BECAUSE MAKING A PLAYLIST IS **HARD**!

# THE PERFECT SPOTIFY PLAYLIST!

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# I'M GETTING SICK OF EXPLAINING WHY I DON'T HAVE A SPOTIFY PLAYLIST!

## FOR A PERSON WHO CHOOSES NOT ONLY HER DATES, BUT ALSO HER FRIENDSHIPS SOLELY BASED ON MUSIC....

The truth of the matter is that liking a song is straightforward on Spotify. I can do it in less than a second, but making a playlist is an art or a dire project on its own, one that I was dreading to tackle. Where should I start? There are MANY ways I could categorize my liked songs and make a playlist based on a song's mood, similarity amongst artists, their genres, language, decade, story, and thousands of other ways that I cannot even imagine. Too many options always crippled my decision-making abilities, and now I was left with more than two thousand songs in my playlist that I played on shuffle. They would change my mood from a hopeless romantic to just mindlessly dancing, and that was only half of it.

# BUT THAT'S NOT ALL!

## I ALMOST HAD A HEARTATTACK ONCE!

I remembered the time I was listening to "Going to California" by Led Zeppelin while driving home. I was lost in the lyrics and the tempo of the song and had turned my volume very high. The song came to an end, and the red lights turned green, all while the next song played on HIGH VOLUME , John Bon Jovi, screaming: "SHOT THROUGH THE HEART, AND YOU'RE TO BLAME, DARLING, YOU GIVE LOVE A BAD NAME". If one listens to "you give love a bad name," on its own, on high volume, one might enjoy it. But when you're lost in the dreams of "going to California, the last thing you want is Bon Jovi accusing you of giving love a bad name. I could give you a heart attack!

# BUT WHY DOSE IT HAVE TO BE ONLY LIKED SONGS?!

1

## I'M CLOSE MINDED!

because while I like to pretend that I am an open-minded person, I have to admit I'm close-minded when it comes to music! I only listen to the 2000 songs I've liked, occasionally adding one or two to the collection.

