



Mix Retriever

A Content Focused Hip-Hop Playlist Generator



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Metis

**Music streaming
platforms offer many
dynamic playlists**

Genres & Moods



Happy Holidays



Hip-Hop



Mood



Pop

2017

Wrapped



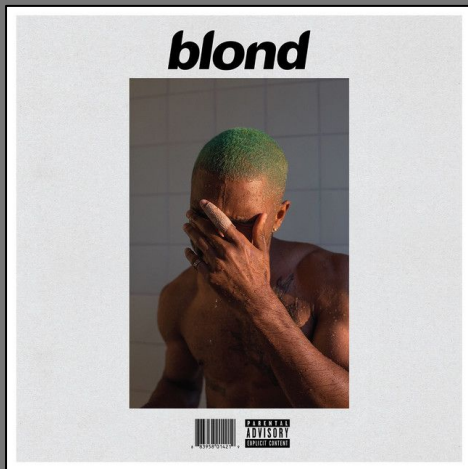
Latin



Workout



Country



Ivy
Frank Ocean

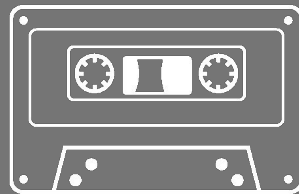
*What if we can't
find a playlist built
around a particular
song we like?*

Current Playlist Generators

Similar songs others
have listened to



Artists and Genres
you like



Our playlist

Current Playlist Generators

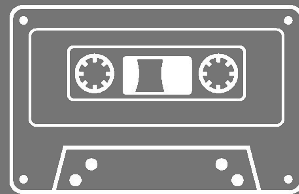
Similar songs others
have listened to



Artists and Genres
you like



Lyrical meaning?
Mood?



Our playlist

Lyrical meaning and mood of songs
can make playlists more cohesive!



Individual song-based
playlist generators

Content focused
recommendations



Mix Retriever

A content focused playlist generator
that builds a hip-hop playlist of songs with
similar lyrical meaning and mood



MyMix.io

Build a playlist around your favorite hip-hop song.

Create Ivy by Frank Ocean

Ivy by Frank Ocean

Marilyn (feat. Dominique Le Jeune) by G-Eazy

Think About You by G-Eazy

Synthesizer by Mike Posner

Late Night In Kauai (feat. Jaden Smith) by Childish Gambino

Wish You Were Mine by The-Dream

Baggage Claim by Astronautalis

Hamster Wheel by Talib Kweli

Welcome To Heartbreak by Kanye West

Real by NF



Late Night In Kauai (feat. Jaden Smith)

Childish Gambino

One time I was at the beach
And we were looking at the stars
And this girl was laying next to me
And the blanket that we had was, had stars on it as well
It looked liked we were just floating in an abyss
Honestly, when I see her face I just smile I guess
I mean, our hair came and the lights were on on them so
we could see what the waves look like
I'll be waiting here on the sand
I remember that first night you were wearing a power
ranger black T-shirt
So was I, a different color, so was Mooy and his brother
Not as pure, so insecure
The times have changed

Data Collection and Storage



Hip Hop artist names scraped from Wikipedia



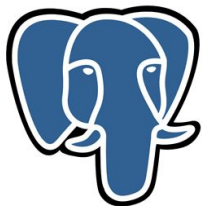
Spotify API to get artist and song metadata

- Song audio sample, album art
- Spotify defined metrics such as song energy, speechiness, and tempo

Data Collection and Storage



PyLyrics provided song lyrics from Lyric Wiki



All data stored in a PostgreSQL database
hosted by Amazon Web Services (AWS)

