INSY 695 GROUP PROJECT

8POTIFY

MUSIC DATA ANALYSIS
MUSIC RECOMMENDATION

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DATA SOURCE: HTTPS://WWW.KAGGLE.COM/EKTANEGI/SPOTIFYDATA-19212020

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THE FANTASY CALABASH GANGSTERS

USER'S STORY

Alice Liu

I'm feeling it! I need music!

Spotify

playlists created by user, stored in user's own music library

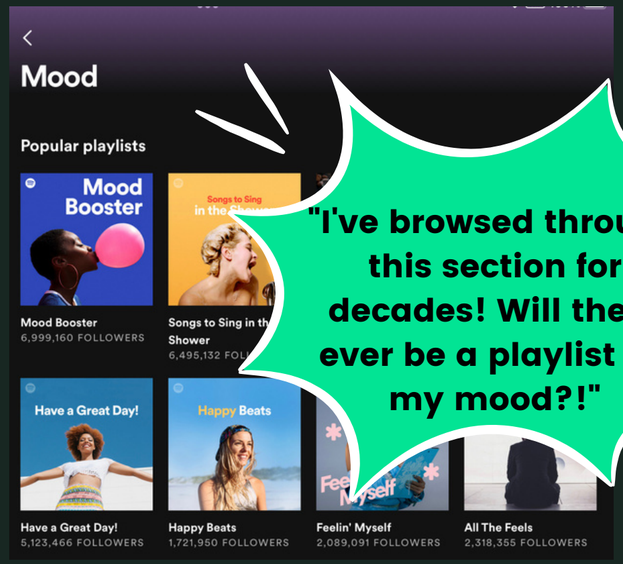
"It's the same playlist! I've listened to it 100000 times! I want something new!"

theme-based playlists generated by Spotify

mood-based playlists

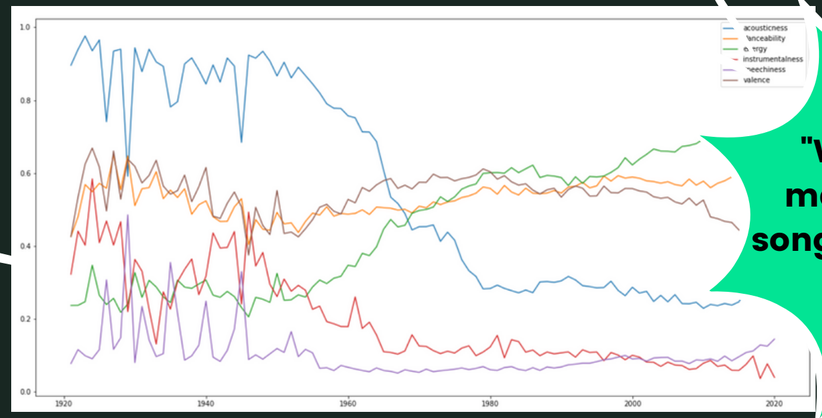
genre-based playlists

☹ PAIN POINT:
- Lack of Efficiency: user needs to browse through many mood-based playlists to find the right one that matches his/her feelings/moods



"I've browsed through this section for decades! Will there ever be a playlist for my mood?!"

☹ PAIN POINT:
- Unclear Genre: music elements gradually mixed together; inaccuracy in album-based manual genre distinguishment.



"Why are there so many un-dancable songs in a dance genre playlists?"

INTRODUCING: 8POTIFY

→ New Features:

▶ GENRE

song-specific machine learning based genres segmentation

▶ MOOD

recommendation system based on user specified moods & feelings

→ New Operation Flow: "mystery Box"

Open App ····→ Choose number of songs ····→ Choose genre, moods ····→ Choose mood level ····→ Playlist generated

Project Timeline (6 months)

Exploration → Strategies → UC Define → Architecture → Development → UI/UX → A/B Testing → Launch

Project Strategies (1 year)

Pre-launch

- **Pricing**:
  - free version
  - premium
  - student/veteran discount
- **Marketing**:
  - social media
  - offline promotions (colleges, malls)
  - influencers collaboration

Phase 1: Pricing

- **Pricing**:
  - pricing model
  - adjustments
  - promo code

Phase 2: Customers

- **CRM**:
  - behaviors data collection
  - feedback gather
  - CRM database
- **Software**:
  - maintenance
  - updates

