

SONG RECOMMENDATION ENGINE



**I AM AN EXECUTIVE
AT A RECORD COMPANY
AND I'M IN CHARGE
OF THE STREAMING
SERVICE DEPARTMENT.
I NEED TO BUILD A
TOOL TO IMPROVE
CUSTOMERS
EXPERIENCE AND
RETAIN THEM.**

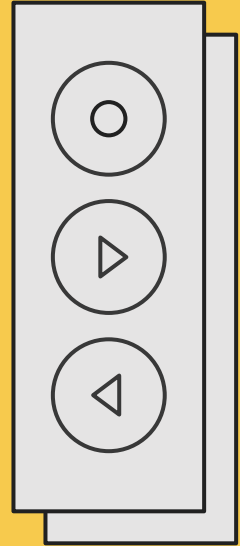


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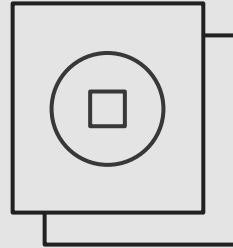
RECOMMENDER

Trying the engine

DATA COLLECTION

Gathered the data from data.world:

- Scraped by Mr. Sean Miller using the Spotify API
- Updated on 12/29/2019
- Around 25000 songs



RELEVANT FEATURES

GENRE

Sometimes too specific,
niche genres

EXPLICIT

Whether or not a song
contains curse words

DURATION

In minutes

POPULARITY

Popularity score based on
the number of plays a song
has

TEMPO

In Beat Per Minutes

KEY

The key the track is in

RELEVANT FEATURES

DANCEABILITY

Danceability score based on tempo, rhythm, beat strength and regularity

ENERGY

Score based on song intensity, energetic tracks feel fast, loud and noisy

LOUDNESS

Overall loudness of a track in decibels

MODE

Whether the song is in Major/Minor

SPEECHINESS

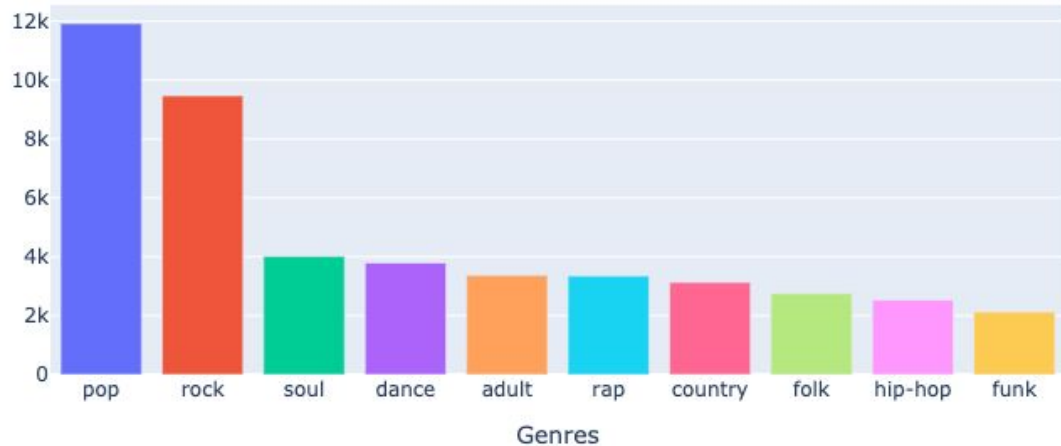
Score based on the presence of spoken words