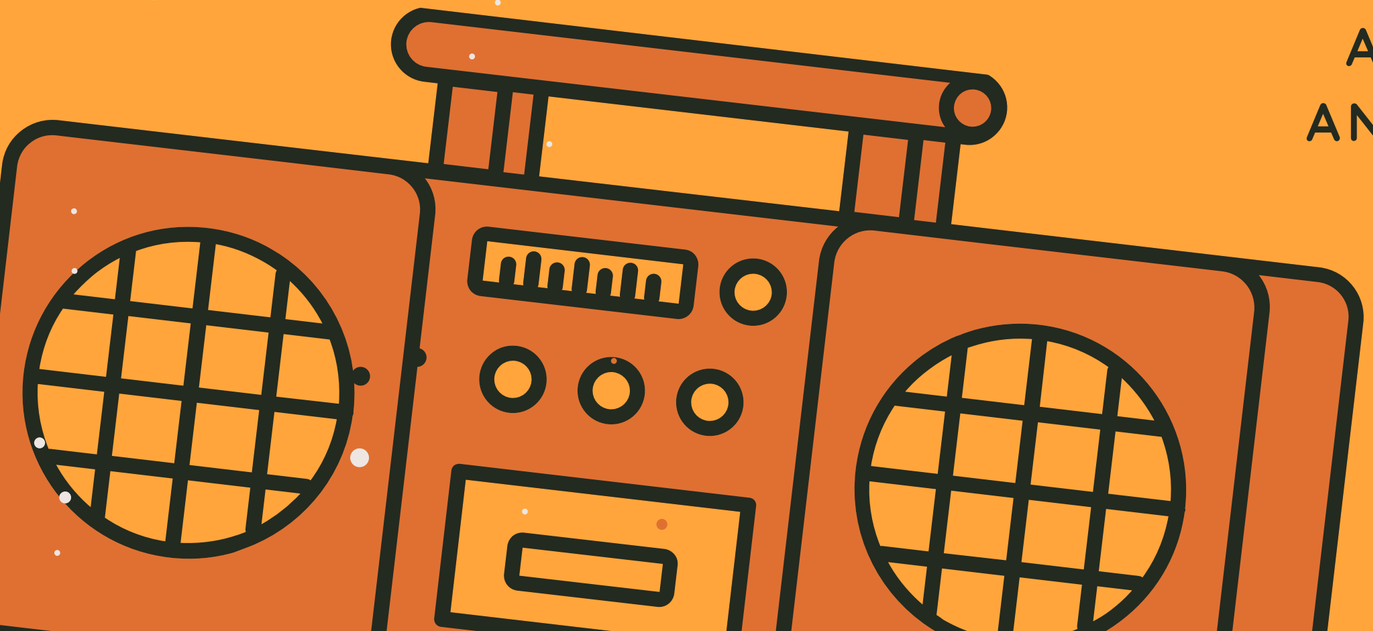
2

## MAKING A PLAYLIST SEEMS LIKE SUCH A DAUNTING TASK!

Either I would get too distracted and end up with a five-song playlist, or I would lay in my bed static upon waking up, dedicating 10 hours to the task. Either way, I would wind up frustrated.

# BEFORE I GET STARTED...

“AFTER THAT COMMUNISM WAS THE ONLY ANSWER FOR ME, I THOUGHT. AND IF YOU CAN’T BE A COMMUNIST AND MAKE MONEY YOU HAVE TO BE A ROCK N ROLL STAR, AT LEAST IN HOBOKEN. “ -LOU REED



# getting started with spotify API

let me tell you, working with this api, I felt like Rosemary in *Rosemary's Baby*...

# PLAN OF ACTION:

FIRST:

grab my liked songs with the api

THEN:

gather track features on the liked song.

D.

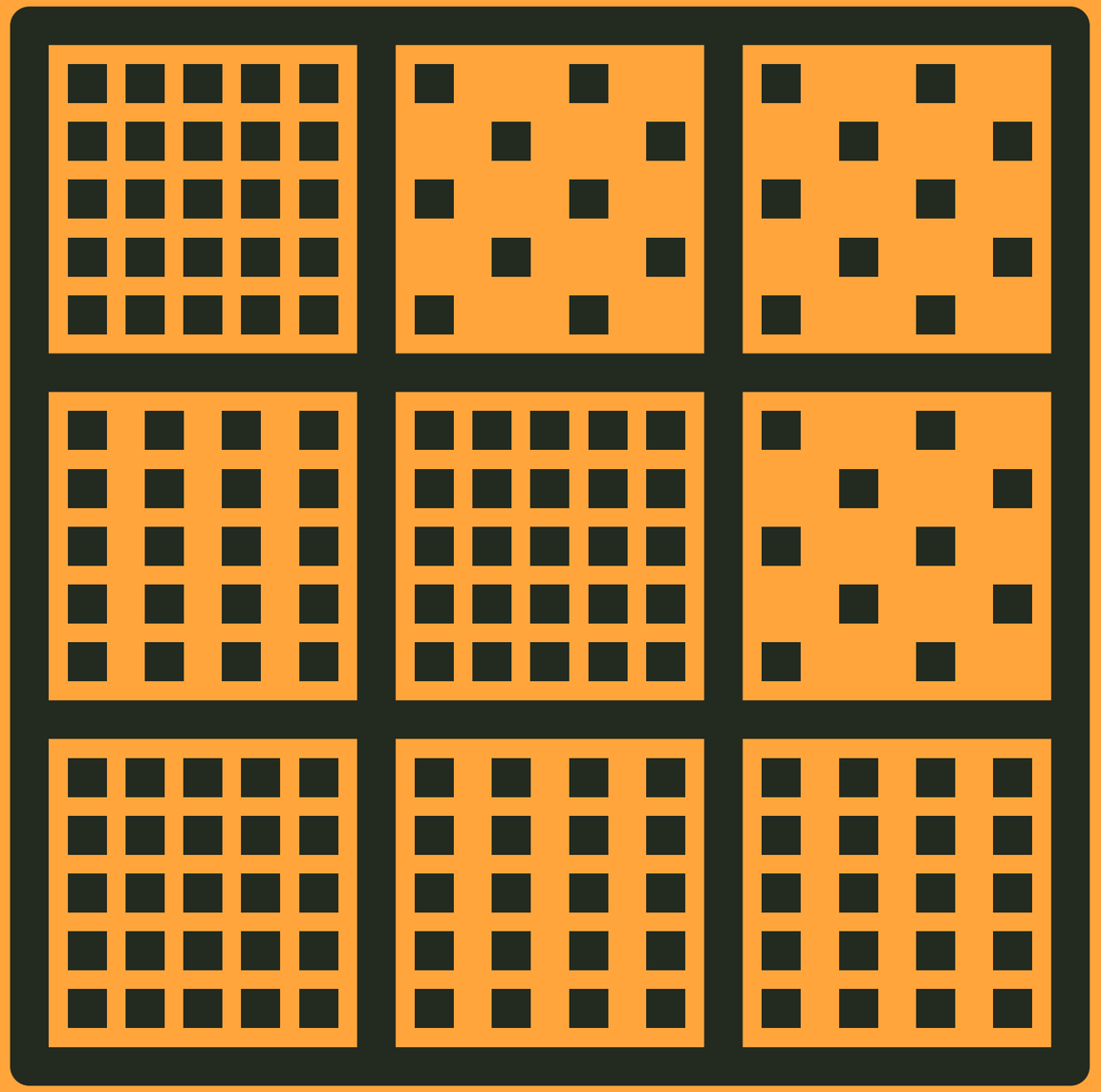
create a data frame.

