The Examination of Spotify Data to Form Character Metrics

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I. Objective and Motivation

The main objective of our final project is to analyze user data using Spotify in various different ways. We want to successfully be able to see and evaluate what genres a user listens to, what time of day they are most likely to listen to such genres, how often they shift between genres, etc. Another big part of our objective is to successfully be able to compare user data. This allows a Spotify user to analyze their friend's music habits with their own, find similarities in music taste, and even discover new artists.

Furthermore, by the end of this project we aim to create character profiles for each individual from the data acquired from the Spotify API. By computing a variety of statistics which include genre, artist, and even song bpm, we will be able to classify individuals into a variety of subsets through a wide range of character metrics. In sum, by the end of our classifications, a user will know more about what they like to listen to and will be able to compare their user sound profile with a variety of other individuals in hopes to widen their sound portfolio.

Our main motivation for our project idea derived from each of our member's strong admiration for music. Each member of our group is always listening to their favorite artists or albums, as well as looking to find and discover new songs, albums, and even genres. Upon considering ideas for our final project, we realized that there are many possibilities available to us regarding the open source Spotify API. We realized it would be useful for a user to know their top songs over a short, medium, and or long period of time. Users would be able to derive which artists they spend the most time listening to over time as well. Our project idea would allow friends to share their top songs and artists with each other and compare various different aspects of their Spotify data.

Moreover, our group found it profoundly interesting to build a character model that consisted entirely of music related data. The idea to be able to create a portfolio of music specifically catered to one individual through a variety of music seemed very unique and thus captivated my team's thoughts. Overall, after brainstorming various different ideas for our final project, we concluded that an examination of music data would fall into an accurate time span and prove to be a challenging process that would exemplify the qualities of digital archaeology.

II. Discussion of Data

For this project, we will be analyzing user data from Spotify. Specifically, the following is the user statistics that will be obtained or used for our project. Possible data that will be categorized and organized:

- Amount of plays for a song
- Amount of plays for an album
- Amount of time listened to a specific genre
- Top genres a user listens to
- Time of day user is most likely to listen to specific genre
- Time variation for switches between genres throughout the day
- Top artist listened to for a user
- Song Beats per minute
- Further statistics to be pulled from the Spotify API

These are some of the possible statistics we will be analyzing for our final project. The data above will also be organized into short term, medium term, and long term data applications, if possible. This will be so the user can observe and compare their habits and statistics over a period of time. We will also be comparing the specific data above to other users as well. After in depth examination of this data we hope to create character profiles for each user. This will be done to compare music habits between two users, as well as discovering new artists, songs, or even genres.

III. Group and Member Responsibilities

It is imperative that we specialize and tackle the problems that are fit for each member's skillset. Since our idea is essentially visualizing Spotify data between two users, there are a variety of tasks to work on that the team can split up to work more efficiently. We were thinking of splitting the project into three parts: Frontend design, backend, and graphics.

Jared: Useful graphic design skill set and will work on graphics/animations portion and the graphic design of the page. Will also work on the data analysis due to being a connoisseur of modern music. Furthermore, will be in charge of making decisions for most of the graphical front end.

Kedar: Has previous experience in frontend development and design and will mostly contribute on the looks of the project and will also work with the backend team to connect components together.

Rephael and Kishan: Using previous backend experience in flask and node.js, will take care of the backend of the project such as pulling data from Spotify API and parsing through it. They will be in charge of creating the statistics and character backgrounds for each user's unique data set. They will also be in charge with Kedar to create the algorithms that will feed into the main app and provide the data for Jared to graphically create and storyboard.

IV. Timeline and Expected Outcome

In the beginning stages of our final project, the main task will be to familiarize ourselves independently with the Spotify API, since we believe it will be the main hurdle for our project. This might take one to two weeks before we feel comfortable enough to begin our task, but during this we can framework and wireframe exactly what data we plan to grab, as well as the way to present it. This is the rough timeline and order we have came up with, barring any setbacks look as so:

- Individually learn the api, and discuss and framework the project
- Begin collecting data using the Spotify API for one person.
- At this point, we expect to be able to have a list of popular songs and artists, which is what the API allows, for one user.
- Look into creating the character backgrounds for a specific user
- Add another user to simply compare song, artist, and genre data.
- Flesh out the presentation of the data from more than just text.
- Begin adding more niche data as allowed, such as amount of plays per song, or time of day, or even something like what genre you are most likely to listen to at the time of day.
- Finalize the dataset and finish creating character profiles
- Finalize the main page
- From this point forward, we are simply fleshing out the presentation by adding intuitive design elements or more and more data to present to the user.