

Spotify: Heuristic Evaluation

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Introduction

For the purpose of this report, each member of our group individually reviewed Spotify using Heuristic Evaluation (Nielsen and Molich, 1990; Nielsen, 1994) methods. After conducting individual heuristic evaluations of issues and problems with Spotify, our team combined the resulting data to identify severe problems, issues found by all three evaluators, and user group specific problems. Specifically, we evaluated Spotify along the 10 dimensions outlined in Nielsen (1994), shown in table 1 below. We noted any issues we detected and made recommendations for each of the identified problems (Appendix A). Spotify is organized into three main navigation tabs: Home, Search and Library. Each had a number of associated issues (See Appendix B for detailed counts). After categorization, the problems were rated on a scale of 1 (cosmetic) to 4 (catastrophic) with 2 being minor and 3 being major issues. We identified several severe problems, many moderate ones, and only a few cosmetic ones.

The most serious issues with Spotify are the absence of a ‘Help’ menu within the app, the mislabelling of the ‘Artists’ tab in ‘Your Library’, the lack of specificity in error messages, and the lack of communication of new features implemented in Spotify. The lack of ‘Help’ in the app is a catastrophic problem because information that allows a user to prevent or rectify errors is essential to usability. When a user navigates to the ‘Artists’ tab in the ‘Your Library’ section of the app, the content displayed is an index of the artists if the user has ‘liked’ one of their songs, followed by a list of recommended artists based on listening history. When the user selects an artist, only the ‘liked’ songs in the user’s library appear, rather than their full discography. This is a severe issue because this format deviates from the user’s conceptual model of the app based on past experience with similar systems, and Spotify’s tab labelled ‘Artist’ displays completely different content. Two other severe issues include vague error messages and Spotify’s lack of communication about new features and implementations.

Problems identified by all three evaluators include the absence of customization and sorting options on the homepage, within Spotify-curated playlists, or during playlist creation. Our team also evaluated the app through the lens of the user groups defined in our previous research. This targeted heuristic evaluation yielded a number of recommended modifications to benefit the ‘Situational User’, the ‘Commuter’, and the ‘Heavy User’.

Table 1. Heuristics

Key	Usability Heuristic
1	Visibility of system status
2	Match between system and the real world
3	User control and freedom
4	Consistency and standards
5	Error prevention
6	Recognition rather than recall
7	Flexibility and efficiency of use

8	Aesthetic and minimalist design
9	Help users recognize, diagnose, and recover from errors
10	Help and documentation

Severe Problems

Help

The most grievous problem we discovered is the total lack of support or help within the app. The website has an extensive support section, but in the Spotify app, help is located in the FAQs on Apple products, and the solutions there are from other users rather than Spotify. On Android, help is in the settings menu under ‘Support’ which links to a support webpage. The settings menu is reachable only in the upper right corner of the home page; thus, it can be easily missed. We ranked this as a catastrophic issue, because access to help is an important aspect of usability, and the information to prevent or troubleshoot errors is non-existent or difficult to find.

Artists

An additional severe problem is located in the ‘Your Library’ menu under the ‘Artists’ tab. Library is the user’s storage of tracks, podcasts, playlists, albums and artists. Our team categorized this as a severe problem because ‘Your Library’ is one of the main navigation tabs and there is not a match between the organizational system in the app and the real world. The first issue here is that ‘Artists’ does not show you all the artists in your library. If you have never ‘liked’ a song from an artist, it will be a list of recommended artists based on your listening history. If you have ‘liked’ a song, then all the artists of songs that you have ‘liked’ appear, followed by recommended artists. A complete list of artists whose music you have saved, regardless of method, should be displayed here. The artist list should be automatically created by Spotify itself from the playlists you save, artists you follow, and all other ways of collecting music through the app.

Clicking on an artist in the ‘Your Library’ takes the user to a page where only the songs by the artist that the user has ‘liked’ are shown, rather than the full discography. This is an issue because there is another page labelled ‘Artist’ (not under ‘Your Library’) that does display the artist’s full discography. The two pages should not have the same label as that adds an additional level of confusion for the user. This is in violation of heuristic 4 on consistency and standards, as users expect the same content from pages with the same title.

Another related issue is the structure of the artist’s page after the selection of an artist not through the ‘Your Library’ page. The categories are ordered by ‘Popular’, ‘Artist’s pick’, ‘Popular Releases’ and then a tiny button leading to the entire discography, followed by ‘Featured On’, and ‘About’. Our team strongly recommends placing access to the discography on top as the first thing the user sees, followed by

the ‘Popular Tracks’ etc. A category “Your songs” can be added to easily access a list of the user’s preferred songs of the particular artist.

