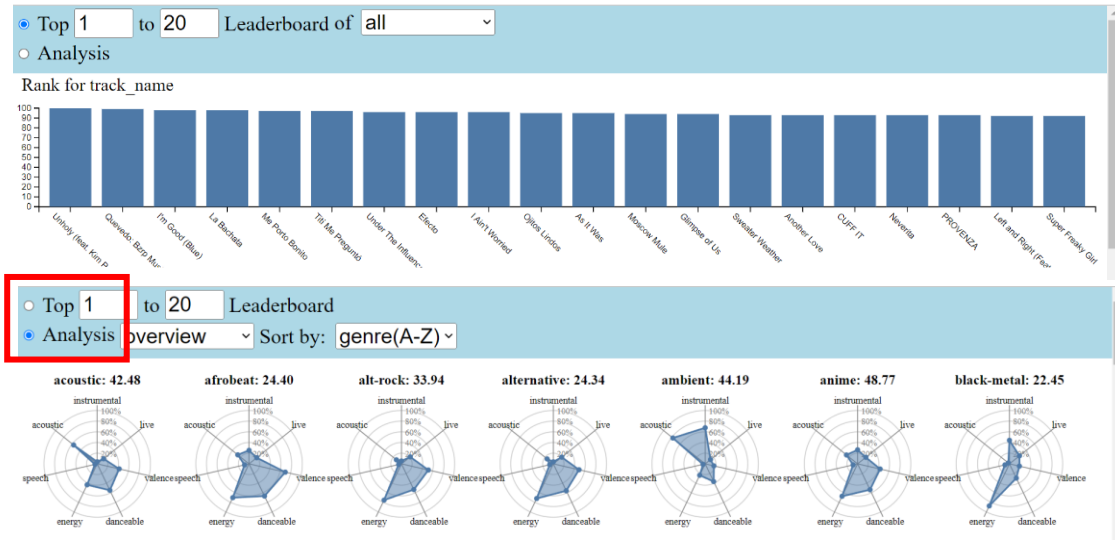


HW9 report

Name: 陳以瑄 Student ID: 109705001

Introduction

My project is divided into two parts. One is the leaderboard, and the other is song analysis. You can switch between them by clicking the topmost radio button.



Leaderboard



(1) Purpose

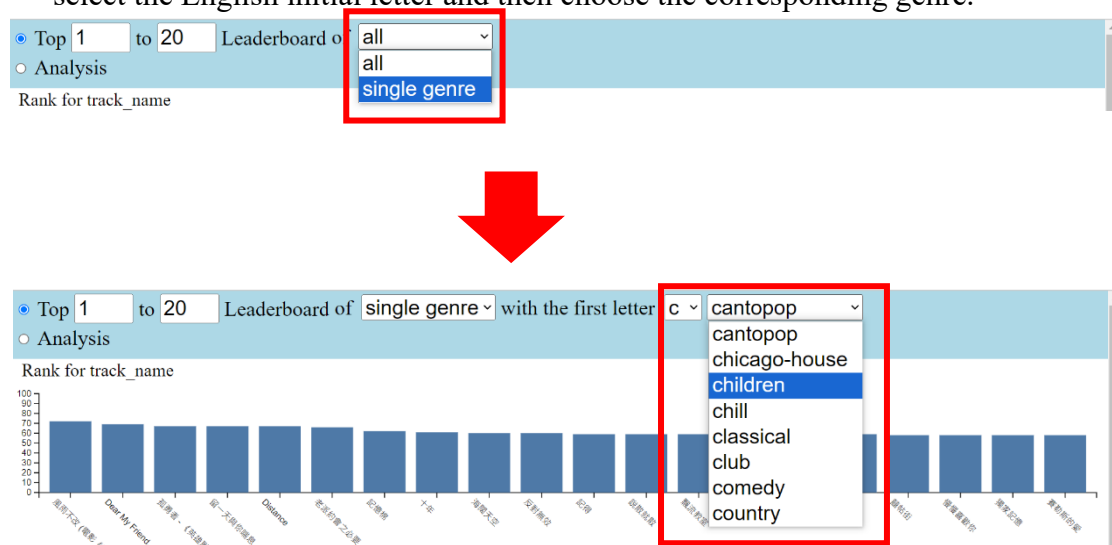
As people often pay close attention to the popularity of songs while listening, I have prepared a leaderboard. In addition to the most popular songs, there are also rankings for the most popular albums, artists, and genres.

