

DSCI 510 Final Project

Analysing Audio Features & Spotify Song Popularity

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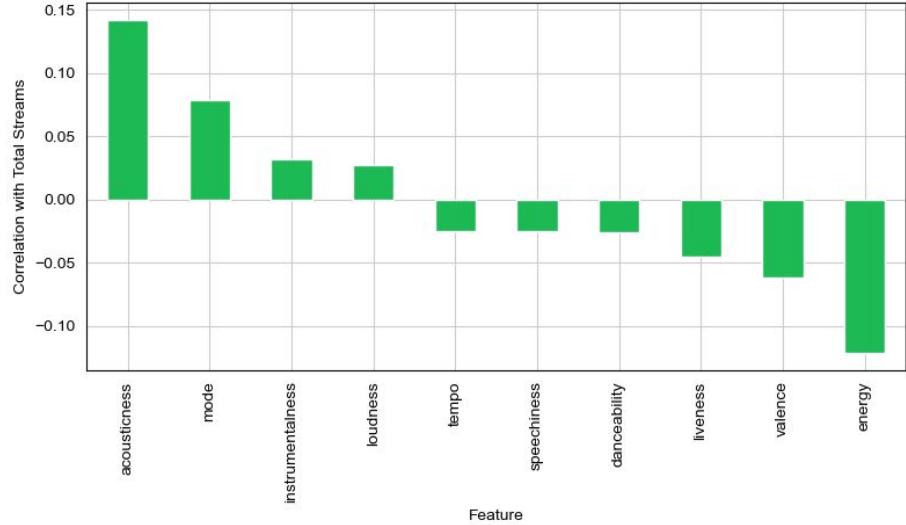


Data Sources

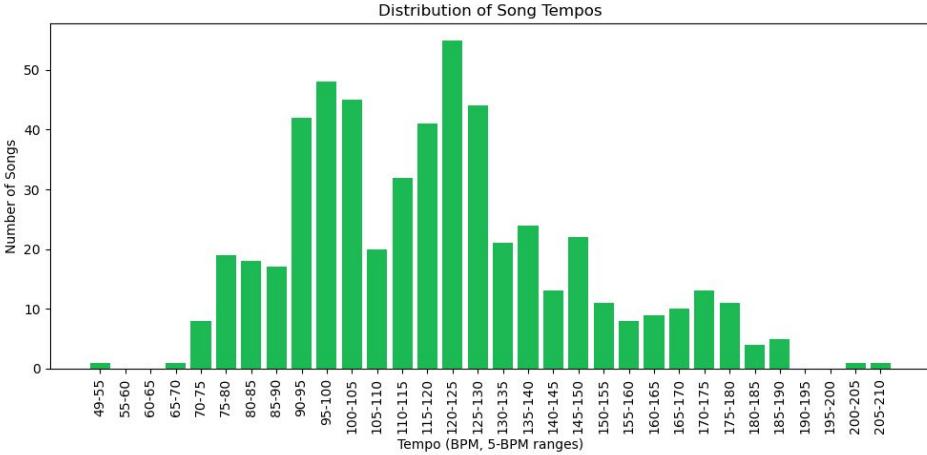
Data source	Name / short description	Source URL	Type	List of fields	Able to access/collect data with python?	Data retrieved // Dataset size
Spotify API	Spotify Web API	https://developer.spotify.com/	API	Popularity, track name, artist, album, release date, explicitly flag, duration	Yes	970 // ??
Kaggle	Audio features and lyrics of spotify songs	https://www.kaggle.com/datasets/imuhammad/audio-features-and-lyrics-of-spotify-songs	CSV	Danceability, energy, tempo, valence, loudness, lyrics, genre	Yes	546 // 180000
Kworb	Spotify most streamed songs of all time	https://kworb.net/spotify/songs.html	Web page	Song, total streams, daily streams	Yes	1000 // 2500
Kaggle	Most Viewed YouTube Music Videos	https://www.kaggle.com/datasets/asmonline/most-viewed-youtube-music-videos	CSV	Video, total views	Yes	357 // 2500