V.

build a recommender model

2. DUMP THEM IN A PLAYLIST!

make a playlist based on a song from the liked songs.



# AT LAST, A DATAFRAME!

- danceability has a high correlation with valence (how happy a song is), but no other significant relations with any other features, not even the tempo, which is interesting to see. as a matter of fact danceability seems to have a negative correlation with tempo!
- energy seems to be directly correlated with higher valence. songs that are higher in energy seem to also be VERY LOUD! and it looks like they have a very negative relation with causticness, meaning high energy songs are not acoustic and acoustic songs are low in energy!
- to my surprise tempo doesn't seem to be highly correlated to danceability, energy or the valence of the song. however songs with higher tempo seem to be just moderately related to it's time-signiture, I was expecting a much stronger correlation.
- duration seems to have the most negative correlation with other features, most notables are: valance and danceability.I though duration and liveness would have a positive correlation, since live performances tend to have a monolog before or after the performance, or could have a longer guitar solo.
- acoustic ness seems to have a negative correlation with many of the features, most notably with loudness and energy.
- key, mode, speechiness, instrumentalness,liveness, seem to have NO EFFECT on the rest of a features.

# distributions

## OUTLIERS

speechiness, instrumentaliness, duration liveness, and loudness all seem to have outliers!

## NORMAL

danceability and tempo seem to have a very normal distribution.
it is worth mentioning that some of the other features seem to fall under categorical variables, ie. mode, key, time-sig.

## SKEWNESS

liveliness, and acoustic-nessis are right skewed, however the latter seems to have an outlier.
valence and energy are left skewed, meaning they are more happy and higher energy songs in my liked songs!

**just some things to note:** (get it? note?)

## SISTER RAY:

at 17 minutes and 50 seconds, sister ray is the longest VU song, and the longest song in my liked songs!

## THE STONES ARE THE MORE ENERGETIC!

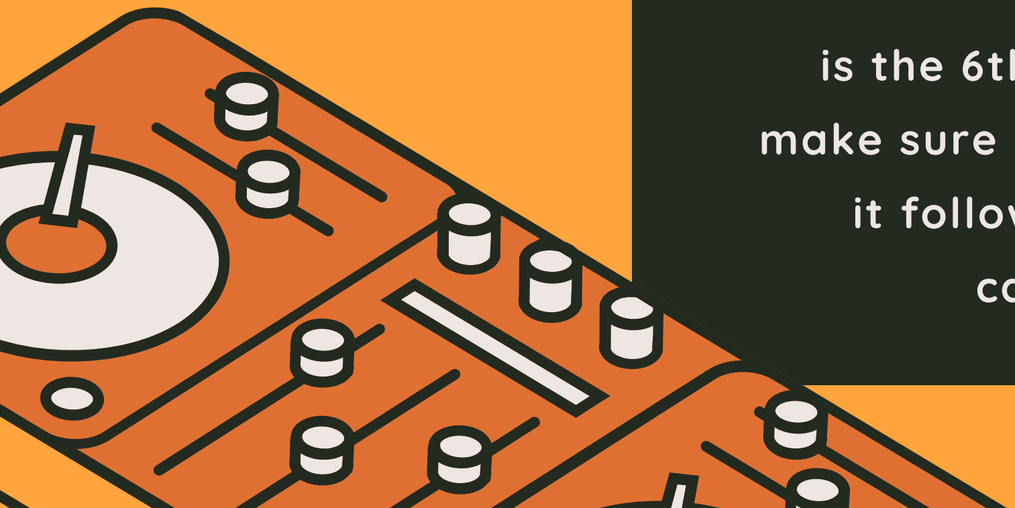
I mean are we even surprised?! in their late 70's and they were the best act in one world together at home

## YOU GIVE LOVE A BAD NAME

is the 6th loudest song! make sure you don't listen to it following "going to california"

## AMERICAN PRAYER

is an album of Jim Morrison's Poetry, he just reads them... but somehow not all 13 made it to the most speechy!



