MoodSync

A Mood-Based Spotify Song Recommendation System

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Problem Overview

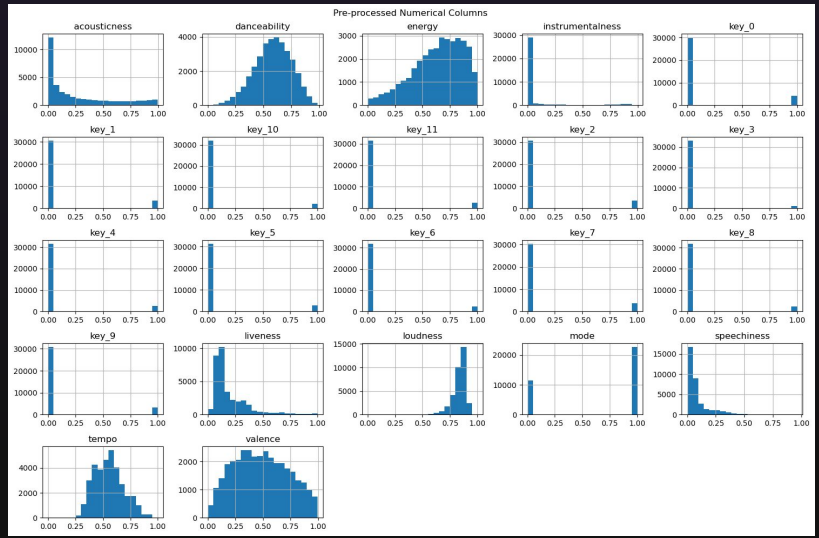
- Currently, there is a lack of intelligent automated features that enhance the user experience of music streaming platforms such as Spotify
- There is an opportunity to refine Spotify's AI feature 'DJ' to generate playlists based on user inputs such as mood, offering a more innovative and personalized music experience

- Use clustering and unsupervised learning to group songs by audio features
  - Sample the groups to determine and assign them a mood label (5 most common moods)

- The impact of enhancing user experience meets the widespread demand for efficient and personalized playlist creation, impacting millions of users.

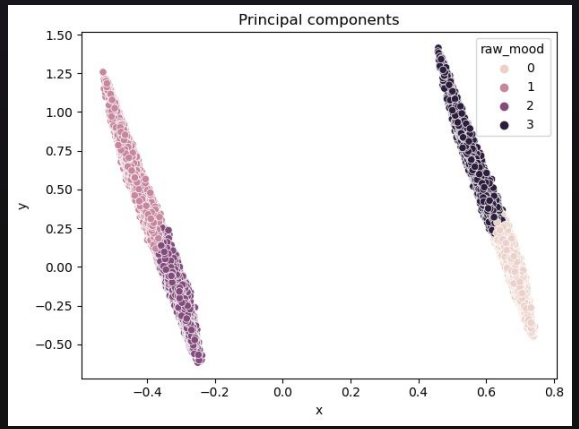
The Dataset & Findings

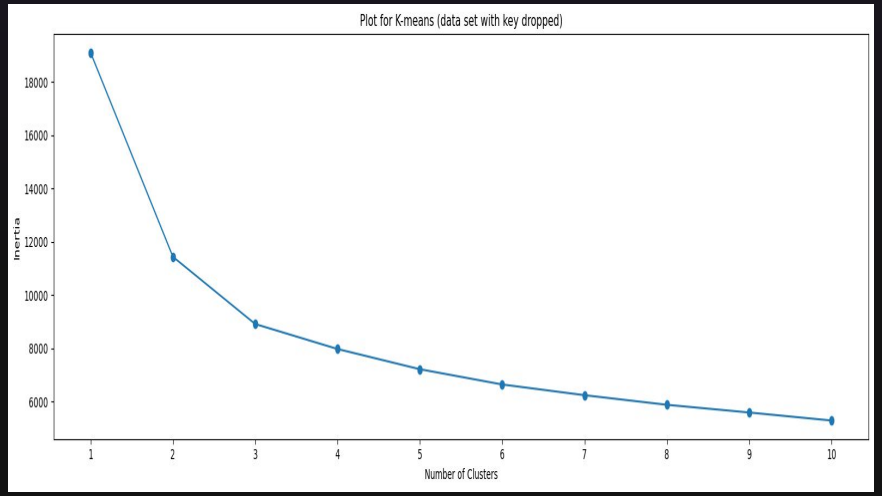
- The dataset required minimal preprocessing since it was already clean and in a usable format
- The only preprocessing that was required was to scale the data - used MinMax since most columns already had a range of values between 0 and 1, and I wished to preserve the semantic meaning of features as much as possible
- Most of the numerical features lie between 0 and 1, except for loudness, tempo, and key
- Key is a numerically encoded categorical variable



Model & Evaluation

- K-Means was used as the baseline model for clustering in order to group the data based on audio features so that mood labels can be assigned





Next Steps

- Investigate other techniques for clustering the data and compare them to the K-Means technique
- Investigate techniques to allow a single song to map to multiple moods instead of just one, and determine if this will add value
- Analyze the clusters and manually assign mood labels based on samples from the clusters
- Use the labelled data from the clustering process to build a supervised learning model that can predict the mood of new songs
- Create customized playlists for users based on their liked songs and a mood that they specify as user input

Thank You

Despacito

Luis Fonsi, Daddy Yankee

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