Proposal for Capstone 1
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What goal will your website be designed to achieve?

This application will be aimed at making music discovery a more direct and streamlined process, allowing users to easily find songs based on an array of different search criteria. While song recommendations on sites/apps like Spotify and Soundcloud are intelligent and useful, they are rather obscured to the user and lack the ability to directly control certain aspects of the music they are suggested. This app would be built upon these intelligent algorithms, but with the added functionality of allowing users to filter suggestions based on keywords, artists, genre, bpm, and energy levels among many other things. Any amount and combination of parameters can be used in their search. Users will find the perfect songs for their needs, and be able to add/save them to a playlist for later.

What kind of users will visit your site? In other words, what is the demographic of your users?

This site is aimed at a wide demographic of music lovers, primarily those that are looking for something fresh and spend time attempting to curate their perfect playlist. Remember how music lovers used to scour the LP boxes of record stores for hours for new music? Well even with the advent of modern day algorithms, the process of discovering music we enjoy can still be a longer-than-desired process. Everyone has individual or nuanced taste when it comes to music, and users will be able to satiate their music needs quickly with this precise recommendation experience, and further express themselves by compiling playlists with their discoveries. This site would also be a very useful tool for people in the music industry, like producers and DJs. DJs often need music of a certain genre, emotion, bpm, or key for their live sets, and are always looking for songs that haven’t already been overplayed. They could easily obtain what they are looking for by using my site. Producers on the other hand, are also in search of lesser known songs that they can sample from for their own arrangements. Having the ability to control parameters of the new songs suggested to them would ultimately streamline the process for them.

What data do you plan on using? You may have not picked your actual API yet, which is fine, just outline what kind of data you would like it to contain.

This app will make extensive use of the Spotify API, with some considerations for the Soundcloud API as well for the lesser-known song suggestions. The primary data object that will be utilized in this app is a Spotify song, and subsequently, lists of Spotify songs that can be turned into a Spotify playlist. Users that are Spotify account holders can create and delete playlists, and add and delete songs from said playlists. The API allows for all this functionality, but I would also like to implement some sort of widget that can allow users to preview the songs in their playlists.

In brief, outline your approach to creating your project (knowing that you may not know everything in advance and that these details might change later). Answer questions like the ones below, but feel free to add more information:

What does your database schema look like?

The database would include a user table with user data that is seeded from Spotify. This would have a one-to-many relationship with the playlist table that holds data on the users' created playlist(s), like name, description, song ids, etc. The playlist table would then have a many-to-many relationship with the songs table, as one playlist can have many songs, and one song can belong to many playlists. The song table would contain the song data retrieved from the API, and would probably have the most extensive amount of data attributes, as those are what are utilized in the song recommendation search.

What kinds of issues might you run into with your API?

The Spotify API is very popular, and is often undergoing changes to the way it is utilized. If endpoints happen to change over the course of my app utilization, the necessary changes would need to be made in order to ensure that it still works. With some lesser known artists that self release music under independent distributor clients (like DistroKid), sometimes problems arise with songs being incorrectly attributed to artists and vice versa. This could cause some songs that have been added to a user's playlist to change or disappear, so I would need to handle these instances to prevent them from breaking users' playlists or the app as a whole.

Is there any sensitive information you need to secure?

I would need to secure the API Key when making requests with the API, and the users' password when they sign into their account.

What functionality will your app include?

- The ability to search for new music based on a wide range of criteria.
- Adding/deleting music to playlists created by the user
- A widget that previews the songs in browser

What will the user flow look like?

Users will first sign in, and then be presented with the form to search for new music. There will also be a nav bar that allows them to access their playlists consisting of songs they have already saved. If a user searches for a song, they will be directed to a page that presents the song with all of its attributing data, and be able to preview the song. They will then be prompted to either save the song, or attempt the search again.

What features make your site more than CRUD? Do you have any stretch goals?

Stretch goals would include the implementation of a ‘favoriting’ system that allows users to display their curated playlists to one another and ‘like’ them, or even save them as one of their own playlists. This would establish a need for a many-to-many relationship between users and playlists. Another consideration of mine would be to use an additional API, like Ticketmaster or Songkick, that would allow users to see upcoming live shows for the artists of the songs in the searches and playlists, and follow a link to purchase tickets.