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Fall 2019 – Sprint 1 Individual Report

CS 8803 Mobile Application and Services
Georgia Tech, Atlanta, Georgia, USA

Team Name:
Beat Harmony
Project Name:
Beat Harmony
Team Members:

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Problem:

Novelty seeking music-heads cannot find the fresh new music they need because:

- *Music-heads are stuck in echo chambers as a result of the naive recommendation algorithms of Youtube and Spotify.*
- *Music-heads are not connected to curators who share in their unique tastes.*

Problem Description

Customer discovery interview was conducted by Ankit Verma who is the Team lead for this project as part of First Interview assessment [1]. Following insights could be derived out of the work:

- Major platforms used for finding music are – Spotify, Soundcloud, Reddit, Youtube, Friends or Word-of-mouth, Social media (Facebook, Twitter)
- Participants felt the current algorithmic solution suggest something based on their previous choice and can be repetitive. Music-heads worry that they may miss out on other gems as it could be in the bottom of list.
- Participants want music discovery platforms to suggest new music based on the choices of people with similar taste or on their own established tastes
- The majority of participants value ease and convenience for music discovery. Participants feel like they have to put in too much effort to find new music
- Person who seeks novelty in music and digs for obscure music is more likely to be dissatisfied with current solutions than someone who is fine with listening to what they already are familiar with.
- Many interviewees seemed to imply that getting new music recommendations from their friends was their most reliable method of getting to hear new music that they really like.
- There is no one size fits all when it comes to music discovery as each person has different preferences based on demographics

There is a significant trade-off between convenience and high-quality discovery, and yet users opt for convenience in every case. It seems like the solutions that the interviewees use all currently strike a balance between speed, convenience, and finding music that is “just good enough for now”. What is missing for most individuals is a style of discovery that closely resembles word-of-mouth recommendations from friends, but users are not willing to sacrifice convenience to get there. There

seems to not yet be a solution that can find a balance between convenience and quality organic, word-of-mouth, style discovery, and our team believes this niche use case can be a great starting point to explore a potential viable product.

Approach Exploration

In music discovery, purely algorithmic and human recommendations have been the two extreme sides of solution. I think the answer is somewhere in between – a blended approach. In addition, we need re-think the basis of the recommendations. **Here are few approaches conceptualized by me**. The three approaches are different in the artefacts used for recommending music to user.

Approach 1 – Music Circle

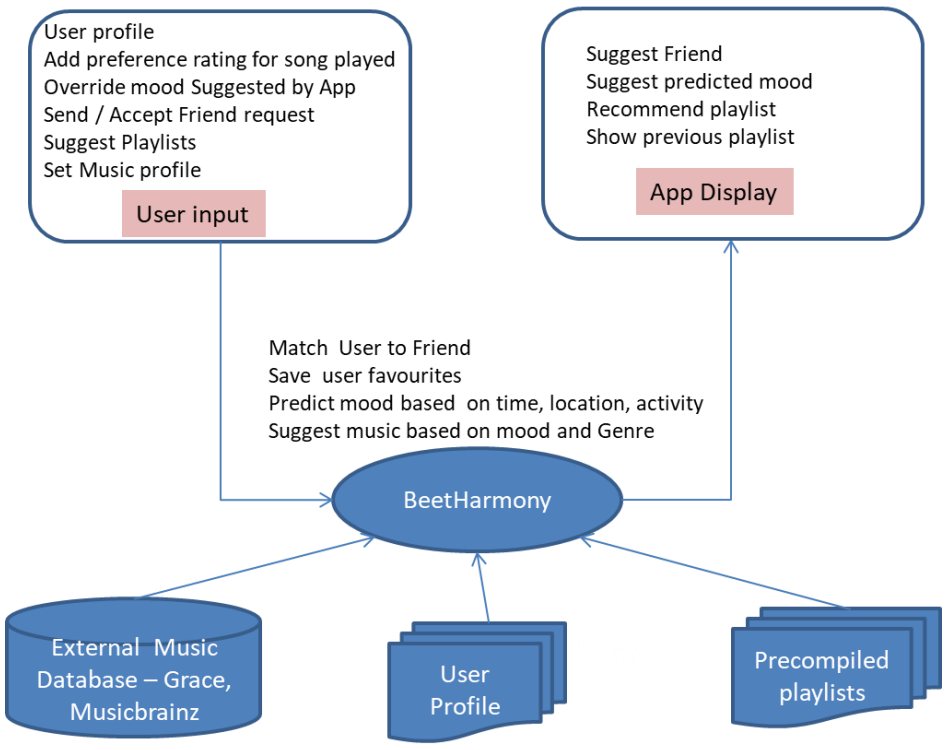
Like minded Friend Circle with similar music taste; Algorithm makes a recommendation based on music-heads' mood using

- Friends recommend based on each Genre
- Friends recommend based on their music experience

Features:

- Predicts mood of user / allows user to override
- Multiple users form a music circle with similar taste
- App suggests friends based on similar taste
- Algorithm suggests top 5 songs to be played based on user favourites, friend suggestions, previous playlists