- ~140k songs reduced to ~20k

Making the Playlist

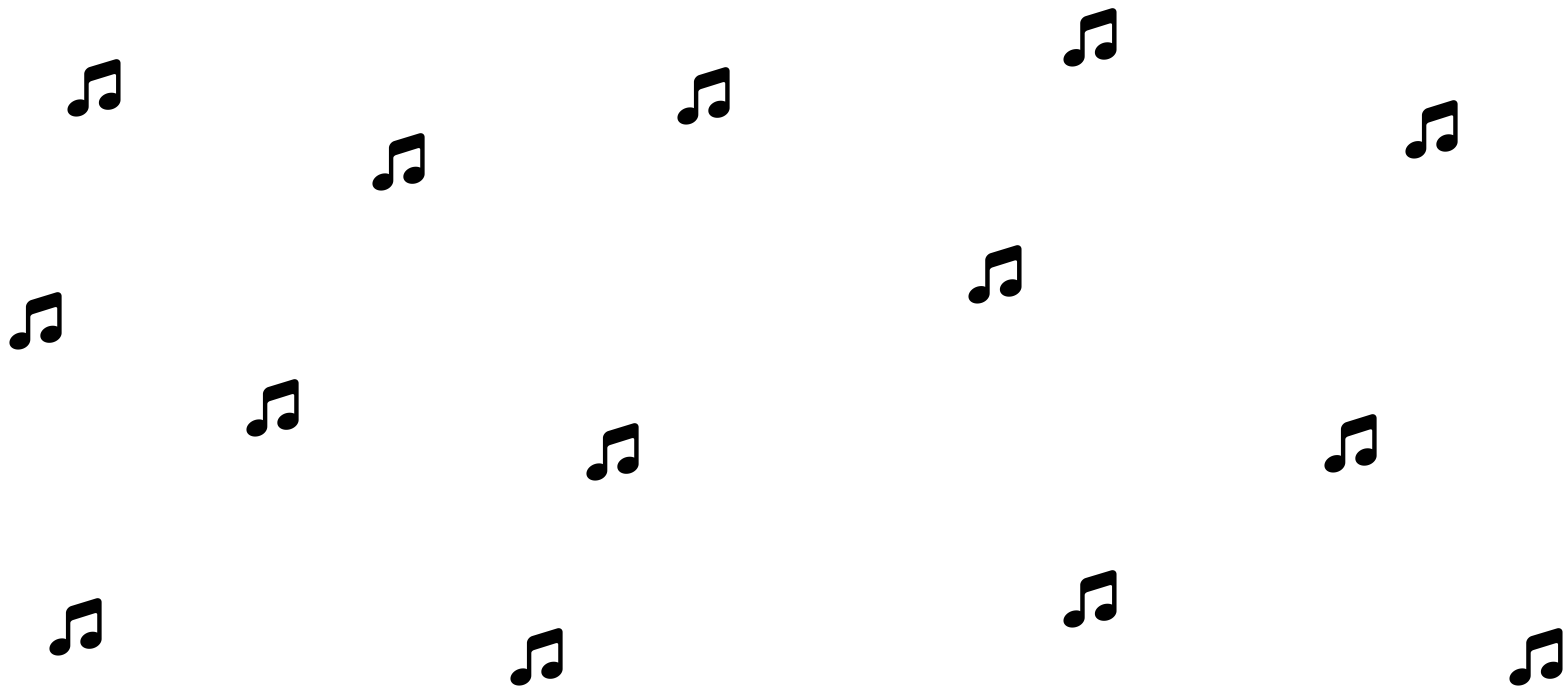
Cleaned song lyrics with Python's NLTK

- Converted to lowercase
- Remove punctuation and stopwords