Error Messaging

While evaluating Spotify, evaluators encountered two different errors. For one iPhone user, the message simply stated that an error had occurred and the user was recommended to restart the app. This type of error message does not provide enough feedback to the user about how to prevent or resolve this error in the future. While this error is rare, the vague wording of the error provides no helpful way to pinpoint what was happening if the error re-occurred more frequently. This error message did not display a code for the user to research for more guidance. In the Spotify app on an Android device, one evaluator encountered the message ‘No internet connection available’. This message showed up despite the device being connected via 4G data connection and 5G internet connections, and with no other app reporting issues on the same device. We presume the error to thus be related to connecting to Spotify servers, but the error message does not indicate this possibility. So again, the vague text of the errors is an issue to be addressed. Because the users are not given clues about the cause of the problem, they find methods to circumvent the error message (see [Spotify Community Forum](#) for examples of this particular error dating as far back as 2012).

Feature Discovery

Spotify is constantly adding new features, but the streaming service often fails to communicate these new features to users. For example, playlist editing was added to Spotify before we conducted user surveys and interviews (Holt, 2019). However, out of our 170+ users, many mentioned that not having playlist editing was an issue. This indicates that they were unaware that playlist editing was already available. Other new features include the spin-off apps Spotify Lite (Spotify, July 2019) and Spotify Kids (Spotify, October 2019). These were posted on the Spotify Newsroom page, and were never mentioned anywhere in the app.

Spotify Lite is a build of Spotify for locations or devices with less bandwidth or less storage. This makes it ideal for older phones or rural or developing areas. Spotify Lite also allows the user to set up bandwidth limits to avoid overage charges. Spotify Kids is a separate app that only offers children’s music. It is designed to be used with Spotify’s more expensive family subscription plan, where children have their own account. This allows a child to listen to what they want without influencing the music suggestions on the parents’ account. Another addition this past week was Spotify Podcasts (Spotify, November 2019). This feature takes the form of a new type of ‘Discover Music’ where podcast suggestions are compiled into one playlist and built automatically for the user. All of these are important and useful features, but they are not directly communicated with their users. A banner at the top of the app when a new feature or separate app is available would resolve this issue. A clickable banner would take the interested person to more information about this update. This solution adds minimal interference because a banner is far less obtrusive than a pop-up, but the information reaches more users than the Spotify Newsroom.

Commonly Found Problems

Customization

Less catastrophic problems found by all three evaluators include a lack of customization and sorting features to allow users control over content displayed on the homepage and the ability to edit recommendations. Spotify does not allow users to remove songs from albums or Spotify curated playlists. The absence of this feature forces the user to manually create a separate playlist of an album excluding disliked songs, skip the song manually every time it plays, 'hide it' which means the song is not only deleted from the album, but deleted from the user's library. These are extreme choices for a simple issue. To resolve this problem, Spotify should add a 'remove from album' option so users can customize the albums as they like and listen to every song in any playlist. Similarly, users are not given an option to customize the artists they do not want to listen to. Spotify curates a set of playlists based on the user's history, moods, and activities. Users cannot remove an artist from these suggested playlists. The user should be able to 'hide' these artists from being recommended. The inclusion of this feature would give users the freedom to control the data fed to the suggestion algorithms. An option like 'Hide Artist' or 'Listen Less Frequently' can be added to playlist settings.

Playlist Creation

Spotify offers its users a huge number of playlists along with the option to create and share their own playlists. Based on our research and experiences navigating the app, users enjoy creating personalized playlists, but face issues while composing them. The 'Create Playlist' option is easy to find under 'Library', but adding songs to the playlist requires several steps. When a user clicks on 'Add Songs', they are taken to a screen showing suggested and recently played songs, liked songs and other popular genres. Songs are added to the playlist by swiping right. This action is intuitive, but the user does not have the option to add songs from personal playlists or their own library. User created playlists are not searchable when making a new playlist. The search bar allows users to add songs from their personal library, but combining playlists or duplicating and editing different versions of playlists is impossible. Playlist creation currently requires too many steps while creating and adding songs to personal playlists. This problem can be resolved with the addition of the option to search previously created playlists and duplicate portions of playlists or albums.

