Usability Study Report: Spotify Mobile App

Maxwell Coppock, Shivank Mistry, Shreya Senthil, Michael Wentworth

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Executive Summary

Executive Background:
The purpose of this study was to identify opportunities for improvement in the user experience of the Spotify mobile app. Specifically, we were interested in exploring music discovery and playlist management. This study had 10 participants from a wide range of age groups. We had 4 non-Spotify subscribers and 6 Spotify subscribers.

Core Research Questions:
- How do users find new music?
- What are common errors that users make when managing a playlist?
- How easily can a user create a new playlist with a genre they are not familiar with?

Executive Findings and Recommendations:
Based on our observations and participant comments, we found that participants generally appreciated the number of avenues to take when discovering new music. Spotify provides a recommendation system, custom playlists, and user generated playlists that participants used to explore new music.

There are also opportunities for improvement. These are the main usability findings in the study:

Issue	Severity (Neilsen)	Participants
Difficulty changing playlist image	2	P5, P6, P7, P9
'Edit playlist' label is confusing	2	P5, P6, P7, P8, P9
Tedious to add/remove many songs	2	P2, P7
Too many symbols requires savviness	2	P1, P3
No advanced filtering for searches	2	P1, P6, P10
Low confidence in song genre	1	P1, P2, P3, P4, P6, P8

These issues use the Neilsen scale of severity with 0 being a nonissue and 4 being a usability catastrophe. Our findings were a 1 or 2, which are cosmetic problems and minor usability issues.

Our recommendations for these usability issues are: making the 'edit playlist' menu and its 'change image' function more clear and accessible, adding the capability to filter by genre both in the user's library and when searching for new music, a long press option to quickly add/remove songs on a playlist, and a walkthrough feature to show new users the process of navigating Spotify's many icons and features.

Study Background and Objective

What is Spotify?
This study was centered around the usability of Spotify. Spotify is a music streaming service where users can create playlists, discover new music, and listen to their favorite artists. Spotify has a large library of music, so discovering new music is a core feature for users. Spotify has multiple avenues to explore music including: built-in recommendation systems, Spotify-generated playlists, user-generated playlists, and a search tool that allows users to search for artists, songs, albums, and playlists. While Spotify has a mobile, web, and browser platform, this study focuses specifically on the mobile application.

Objective:
The objective of our study was to see how intuitive and effective the music discovery and playlist management features are for Spotify users. There are many avenues of discovering music on the app such as through searching, finding it in a Spotify-generated playlist, recommendations, a friend's library etc. One of Spotify's main features that sets it apart from its competitors is the ability to discover new music easier. We wanted to see what methods people use to discover music, and how successful these methods are. In addition to that, when you find this music, how easy is it for you to manage your playlist? Some tasks within this include adding and removing songs, renaming the playlist, and adding a description or cover photo. Our goal was to identify user pain points in the discovery and managing process, rank the issues on a scale of severity, and make recommendations for Spotify in order to improve the product.

Methods

In order to collect user data, we moderated in-person interviews with users who are both Spotify premium users as well as those who are not. The usability study was conducted with 10 participants individually with the goal of answering our research questions. These questions include:

- How do users find new music?
- What are common errors that users make when managing a playlist?

- What criteria would users like to search music by? (Genre, Year, Instruments, etc.?)
- How easily can a user create a new playlist with a genre they are not familiar with?
- How do users incorporate their personal music tastes while using Spotify's music discovery features?

The structure of the study started out with the researcher introducing the study and giving the participant some context. From there, we asked them if they had any questions for us before getting started. Ultimately, we had eight tasks that we wanted to observe the participant complete. These tasks included:

- Select a genre that you are interested in
- Find a few songs that are within this genre
- Create a playlist and add these songs to that playlist
- Find more songs that you already know and add them to this playlist
- Remove a few songs from this playlist
- Rename the playlist
- Change the playlist's cover image
- Edit the playlist's description

These tasks took the participant through the end to end task flow for discovering music and managing a playlist. We were able to get a better sense of the user's pain points and emotions through their body language, expressions, and quotes that we recorded during this portion. At the end of the observation, we finished out the interview with some post study questions that allowed the user to give us more context for their struggles. Some of these post study questions include:

- How easy was it to create a new playlist?
- How confident are you that the songs you added are in the genre you selected?
- How easy was it to find songs that you like to listen to?
- Rate the difficulty of tasks 4-8 on a scale of 1-10
- How would you rate the intuitiveness of finding new music on a scale of 1-10?
- How would you rate the intuitiveness of managing a playlist on a scale of 1-10?
- Do you feel there is enough instructions/ confirmation throughout the process?
- At what points did you feel confused or stuck in the process?

Participant Overview

We recruited 10 participants for this study with a convenience sampling method. 6 of the participants were Spotify premium users and 4 were not. We recruited a wide range of age groups with 4 participants in the 18-24 age group, 2 in the 25-34 group, 3 in the 35-54 age group and 1 in the 55-64 age group. We had 5 self-identified females, 4 males, and 1 genderqueer participant. This study attempted to capture perspectives across the age and gender spectrum. In addition to this, we also wanted to get the perspective of non-Spotify users and Spotify users to compare and contrast their experiences with genre exploration and playlist creation.
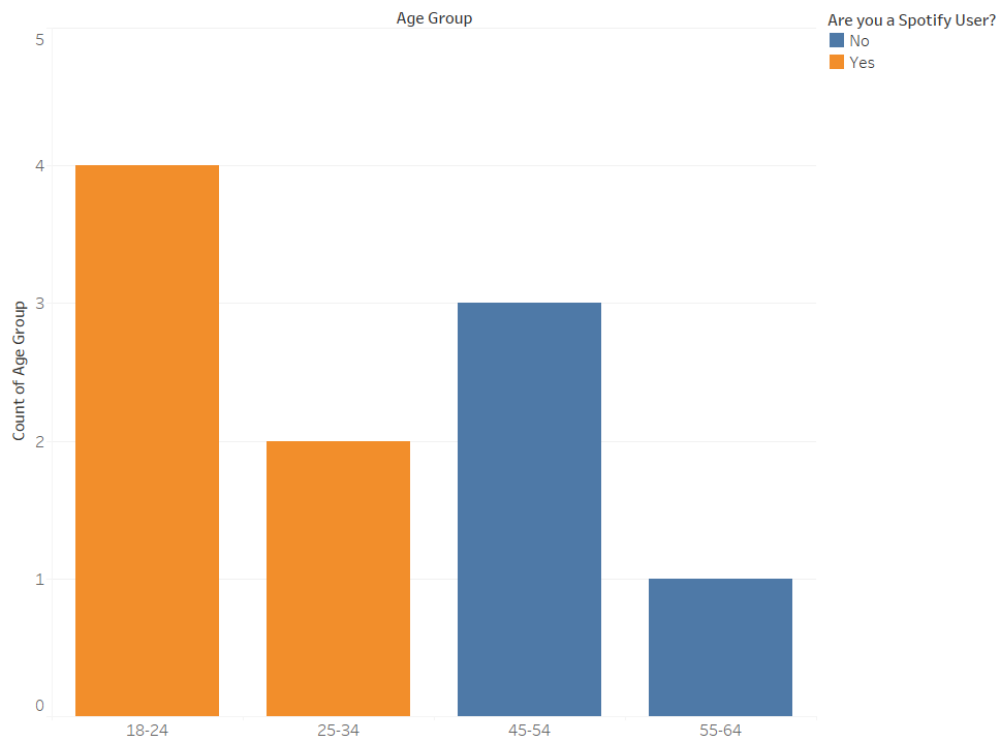
Fig. 1. Count of participants by age

