PLAYLIST RECOMMENDATION

Group – 17

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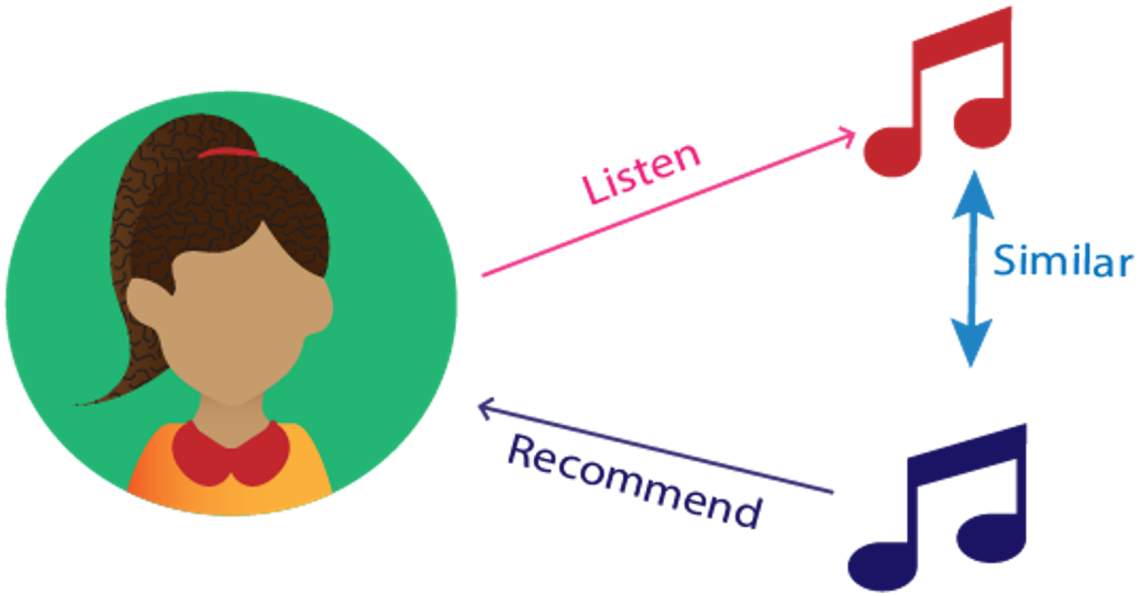
Motivation

- Where words fail, music speaks
- Playlists save the day
- Supervised or Unsupervised?



Methodology

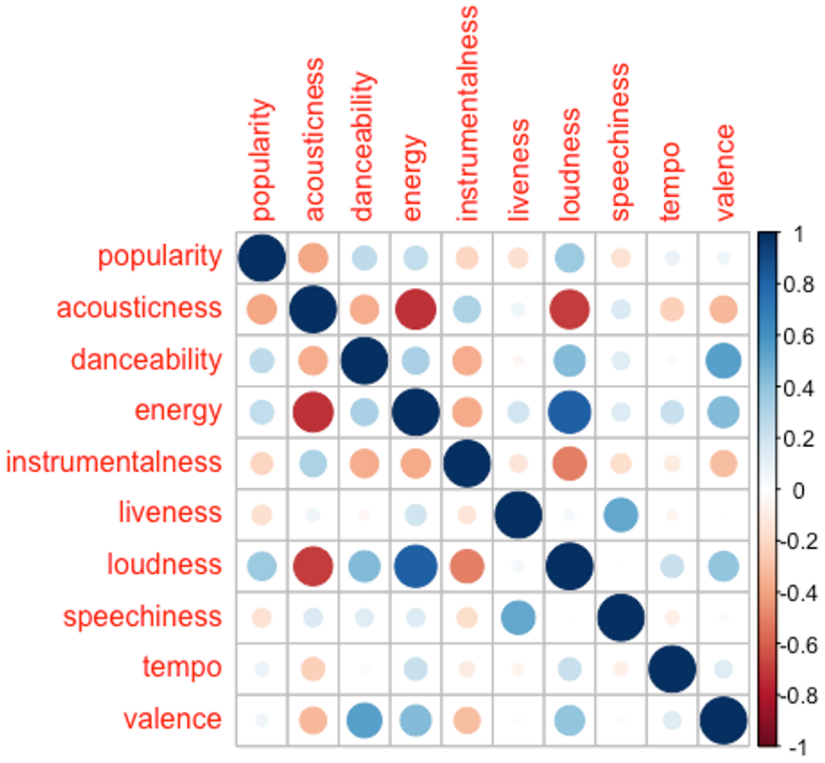
- Capturing user input:

  a. number of playlist and songs per playlist

  b. selection of feature values such as Popularity, Danceability, Accousticness, and Energy (Slider Inputs)

