

Workflow

Kaggle
Spotify
Genre
Dataset

Spotify API (on
top charts
spanning
multiple
years)

Dataworld
Billboard
Dataset
1970-2017

Description
of
Datasets

Combined
Dataset
(genre, year,
popularity,
other
attributes)

matplotlib
Jupyter
notebook

Results

The Development of Musical Genres

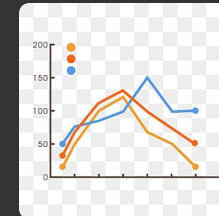
Kaggle Dataset: A massive collection of ~80k tracks obtained using the Spotify API, which allows for the user to obtain information about a track's attributes, provided by the Spotify API. These include popularity, genre, acousticness (measure of the utilization of live instruments), valence (how "happy" a track sounds), energy, danceability, etc.

Dataworld Dataset: Contains the top 100 Billboard songs through the years 1970 to 2017.

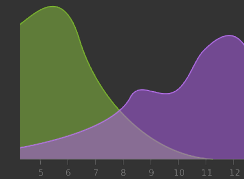
Key Attributes

Acousticness (0-1): the level acoustic instrumentation
Danceability (0-1): analyzes the bpm and rhythmic stability
Energy (0-1): measured based on loudness and intensity
Instrumentalness (0-1): the presence of vocals
Valence (0-1): how "happy" or positive a track sounds

Data Analysis Methods



Line graph: charts the trends in the characteristics of popular tracks over the years, measuring valence levels, danceability, and acousticness



Density Plot: will be used to display the variances in a genre's characteristics, such as valence, energy, and danceability.

Python's library matplotlib will be used to plot the data

Pandas will be used to combine the datasets obtained from Kaggle, and personal scraping from the Spotify API, as well as to organize the data

Research Questions

- Which genre displays the most variability in energy, acousticness, or bpm?
- Which genre has seen a growth in popularity?
- Which genre is seen the most in the top charts over the years?
- What kind of traits are seen in popular music and what genres do they match?

Interpretation of Data

I expect some trends in music to be fairly straightforward, with the more traditional genres such as classical and older rock to have more acousticness. The variance in energy and danceability levels in the electronic genres will probably be lower compared to other genres as EDM makes up such a large portion of electronic music. One genre I expect to see a large variance in valence levels is jazz, due to the wide range of experimentation and expressive instrumentation in the genre.

Further Exploration

By analyzing characteristics of certain genres, it will be interesting to see if some of the less popular genres share many of the same qualities as more popular ones. Through this, it may be possible to predict future trends in music, and see which genres may rise to popularity.

Works Cited

https://www.kaggle.com/yamaerenay/spotify-dataset-19212020-160k-tracks?select=data_by_year_o.csv

https://data.world/typhon/billboard-hot-100-songs-from-1970-2017/workspace/file?filename=songs_1970_2018_uniq.csv