ACCOUSTICNESS

From 0 to 1, level of acousticness

TOP 10 GENRES

Top 10 Genres



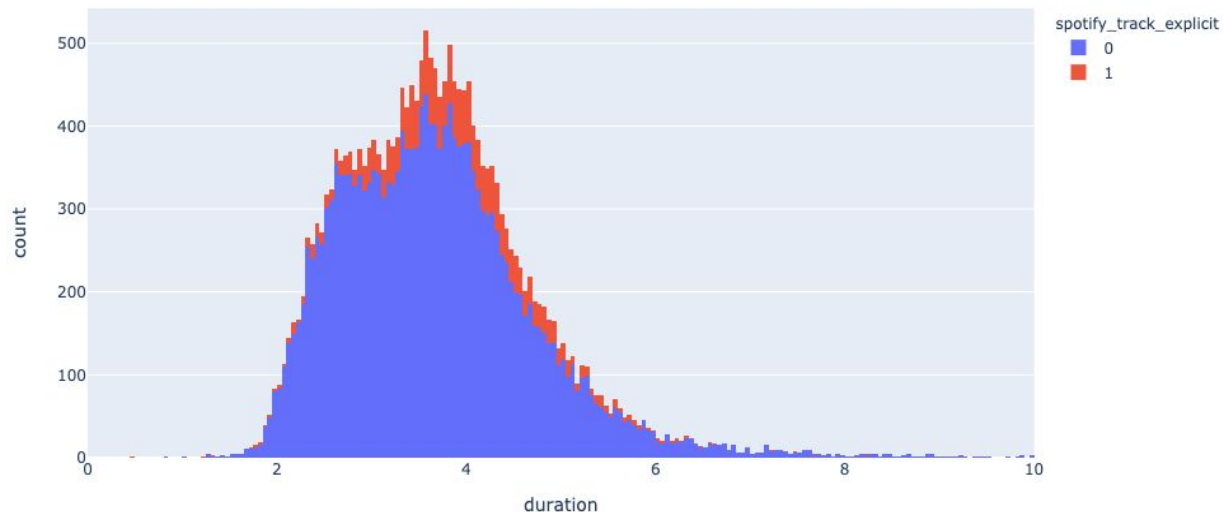
POP 11.9K

ROCK 9470

SOUL 4016

SONG DURATION DISTRIBUTION

Song Duration Distribution



AVERAGE 3.7

MAX 26

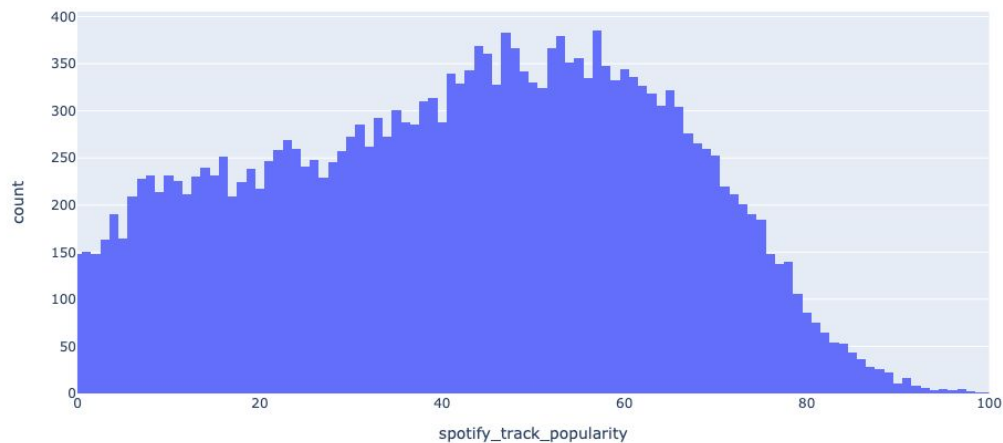
Only 2538 explicit songs

MIN 0.5

Luke Feat. No good But
Good So - Raise the
Roof

POPULARITY SCORE DISTRIBUTION

Song popularity Distribution



AVERAGE 42

MAX 100

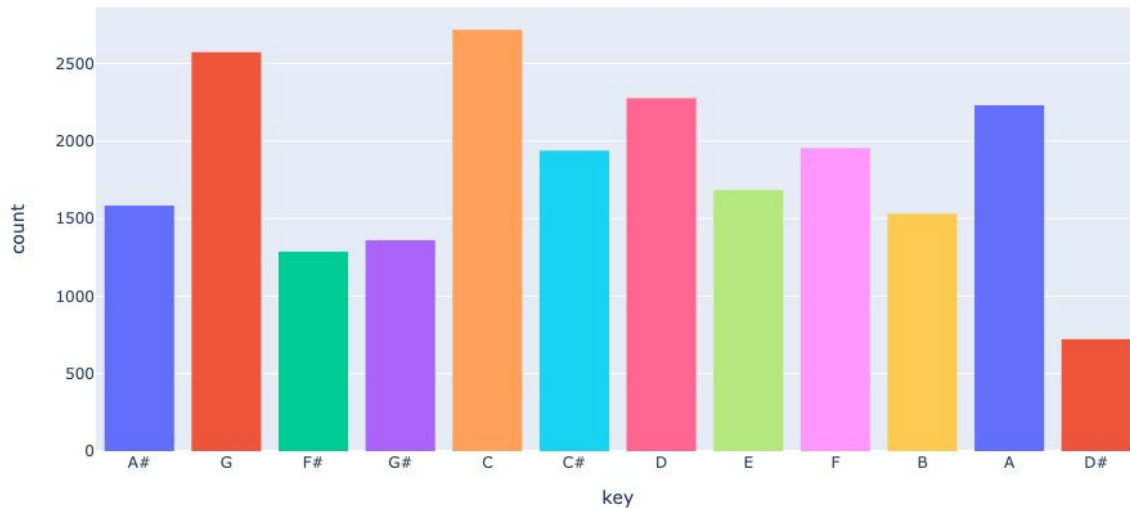
Tones and I - Dance
Monkey

MIN 0

The McGuire Sisters -
Just Because

DISTRIBUTION OF SONG KEYS

Distribution of Song Keys



POPULAR KEYS

C, G, D, A

MAX

C

MIN

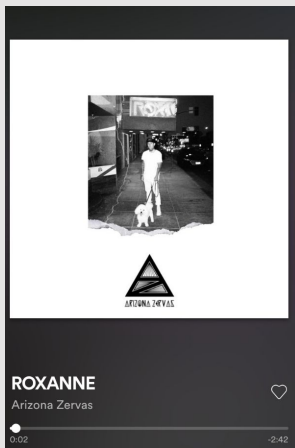
D#

5 MOST POPULAR SONGS



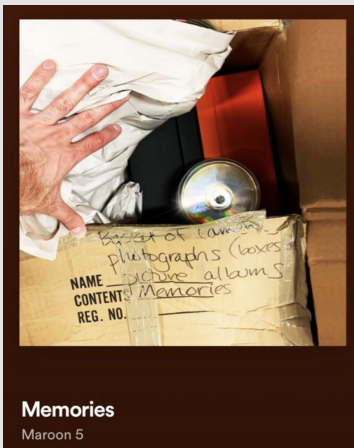
0:12 —3:17
Dance Monkey
Tones and I — Dance Monkey - Single

#1



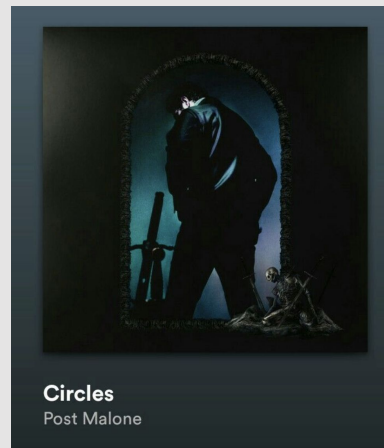
ROXANNE
Arizona Zervas
0:02 —2:42

#2



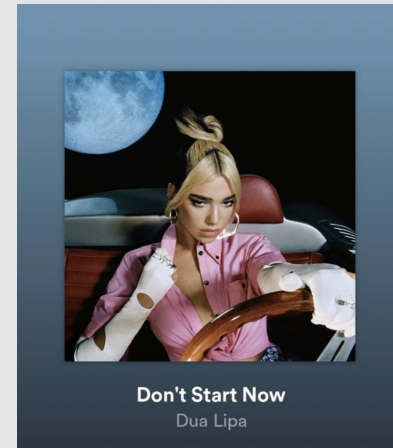
Memories