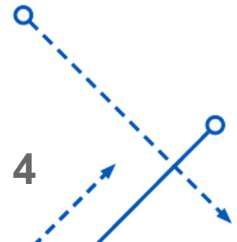
- Incorporating user input into our algorithm
- Analysing the result via plots

Correlation Plot



Algorithm - Cosine Similarity and K Means

- Create a data frame with features of the songs
- Pass input into similarity function - Cosine Similarity
- Merge the cosine similarity column into our original data frame
- Descending order sort - Most similar songs
- Pass the data frame and number of playlists into KMeans algorithm which creates different clusters



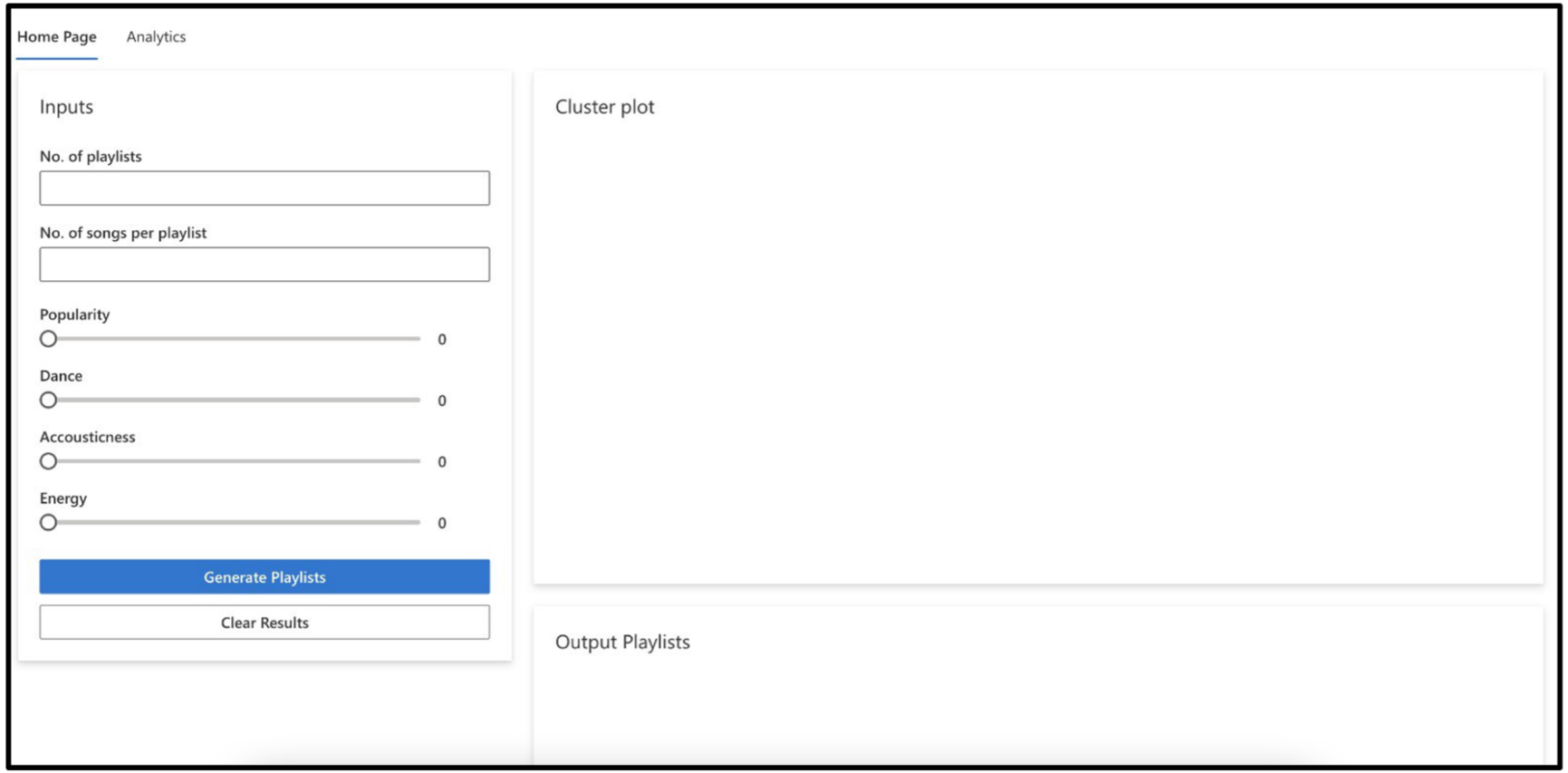
Analyzing results

- Retrieve playlists
- Plot cluster of songs

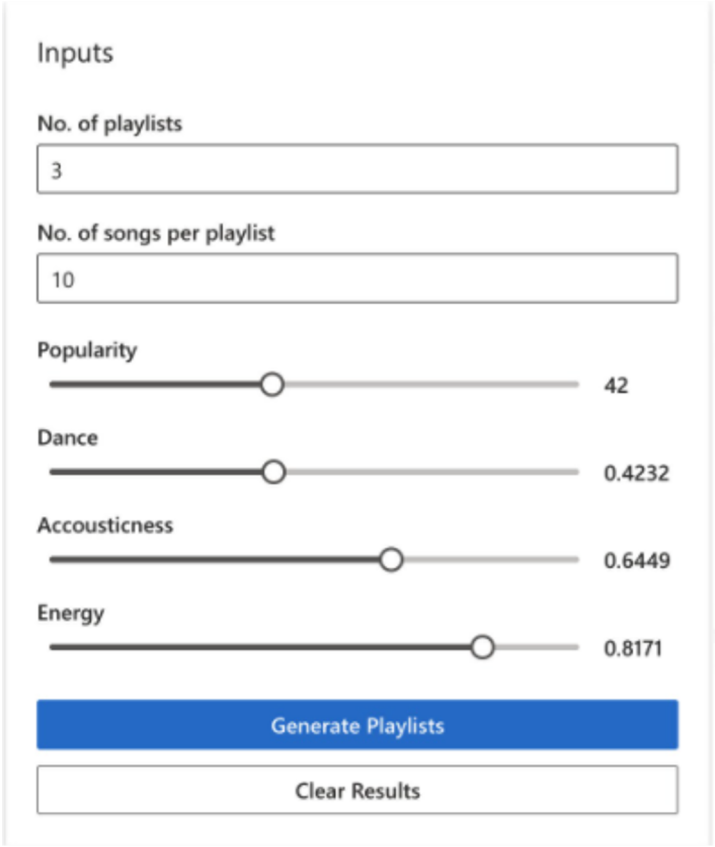
  a. Overlap in different clusters - similar songs in playlists

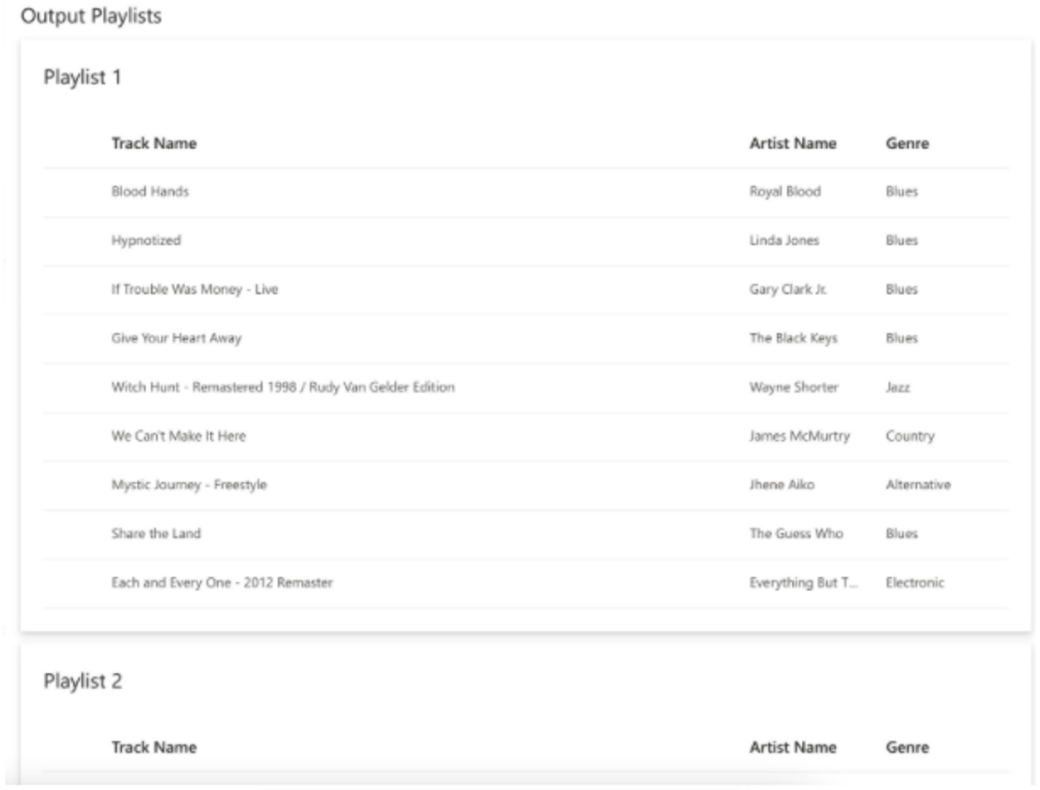
  b. No overlap - relatively distinct playlists
- Depict histogram plots of various features

