Process Book

Jaks

Github Repository

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Overview and Motivation

Music streaming services are getting smarter. Developers have access to a wealth of data about trends and habits of users, and this data is being used to develop statistical models which can offer up music suggestions. One streaming service, Spotify, produces a daily playlist and personalized playlists.

The main motivation for a playlist is to discover new music. As a user listens to a playlist, it would be fun if the user could learn more about it. Items of interest such as lyrical content and even how dancy a certain track is. The goal of our project is to have a focused website that curates this information to a user. Our project will serve as a playlist companion to make it easy to explore data related to the playlist.

Related Work

A lot of the related work on Spotify has to deal with 3D visualizations that correlate to the song that is currently playing. There are akin to the audio visualizations that ship with most media players. There isn't a strong focus on visualizing information about playlists. Our motivation is as Spotify users that listen to the new playlists to find new music. Sites like Genius provide a lot of fun insights into songs and it would be nice to have all that information in one place.

Questions

While our project is mostly for entertainment, it will be interesting to see if our project exposes any patterns in popular music. More to come here as we progress past the midpoint milestone.

Data

We will be getting most of our data straight from Spotify using their web API (https://developer.spotify.com/web-api/). In addition we will be using the Genius API (https://docs.genius.com/) to get lyrical data.

To pull this data, we have built wrappers around the API to meet our needs. The daily playlists will be pulled daily and saved to file. Some cleanup is needed to synchronize the data between the Spotify and Genius APIs.

Exploratory Data Analysis

An initial data visualization we had in mind was star charts. We noticed that the Spotify API provides fun data about their songs. For example song comes with a rating of how dancy a song is or how instrumental or vocal it is. We think these would be well represented by a star chart.

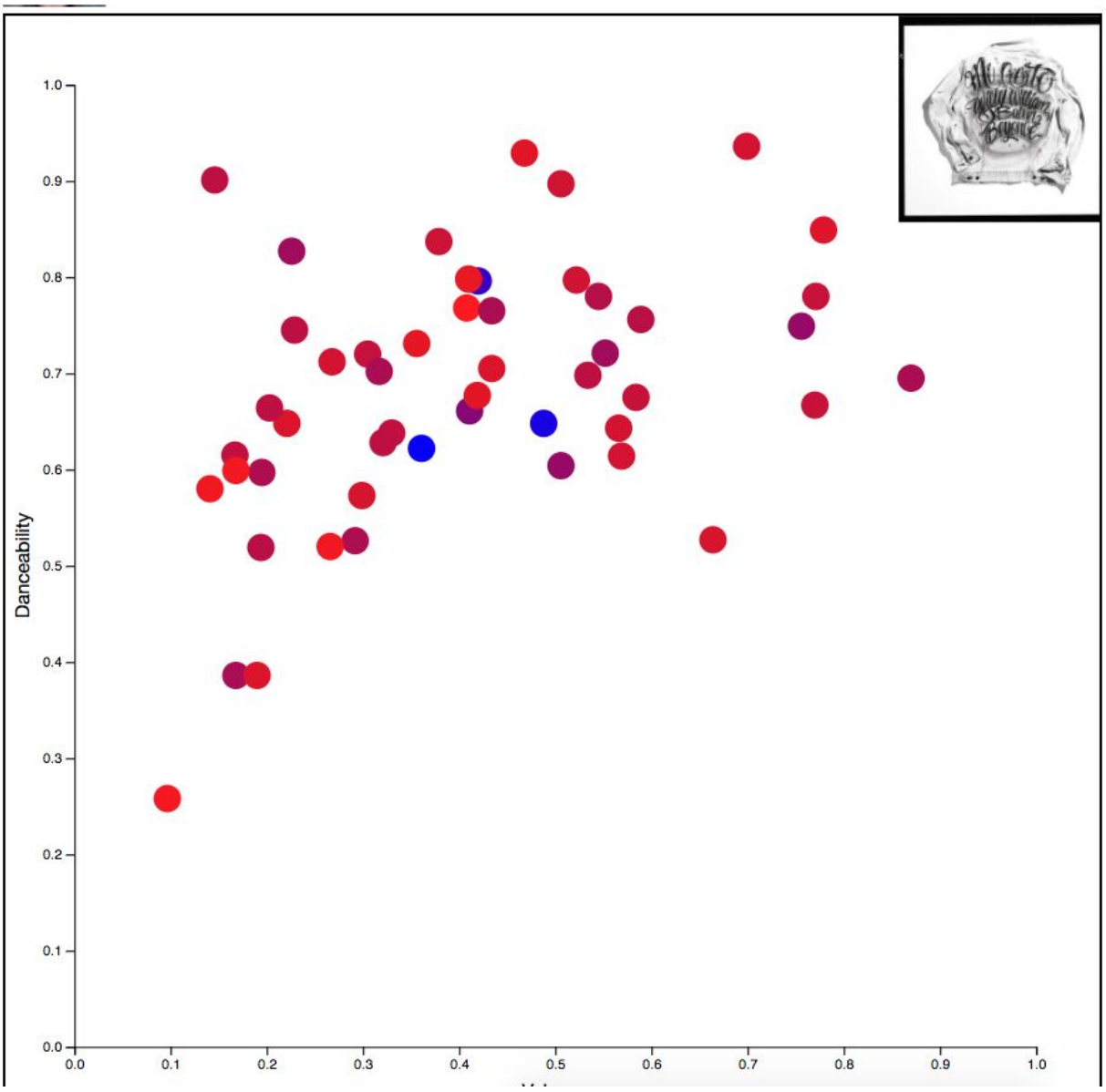
Another point of interest is comparing these attributes using a dimension plot. For example, is there a correlation between the danceability of a song and it's popularity? We intend on polishing these visualizations as well as adding more before the final evaluation.

Implementation and Design Evolution

We currently display album art, popularity, track information, and a star chart for each song on the playlist.

This is just a proof of concept and we have ideas on how to move this design forward. Actions such as sorting and filtering will be implemented in the future.

Additionally there is a scatterplot that shows the correlation between the danceability of a song and it's popularity. If you hover over a point, you can see the album and track.



We intend to advance this visualization by adding labels to the points so the user can view information about the tracks before hovering.

Evaluation

So far one of our biggest challenges has been synchronizing the information between the Spotify and Genius APIs. There are often variations in how artists represent their names and the names of their work. This has proven a bit of a challenge. We are still

exploring the data and how to visualize it and will have more insights as we move past the midpoint milestone.