Approach 1 – Music Circle



Use Cases

Use case 1: Add User profile

Preconditions:

User has downloaded app and has not set up a profile

Main Flow

Use case starts when user opens the App
App recognizes that user profile is not set
App brings up menu to set user profile
User add Name, his favourite albums, genres, frequency of usage, etc
App Saves information in a database
Use case ends

Use case 2: User Plays music

Precondition

User has already set up a profile

Main Flow

Use case starts when user selects a track to be played
App fetches the song and streams the music
Song Ends or User selects different track
If new song, App asks user to rate the song
If rating is > X, App adds to user playlist and sets recommend to friend Flag
Use case ends

Use case 3: App recommends playlist

Precondition

User has already setup a profile

Main Flow

Use case starts when User opens the App to stream music
App predicts the mood of user based on Time, Location, activity
App displays an animation on suggested mood of user
User either acknowledges OR overrides the suggested mood
App suggests top 5 songs based on user mood, previous played songs, friends recommendation
User accepts recommendation or navigates to his favourite playlist
User selects the track to be played
Use case ends

Learning Prototype

Need to investigate if there is a large music database which has mood and genre information. Need algorithm to match user mood to music

Reference / Technologies

Streaming service API for Music database Grace, MusicBrainz, discogs

Approach 2 – Music Connoisseur Recommends

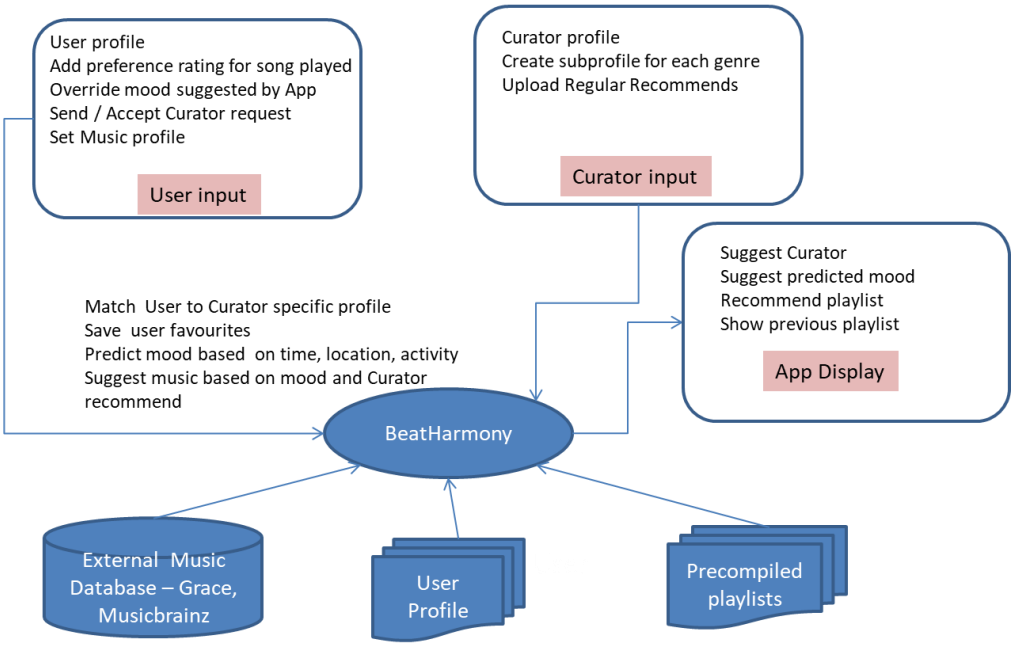
List of favourite Curators / websites; Algorithm makes a recommendation based on music-heads' mood using

- Music-heads' desire to listen again rating
- Curator rating recommendation

Features:

- Predicts mood of user / allows user to override
- Music Curators add their recommendations for a fee
- App matches Music curator sub profile to user
- Algorithm suggests top 5 songs to be played based on user favourites, , previous playlists

Approach 2 - Music Connoisseur Recommends



Use case 1: Add Curator profile

Preconditions:

Curator has downloaded app and has not set up a profile

Main Flow

Use case starts when curator opens the App
App recognizes that curator profile is not set
App brings up menu to set user profile
Curator adds name, his subprofile under genre of his taste
Curator adds an initial list of recommended playlist
App Saves information in a database
Use case ends

Use case 2: App recommends matched Curator

Precondition

User has already setup a profile

Main Flow

Use case starts when User opens the App to stream music
App recognizes opportunity to match user to curator
App suggests a curator match
User reviews curator taste and either accepts or rejects the match
Use case ends

Use case 3: App recommends playlist

Precondition

User has already setup a profile
User has a matched curator(s)

Main Flow

Use case starts when User opens the App to stream music
App predicts the mood of user based on Time, Location, activity
App displays an animation on suggested mood of user
User either acknowledges OR overrides the suggested mood
App suggests top 5 songs based on user mood, previous played songs, curator recommendation
User accepts recommendation or navigates to his favourite playlist
User selects the track to be played
Use case ends