Trained Song2vec model on AWS

- Neural Network with a single hidden layer of weights

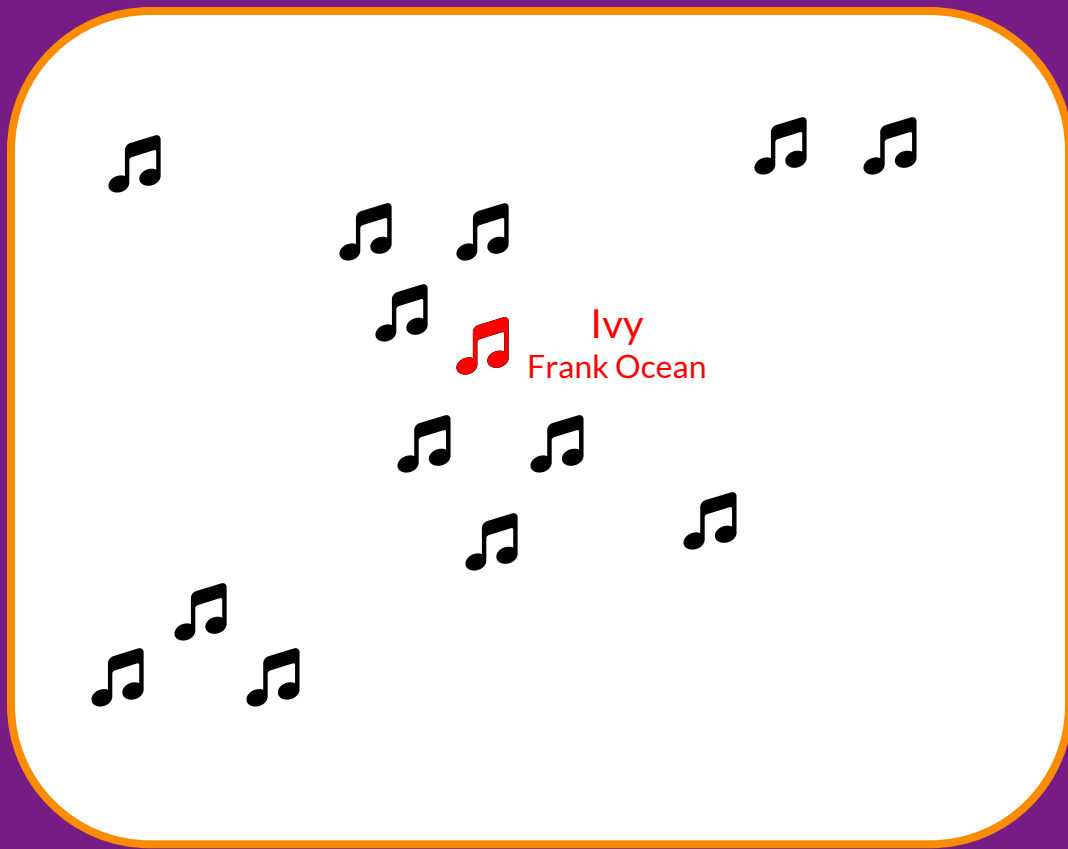
Song2vec weights put the 🎵 songs into feature space