Homepage

The Spotify homepage currently does not allow users to control the displayed content. This page functions as the user's portal each time they interact with the app. After opening the app, the user lands on a scrollable homepage featuring categories of Spotify-curated playlists such as 'Recently Played', 'Uniquely Yours', 'Get Things Done At Home', 'New Songs Added', and 'Made For You'. These immediate recommendations provide a quick way to explore new music, but, as we discovered through interviews, some users would appreciate the option to customize the homepage with their own playlists. One issue with the homepage is that Spotify curated playlists are displayed at the top and personal playlists are listed toward the bottom of the homepage requiring the user to scroll to see them. The

homepage categories appear to be displayed independent of interest or listening frequency, for example, a user who does not drive does not need a 'Traffic Jams' category displayed first on their homepage. These categories are constantly reorganized as new categories are added.

Spotify currently lacks the option to customize, sort, and specify categories that remain on the homepage. For example, a situational user who uses Spotify only while doing household chores would always want the category 'Get Things Done At Home' displayed on the homepage. By asking users what they want to see as they open the app, Spotify can offer quick access to certain content. This would also serve to quickly train the algorithm to immediately display content relevant to each user. A modification to resolve this issue would be to add a 'Customize your homepage' option in the settings. Each genre or activity playlist category could have a 'Add to homepage' option.

User Group Specific Problems

The above sections 'Severe Problems' and 'Commonly Found Problems' cover how the issues identified during the heuristic evaluation affect all users. We were also interested in considering how some problems with the Spotify app affect the user groups defined in our previous research. The following heuristic assessments focus on the situational user, the commuter, and the heavy user, and issues pertaining to them with specific recommendations to benefit these user groups.

Situational Users

Situational users listen to Spotify during specific activities, meaning they use it only for a limited period of time. For this user group, most issues are related to navigation and homepage customization. Frequently listened playlists are posted on the homepage, but sometimes they appear after Spotify-curated playlists at the bottom of the homepage. Users should be able to add their playlist or preferred podcast to the homepage so they find it the moment they open the app. The homepage also shows recommendations that are not user specific. These suggestions are useful for certain users, but unnecessary for others. The Spotify app homepage would benefit from customization options like 'More of This', 'Less of This', 'Add to Homepage' and 'Never Show Again'.

The podcast Listener, a subtype of the situational user group, receives primarily music recommendations on their homepage rather than podcasts. This type of user navigates to 'Your Library' and then the 'Podcasts' tab to find podcasts recommendations and playlists. A user who only listens to Podcasts would benefit from a shortcut button on the homepage linking directly to 'Podcasts'.

Commuters

After conducting interviews and reviewing survey responses, our team found that the highest number of users reported listening to Spotify while commuting. Within this user group, a prominent subtype is the car commuter. In January of 2019, Spotify introduced 'Car View', a function where the app, upon detection of a car's bluetooth signal, switches to a user interface with larger icons and buttons (Spotify, n.d.). This feature is inaccessible to some, because it is impossible to manually switch on 'Car View', preventing users with older vehicles from navigating Spotify safely while driving.

Spotify provides users with a voice control option within the search bar, but for safety, this feature should automatically engage while a user is driving to prevent typing and scrolling. An alternate navigation system that does not require typing to search for an artist or album would provide a better, safer experience for drivers. As noted in the above discussion of issues and recommendations for the homepage, the option to customize immediately accessible content would aid the significant portion of Spotify users who listen while driving. Another related recommendation would be to tie suggestions to location, offering commuters an intuitive way to find their desired content on the move.

Heavy Users

As heavy users are frequently engaged with Spotify, they experience many of the issues identified during the heuristic evaluation. However, some of the identified problems most directly impact the heavy user. These include issues related to the home page and 'Browse All' locations. Specifically, these problems are exacerbated by the heavy user's continual interaction with the app.

On the home page, content is generated based on past behavior. As the heavy user has a great deal of listening history information, the home page will have a wide variety of content to display. This content will also frequently change as mentioned (Appendix B, Table 2) under heuristic 7, problem 1, thus a user may miss out on content they wanted to listen to. Heuristic 3, problems 1, 2, and 3 detail issues with homepage customization, which constantly impact the heavy user. Homepage customization would positively impact the heavy user, even just the ability to add elements (a type of interactive content organizer with a scrollable view like Spotify's current homepage setup) to act as navigation shortcuts. For example, a user could add icons for 'Coffee Shop Music', 'Focus Music', and 'Party Music' to their homepage. Spotify links those shortcuts to relevant recommended playlists or playlists that the user has added to the shortcut category. This would allow the user to train the Spotify algorithm to provide specific content that can be easily reached. This is one example of a layout change that would help mitigate the navigation issues that a heavy user might frequently encounter.