Referencing fig. 1, we see that our non-Spotify users are all part of the older demographic of participants. This is important because factors that might be influenced by age may be incorrectly correlated with non-Spotify use and vice versa. This is certainly a limitation of our study, and further research needs to be done with older participants and non-Spotify users to fully understand the context and experiences of those participants.

Findings and Recommendations

Strengths:

None of the ten participants failed to complete a task set by the study, so Spotify is very usable overall. Participants who were Spotify subscribers were very comfortable and efficient when completing our tasks, while individuals new to Spotify spent more time orienting themselves to the interface.

Many users appreciated how Spotify provides many different ways of finding new music. Users are able to browse specific albums, artists, a wide collection of spotify-curated playlists for different genres and vibes, and a dedicated 'add songs' menu for a specific playlist. This allows users to explore music in a way that feels intuitive to them. Participants expressed they liked the different avenues for discovering music. One participant said, *"Song suggestions are a cool feature that I use pretty often." (p10).* Others shared they liked the "You might also like…" section on an artist's page (p5), and that, *"it's so nice that it has one-click addable songs at the bottom under a playlist," (p7).*

Our participants also appreciated Spotify's confirmation messages for different user actions. When a user adds or removes a song from a playlist, a banner pops up to confirm the action was completed. After removing songs from their playlist, one participant said, *"It told me it did it, good feedback."* After completing the same step, another participant commented, *"There's that banner across the bottom, and you see it go. It's nice to have the feedback."*

Opportunities for Improvement:

These findings are ranked with Nielsen's severity rating for usability problems:

       0 = I don't agree that this is a usability problem at all
       1 = Cosmetic problem only: need not be fixed unless extra time is available
       2 = Minor usability problem: fixing this should be given low priority
       3 = Major usability problem: important to fix, so should be given high priority
       4 = Usability catastrophe: imperative to fix this before product can be released

More information on Nielsen's severity ranking system can be found here:
https://www.nngroup.com/articles/how-to-rate-the-severity-of-usability-problems/

The following areas for improvement are presented in descending order of severity.

Finding 1: Difficulty Changing Playlist Image
Severity: 2 -- minor usability problem
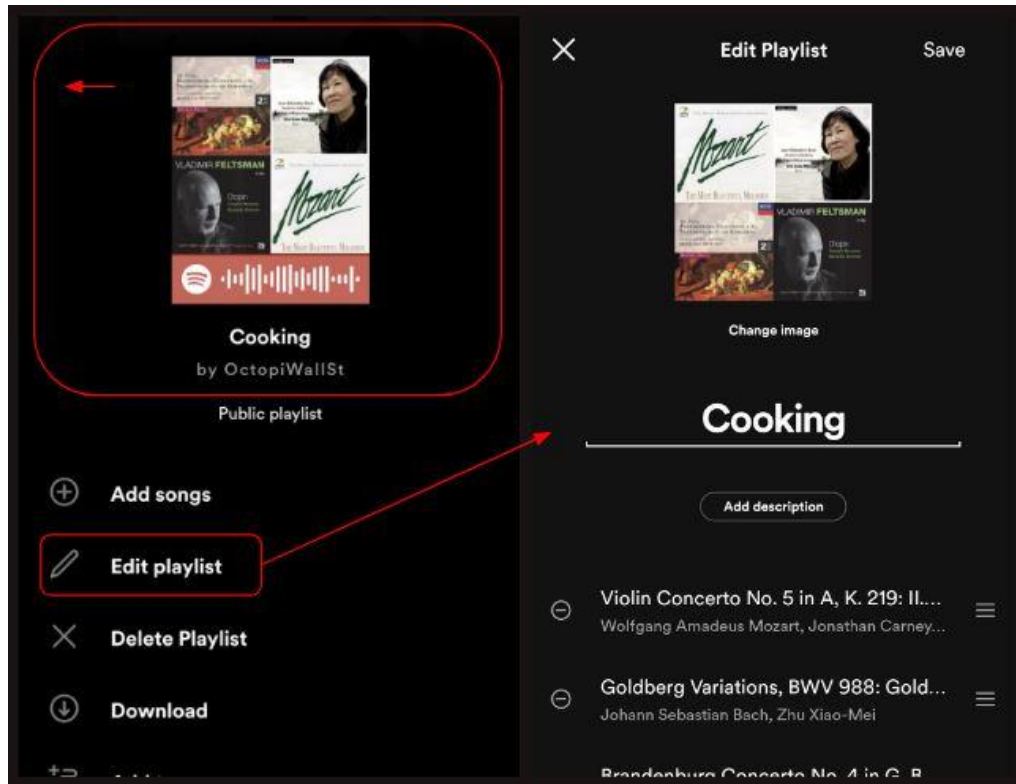Participants: 4/10

Description:

Fig. 2. The 'Playlist Options' menu (left) and embedded 'Edit Playlist' menu (right)

To change the cover image of a playlist, a user must tap on the ellipses symbol on the playlist screen to bring up a 'Playlist Options' menu. Then, they would tap the 'Edit Playlist' option to go to a second menu which shows the prompt "Change image" beneath the playlist image. The ability to tap on the image to change it is in this secondary menu, and tapping on the image in the primary menu of playlist options closes it. In the 'Playlist Options' menu, it is unclear that the playlist image cannot be edited and is actually a back button.