## DUPLICATE SONGS:

190 songs were identified in the data frame as multiples, I dropped them keeping only one set of each.
over all I lost about 239 rows.

## MY TOP 5 BANDS:

the 5 bands with the most songs in my liked songs are my top favorite bands:

- The Rolling Stones 423
- The Velvet Underground 195
- Led Zeppelin 73
- Fleetwood Mac 68
- The Doors 67

## DISTRIBUTION OF TIME SIGS:

- 4 1602
- 3 115
- 1 9
- 5 8

## DISTRIBUTION OF MODE MINOR VS. MAJOR

major: 1308

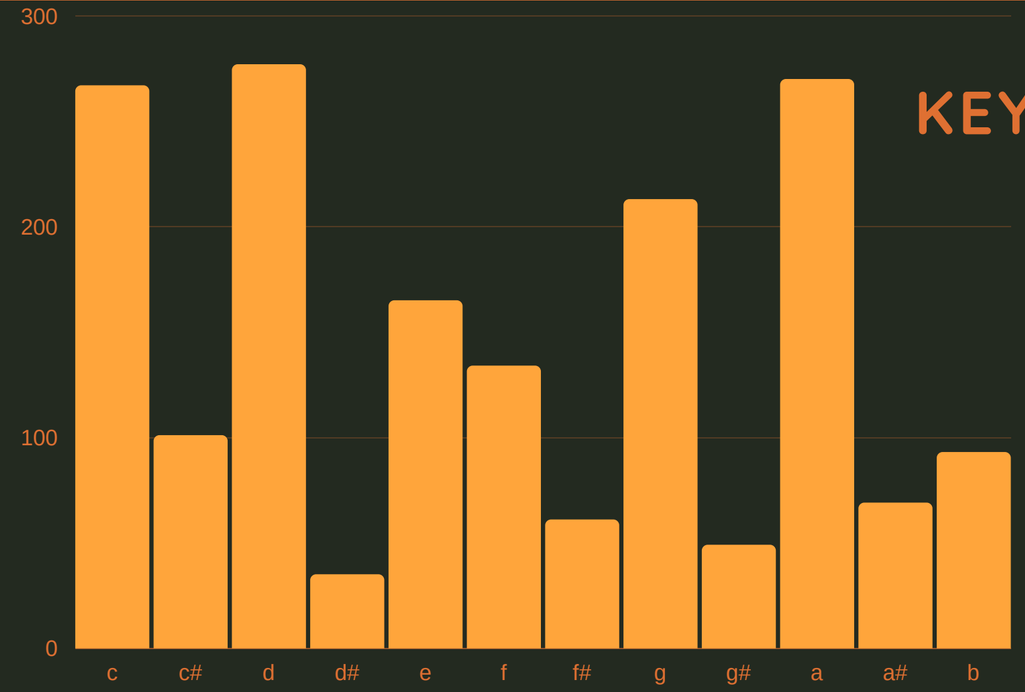
minor: 426.

## DURATION MIN AND MAX

**AVE: 4:14 MIN*

- freedom exists, jim morrison: 34 sec
- sister ray: the velvet underground: 17.50 min