Results - Audio Features

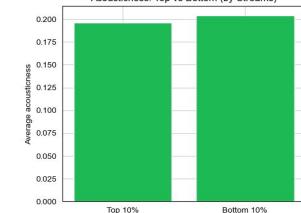
Correlation of Audio Features with Total Streams



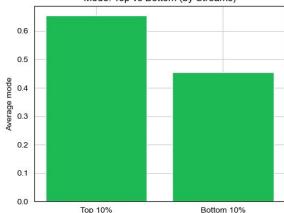
Distribution of Song Tempos



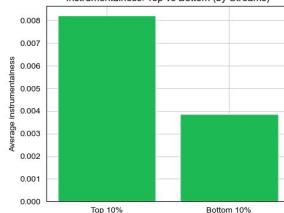
Acousticness: Top vs Bottom (by Streams)



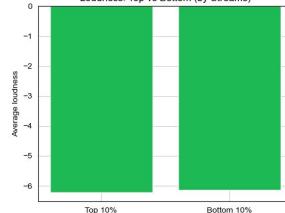
Mode: Top vs Bottom (by Streams)



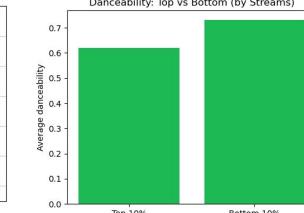
Instrumentalness: Top vs Bottom (by Streams)



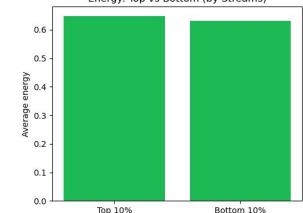
Loudness: Top vs Bottom (by Streams)



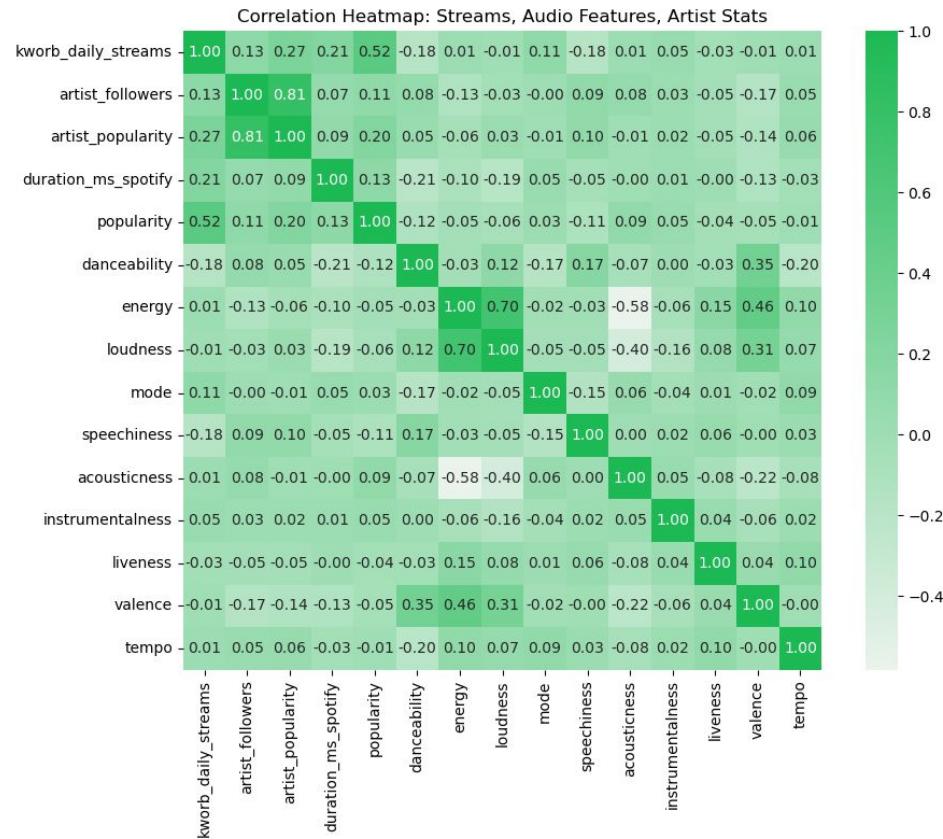
Danceability: Top vs Bottom (by Streams)