Phase 3: Marketing

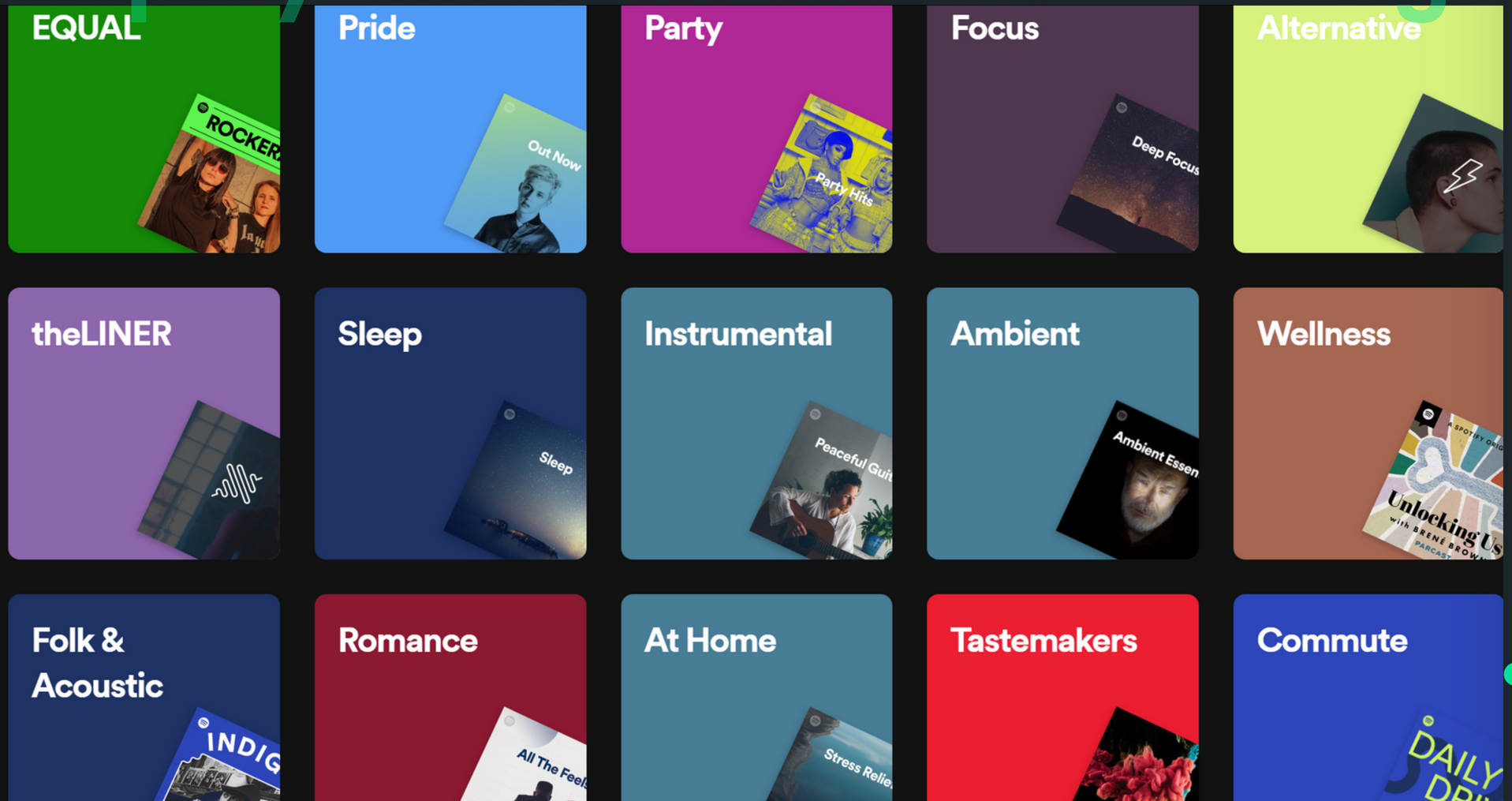
- **CRM**:
  - theme based engagement
  - customer journey study
  - churns management
  - retention strategies
- **Software**:
  - new features exploration
- **Marketing**:
  - email compaign
  - influencers collaboration (round 2)
  - cross-company promotions