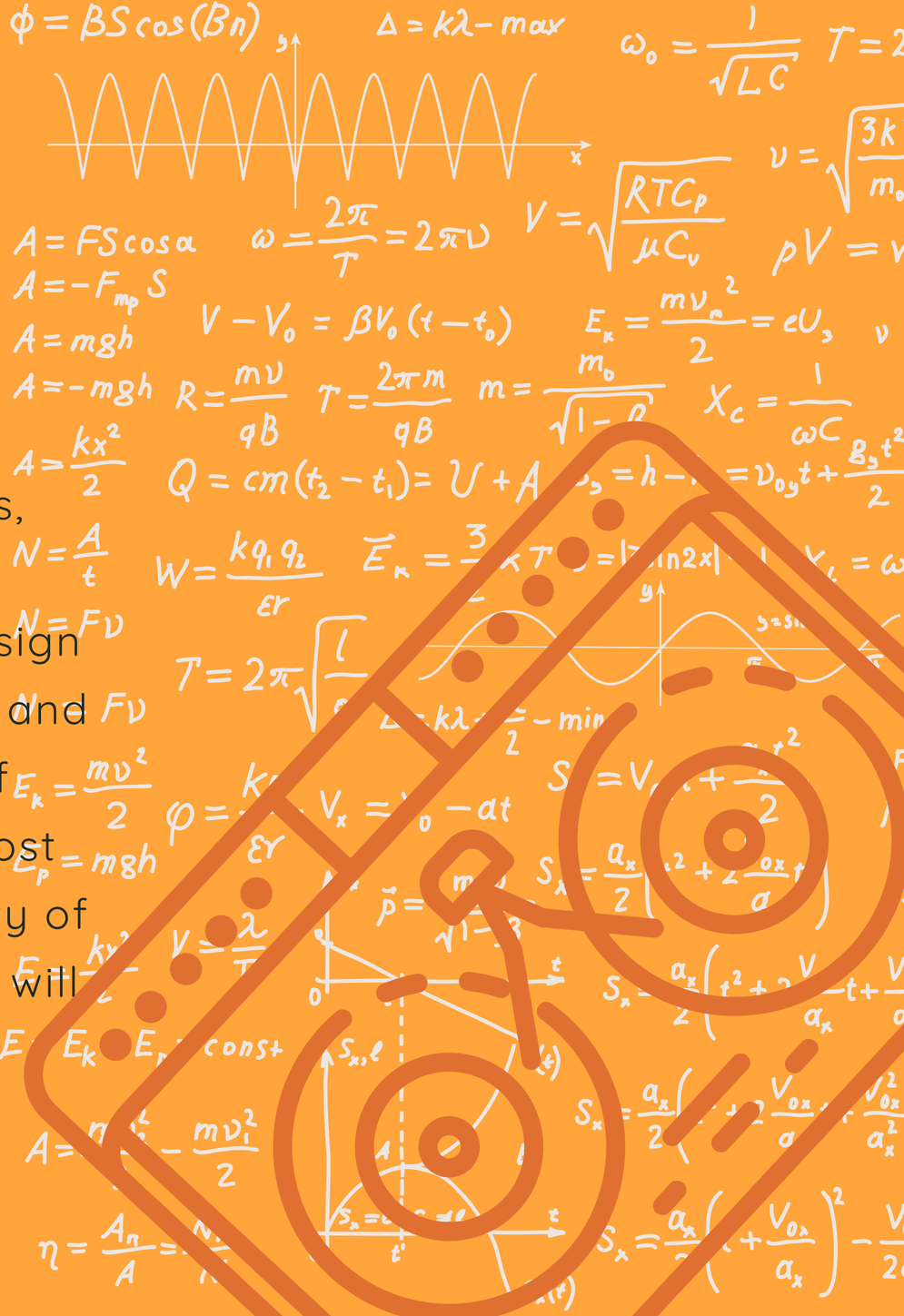
## KEYS:



# THE MODEL:

## COSINE SIMILARITY:

this is a measure of similarity between two non-zero vectors, by measuring the cosign of the angle between them. as we know cosine of 0° and 180° are 1 and -1 respectively, and cosign of any other angle falls between the two, with cosine of 90° and 270° are both 0. therefore, we are comparing the position of each item along the circle. this means two items that are most similar will have an identical orientation and cosine similarity of 1, two items that have a 90° angle between their orientation will have a cosine similarity of 0, and if they have a cosine similarity of -1 then they are on the opposite sides of the spectrum, and will therefore have 180° angle between them.
f



# THE PLAYLIST:

A PLAYLIST IS LIKE A ROLLER COASTER, IF IT GOES UP, IT MUST COME DOWN, OR I'M NOT RIDING!

1

## 20 SONGS:

the first 20 songs closest to the song chosen.
the song it self is the first one!

2

## ORDERED BY:

ordered by tempo, the first 10 song are ascending in tempo, the next 10 descending.
because what goes up must come down

-Issac Newton

*probably

# NEXT STEP:

## PUT IT OUT THERE:

make a flask

have it look preety(ui)

host on heroku

FINAL WORDS:

"and if I can't be a rock 'n' roll star and make money, then Spotify is the only answer for me, I thought; at least in Brooklyn."

PEGAH MIRGHAFARI