Supporting data:

During the task to change the playlist image, four participants entered the 'Playlist Options' menu and tapped on the image to change it, which closed the menu. One participant explained: "*This [Playlist Options] screen shows the name and the art, I would expect to be able to edit it right here. Tapping the cover art here though is like a 'back' button," (p5).* This caused confusion and frustration in these four users, and they described the task as a difficult one. Participants who struggled with this task were from a variety of age groups and included both Spotify subscribers and new users (Fig. 3).
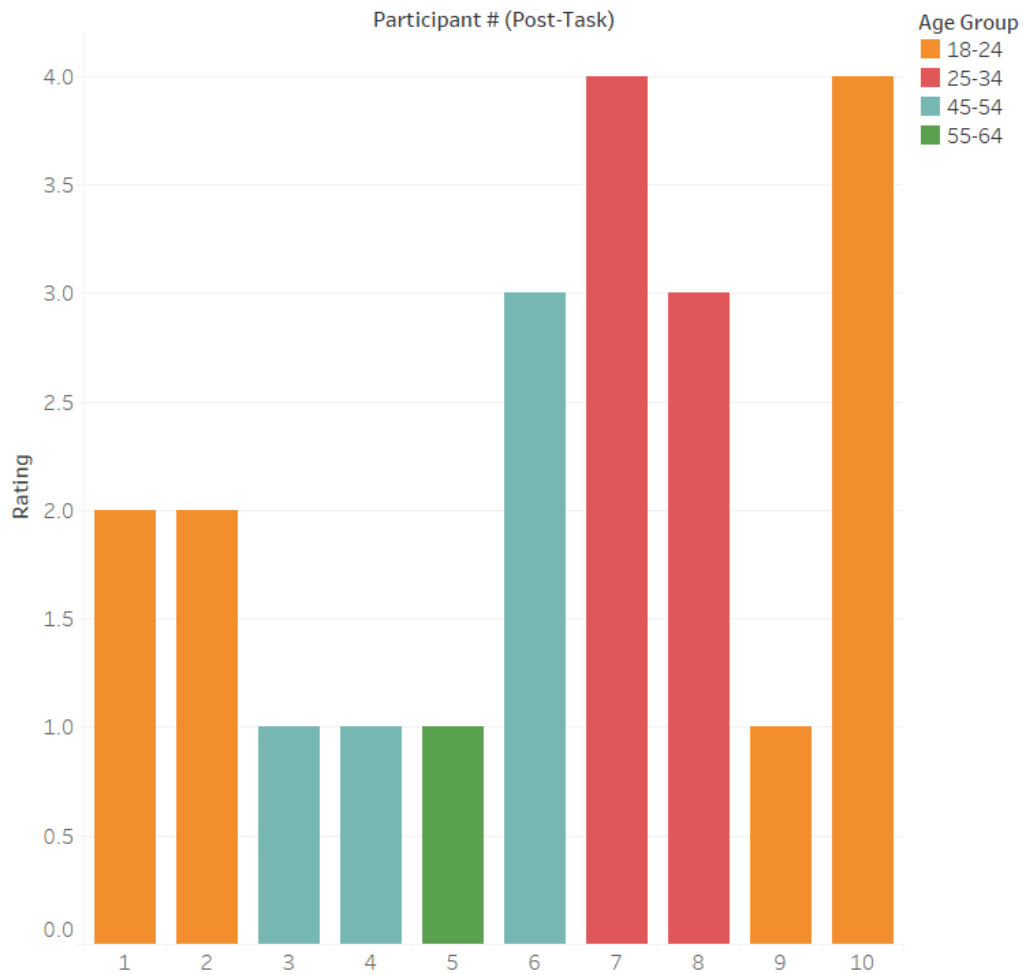

Fig. 3. Participants' self-rated ease of changing the playlist image.
0 = very difficult, 1 = difficult, 2 = neutral, 3 = easy, 4 = very easy

Recommendation:
Our recommendation for this usability problem is to afford editing the playlist image on the 'Playlist Options' menu, and possibly even the playlist page itself. This would allow users to tap on the playlist image and change it easily without first having to navigate into a menu within another menu. One participant expressed support for this idea, "*It's*

straightforward to go into 'edit' first, but I would like to be able to click on the image [in the Playlist Options Menu]" (p8). In addition, a dedicated 'back' or 'close menu' button should be added to the 'Playlist Options' menu to reduce users' confusion when they tap on the playlist image and the menu closes.

Finding 2: Edit Playlist Label is Vague and Confusing
Severity: 2 -- minor usability problem
Participants: 5/10

Description:
Within any playlist's 'Options' menu, there is a secondary menu with the label 'Edit Playlist' (Fig. 2). This menu allows users to rename the playlist, change the cover image, add a description, and remove many songs at once. The label 'Edit Playlist' did not effectively convey the functionality of this menu to some participants.

Supporting data:
When going through the tasks of managing a playlist, several study participants commented on the wording of the 'Edit Playlist' menu. Some participants thought editing a playlist meant editing the songs included on it. They commented: "*In my mind, 'edit playlist' means you're editing the songs, as opposed to renaming or changing the image,*" *(p5)* and *"Am I editing the [play]list or the name of the list?" (p6).* Another participant simply said, "*I don't know what 'Edit Playlist' means, that's kind of vague.*" *(p8).*