STRATEGY

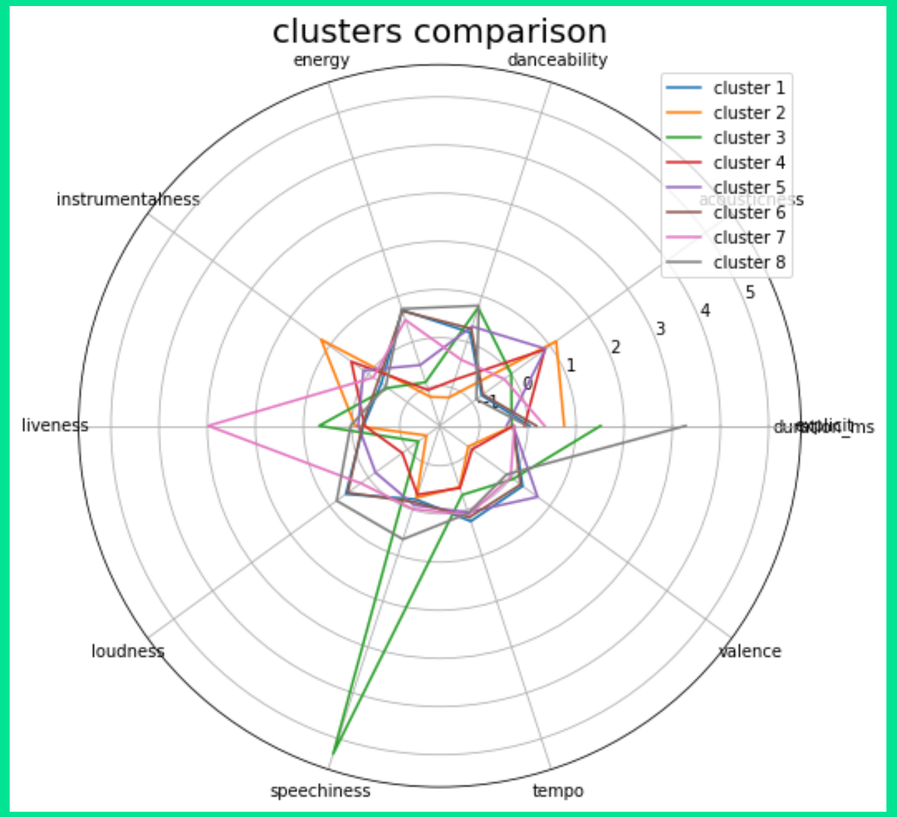
Construct the discover Page for our app

display different categories of songs

display different albums of songs



SEGMENTATION USING CLUSTER



Visualize Cluster Results

SMART SEGMENTATION

- Use multidimensional graphs to show the characteristics of each cluster
- Assign clusters into categories
- can be utilized in mood recommendation

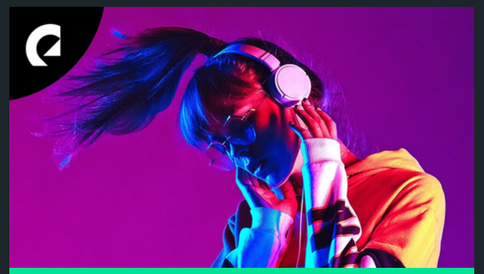
CLUSTER SEGMENTATION

Workout

Party

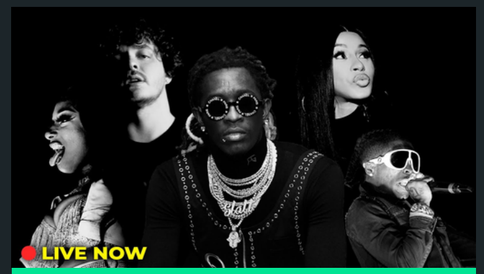
Sleep

Country



Pop

Folk&Acoustic



Rap

https://8potify.netlify.app/

LIMITATION AND FUTURE PLANS

OPTIMIZE APP'S FUNCTIONS

Song's mp3 links can be scraped in order to get the songs played on our web application, currently the data only contains song names and artists information.
Besides, with more songs' data added to future database, especially the unstrctured voice data, the algorithm will continuously improve its accuracy in categorizing each songs.

BUILD AN END-TO-END APPLICATION

A relational database can be built from the cloud to store the songs data, then our predictive model could directly read the data from the database, the output of the predictive model will also be directly sent to the frontend of our application.
By building this database to store our songs, the songs on our app can be updated in real time, as soon as a new song is released, it will be immediately clustered and categorized and displayed on our app in time

Innovation Objective

"Dance to The Rythm of Your Heart."

- We want to develop a music app that allows users to choose which songs to listen to based on their current moods and feelings
- We plan to target music lovers who enjoy selecting songs randomly based on mood, and who are fond of exploring new ways of music streaming and media services

8POTIFY INITIAL LAUNCH

MOOD COLLECTION

Users enter/select their current mood at the moment

LEVEL OF THE CURRENT MOOD

Users choose the level of their current mood (in %)

PLAYLIST GENERATION

The app will generate a customized playlist for the users by using machine-learning based algorithm

Music recommendation
Music recommendation
Music recommendation
Music recommendation

K NEAREST NEIGHBORHOOD

KNN is a non-parametric, lazy learning method. It uses a database in which the data points are separated into several clusters to make inferences for new samples.KNN does not make any assumptions on the underlying data distribution but relies on item feature similarity. When KNN makes an inference about a song, KNN will calculate the “distance” between the target song and every other song in its database, then it ranks its distances and returns the top K nearest neighbor songs as the most similar recommendations.

