

What is it?



Playlist generation based on user's mood



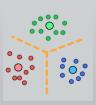
Obscure Playlist: Playlist of songs which are less popular



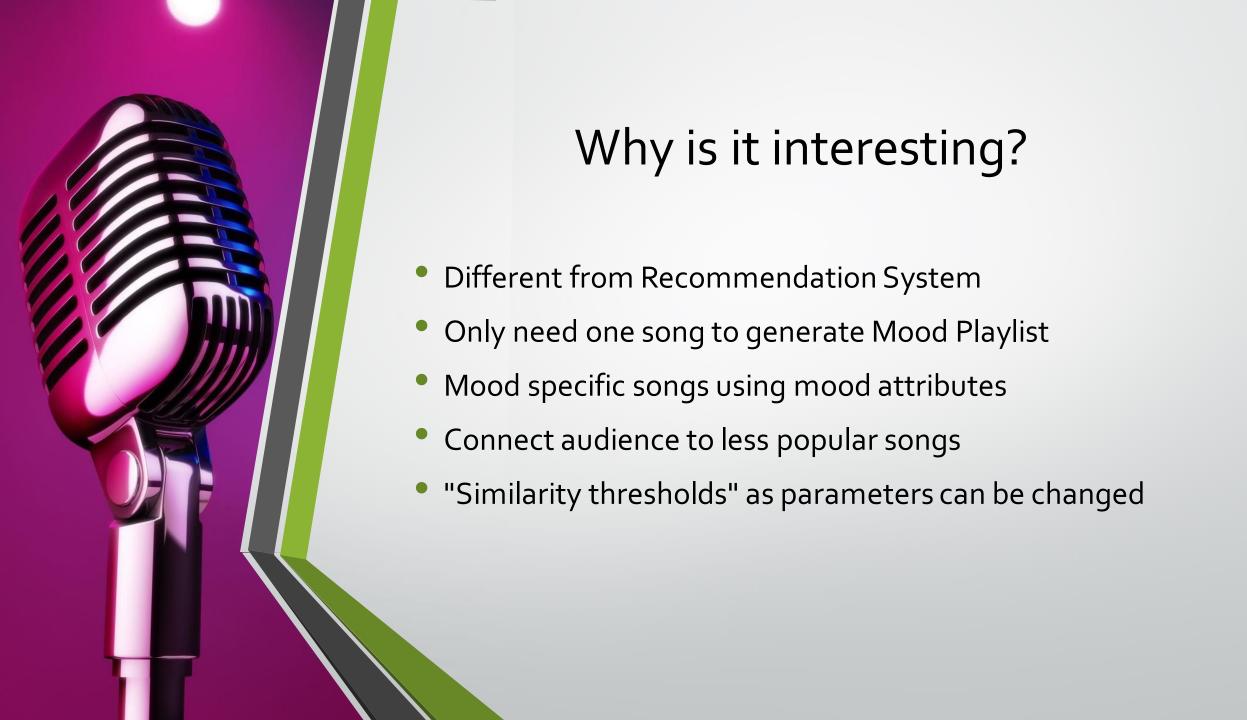
Multiple random playlists from similar set of songs based on user preference



On the spot playlist creation



Implemented using clustering techniques



Data

Used Two data sources



Playlist Generation Data – Publicly Available GitHub repository

- •Collected using Spotify API
- •32K songs from 10K artists
- •Future Add more songs by collecting from Spotify API

Query Data - Spotify web API

•Spotify API to retrieve attributes of input song for prediction

Track	Energy	Danceability	Speechiness	Acousticness	Instrumentalness	Liveness	Valence	Tempo	Loudness
Shy Guy	0.56	0.67	0.04	0.79	0.00	0.09	0.63	96	-6
Alaska	0.38	0.84	0.2	0.34	0.003	0.1	0.43	85	-10
Justified	0.64	0.65	0.08	0.54	0.02	0.02	0.23	90	-6.5
Sacrifice	0.23	0.34	0.1	0.76	0.005	0.001	0.5	81	-18
Colorblind	0.16	0.49	0.03	0.7	0.00	0.003	0.3	112	-9.6
Nowhere	0.23	0.77	0.04	0.93	0.007	0.18	0.44	100	-17.9
Silly Girl	0.04	0.48	0.06	0.94	0.0009	0.12	0.13	79	-22

