**DS4200**

**04/13/25**

**Work Delegation**

Saariya Faraz – 2 Altair Plots, 1 dash plot, helped with website, found the data source

Daman Anand – 2 Visualizations, helped find the data source helped with the writeup

Sahaj Baxi – 2 Visualizations, helped with the writeup and website

**Website:** <https://saariya.github.io/upd_ds4200/>

**Heatmap - Popularity**

This heatmap visualizes the correlation of various features with the popularity of songs. It highlights that while many features show weak relationships with popularity, **loudness** and **danceability** are the most strongly correlated. The heatmap's design allows for a quick visual assessment of which attributes impact popularity, helping users understand how different features such as energy, tempo, and acousticness compare in terms of their influence on song success. Despite loudness showing some correlation, the emphasis on danceability allows users to focus on the feature with a more consistent impact on popularity. Used Seaborn.

**Popular Genre Distribution**

This visualization shows the distribution of the three most popular music genres: **pop-film**, **k-pop**, and **chill**. It uses a series of plots to compare these genres' popularity distributions and allows users to explore the popularity of a fourth genre through a dropdown menu. The design of this plot is interactive, providing flexibility for users to explore genre-specific trends, particularly how niche genres like "iranian" differ from broader genres like "edm." By visualizing the popularity spread, the plot helps users understand how genre influences song success and shows that genre popularity varies widely across different music styles. Used dashboard and plotly.

**Popularity Distribution of the Top 3 Most Danceable Genres**

This plot investigates the relationship between danceability and popularity by comparing the three most danceable music genres: **kids**, **chicago-house**, and **reggaeton**. The design includes scatter plots to show the popularity distribution of these genres, revealing insights like **reggaeton's** unique bi-modal distribution with popularity clustering at either extreme. This visualization highlights that despite similar danceability, these genres have very different popularity patterns, implying that danceability alone is insufficient to explain a genre's success. Used Altair.

**Top 10 Artists by Average Song Popularity**

This bar plot visualizes the top 10 artists based on their average song popularity. It emphasizes how artist success correlates with various features, such as danceability. The plot’s design includes an interactive interface to compare how different features influence an artist's popularity. By showing the range of danceability across artists, this plot reveals that while danceability contributes to popularity, other factors, such as **artist reputation** and **fan engagement**, play a more significant role in determining success. It shows that **danceability** alone does not consistently drive the rankings. Used D3.

**Exploring Popularity**

This box plot explores how song duration affects popularity across different categories. It compares the popularity of songs grouped by their duration (<3 min, 3-4 min, 4-5 min, 5-10 min, and 10+ min). The design highlights that songs with a duration between 4-5 minutes and 5-10 minutes tend to have slightly higher median popularity than both shorter and longer songs. This suggests that song length may play a role in determining popularity, and the plot gives insight into how song duration can influence listener engagement and success across various categories.