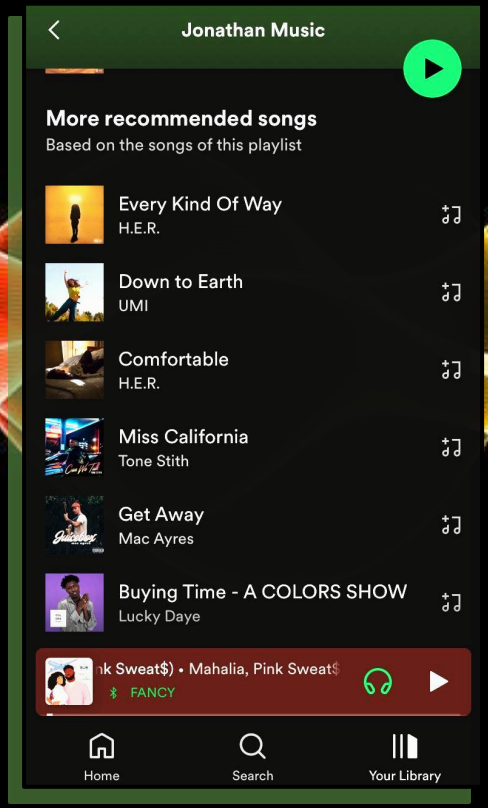
MUSIC RECOMMENDATION SYSTEM

OVERVIEW

- BUSINESS PROBLEM
- DATA UNDERSTANDING
- MODELING
- RESULTS
- RECOMMENDATIONS
- NEXT STEPS

BUSINESS PROBLEM



SPOTIFY wants to improve it's music recommendation system that is located under a user's saved playlist.

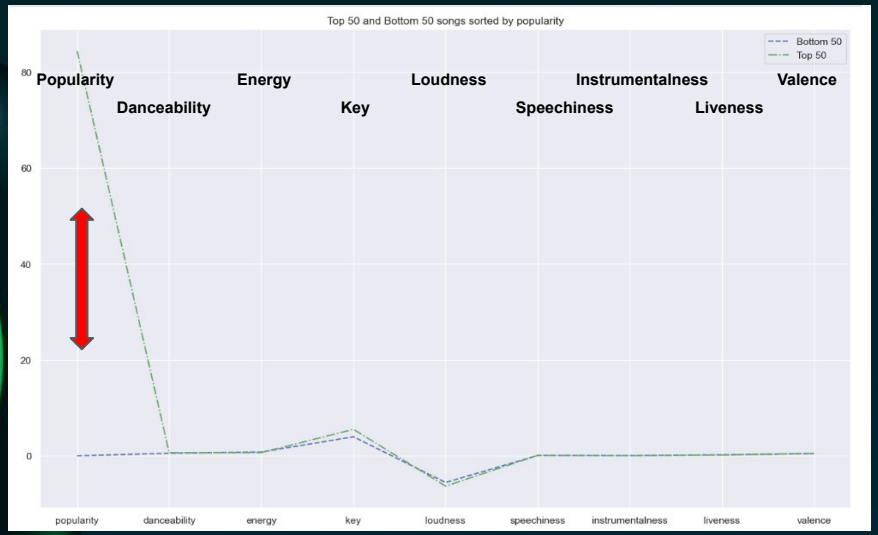
The goal is to take a song and recommend other songs based off of the music that they listen to.

This may save the user time in scrolling through the app and promote an additional way of engagement with the app.

DATA UNDERSTANDING

The dataset was from the spotify API and the Meek Music Mouse playlist.

The dataset contained:
6514 rows/songs
17 columns



	popularity	danceability	energy	key	loudness	mode	speechiness	instrumentalness	liveness	valence	tempo	duration_ms	time_signature
0	8	0.534	0.887	0	-3.777	1	0.0345	0.000099	0.325	0.720	122.494	249293	4
1	0	0.257	0.819	7	-3.562	1	0.0422	0.015000	0.324	0.267	150.354	308560	4
2	64	0.268	0.459	7	-6.948	0	0.0346	0.000000	0.119	0.172	64.223	179200	4
3	69	0.693	0.497	2	-7.316	1	0.1190	0.000000	0.258	0.473	81.308	122067	4
4	0	0.556	0.945	0	-4.347	0	0.0496	0.000004	0.394	0.781	122.875	224307	4

MODELING

PCA

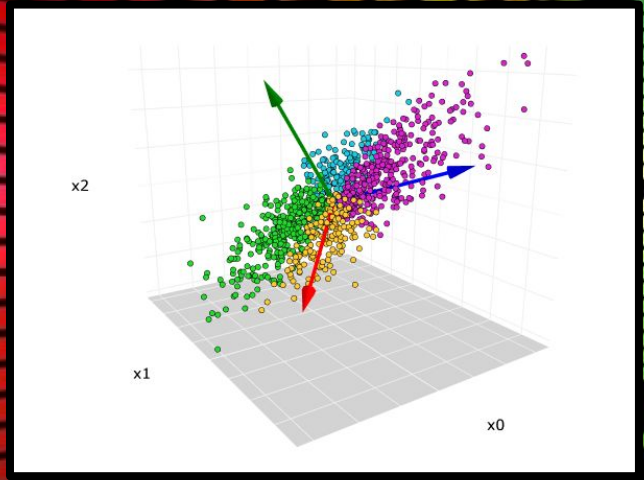


Image source:https://towardsdatascience.com/principal-component-analysis-pca-explained-visually-with-zero-math-1cbf392b9e7d

CLUSTERING (MiniBatchKMeans)

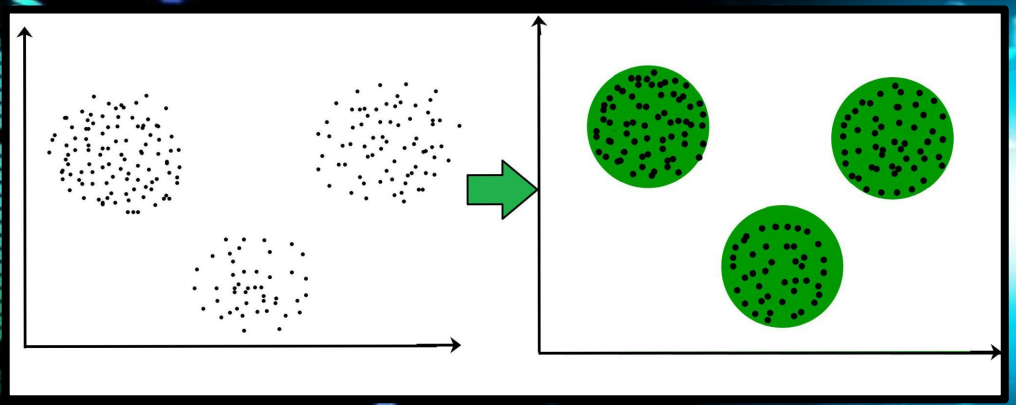


Image source:https://www.geeksforgeeks.org/clustering-in-machine-learning/

RESULTS

SCORES

Silhouette Score
~0.06

Calinski-Harabasz Score
~1884.60

Davies-Bouldin Score
~3.19

RECOMMENDATIONS

- Quantify more defining characteristics of music such a beats per minute(BPM), color, harmony, melody, etc.
- Increase limits on amount of songs that can be pulled from the database in a day. (The current limit is 100)
- Include a numeric genre association metric

NEXT STEPS

- Congregate genre data to predict better clusters
- Gather follower data to recommend both popular and indie artists
- Capture lyric data to provide listeners with similar messaged music

THANK YOU!

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