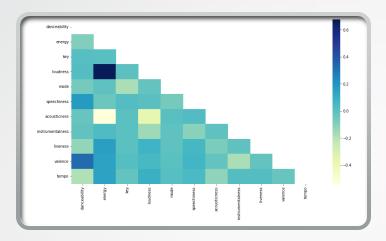
Data Visualizations

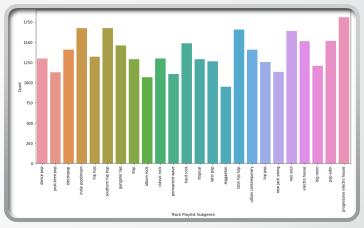
Correlation Matrix

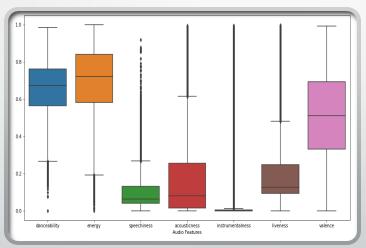
Attributes Distribution

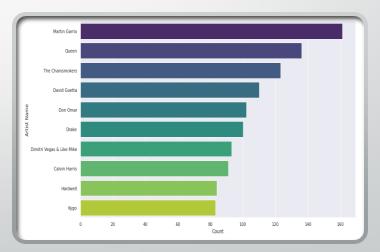
Pre-Existing Playlist Subgenre

Top 10 Artist





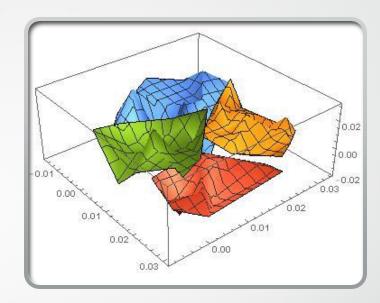




Clustering Methods

Two popular clustering techniques have been explored :

- K-Means Clustering
- Hierarchical Clustering





Clustering Experiments



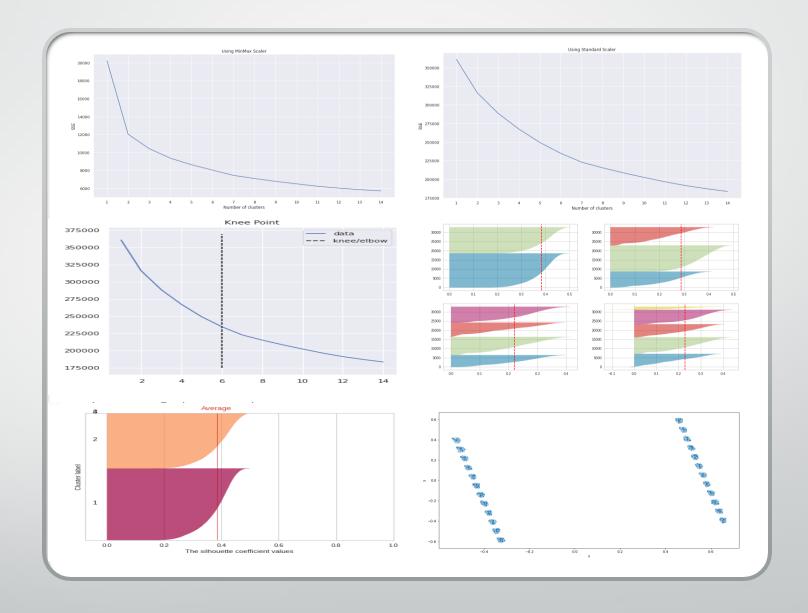
Scaling





Hierarchical





Playlist Generation – Normal Playlist

- Retrieved from Spotify API / Mood sliders input
- Predict Mood Cluster

Input Features

Cluster Prediction

- Compute distance from songs assigned to the predicted mood cluster
- Scale distance to use adjustable threshold

- Randomly sample N songs from these songs with distance < d
- *N* and *d* parameter values can be changed

Song Sampling

Playlist Generation – Obscured Playlist

- •Retrieved from Spotify API/ Mood sliders input
- Predict Mood Cluster

Input Features

Cluster Prediction

- •Compute distance from songs assigned to the predicted mood cluster
- •Scale distance to use adjustable threshold

- •Computer *q* quantile of track popularity in the mood cluster songs
- •Filter and select songs with track popularity < q

Popularity Quantile Filtering

Song Sampling

- •Randomly sample *N* songs from these songs with distance < *d*
- •N, d and q parameter values can be changed

Cluster Snapshots



(High Energy, Low Acousticness)

