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| MUSIC RECOMMENDATION SYSTEM | Chinmay Shakya  2017482  H - 16 |

Music recommender system

A **recommender** (or recommendation) **system** (or engine) is a filtering system which aim is to predict a rating or preference a user would give to an item, eg. a film, a product, a song, etc.

There are two main types of recommender systems:

* Content-based filters:
* Collaborative filters:

*Content-based methods* gives recommendations based on the similarity of two song contents or attributes while *collaborative methods* make a prediction on possible preferences using a matrix with ratings on different songs.

**Content-based methods** are computationally fast and interpretable. Moreover, they can be efficiently adapted to new items or users.  However, one of the biggest limitations of content-based recommendation systems is that the model only learns to recommend items of the same type that the user is already using or, in our case, listening to. Even though this could be helpful, the value of that recommendation is significantly less because it lacks the surprise component of discovering something completely new.

**Collaborative-based methods** work with an interaction matrix, also called rating matrix. The aim of this algorithm is to learn a function that can predict if a user will benefit from an item - meaning the user will likely buy, listen to, watch this item.

Among collaborative-based systems, we can encounter two types: **user-item** filtering and **item-item** filtering.

# **Motivation for work**

Different recommendations primarily need to work for the satisficationtheusers.Identifying user grievances thereby resolving themleads to customersatisfaction as well as trustworthiness.The today’s world many people are busyandsuffering a lot in their life so to overcome that problem for atleast sometime andthebest solution is listening to the music.So we dediced to project on a musicrecommendation system so that users can listen a song based on their interests , canget the recommendation based on the similarity between the lyrics and alsobasedontheir mood songs can be recommended

# **PROBLEM DEFINITION**

The central issue is the recommendation of songs to a user. For a given user, we have their song history and play count for each song. From this, we want to produce a set of ten recommendations to the user. Then, we try to answer the question, “How do we use the song history of a user to provide recommendations that they will like?” Generally, this is done by looking at the songs that are most similar to the users songs, as well as the users who are most similar to the user according to their listening history.

# The aim of this project is to:

1. Generate a content-based music recommender system using a dataset of name, artist, and lyrics in English obtained from Kaggle. The data has been acquired from LyricsFreak through scraping by the author.
2. Build a collaborative filtering music recommeder system using the Million Song Dataset; a freely-available collection of audio features and metadata for a million contemporary popular music tracks.

# **Tools used and the methodology followed:**

## **This project contains the following files:**

**Content-based recommendation system**:

1. A jupyter notebook named content\_based\_music\_recommender that contains the code and analysis for the recommedation system.
2. A CSV file named songdata containing the data for the songs used in the system.

**Algorithms:**

* Popularity filtering
* Content-Based filtering
* Collaborative filtering