CS 725 FML PROJECT

MUSIC RECOMMENDATION SYSTEM

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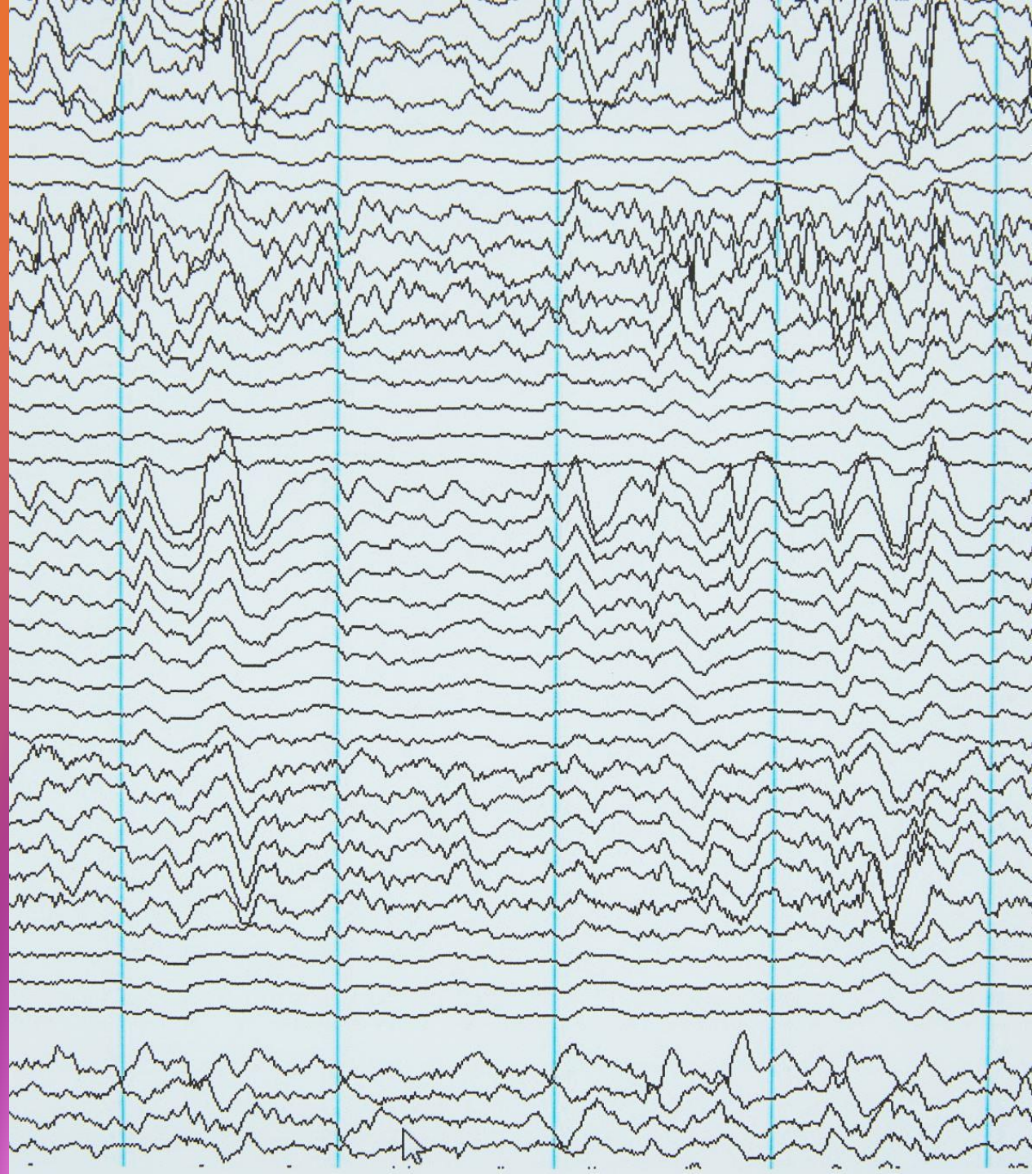
Description

- This project aims to provide a system that suggests songs based on your input
- This is done by using the features which we extract from the audio file
- The features are then used to compute the similarity
- The dataset used for this project is the GTZAN dataset



Features Used

- MFCC (Mel-Frequency Cepstral Coefficients): Represent the short-term power spectrum of sound
- Chroma Features: Summarize the energy distribution across the 12 pitch classes
- Spectral Contrast: Measures the difference in amplitude between peaks and valleys in the audio spectrum
- Tempo: Measure of the speed of the music

Idea behind Project

- Using the Extracted features, we plot the points in the space
- Then we measure similarity based on how close they are to each other
- Before plotting, we whiten the features to make sure that no feature due to its values skews the results

Measure of Closeness

EUCLIDEAN DISTANCE

MANHATTAN DISTANCE

COSINE DISTANCE

DYNAMIC TIME WARPING

Work Division

- We divided the project into two parts: Feature Extraction and the Similarity Check
- Feature Extraction is done by Nitin and Vinay
- Similarity Check is done by Anvesh and Abhishek

Analysis

- This is a very crude Recommendation System that uses only the audio features and nothing else
- Each Similarity Measure provides different results for some inputs and the same results for some inputs
- A much better system can be made by utilizing some Metadata about the audio

Thank You