- •Dreams Of You (feat. Rae Morris)
- •Shades Of Voices (Original Mix)
- Spirit Of Freedom
- Mercury
- •Nothing but the Beat (Ultimate Edition)
- •Bromance Avicii Remix
- •Before The Storm



(High Danceability, Low Instrumentalness)

- Funky Friday
- Clockwork
- Sake
- •Is That Too Much to Ask (feat. Nina Zeitlin)
- •Bad Liar
- Anaconda
- Millions
- Joanna (Drogba) -Remix



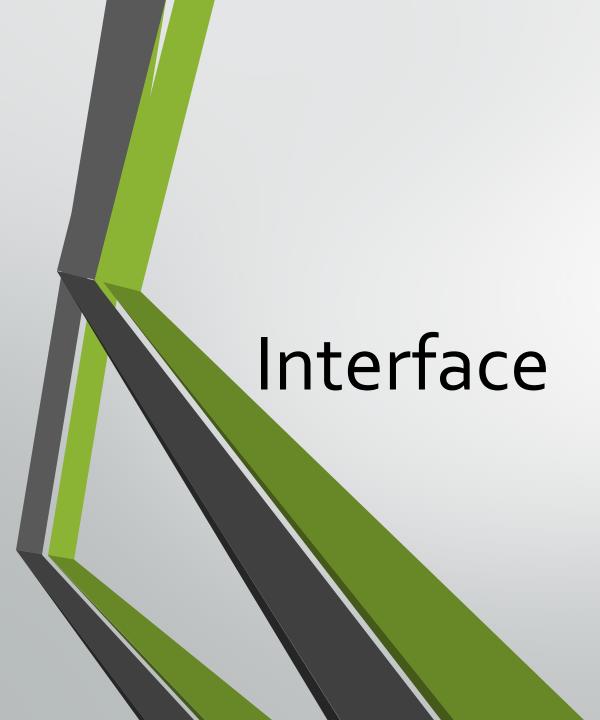
(Moderate Danceability, High Energy)

- •Feed the Machine
- Hardwired
- •Creep The Four Performance
- •Spit Out the Bone
- Always Forever
- Animal
- Legend
- Mockingbird

Time to Relax

(High Acousticness, Low Instrumentalness

- •New Shoes feat.Shun Murakami
- Memories
- •When You Wish Upon A Star
- Gravity
- •Zebra
- •(No One Knows Me) Like the Piano
- •Someone Like You
- Sweet Dreams





MOODIFY!

Spotify Mood Playlists

Get a mood playlist with songs similar to your favorite song. Just provide the song input. Alternatively, play with the mood sliders to get a desired playlist.

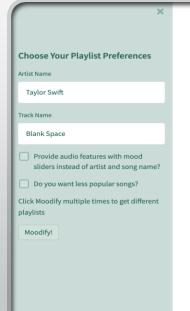


CLOSEST SONG TO THESE AUDIO FEATURES:

	Track Name	Artist	Album	Track Popularity	Gen
0	Memories - Dillon Francis	Maroon 5	Memories (Dillon Francis	67	dan

YOUR CHOSEN MOOD ATTRIBUTES:

0 0.7260 0.8150 11 -4.9690 1 0.0373 0.0724	
0.000	
011200 010100 12 010010 010121	



YOUR CHOSEN MOOD ATTRIBUTES:

	danceability	energy	key	loudness	mode	speechiness	acousticness	inst
0	0.7530	0.6780	5	-5.4210	1	0.0644	0.0850	

GENERATED PLAYLIST

	Track Name	Artist	Album	Track Po
0	No Vacancy	OneRepublic	No Vacancy	
1	Que Tire Pa Lante	Daddy Yankee	Que Tire Pa Lante	
2	Infatuation	The Deele	An Invitation to Love	
3	22	Taylor Swift	22	
4	Happier	Marshmello	Happier	
5	African Woman So Fine	HARRI BEST	African Woman So Fine	
6	Crash into Me	Dave Matthews Band	Crash	
7	My Buddy	G-Unit	Beg For Mercy	
8	Jus Lyke Compton	DJ Quik	Born And Raised In Comp	
9	Stay Young	Mike Perry	Stay Young	

More About Audio Features

More About Data

Demo

Future Improvements Dynamic threshold changing from user input

Collect more data from Spotify API to include different languages like Hindi, Korean etc

Reference

- Web API Reference | Spotify for Developers
- <u>tidytuesday/data/2020/2020-01-21 at master · rfordatascience/tidytuesday · GitHub</u>