Recommendation:
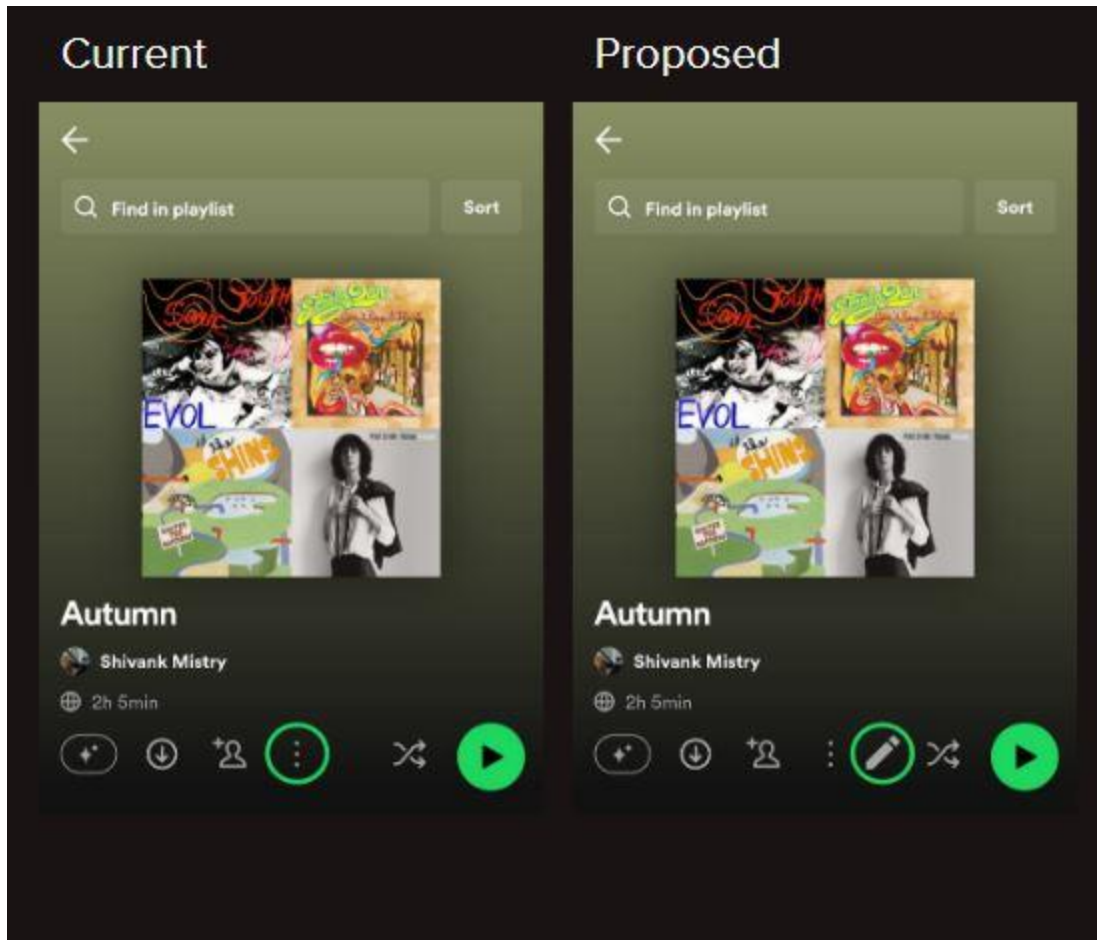
Fig. 4. Playlist page with current ellipses button to access playlist options menu (left) and proposed button to access 'edit playlist' menu (right)

Our recommendation is to change the label for the 'Edit Playlist' menu to something more descriptive of its functionality. A label like "Change Name and Image," might be more appropriate and less confusing to users. Creating a button for this menu on the playlist page itself would also improve its visibility and access, so users wouldn't have to navigate to a menu within a menu to find it. Using a pencil icon on that button may convey the act of rewriting the playlist's details better than the 'Edit' label (Fig. 4).

Finding 3: Tedious to Add and Remove Many Songs
Severity: 2 -- minor usability problem
Participants: 2/10

Description:
When creating a new playlist, users often have to add and remove a significant amount of songs before finalizing their playlist. Adding and removing a song from a playlist then becomes an action that users do multiple times. Currently, the process of adding and removing songs requires first going into the ellipses menu next to the song, then clicking "add to playlist" (or alternatively, "remove from playlist"), and finally selecting the desired playlist from the given menu. This requires three actions per added song. Since adding songs is an action users do a fair amount of times, we propose this process becomes more efficient and quick to use. Fig. 5 below shows the existing interface for adding a song.
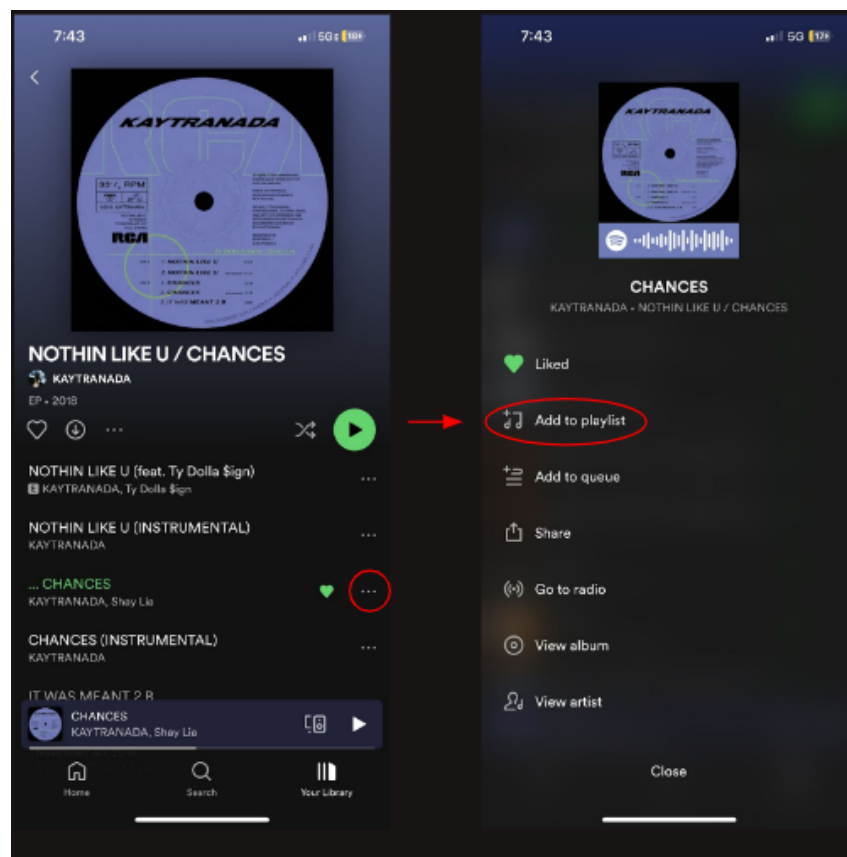

Fig. 5. Screenshot of the mobile app showing the existing process of adding songs to the playlist.