The 'Browse All' menu is inaccurately labeled because it does not actually allow a user to browse all Spotify content; instead, the tiles displayed are chosen algorithmically, not alphabetically. 'Browse All' impacts heavy users in several ways. Firstly, because the content is chosen algorithmically, a user may not be able to locate a category containing the content they want. Additionally, even if such a category exists in the menu, they might not be able to find it because the menu is not organized in a sensible manner. This relates with heuristic 2 problems 1 and 2, where the recommendation would be to change the way 'Browse All' is organized. Users might not know that certain content types exist if they cannot see them under 'Browse All'. They also may not know the name of the category of content they are looking for (making them unable to search for it directly). Both of these issues should be the reason that 'Browse All' exists, but the current implementation is not meeting those requirements.

The heavy user could be better served by the adjustments recommended above, and also by better communicating new features as discussed under the 'Feature Discovery' heading in this report. For example, using Spotify Kids (Spotify, October 2019), would remove the clutter of children's songs from

the heavy user's recommended songs. Additionally, the new playlist features make building customizable playlists more accessible for the heavy user.

Conclusions and Implications

Spotify is constantly updating and changing the user experience for the better, but some issues remain. From the obvious issues with finding help, understanding error messages, finding new features, artist pages, to the more common, minor issues revolving around customization and playlist creation, we identified multiple areas needing improvement and outlined suggestions for these changes. The heuristic evaluation also revealed problems impacting our previously defined user groups. Our team generated recommendations for modifications of the Spotify app to resolve these issues and better serve these users.

Some of the most impactful changes Spotify could make pertain to the severe problems. The first is the inclusion of better access to help and support through the app. This is a relatively simple change that should have been made a long time ago. In a similar vein, updating the error messages to more accurately communicate problems is also a key change that needs to be made. While errors seem to be relatively rare, multiple types of errors displaying in the same message leaves users unable to locate the specific issue and take steps to resolve or prevent the problem. To increase usability, Spotify needs to improve communication of new features to their users. For example, the Spotify Kids app would be helpful for many parents (impacting all three user types), while also benefiting Spotify, as it requires a higher premium price point to use. Other suggestions made throughout the report would significantly improve the user experience. Clear next steps would include turning the recommendations into actionable designs and design elements, wireframing and testing, and finally programming and implementation of the additions.

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Appendices

Appendix A

For complete heuristic evaluation data see attached spreadsheet labeled Grp3_608_Heuristic_Evaluation.xlsx under tab Group Results