Energy: Top vs Bottom (by Streams)

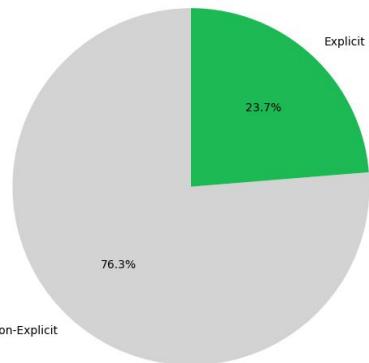


Results - Audio Features

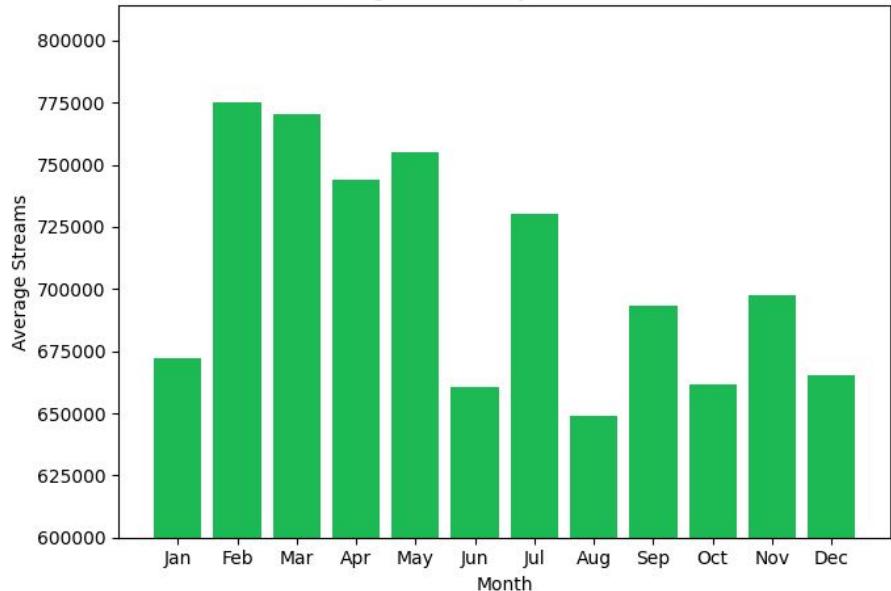


Results - Non-Audio Features

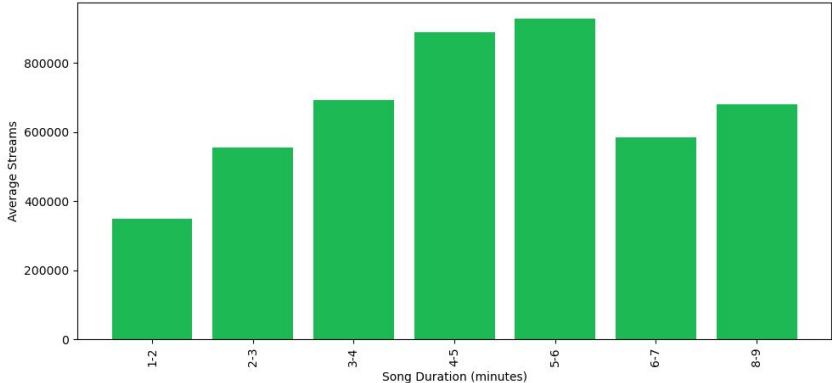
Explicit vs Non-Explicit Songs



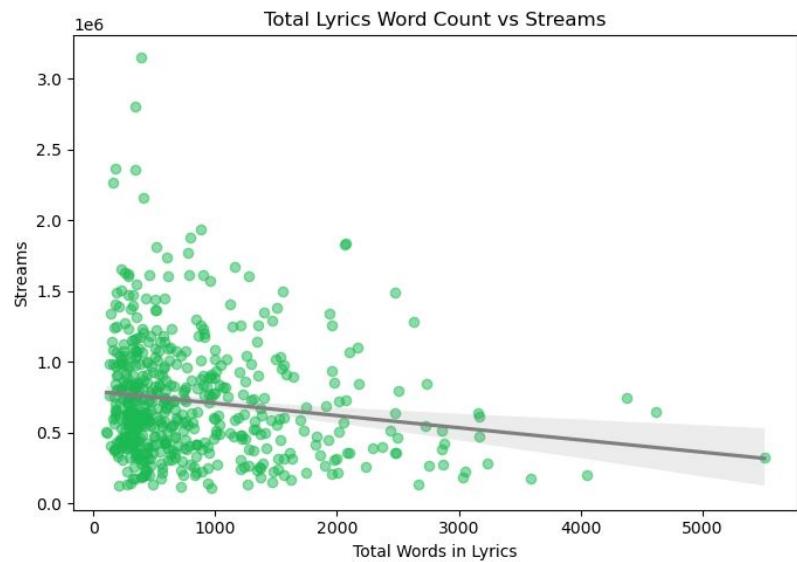
