Interaction of Music and Social

User Interface Prototypes

CMPT 863: Advanced Topics in Human-Computer Interaction

April 2022

Group #3

Group Members:

Parsa Rajabi
Rylan Sampson

Links:

[Github](#)
[Figma Board](#)
[Video Demo](#)

Table of Contents

1. Horizontal Prototype

The horizontal prototype that emerged as a consequence of the user studies and requirement analysis tries to construct a more appropriate interface for the casual user while offering shortcuts and feature extension for the expert user. The requirement analysis consisted of examining user challenges and pain points to incorporate new features or design as a remedy. We attempted to emulate Spotify's current design and aesthetic for more direct comparison between our development and the existing list of actions required to complete a task. Furthermore, this was beneficial as it refrained us from imposing our own design ideas into the prototype and instead solely solving user requirements.

As referenced, our user studies in part 1 of the project consisted of casual and expert users which resulted in requirements ranging from current interface being convoluted/confusing to overly simplistic and not niche enough. To address these challenges, at a high-level, our approach attempted to simplify the actions associated with these tasks and increase interconnectivity within the interface. This way, expert users can identify shortcuts to still feel as though they have overcome an artificial learning curve.

From our paper prototypes in part 2, we moved forward with the Figma tool to begin implementation. We first implemented the proposed horizontal development from our paper prototype. Our prototype builds off of the music streaming app, Spotify, so we constructed a shallow replication of Spotify's mobile app. Regarding the paper prototype, the following interface extensions were implemented: a social tab which navigates the user to a novel social page, a more granular view of a user's profile settings, newly introduced privacy settings, and the ability to view who follows your playlist. This horizontal prototype leads to functionality as well which is discussed in the following **Vertical Prototype** section. It's important to note that as part of our horizontal prototype, we developed various other interfaces to expand our horizon. Some of these interfaces include: home, search, library, profile, settings, song view, share song options, album view, playlist view, listening on view and lastly, out of scope view (an interface shown to the user if they interact with a feature that is out of scope of this project).

From our user study we discovered that the tasks we chose had unclear steps, which was an important factor in deciding what requirements were more important than others. During the usability test, users took drastically different approaches to completing a task, in particular the impossible task of viewing friend activity. Working with this information we attempted to streamline the steps associated with requirements either by:

(1) Introducing dedicated views for casual users
(2) Creating shortcuts within the interface an expert user would expect.

2. Vertical Prototype

The vertical prototype of our mobile app builds on the horizontal prototype developed in the previous stage. To start off, we referred back to our requirements and their priority (i.e. must have, could have, should have, won't have) from part 1 of our project and solely focused on expanding functionality for those elements. In this process, we developed substantial vertical functionality for the following interfaces:

Must Have	Could Have
Location of Group Session	Profile Privacy
Friends Activity	Manage playlist followers

As part of our novel solution, we created a social tab which can be accessed via the bottom navigation bar of the mobile app. Upon selecting this tab, users are presented with their friends' listening activity and the ability to start a group session with a press of a button. In addition, users are provided a "What's New?" section that provides the latest update on what their friends/users that they're following have been up to. To come up with a design for our social tab, we iterated through various paper prototypes to explore new concepts and establish an adequate user interaction technique that is easy to use and utilizes familiar design concepts that already exist in the mobile app. In addition, we utilized some of Nielsen's interaction principles such as **visibility of system status** and **aesthetic and minimalist design** to develop this new interface. Specifically, the "Group Session" area of this interface promotes transparency of system status, letting the user know if they're in a session or not and if so, who else is a part of it. Furthermore, the friends activity section of the interface was designed to be aesthetically pleasing with a minimalist approach to reduce clutter and distraction for the user.

Moreover, we developed two new features including a profile privacy option and a manage playlist followers interface. Accessible via the profile page, the privacy interface introduces new features such as:

Profile Privacy Options	Purpose/Functionality
Block User	Search and block a specific user on Spotify
Hide Music Activity	Search and hide music activity from a user on Spotify and/or hide music activity from all followers
Hide Your Playlist	Hide a specific playlist from public view i.e. only visible to the playlist owner
Manage Followers	Manage profile followers, remove a specific follower
Incognito Profile	When activated, user profile is not visible to others
Manage Listening History	View recently listened items and delete history for the past: 1hr, 3hr, 1d, 7d, 1m, all

While these privacy features may seem trivial, the current Spotify version (mobile or web app) does not offer them to users, despite being necessary in our new digital world. Privacy plays a pivotal role in our daily lives and although Spotify offers some social features (i.e. following other users, viewing their recent listening activity), there is no infrastructure in place to combat malicious use of these social elements. To design this space, we iterated through various locations to place the privacy button and also how to present the options to the users. Ultimately, we chose to embed the privacy button on the profile page given its relevance to an individual's profile. We decided to present the options through a classic list (and familiar) view in combination of icons to leverage some heuristic design principles such as **recognition over recall** and **aesthetic and minimalist design**. The icons beside each privacy feature promote the user to recognize the element before reading the actual text. By leveraging familiar icons that are already used in Spotify's app and also common in other mobile apps, we believe users can quickly identify the option without much thought. Furthermore, this classic list view was designed based on a minimalist approach as it presents the most important elements with the least amount of clutter (i.e. only text and icon). Lastly, this list view is also futuristic as it can easily be scaled up by adding more options to the bottom and introducing a scroll interaction to access them.

