch:



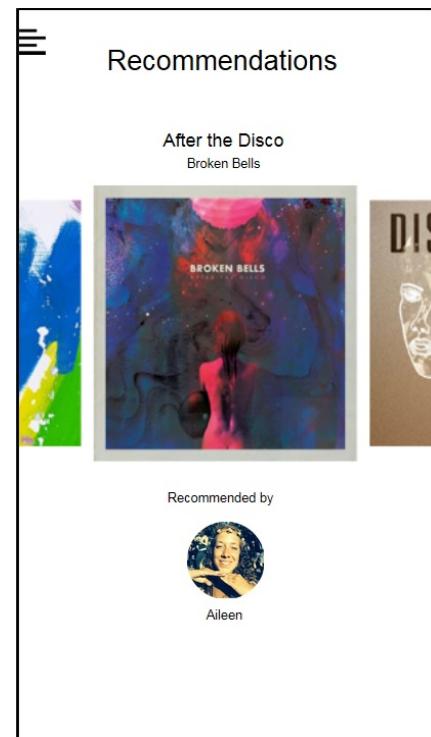
Our original idea was to have three main screens that the user could flip through to perform each of our three tasks: listen to and share music, discover new people and music, and connect with people through a profile page. We wanted to keep it simple and easy to navigate to emphasize the tasks we wanted users to complete. The focus on the album art on the main screen is very similar to current music apps, and we wanted to keep Merge consistent and familiar to users.



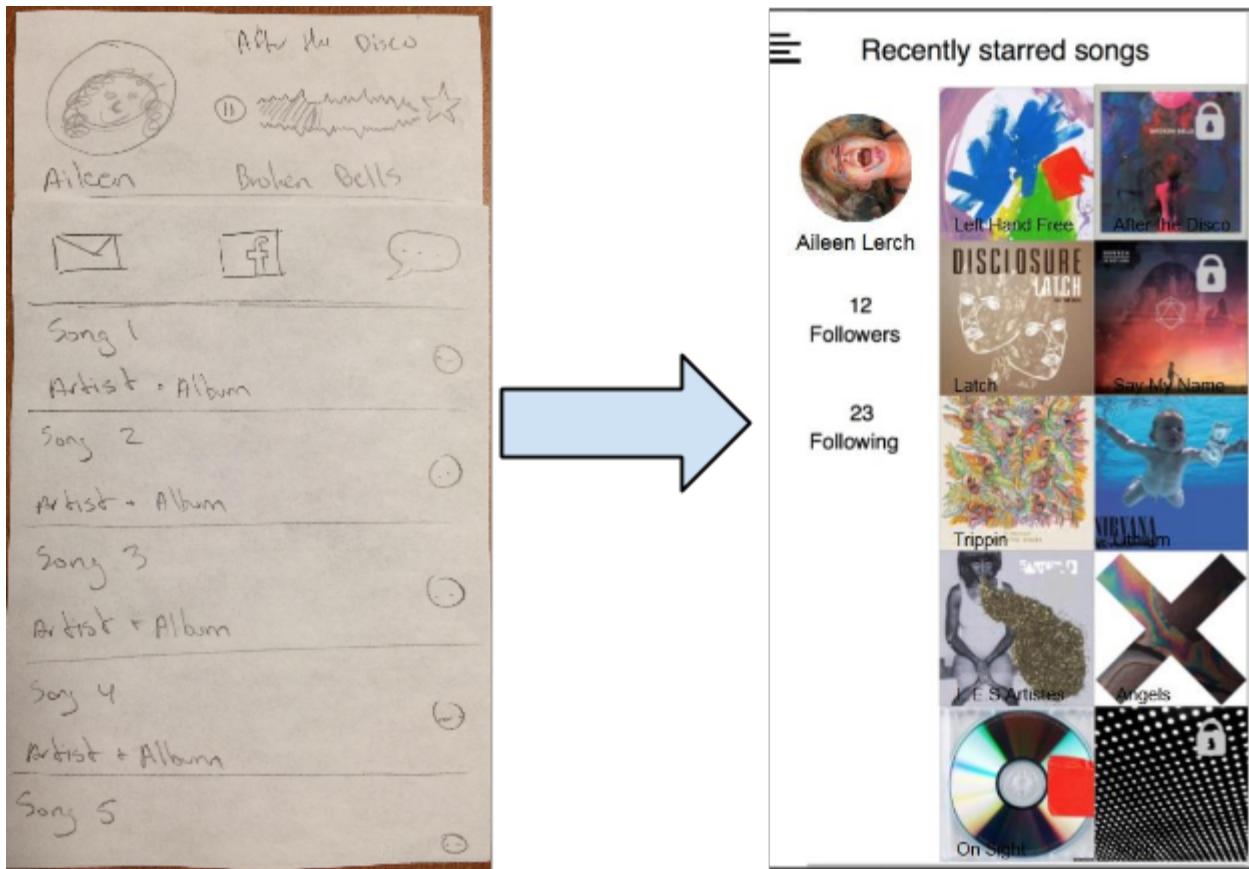
Then in our low fidelity prototype we decided we would break the main playing screen into multiple sections to better distinguish their functions. We figured this would easily guide the users to the specific task they wanted to perform, without much trouble. In addition, we added a way for users to flip through photos of the person they were currently listening to. The rationale here was that during our usability testing the users wanted more options to interact with other people and feel like they have already met. Using Facebook to provide this interaction and keep users engaged in the app was the best idea we decided to try.

