Groupify is an interactive visualization tool for recommending music to groups of individuals.

We performed K-Means clustering on over 10,000 Spotify songs and their features. After you and your group authenticate your Spotify accounts, we will obtain the top 50 most played songs for each individual in the group. We will then determine the closest cluster to the songs that your group listens to and generate recommendations based on both the group’s listening history and songs in that cluster. On the “Visualization” tab, you will see the clusters of the 10,000 Spotify songs, the distribution plots of song features of each individual’s songs, and the distribution of the recommended songs. You’ll also get a list of recommended songs for your group.

Spotify measures the following audio features of songs. We listed them out here with explanations. More descriptions can be found on the Spotify API documentation.

acousticness: A confidence measure from 0.0 to 1.0 of whether the track is acoustic. 1.0 represents high confidence the track is acoustic.

danceability: Danceability describes how suitable a track is for dancing based on a combination of musical elements including tempo, rhythm stability, beat strength, and overall regularity. A value of 0.0 is least danceable and 1.0 is most danceable.

duration\_ms: The duration of the track in milliseconds.

Energy: Energy is a measure from 0.0 to 1.0 and represents a perceptual measure of intensity and activity. Typically, energetic tracks feel fast, loud, and noisy.

instrumentalness: Predicts whether a track contains no vocals. “Ooh” and “aah” sounds are treated as instrumental in this context. Rap or spoken word tracks are clearly “vocal”. The closer the instrumentalness value is to 1.0, the greater likelihood the track contains no vocal content.

liveness: Detects the presence of an audience in the recording. Higher liveness values represent an increased probability that the track was performed live.

loudness: The overall loudness of a track in decibels (dB). Loudness values are averaged across the entire track and are useful for comparing relative loudness of tracks.

speechiness: Speechiness detects the presence of spoken words in a track. The more exclusively speech-like the recording (e.g. talk show, audio book, poetry), the closer to 1.0 the attribute value.

tempo: The overall estimated tempo of a track in beats per minute (BPM).

valence: A measure from 0.0 to 1.0 describing the musical positiveness conveyed by a track. Tracks with high valence sound more positive (e.g. happy, cheerful, euphoric), while tracks with low valence sound more negative (e.g. sad, depressed, angry).