Similarly, the manage playlist followers interface builds on the idea of transparency to provide users with the ability to view who followers their playlist and if needed, remove them from following it. Currently Spotify only shows the number of users who follow the playlist by indicating "X likes", as shown in our vertical prototype (where "X" is the number of playlist followers). Our new functionality allows users to tap on the "X likes" text, where they are taken to an interface with the playlist followers. On this interface, users can navigate to playlist followers' profiles or remove them by tapping on the X button next to their name. As part of our design iteration for this interface, we sketched ideas to utilize key heuristic design principles such as **consistency and standards** and **match between system and the real world**. On this

view, users may be curious to learn more about their playlist followers, thus, to eliminate a searching step for the user, we added a "View Profile" button beside every follower's profile to promote and accelerate this avenue. Furthermore, the X button next to each profile leverages both the **consistency and standards** and **match between system and real world** principle as X is known to "exit" and/or "delete" an item, allowing users to easily remove a specific follower from their playlist.

3. Cognitive Walkthrough

3.1 Task and required actions

The task used for our Cognitive Walkthrough was creating a Group Session with a friend using the newly developed prototype. This combines our two **must** requirements which were facilitating Group Sessions and being able to see friend activity. Although Group Sessions is directed towards expert users, it also garners interest among casual users. During our user study, it was evident that casual users did not understand the steps required to start a Group Sessions and identified it as a barrier to use the feature. We wanted to ensure that Group Sessions provided expert users with a unique experience while making it accessible to the casual user.

Steps required to start Group Session via social tab:

1. Begin from the Spotify mobile application home page.
2. Navigate to the social icon on the bottom menu bar, second from the right.
   a. Select this icon to proceed to the social view.
3. On the social view, find your friend list/activity.
   a. Swipe through the friend's to find the one you want to start a group session with.
   b. Find the friend who is listening to "Jango's Escape" and invite them to a Group Session.
   c. Select the social plus **(+)** icon to invite a friend to a Group Session (for the prototype the friend is automatically added)
4. (Additional) Report on whether you think the action successfully added the invitee to the Group Session.

3.2 Encountered Problems

During the walkthrough we identified a few problems that were overlooked during user studies and requirement analysis. The first issue is that Spotify's mobile app does not utilize mobile interactions and gestures. Whereas on a computer, you may click on another tab to navigate, on a phone you may be more comfortable swiping. Although this is not an exchangeable comparison for every task, there are many actions where it would be applicable yet, Spotify offers no interaction methods beyond tapping.

Another issue pertains to joining Group Sessions and how there are still numerous steps to set it up with your friends. For example, the high-level steps include: create a Group Session, invite friends individually, each of them have to join, and steps two and three repeat if additional people join later on. These steps can become tedious when repeated per each Group Session and especially if a user makes use of this feature quite frequently.

The final issue is associated with the friend activity as it may require cognitive processing by the user. A swiping horizontal interaction means if a user is comparing among their friends' listening activity, they need to remember previously viewed information. Whereas, a vertical layout could show more at once, thus, reducing the need for information retention. Below, we briefly summarize these problems and pose possible solutions.

Problem	Solution
No mobile interaction methods	This is a rather simple solution of "Incorporate mobile interaction methods as appropriate".
Streamline Group Session	Rather than instantiate a Group Session every time, implement *virtual rooms* similar to Discord where users can simply enter and leave at will. To limit who could just join these *virtual rooms* the concepts public versus friend versus close friend could be introduced.
Group Session menu layout	Switch from a horizontal sliding layout to a vertical layout that can fit more information. This style of layout would be better suited to a mobile design and overflow can be scrolled through by swiping up and down.

3.3 Main Findings

The main findings from our cognitive walkthrough mostly relate to the usability of the prototype. Specifically, it became evident that Spotify's mobile app and our prototype do not make use of mobile interaction methods which can inhibit how natural this interface feels to users. Moreover, while the Group Session functionality was streamlined, it still possesses numerous steps that may be daunting for casual users and deterring for expert users. Furthermore, the proposed layout for friend activity means they cannot directly compare songs being listened to and as a consequence this may impose cognitive processing on the user. To conclude, it would have been beneficial to do further user studies to evaluate whether this novel social view is worthwhile to both casual and export users as it contains a significant portion of our proposed solutions.

4. Appendix

4.1 Flows

Below are a list of flows developed as part of this medium fidelity application:

1. Start group session
   a. Via Social Tab (new)
      i. Navigate to Social tab via navigation bar on the bottom
      ii. Start a group session with a friend using "Start Session" button
   b. Via Song View (new)
      i. Navigate to current playing song via "playing now" bar on the bottom
      ii. Navigate to more via triple dots on the top right
      iii. Start a group session with a friend using "Start Group Session" option
   c. Via Listening on (pre-existing)
      i. Navigate to current playing song via "playing now" bar on the bottom
      ii. Navigate to listening on by selecting the device on the bottom left
      iii. Start a group session with a friend using "Start Group Session" option
2. View friend's activity
   a. Navigate to Social tab via navigation bar on the bottom
   b. View friend's recent listening activity by horizontally scrolling through each one
3. Access profile privacy
   a. Navigate to home or library tab via navigation bar on the bottom
   b. Navigate to profile page via profile icon on the top
   c. Navigate to profile privacy via privacy button
   d. Access profile privacy
4. Manage playlist followers
   a. Navigate to any of your existing playlists
   b. If present, select "X likes" on playlist
   c. View playlist followers (view their profiles or remove them from following)

4.2 References

The prototype was inspired, designed and developed based on Spotify's mobile app for educational purposes. Spotify and its logo are a trademark of Spotify USA Inc.