Maroon 5

#3



Circles
Post Malone

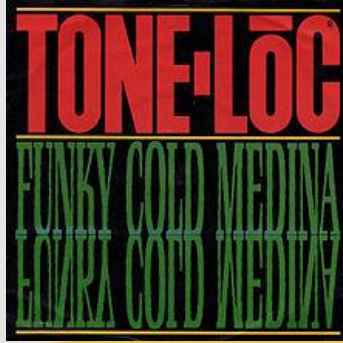
#4



Don't Start Now
Dua Lipa

#5

THE MOST DANCEABLE SONGS?



**FUNKY COLD
MEDINA
TONE
LOC**



**STATE OF
SHOCK
JACKSON
5**



**ICE ICE
BABY
GLEE**

- **CONTENT
BASED
RECOMMENDER**

Keep all the numerical features and scale them

Create dummies for categorical values

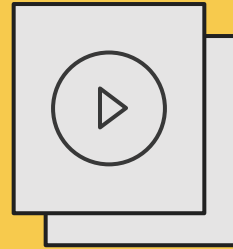


- **CONTENT
BASED
RECOMMENDER**

Calculate Cosine similarity for each song

Function to return the similar songs





PLAY !!

It's time to try the recommender ...

CONCLUSION

THERE ARE MANY STEPS TO IMPROVE THE RECOMMENDER:

- **INCORPORATE USER INPUT**
- **NORMALIZE THE GENRES**
- **GET MORE DATA**
- **PICTURES + SONG PREVIEW**
- **WEB APP**

SOURCES

SPOTIFY API:

<https://developer.spotify.com/documentation/web-api/reference/#endpoint-get-audio-features>

DATA.WORLD - SEAN MILLER:

<https://data.world/kcmillersean>



THANKS !

Do you have any questions?