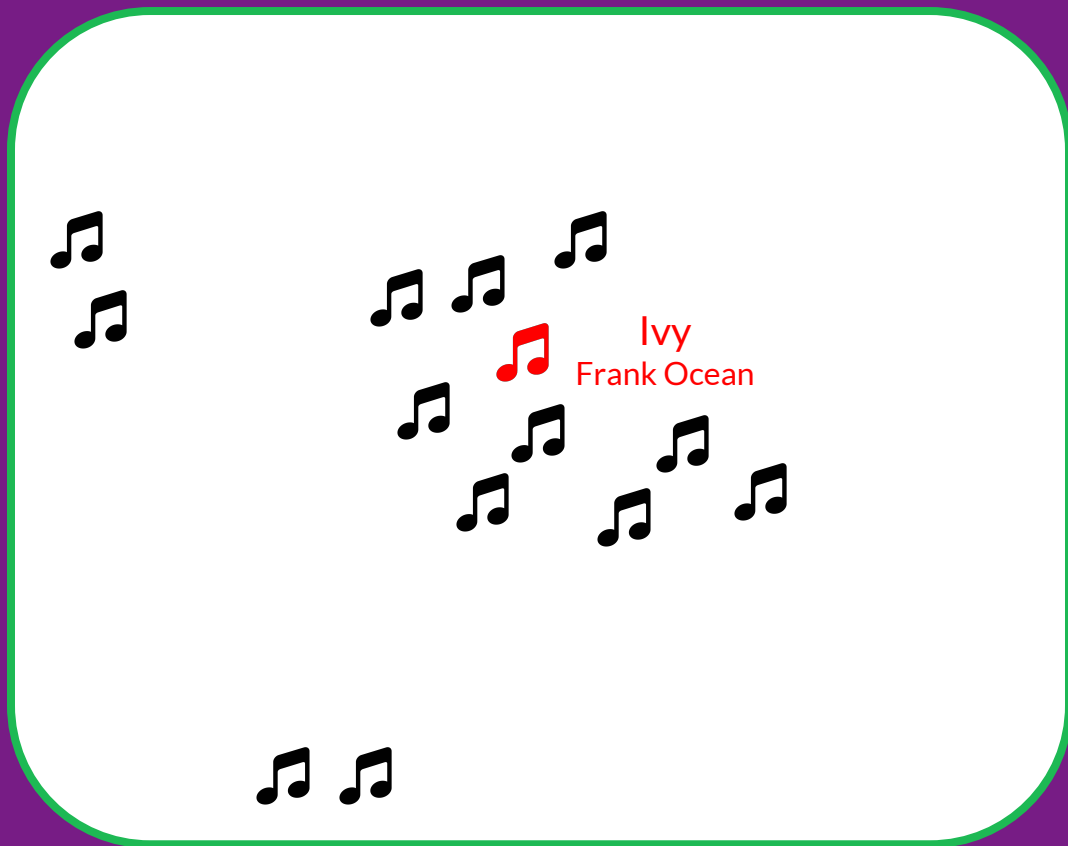
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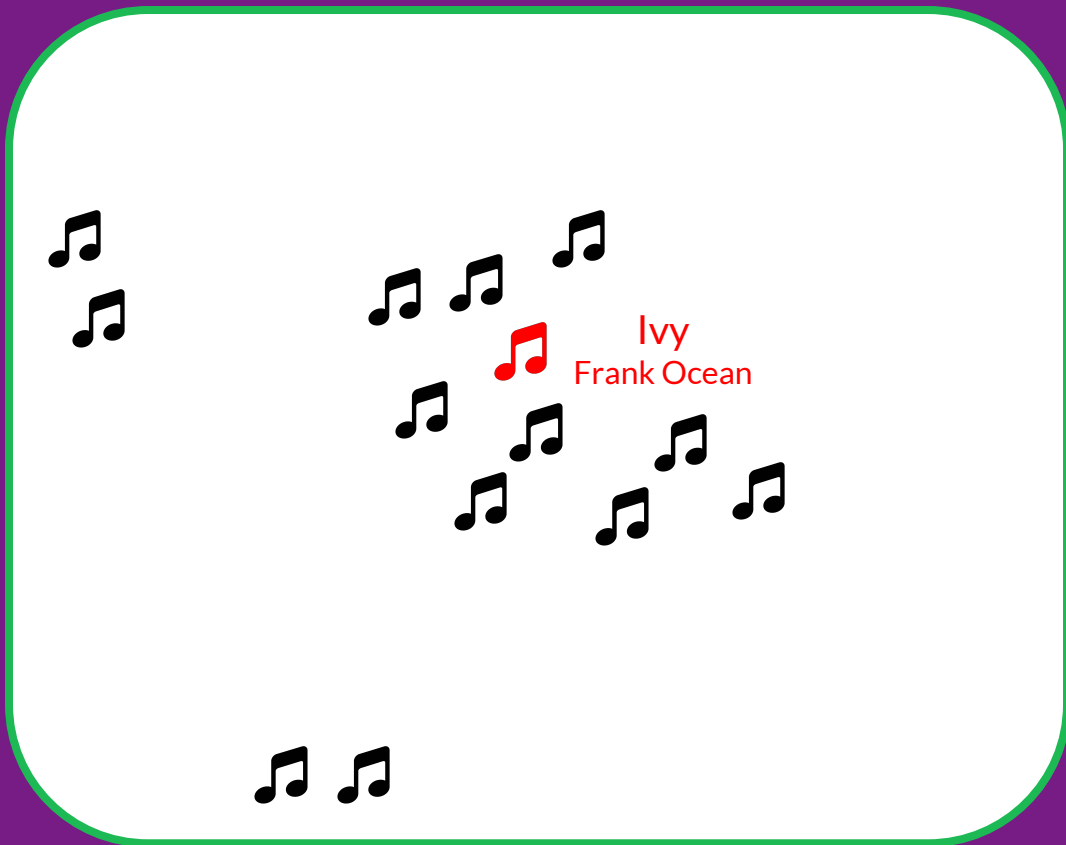
Reduce the features from 100 to 25 with SVD