Appendix B

Chart 1. Heuristic Frequency

Frequency vs. Heuristic

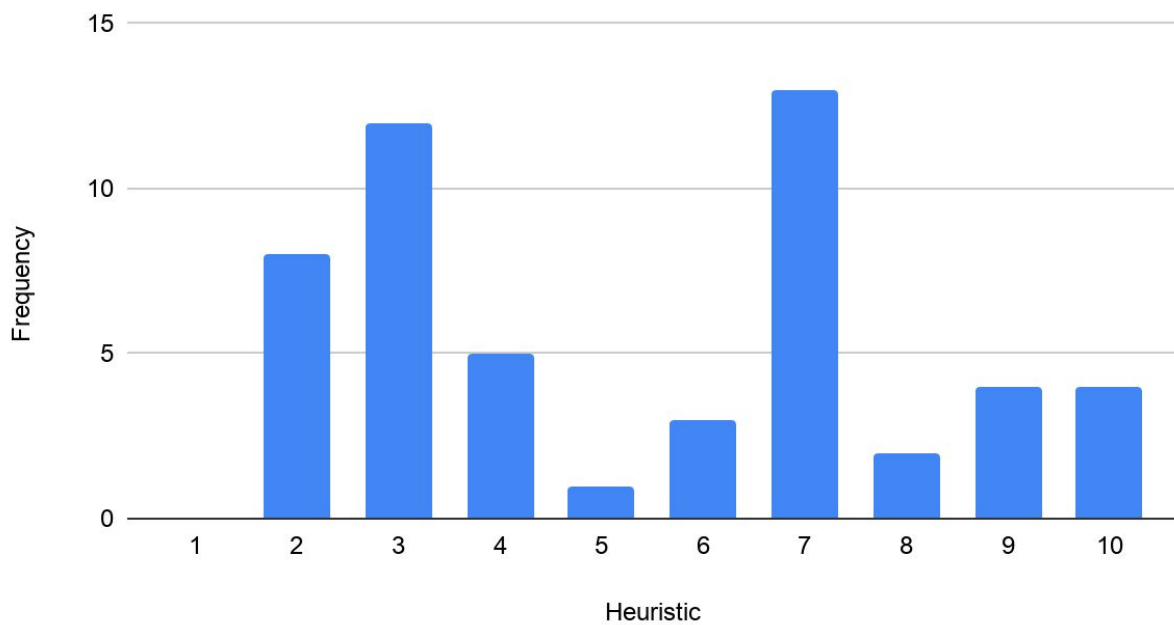


Chart 2. Problem Severity Count

Problem Count vs. Severity

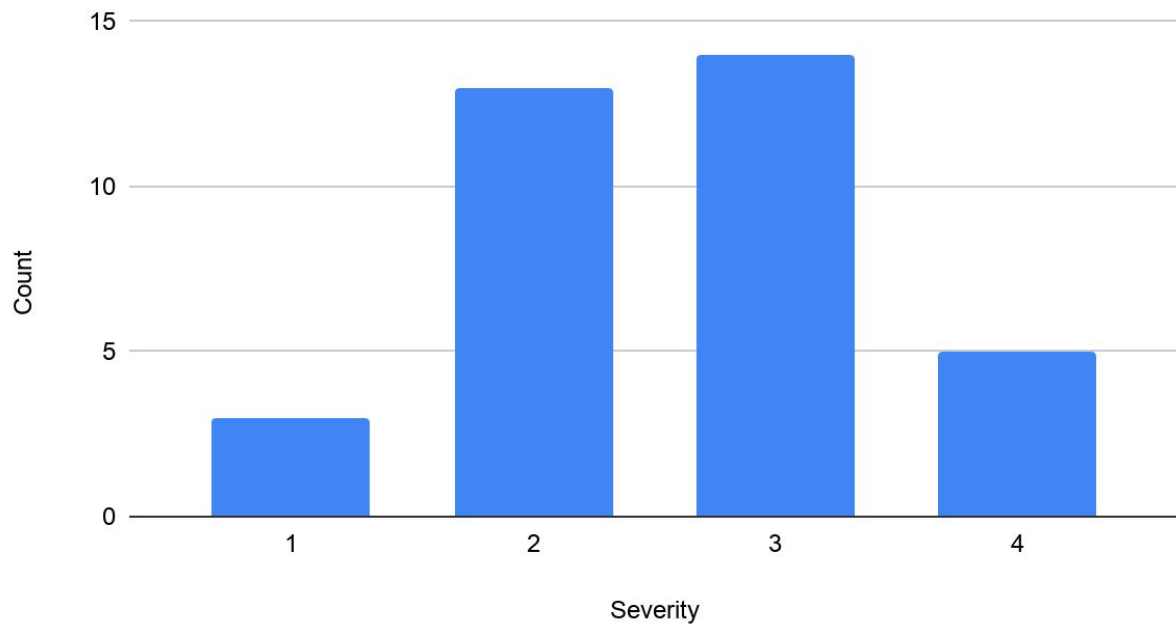


Table 2. Heuristic Frequency and Location

Heuristic	Frequency	Problem Locations	Problem
1	0		
2	8	Browse All	1. Browse all doesn't show 'all' it is a subset of categories, there are more genres but you have to manually search for them.
			2. Browse all isn't presented in a sensible [i.e., alphabetical or categorical] order, and it changes on occasion, making it hard to find things
		Search	3. Search bar and keyboard do not automatically change to accommodate safe use while driving.
		Home Page	4. Homepage does not give you direct access to all the podcasts i.e podcast playlist, podcast recommendations, new released podcast.
		Podcasts	5. No way to reorder podcasts based on title, new releases, favorites, etc. Unclear how list is sorted.