There wasn't much else that we decided to change, mostly because we were realizing the designs from the conceptual stage.

Moving from the low to medium fidelity prototype brought about a few major design changes that would both fit better with the Android platform and take into account feedback from usability testing. Most notably was the addition of a "Recommendations" page that the user would be greeted with upon opening the app. We realized from our low fidelity prototype and usability testing that we never thought about or implemented a sort of inbox for users to listen to the songs that were shared with them. Users were confused about how to actually view and listen to these recommendations, which received negative feedback during testing. This was a huge design flaw on our part, and in addition we decided to make these recommendations the main focus of Merge so that new music was continuously thrust at the user.



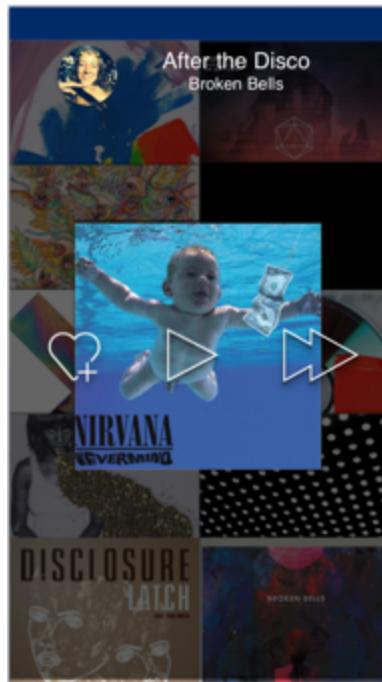
Another notable design change was with the user profile pages. The original prototype had a popup cover the middle and bottom of the playing page, which made it confusing to tell whether the person's face in the top left was for the profile or not. We revised this style in favor of having a cleaner and clearer profile page. It is its own page that displays the user, the number of followers, and the user's playlist as described by "recently starred songs" that would constantly change as they used the app.



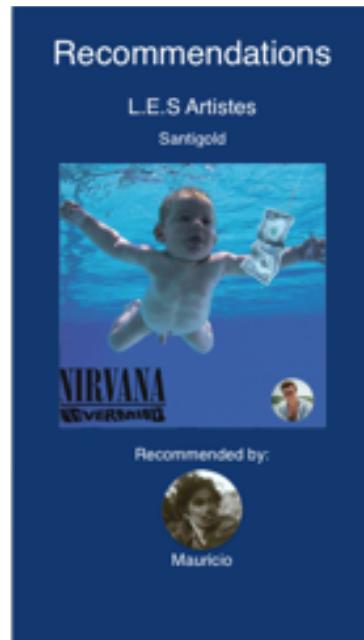
In the final iteration of the prototyping stage, we have focused on implementing the features necessary for the sharing task. The major design changes that came along with this focus revolve around the now playing screen and what happens when a user pauses. We found that users did not find the "invisible" controls intuitive, so we added dedicated navigation buttons at the bottom of the screen. These major options are now always available to the user. In addition, the album cover takes up the entire page of the app instead of specifically segregating the screen into a top, middle, and bottom. We wanted a cleaner and more attractive look for the app, which is what inspired this change.

Also when a user pauses a song, the album cover shrinks to the center of the screen and shows the other songs in the playlist faded in the background. Users can tap around the album cover to transition into the profile page for the person they are "playing." This change

added emphasis to discovering more music and interacting with the people whose songs the user is listening to.



The recommendations page also changed, where we hope to place the face of the person whose playlist contained the recommended song. So if James recommended a song from Melissa's playlist, the recommendation would display both of their faces for the user to further explore the origin of the song and new music.



Prototype Implementation:

The main tool used to build the prototype was Android Studio. This is based on IntelliJ and allows for fairly easy building and testing in a real software environment. The best part about Android Studio is that you can view and interact with the app both on your computer and on an actual phone. The computer allows for quick testing during the development process, but being able to migrate the app and interact with it on a native platform opens up new ways for testing and finding usability problems. Finally, there is already extensive API documentation available through Android Studio that simplifies the process and methods needed to get Merge up and running.

The only major problem with Android Studio was the fact that sometimes the computer simulation was slow and lagged a lot. This made testing difficult at times, and it was frustrating to get it working. Some of the documentation also took some digging to find exactly how it worked and how we could implement Merge. Otherwise, Android Studio is one of the best development environments for Android applications.

Since we don't yet have a back end database or any integration, we had to hardcode almost all of the important information to make the app "work." This includes all of the faces of friends at the bottom of the playing screen, the recommendations, and the songs that the user can select and play. We did not use any Wizard of Oz techniques to make the app work.

Because we only implemented the sharing task, there are still some aspects of Merge that will need to be implemented in the future. The new user profile is currently not implemented with full interaction and messaging functionality, which will be done during the final iteration. In addition we need to implement actually using the search function of the app to find and share music with other friends. Finally, the full pause screen where the playing song shrinks needs to be put together, as well as having the menu buttons actually move to the correct screens and not hardcoded in.