CUSTOMIZE MUSIC RECOMMENDATION

One of the most important features of our product is customization. Users can choose their own "filter" and the recommendation system can customize a list of recommended music for users. The filters we can apply to the algorithm are specific songs, genres and users' mood.

Key Features

Key Features
Key Features
Key Features

BY SONG

Users can enter a song title, the artists of the song, and the number of recommended songs they want. The algorithm will generate a list of recommended songs based on the inputed song.

BY MOOD

We create a list of moods based on the music features. For example, energy will be energetic and danceability will be want to dance. Users can enter their mood, select the percentage of mood and number of recommendations. A sample entry will be: want to dance, 70%, 5 songs. The algorithm will then generate 5 songs based on the song that is the nearest to the 70% quantile of danceability attribute.

ADD GENRE FILTER

Apart from recommending music based on mood. Users can also choose which genre they would like to stream. The genres of each song are generated using the clustering model we developed.

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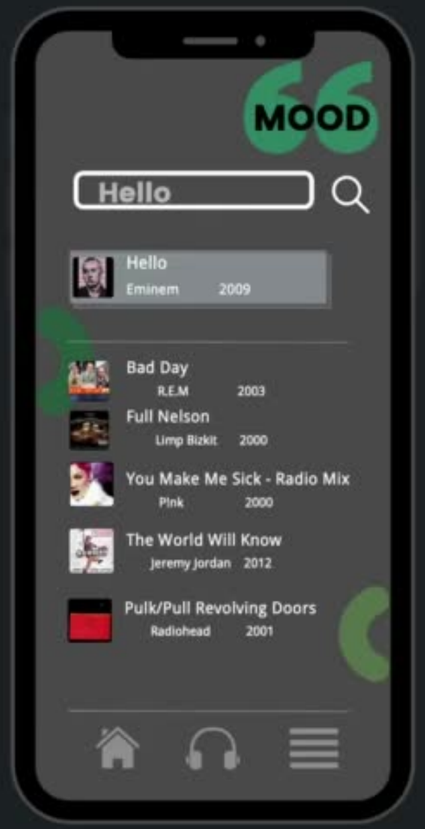

OTHER MODELING OPTIONS

There are a lot of alternative algorithms for content-based recommendation system, for example: matrix factorization and neural network. We should implete more algorithm in the future to find the best algorithm that provide fast and accurate recommendation.

COLLECT MORE DATA

Most mainstream music application allows users to create their playlist. Large corporations like Spotify even have music editors to help come up with a different playlist that meets the users' needs. If we can gain more data on playlists, we can use the algorithm to recognize the pattern in the playlists and recommend better music for our users.

LIMITATION AND FUTURE PLANS

AUDIOS CO. STREAMING APP
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Thank You for Watching

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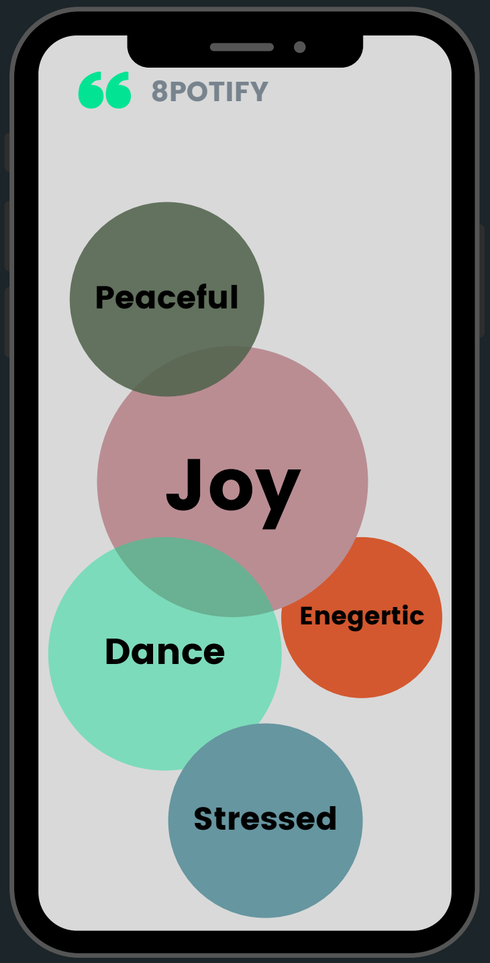

Choose your Mood

FRIEDRICH NIETZSCHE

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