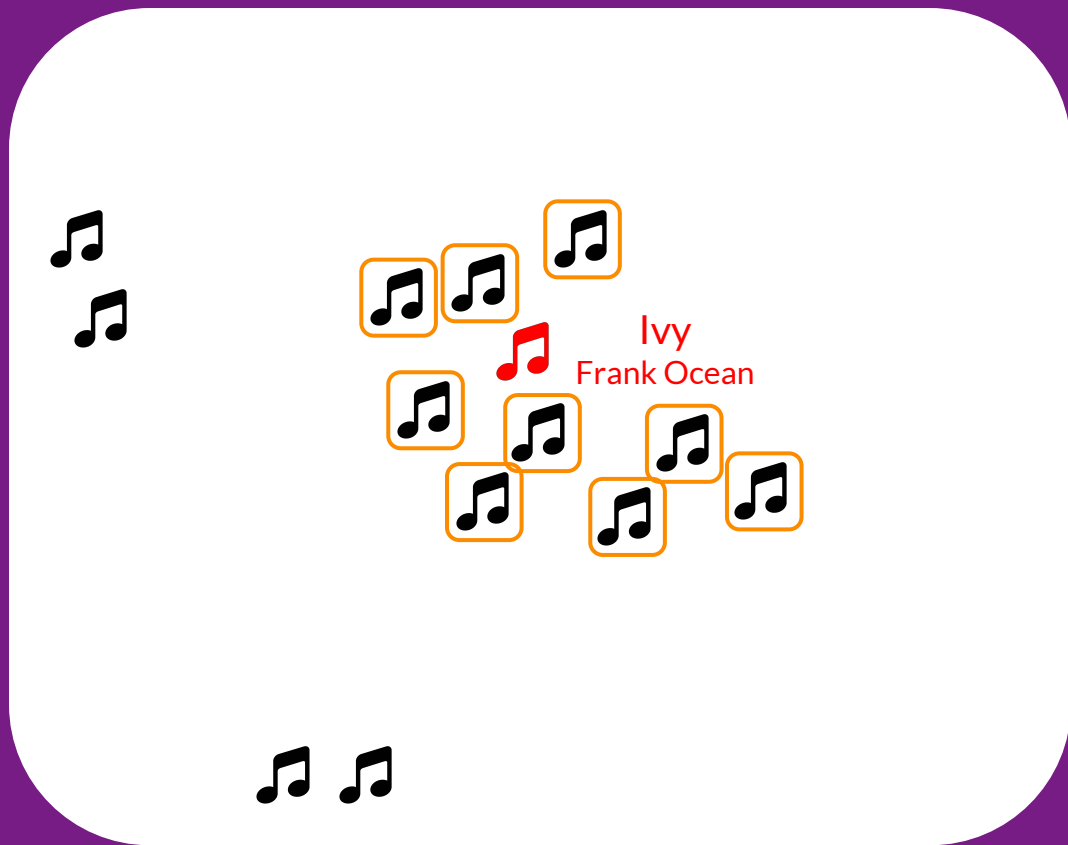
Add in energy, speechiness, and tempo metrics



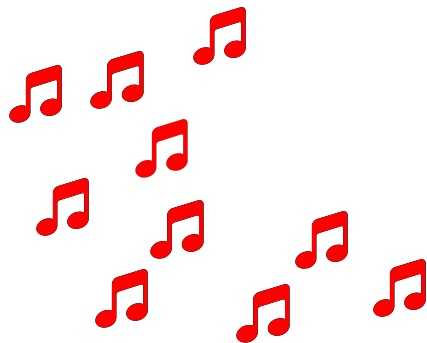
Add in sentiment analysis metrics



Use **Nearest Neighbors algorithm** to find 10 nearest songs



Now we have our playlist!





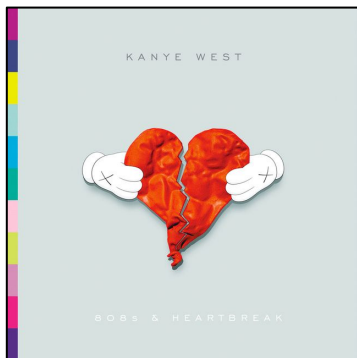
Ivy by Frank Ocean

Frank reflects on his affection and eventual regret about a past relationship



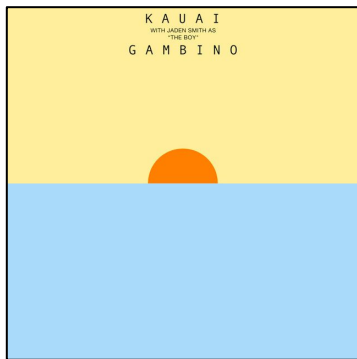
Ivy by Frank Ocean

It started from nothing, I could hate you now
It's quite alright to hate me now
But we both know that deep down
The feeling still deep down is good



Welcome to Heartbreak by Kanye West

Dad cracked a joke, all the kids laughed
But I couldn't hear him all the way in first class
Chased the good life my whole life long
Look back on my life and my life gone
Where did I go wrong



Late Night in Kauai by Childish Gambino

Maybe we can make things right
Maybe we can do it without any spite
It's just for tonight, and we hope it doesn't end
Drive back to our homes chilling with our friends

Recap



Playlists

With **Mix Retriever**, users can automatically create cohesive playlists from their favorite song

Prioritizes lyrical content and mood of songs

Applications



Music



Television & Movies



News

Prioritizing textual content can provide a more **personal and cohesive** recommendation for users

🎵 Thanks for listening

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