R Shiny Application

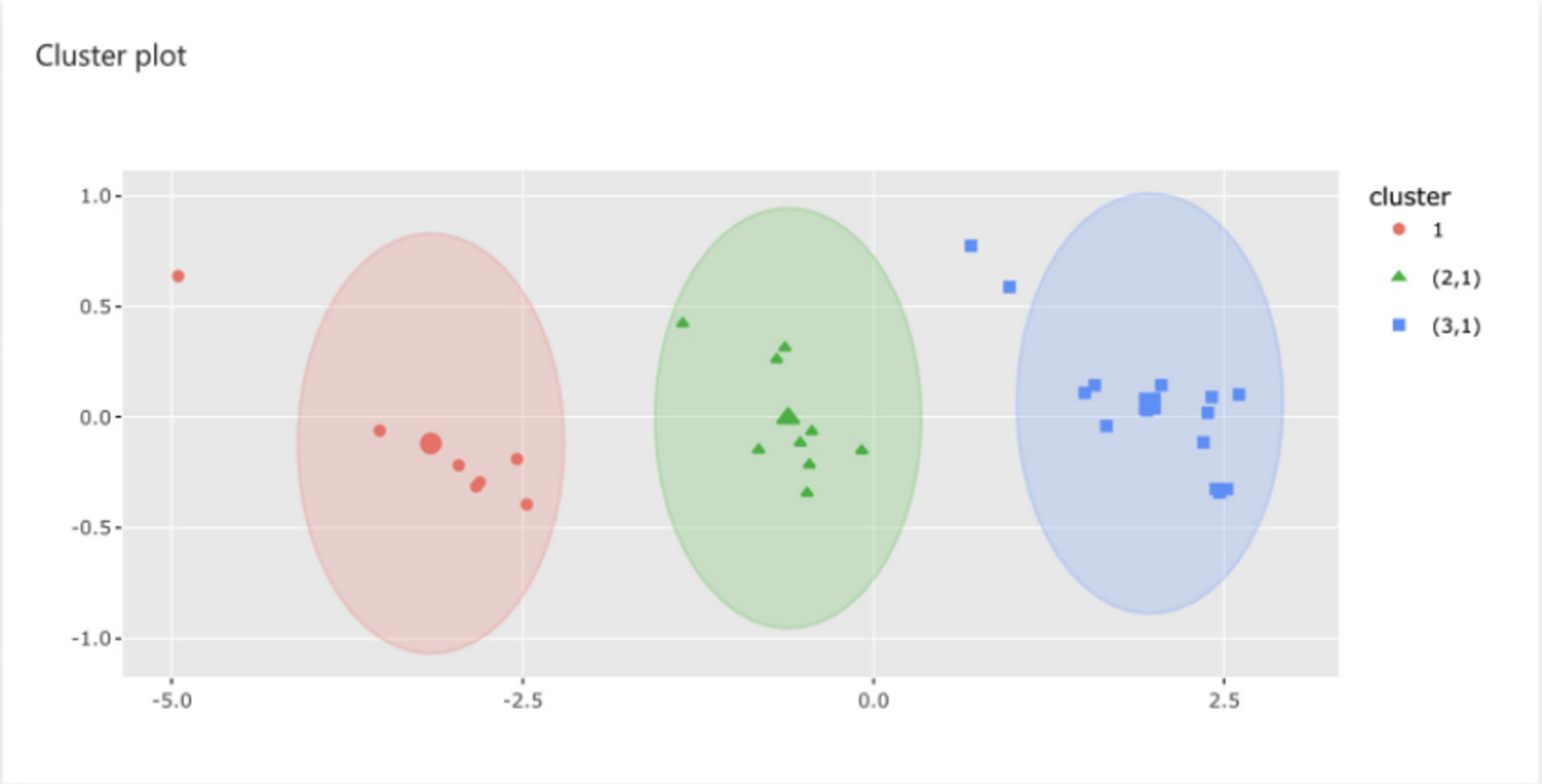


R Shiny - User Input and Output





R Shiny - Analytics Page



Impact

- UI of the application is quite smooth and easy to understand
- Plots and analytics
- Shows similarities and overlaps in the cluster plots

Research Opportunities

- Establishing any third-party app to play the songs.
- Real time data collection
- Incorporate an algorithm which will generate playlists with equal number of songs
- Providing user with the option to create as many playlist as possible