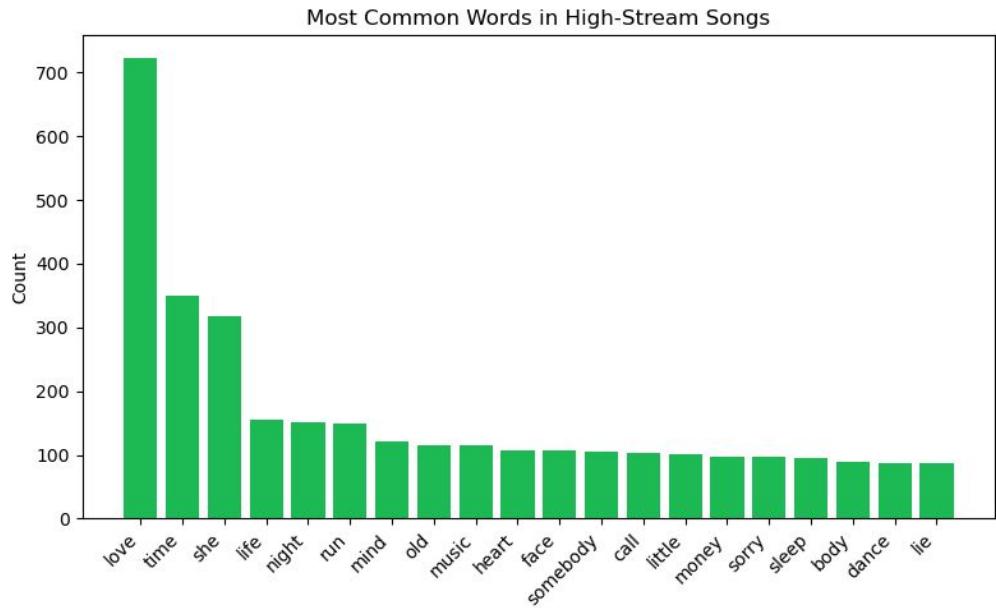
Average Streams by Release Month



Average Streams by Song Duration Range



Results - Lyrics



Challenges

- Spotify API rate limiting
- Standardizing variables & names
- In general... getting the code to work
 - A LOT of debugging & Googling
- No meaningful (new) insights found...