		Library	6. The option to view the artists complete discography is located below the 'Popular Hits' which requires scrolling and in a very small font. Not easy to find.
			7. Does not show list of artists in your library. Shows collapsible list of recommended artists based on past listening behavior
		Settings	8. Car View has no manual toggle. Only works in cars with Bluetooth
3	12	Home Page	1. Homepage does not give you direct access to all the podcasts i.e podcast playlist, podcast recommendations, new released podcast.
			2. Cannot customize your homepage to choose which tab/category (Recently Played, The State of Music Today, Uniquely Yours etc) you want to see first
			3. There is no way to stop a tab/category of playlist (Recently played etc) from appearing on the homepage.
			4. Cannot customize homepage based on what content you want to consume
		Playlist	5. Editing playlist you have to hit save to save and exit, hitting back gives a pop-up to abandon work but save is not indicative of finishing.
			6. There are no undo or redo. If a song is added by mistake you have to manually remove it and if one is removed you have to readd it manually.
		Premium upgrade tab	7. Cannot upgrade to premium subscription from within app.
		Podcasts	8. No way to reorder podcasts based on title, new releases, favorites, etc. Unclear how list is sorted.
		Albums	9. You cannot remove songs from official albums. It's a hassle to create a playlist of the entire album just to exclude one song.
		Search / Browse All	10. Browse buttons are not in any obvious order. No option to sort or prioritize.

			11. Playlists of different genre/categories other than the ones you generally listen to are not available on the homepage.
		Settings	12. Car View has no manual toggle. Only works in cars with Bluetooth
4	5	Playlist	1. Make Collaborative option, to undo you check it and the button says 'make non-collaborative' and the pop up text says 'playlist marked as uncollaborative'
		Home Page	2. Browsing through music gets saved/collected in Recently Played which makes you lose your previously listened to tracks. History of played songs not available.
		Your Library	3. Clicking on Artist doesn't take you to artist page, it takes you to the songs you liked from that artist. While clicking on an artist in the search takes you to the artist's page, but both are called 'Artist'
			4. Does not show list of artists in your library. Shows collapsible list of recommended artists based on past listening behavior
		Search / Browse All	5. Browse buttons are not in any obvious order. No option to sort or prioritize.
5	1	App	1. When for some reason the app stops functioning, the only error you get is An Error Occurred, Try Reloading. You then have to login again but it does not tell you why the error occurred for you to avoid in the future.
6	3	Options/Sandwich/Burger Menu	1. Everything is in the options menu, it makes it hard to sometimes find information
		Settings	2. Cannot upgrade to Premium User from the mobile app. Need to do from the web.
		Search / Browse All	3. Discover tab is hidden in submenu. Difficult to find
7	13	Home Page	1. Content changes frequently, if a user saw something they liked but didn't click it might not appear later and they've lost the chance to interact with it

			2. There is no way to stop a tab/category of playlist (Recently played etc) from appearing on the homepage.
			3. Cannot customize homepage based on what content you want to consume
		Settings	4. Cannot upgrade to Premium User from the mobile app. Need to do from the web.
			5. Car View has no manual toggle. Only works in cars with Bluetooth
		Advertisements	6. On the free version, the advertisements do not have a close option
		Playlist	7. While creating a playlist you cannot go to previously created personal playlists to add songs from there. Even though you can there is an option to add songs from Spotify curated playlists, you cannot go to a specific Spotify curated playlist. You have to search for the song. You cannot browse the library as you like.
			8. To change the order of songs manually, you have to go into 'edit playlist' under options, but sort playlist is also an option but won't let you change the order of the songs
		Library	9. The option to view the artists complete discography is located below the 'Popular Hits' which requires scrolling and in a very small font. Not easy to find.
			10. Playlists curated by the user are at the bottom of the list. Spotify curated playlists are at the top. No option to sort.
		Search	11. Search bar and keyboard do not automatically change to accommodate safe use while driving.
		Search / Browse All	12. Discover tab is hidden in submenu. Difficult to find
			13. Browse buttons are not in any obvious order. No option to sort or prioritize.

8	2	Home Page	1. Diversity of recommendations. Most of homepage is Spotify curated playlists featuring similar groupings of artists.
			2. Cannot customize homepage based on what content you want to consume
9	4	App	1. When for some reason the app stops functioning, the only error you get is An Error Occurred, Try Reloading. You then have to login again but it does not tell you why the error occurred for you to avoid in the future.
			2. Spotify on Android periodically has an error 'No Internet connection available' when there is internet (error could be server side or with the connection, but error text does not diagnose this)
		Help	3. There is no documentation available to get started on the app or to discover any new features.
			4. No help menu or link in app that is easy to find. Eventually found it under Settings as 'Support' which links out to the website.
10	4	Help	1. There is no help in the app, at first glance. It is under 'Support' and links to the website but was super hard to find
			2. No help menu or link in app that is easy to find. Eventually found it under Settings as 'Support' which links out to the website.
			3. There is no documentation available to get started on the app or to discover any new features.
		New Feature Discoverability	4. There is not a good way to highlight new features