Learning Prototype

Need to investigate if there is a large music database which has mood and genre information. Need algorithm to match user mood to music

Reference / Technologies

Streaming service API for Music database Grace, MusicBrainz, discogs

Approach 3 – My Favourite tunes

List of favourite Artists / Bands

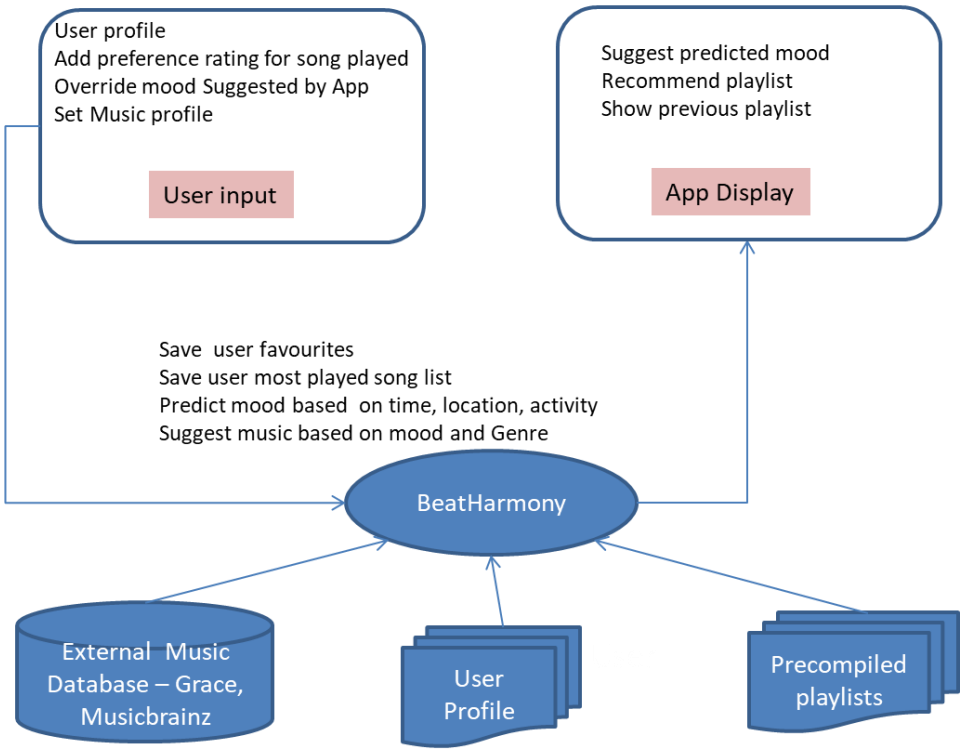
An Algorithm makes a recommendation based on music-heads' mood using

- Music-heads' desire to listen again rating
- Music-heads' old favourite play lists
- Music-heads' most played song list

Features:

- Predicts mood of user / allows user to override
- Algorithm suggests top 5 songs to be played based on his current mood, user favourites, previous playlists

Approach 3 – My Favourite tunes



Use case 1: App decides to change user mood setting

Precondition

User has already set up a profile

Main Flow

Use case starts when

Current time changes to morning / evening / night or

Location of user changes significantly from previous update of user mood

App fetches location and decides social setting – eg restaurant, driving, home, gym, work..

App predicts the mood based on time and setting

App updates the suggested mood on App display

Use case ends

Use case 2: App recommends playlist

Precondition

User has already setup a profile

Main Flow

Use case starts when User opens the App to stream music

App predicts the mood of user based on Time, Location, activity

App displays an animation on suggested mood of user

User either acknowledges OR overrides the suggested mood

App suggests top 5 songs based on user mood, previous played songs, new releases

User accepts recommendation or navigates to his favourite playlist

User selects the track to be played

Use case ends

Learning Prototype

Need to investigate if there is a large music database which has mood and genre information. Need algorithm to match user mood to music

Reference / Technologies

Streaming service API for Music database Grace, MusicBrainz, discogs

Team Recommended Approaches and Consensus

Some of the ideas suggested by other team members resembled Approach 1 and 2 presented by me. Some of the other ideas discussed were

- Music curated based on location
- Social music sharing platform that works similar to Tinder, but for sharing music
- Community based platform with standardized review methods. This solution would be profile based, so users can follow other people with similar tastes, or even artists

Each of the team members proposed three ideas on slack. We rated each of the ideas using following parameters

- Ease of Implementation
- Customer Convenience
- Taking recommendations from Friends
- Having connectivity to platforms

Each team member voted their top 3 ideas. Consensus was reached based on inputs from all group members.

References

1. CS 4261 First Interview Assessment by Ankit Verma
2. https://medium.com/the-sound-of-ai/spotifys-discover-weekly-explained-breaking-from-your-music-bubble-or-maybe-not-b506da144123
3. https://moodagent.com/
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