Supporting data:
When adding/removing songs from playlists, a few participants expressed frustration with the "edit playlist" function. As mentioned for an earlier finding, the "edit playlist" can be vague. While this is the proper menu to remove songs quickly, previous findings support the idea that users find the "edit playlist" button as unclear. In expressing confusion with this "edit playlist" button, participant 7 says, "I wish I'd discovered the way to delete stuff easily [within edit playlist] sooner. It's kind of hidden."

In addition to this, adding each individual song with three separate actions is something participants also expressed frustration in. Participant 7 says, "I wish you could swipe on a song to remove." Another participant shared their frustration and impatience with deleting many songs off a playlist, to the point where they would rather give up and start fresh: "I get annoyed deleting songs so I just make a new playlist" (p2).

Recommendation:
By addressing our previous finding of the "edit playlist" function being vague, we also solve some usability issues when adding and removing songs. However, there is still opportunity for improvement for adding and removing songs en masse. To address this, we propose a long-press gesture on the song to highlight the song (similar to ctrl-clicking in a web browser). Users can highlight multiple songs, and finally, using the ellipses menu on any of the highlighted songs subsequently adds or removes those highlighted songs from the playlist. Currently, long-pressing on a song provides visual and haptic feedback, but no action happens. This proposed long press feature will fit into existing mental models users may have when interacting with systems as the process is similar to ctrl-clicking on a desktop. Supporting this suggestion, two of our participants (P7 and P8) wanted a similar in-line gesture to quickly delete songs en masse in a playlist.

Many Symbols Require Tech-Savviness
Severity: 2 -- minor usability problem
Participants: 2/10

Description:
Spotify uses many symbols throughout its mobile interface. These icons act as labels for buttons and leverage industry standards, but some participants were confused and did not know what some icons meant. An example of Spotify's icons from their mobile interface can be seen in Fig. 6.
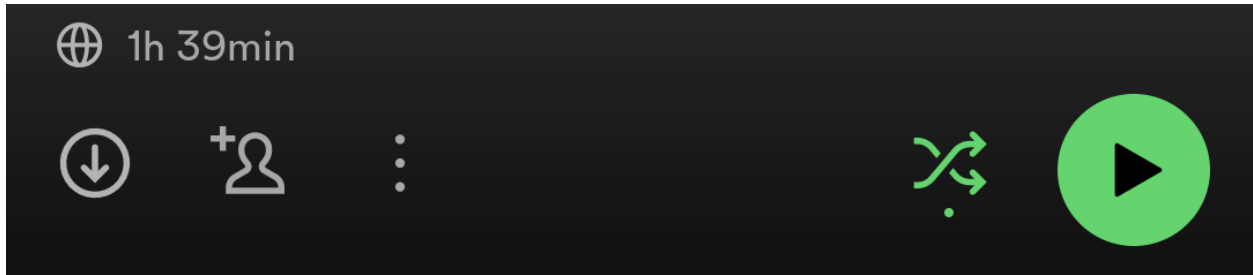
Fig. 6. Screenshot of the interface showing unlabeled symbols as buttons

Supporting data:
One participant commented on the ellipses menu button: *"I don't use apps very often and I do not know what the three dots are but all of the features are in the three dots" (p1)*. This participant did not know that the three dots were trying to communicate a button to see more options. When asked if there were enough instructions throughout the process, another of our participants commented there was not enough instruction because there were too many symbols in the interface (p3).

Recommendation:
Our recommendation is to improve the onboarding process for new users, especially users who are less tech-savvy. On a first-time setup, the Spotify app could show users a collection of the symbols used in the interface with basic labels describing what they represent. More information should be available if a user is still unclear about the meaning of a symbol or icon.

No Advanced Filtering for Searches
Severity: 2, minor usability problem
Participants: 3/10

Description:
Spotify has a strong search bar to find and explore music, but their filtering options are limited. Users can select whether all search results will be playlists, artists, or albums, but there is no capability to perform an advanced search with multiple conditions and filters. For example, users are unable to search playlists that contain a particular artist, or songs that are above a certain tempo.

Supporting data:

One participant expressed their prior difficulty searching for one of her own playlists based on its contents rather than its name: *"It is kind of hard to find what you want from your library, especially if you have a ton of playlists and can't remember the specific name of one" (p1)*. Another participant said she wanted more filtering options based on a song's mood: "*I'd like an emotional or mood-based filtering,*" as well as tempo: "*I like this song, this tempo, and I'd like 5 other recommendations by that type of artist at that type of tempo," (p6*). Finally, perhaps because one of our tasks was to find new music of a particular genre, one participant said they wanted to be able to "*filter results by genre,*" *(p10).*

Recommendation:
Our recommendation is to add a filtering overlay to the music search screen that allows users to include more complex search criteria. It should allow users to search for a playlist or album based on its contents, and it should also include options to filter search results by criteria like tempo, mood, artist, and genre.

Low Confidence in Songs' Genres
Severity: 1 -- mainly a cosmetic problem
Participants: 6/10
Description:
Spotify offers curated playlists that are labeled as different genres, but it does not provide visible data on individual songs, albums, or artists to indicate which genres of music they fall under.

Supporting data:
During the study tasks, participants were asked to explore an unfamiliar genre of music and add five songs from it to a new playlist. After this step, they were asked to rate their confidence on a 5-point Likert scale that the added songs belonged to the selected genre.

Participants' Confidence in Genre of Selected Songs
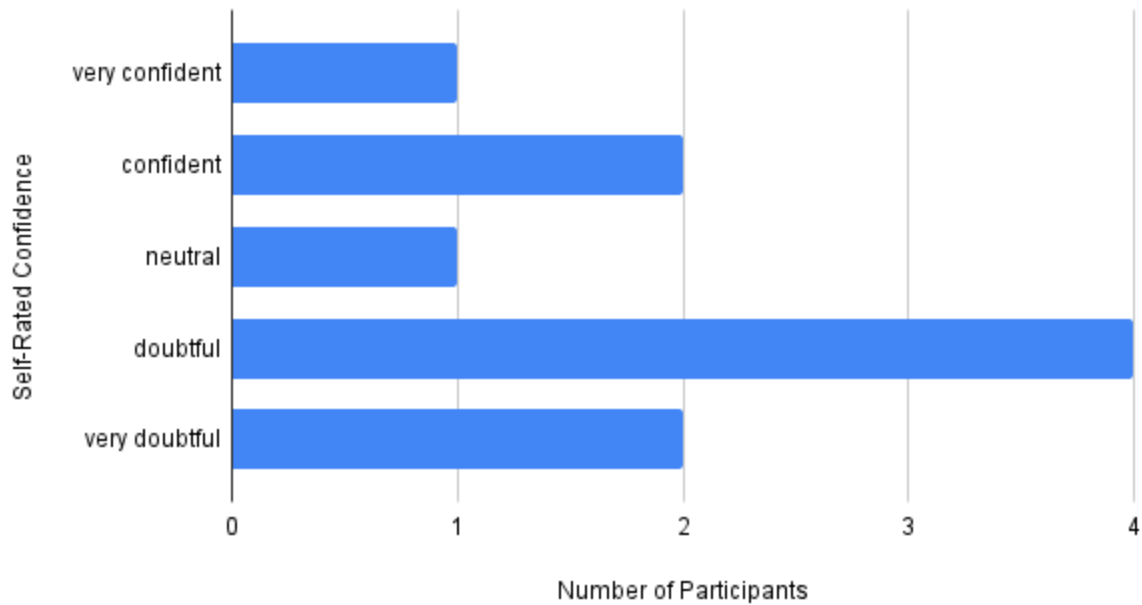
Fig. 7. Distribution of participants' confidence selected songs were in-genre

As shown in Figure 7, the majority of participants were doubtful the songs they added were in the genre they selected.

Recommendation:
We recommend displaying the genres of songs, albums, and artists to users. This could be implemented with a tag system that adds other information to songs, such as their tempo or mood. This would also combine with our recommendation to improve the searching and filtering capabilities of Spotify by enabling users to filter music by tags.

Next Steps

While this study was a valuable introduction to how users discover music and create new playlists on the Spotify mobile app, there are multiple paths for improvement and additional research that can be done to explore the complete context and experience of a wide range of participants.

Our proposed next steps are:
- More participants
- Better, more random sampling of participants
- Younger non-spotify users
- Survey in addition to tests and interviews
- Follow up testing focused on specific issues we identified
- Longer-term study on playlist maintenance

As mentioned in the participant overview, all of our non-Spotify users are part of the older demographic. This could lead to inaccurate conclusions as observations may be incorrectly correlated with age or non-Spotify use. We recommend observing younger non-Spotify users as well as older Spotify users. Our sampling methods were convenience-based. This could have impacted our results as socioeconomic factors could have been correlated with familiarity with tech use. A random sampling approach would lead to more valuable findings across diverse social strata.

Our findings serve as a good introduction to exploring playlist creation usability. To expand on these findings, we propose a survey in addition to usability testing, follow up studies on identified issues, and a longer-term study to explore playlist maintenance through a long period of time. By proposing additional research based on our findings, we achieve a more robust understanding of usability concerns users have.

Appendix A1: Study Materials

Usability Toolkit

Maxwell Coppock, Shivank Mistry, Shreya Senthil, Michael Wentworth

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Consent Form:

Audio/Video Recording Consent &
Release and Non-Disclosure Agreement

HCDE 417 Research Team

Consent and Release
I, the undersigned, consent to the use of my likeness, voice and material derived from the audio recording by the HCDE 417 Research Team, solely for HCDE's internal research purposes and NOT for any public purpose, such as advertising. I further consent to the reproduction, editing and use of such audio recording and release to HCDE and its respective researchers and instructors to and from any and all claims, including but not limited to invasion of privacy, defamation, and right of publicity, by reason of such use. All property rights in my likeness, voice and material derived from the audio recording shall belong to HCDE and their respective researchers and instructors.
I agree that any and all Confidential Information is and shall remain the property of HCDE to be held in strict confidence by me solely for HCDE's benefit, and shall not be used or otherwise disclosed to any other parties at any time, without obtaining HCDE's prior written consent. "Confidential Information" includes all technical, business and

personnel information, or other information which relates to past, present and future research, development and business activities of HCDE and its subsidiaries and Affiliates (including customer or client lists), however communicated or disclosed to me in the performance of any services for HCDE. Confidential Information shall not include information that becomes generally available to the public (other than by the acts or omissions of myself). I also agree to keep confidential and secret the proprietary information on HCDE's researchers and instructors.

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I have signed this Consent & Release this _____ day of _____, 2022 intending to be legally bound hereby.

_____   _____
Name   Signature

_____   _____
Street Address

_____   _____
City, State, Zip   Witness (if applicable)

_____
Telephone

Intro Script:
Hi, my name is _____, thank you for participating in this usability test. We are a group of UW students studying people's experiences using the Spotify app. We'll lead you through a list of tasks to perform on the app, then finish off by asking a few questions about your experience. Please remember, we're evaluating the interface, not you, so please just try to be honest and communicative. We expect the full study, including this introduction, will not take longer than an hour. You are free to drop out of the study at any time, and you will be compensated regardless with your choice of these candies. With your permission, we will take an audio recording of the session to get a transcript to refer back to in the data analysis process. After we analyze the data, the recording will be deleted and the transcript will be anonymized. Do we have your permission to record? Before we get started, what questions do you have?

Think Aloud Script:
As you're going through the tasks, please try to share your thoughts out loud. For example, if I was taking you through my task of drinking a bottle of water, I would say

"I'm going to hold the bottle with my right hand, put my left hand on the cap, and twist to open it. Then I'm tilting the bottle up to my mouth to take a sip"

Screening Questionnaire:
1. Which, if any, of the following music apps do you use?
2. Spotify, Apple Music, Youtube Music, Amazon Music
3. What is your profession or field of study?
4. What is your gender?
5. If you are comfortable disclosing your approximate age, which of the following age groups do you belong to?
     a. 18-24
     b. 25-34
     c. 35-44
     d. 45-54
     e. 55-64
     f. 65+
     g. Prefer not to answer
6. Are you a smartphone user?
     a. Would you be able to use your own smartphone during this study?
7. Will you be available _____ (time & date) for about an hour in the _____ building on campus at UW?

Pre-Study Questionnaire:
If Spotify User:
1. How many days a week do you use Spotify?
2. How many hours a day?
3. In what circumstances do you **listen to music** on Spotify? During any particular times or activities?
4. In what circumstances do you **search for new music** on Spotify?
5. In what circumstances do you **create playlists** on Spotify?

If Non-Spotify User:
1. Do you listen to music? Podcasts?
     a. Is there an app or service you use to listen?
     b. How many days a week do you listen? How many hours a day?

Post-Task Questionnaire:
1. Before opening the app, select a genre of music you are not very familiar with, preferably one you are interested in exploring.

2. Starting at the home page, create a new playlist. Give the playlist an appropriate title.

    Q: How easy or difficult was it to create a new playlist? (5 for very easy, 4 easy, 3 neutral, 2 difficult, 1 very difficult)

    Q: Are there any pain points you noticed?

    Q: Are there any things you particularly appreciated?

3. Find five new songs in the genre and add them to the playlist. These should be songs you don't already know, each from a different artist.

    Q: How confident are you that the songs you added are in the genre you selected? (5 for very confident, 4 confident, 3 neutral, 2 doubtful, 1 very doubtful)

    Q: How easy or difficult was it to find songs that you like to listen to? (5 for very easy, 4 easy, 3 neutral, 2 difficult, 1 very difficult)

    Q: Why did you choose [whatever they chose] to find new music?

    Q: Are there any pain points you noticed?

    Q: Are there any things you particularly appreciated?

4. Find two songs you already know and add them to the playlist. These don't have to be songs within the genre if you don't know any, but they should go with the songs you've added on some level.

    Q: How easy or difficult was it to complete this task? (5 for very easy, 4 easy, 3 neutral, 2 difficult, 1 very difficult)

    Q: Are there any pain points you noticed?

    Q: Are there any things you particularly appreciated?

5. Remove two songs from the playlist.

    Q: How confident are you that you successfully completed the task? (5 for very confident, 4 confident, 3 neutral, 2 doubtful, 1 very doubtful)

    Q: How easy or difficult was it to complete this task? (5 for very easy, 4 easy, 3 neutral, 2 difficult, 1 very difficult)

6. Rename the playlist to "New Jams"

Q: How confident are you that you successfully completed the task?(5 for very confident, 4 confident, 3 neutral, 2 doubtful, 1 very doubtful)

Q: How easy or difficult was it to complete this task? (5 for very easy, 4 easy, 3 neutral, 2 difficult, 1 very difficult)

Q: Are there any pain points you noticed?

Q: Are there any things you particularly appreciated?

7. Give the playlist a cover image.

Q: How confident are you that you successfully completed the task?(5 for very confident, 4 confident, 3 neutral, 2 doubtful, 1 very doubtful)

Q: How easy or difficult was it to complete this task? (5 for very easy, 4 easy, 3 neutral, 2 difficult, 1 very difficult)

Q: Are there any pain points you noticed?

Q: Are there any things you particularly appreciated?

8. Write a description for the playlist (a few words of filler text is fine).

Q: How confident are you that you successfully completed the task?(5 for very confident, 4 confident, 3 neutral, 2 doubtful, 1 very doubtful)

Q: How easy or difficult was it to complete this task? (5 for very easy, 4 easy, 3 neutral, 2 difficult, 1 very difficult)

Q: Are there any pain points you noticed?

Q: Are there any things you particularly appreciated?

Post-Study Questionnaire

1. On a scale of 1-10, how intuitive was the process of finding new music? (1 being least, 10 most intuitive)
2. Overall, on a scale of 1-10, how intuitive was the process of creating and managing a playlist?
3. What were the points where you felt stuck or did not know what to do next?

4. Do you feel that you had enough instructions or confirmation throughout the process?
5. Were there any steps or features that you found easy or really liked?
6. When finding new music, can you think of any features you would have liked to see that weren't present in the interface?
7. When managing a playlist, can you think of any features you would have liked to see that weren't present in the interface?

Note Taking Sheet - One Per Participant

Tasks	Completion Criteria (Y/N)	Study Question Answers	Frequency of Issues	Pain Points/Easy Points	Number of Steps to Complete Task	Participant Quotes	Body Language	Other Notes
Before opening the app, select a genre of music you are not very familiar with, preferably one you are interested in exploring.	Completed when the user verbally confirms their genre of choice. Default to Contemporary Jazz if the user is unable to choose. (Y/N)							
Starting at the home page, create a new playlist. Give the playlist an appropriate title.	Completed when the user successfully creates a named playlist.(Y/N)							
Find five new songs in the genre and add them to the playlist. These should be songs you don't already know, each from a different artist.	Completed when the user adds 5 new songs to the playlist.(Y/N)							
Find two songs you already know and add them to the playlist.	Completed when the user adds two selected songs to the playlist. If the participant is unable to choose two songs, they will be provided by the researchers.(Y/N)							
Remove two songs from the playlist.	Completed when the user removes two songs.(Y/N)							
Rename the playlist to "New Jams"	Completed when the user renames the playlist.(Y/N)							
Give the playlist a cover image.	Completed when the user selects or takes a photo for the playlist cover							

	image.(Y/N)							
Write a description for the playlist (a few words of filler text is fine).	Completed when the user gives the playlist a description.(Y/N)							

Note Responses to Post Study Questionnaire:

On a scale of 1-10, how intuitive was the process of finding new music? (1 being least, 10 most intuitive)

Overall, on a scale of 1-10, how intuitive was the process of creating and managing a playlist? (1 being least, 10 most intuitive)

What were the points where you felt stuck or did not know what to do next?

Do you feel that you had enough instructions or confirmation throughout the process?

Were there any steps or features that you found easy or really liked?

When finding new music, can you think of any features you would have liked to see that weren't present in the interface?

When managing a playlist, can you think of any features you would have liked to see that weren't present in the interface?

Appendix A2: Research Data

Spreadsheet for quantitative and demographic data:

https://docs.google.com/spreadsheets/d/1ebCtc8M-Esny23i4S7nS_oZpNlqaEe2fSqG68trLp08/edit?usp=sharing

Pre-Study Screening & Questionnaire:

Participant #	Are you a Spotify Subscriber?	What is your profession or field of study?	Gender	Age Group	How many days a week do you use Spotify?	How many hours a day?	In what circumstances do you listen to music or podcasts on Spotify? During any particular times or activities?	In what circumstances do you search for new music on Spotify?	In what circumstances do you create playlists on Spotify?
1	Yes	HCDE	F	18-24	7	1-3	When I am driving, working out, studying	When something new drops	When I get sick of old ones
2	Yes	English/ CHID	F	18-24	7	2-5	Driving, walking, homework, exercise, shower	When I get bored of old stuff	When old ones get too long
4	No, Sometimes Use	Data Analyst	M	45-54	2	0-2	When I want to relax, driving to work	When friends tell me something is good	For different moods/ languages
7	yes	UX Research	F	25-34	6	1	Driving, running	very rarely look for new music	for specific events, like a party or a run
8	yes	Communications	NB	25-34	6	2	chores, driving	when making playlists	at the start of each season
9	Yes	Mech Engineering	M	18-24	6	2	On commute to and from work	Not usually, sometimes discover weekly	not usually, uses the same one a lot
10	Yes	Microbiology	M	18-24	7	4-5	Shower, Working out, Walking to class, randomly	When bored of what they currently listen to or new music comes out	Randomly, usually around a mood or related to a song

Non-Spotify Subscribers

Participant #	Are you a Spotify Subscriber?	What is your profession or field of study?	Gender	Age Group	Is there an app or service you use to listen?	How many days a week do you listen?	How many hours a day?
3	No	Stay at home mom	F	45-54	Youtube	5-7	0-2
5	no	Engineering	M	55-64	AppleMusic, iTunes, Youtube	2	1
6	no	Art History	F	45-54	iTunes	3	1

Post-Task Questions:

Participant #	How easy was it to create a new playlist?	How confident are you that the songs you added are in the genre you selected?	How easy was it to find songs that you like to listen to?	T4 add known songs ease/difficulty	T5 remove songs completion confidence	T5 remove songs ease/difficulty	T6 rename playlist completion confidence	T6 rename playlist ease/difficulty	T7 change image completion confidence	T7 change image ease/difficulty	T8 write description completion confidence	T8 write description ease/difficulty
1	4	2	2	5	5	5	5	4	3	3	4	3
2	4	2	3	5	5	5	4	4	4	3	3	2
3	1	1	3	2	1	2	1	3	1	2	1	1
4	3	1	2	4	3	4	2	3	1	2	1	1
5	3	4	5	4	5	5	5	5	5	2	5	4
6	2	2	1	5	5	5	5	2	5	4	5	2
7	5	5	4	5	5	5	5	4	5	5	5	5
8	4	2	5	5	5	5	5	5	5	4	5	5
9	4	3	3	5	5	5	5	4	5	2	5	2
10	5	4	4	3	5	4	5	5	5	5	5	5

Post-Study Questionnaire:

	A	B	C	D	E
1	Participant #	New music intuitive 1-10	managing playlist intuitive 1-10	enough instructions and confirmation	
2	1	8	6	yes for both	
3	2	7	6	yes for confirmation no for instructions	
4	3	5	2	no, too many symbols	
5	4	6	4	no, hard to learn easy to master	
6	5	8	6.5	yes	
7	6	4	6.5	yes instructions, 50/50 confirmation	
8	7	7	10	instructions could be improved, yes confirmation	
9	8	8	9	yes	
10	9	4	6	yes	
11	10	8	9	yes	
12					

Figma file for qualitative data:

https://www.figma.com/file/ehsFdCuLNYwZUMV9zKHNVu/Affinity-Analysis?node-id=0%3A1&t=3LfMe9ClEFn3KRcf-1

Task 6
Rename
Playlist

Maxwell James Coppock

Task 7
Playlist
Cover
Image

Maxwell James Coppock

Task 8
Playlist
Descript
ion

Maxwell James Coppock

"So many items in that [edit playlist] menu, took a second to find it"
p7

Maxwell James Coppock

good options for customization
p10

Michael

"Wait I forgot how to do this haha I don't really do this that often. Oh wait, it's just this button. There's so many symbols hahaha" (P1)

Shreya Senthil

You hit the 3 dots and it shows you options. "This screen shows the name and the art, I would expect to be able to edit it right here. Tapping the cover art here though is like a 'back'"
p5

Maxwell James Coppock

"Once I found it, it was easy enough"
p5

Maxwell James Coppock

likes that they can take a photo
p7

Maxwell James Coppock

participant kept tapping the photo on the playlist to change, when that did not work, they then used the three dots. scrolled to find image change, couldnt, then went to the right path with "edit playlist"
p9

Shivank Mistry

"realistically it's straightforward to go into edit first, but i would like to be able to click on the image"
p8

Maxwell James Coppock

"I don't know what 'Edit Playlist' means, that's kind of vague"
p8

Maxwell James Coppock

"You hit 'Edit Playlist', which in my mind means you're just editing songs"
p5

Maxwell James Coppock

"when you say 'Edit Playlist', I don't know if that means a screen where I'm going to delete songs off it or... I mean, am I editing the list or the name of the list?"
p6

Maxwell James Coppock

After taking the photo, you can't scroll to the bottom. You can zoom, but you can't crop to have just the lower part of the image showing, even though it looks like you should be able to
p7

Maxwell James Coppock

pain points, felt stuck

Maxwell James Coppock

easy and enjoyed steps

Maxwell James Coppock

New Features Finding Music

Maxwell James Coppock

New Playlist Features

Maxwell James Coppock

"Got a little stuck changing the image of the playlist, finding that"
p5

Maxwell James Coppock

user got stuck changing the playlist image and adding a description
p8

Maxwell James Coppock

got confused trying to change the cover photo, clicked the picture before the edit playlist button
p7

Maxwell James Coppock

I wish I'd discovered the way to delete stuff easily (within edit playlist) sooner. It's kind of hidden
p7

Maxwell James Coppock

"Adding and deleting songs was really easy, all under those 3 dots" (in-line song menu)
p5

Maxwell James Coppock

On an Artist page, liked the "You might also like..." section for finding new music
p5

Maxwell James Coppock

adding an image was a highlight, I liked it
p7

it's so nice that it has one click addable songs at the bottom under a playlist.
p7

"I think the playlists someone else made were useful as a way to get familiar with popular songs in the genre
"
p9

Shivank Mistry

I liked all the different options on the edit page
p8

"songs suggestions are a cool feature that I use pretty often"
p10

Michael

tag system for song characteristics - tempo, energy, emotion
p6

Maxwell James Coppock

Voice-operated assistant
p6

Maxwell James Coppock

genres for songs built into the search bar.
filter results by genre
p10

Michael

mood-based music searching
p6

Maxwell James Coppock

wanted to see less popular songs and more diverse playlists. Doesnt want the same top songs for every playlist.

Shivank Mistry

tool tip for more instructions in a written manner instead of symbols

Shreya Senthil

wants an in-line gesture to quickly delete songs on playlist
p7, p8

Maxwell James Coppock

customize color of song names in the list. Maybe Spotify could do it automatically based on the vibe of the song
p5

Maxwell James Coppock