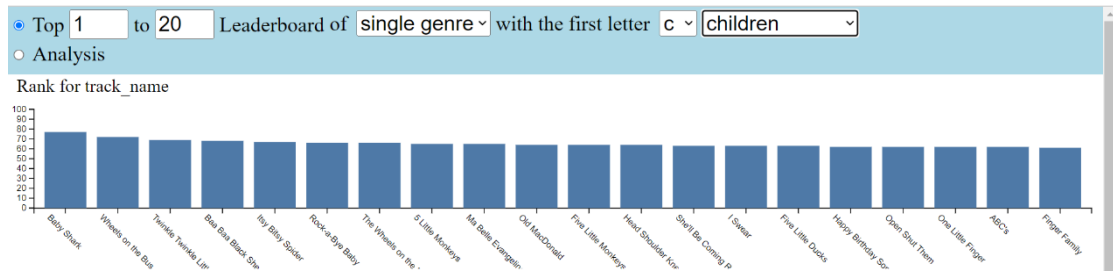
(2) Interaction

- a. Users have the flexibility to determine the number of top entries to display on the leaderboard by adjusting the numeric input in the title box.

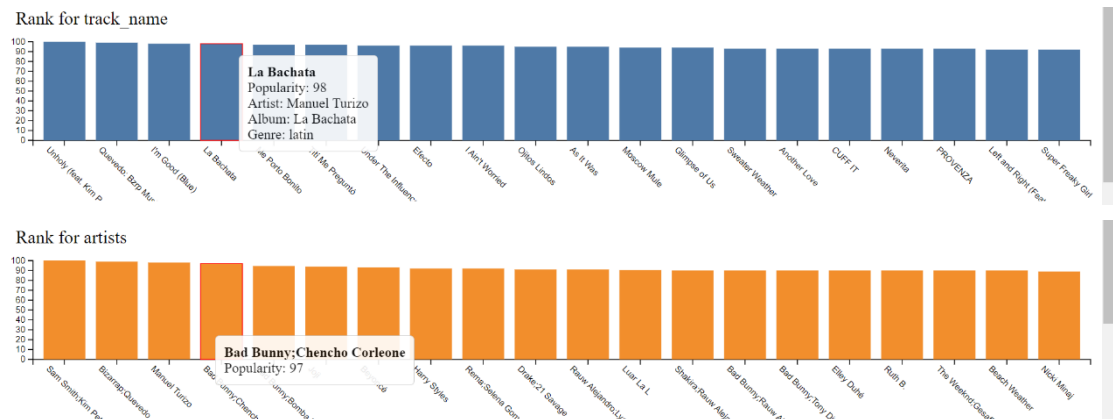


- b. Users can focus on specific genres on the leaderboard through a dropdown menu. Due to the numerous genres available, for user convenience, I've categorized them by the initial letter of their English names. Users can first select the English initial letter and then choose the corresponding genre.



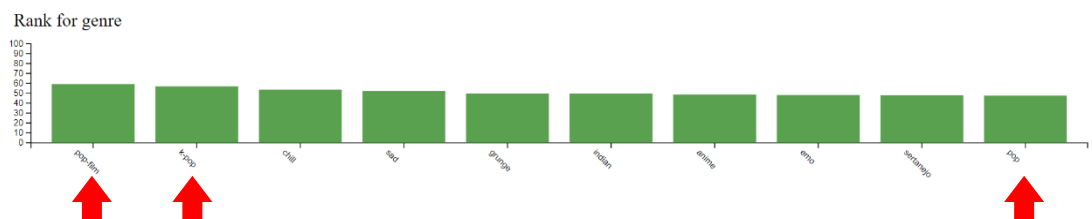


c. Users can hover on the bar that they are interest in, to see the details.



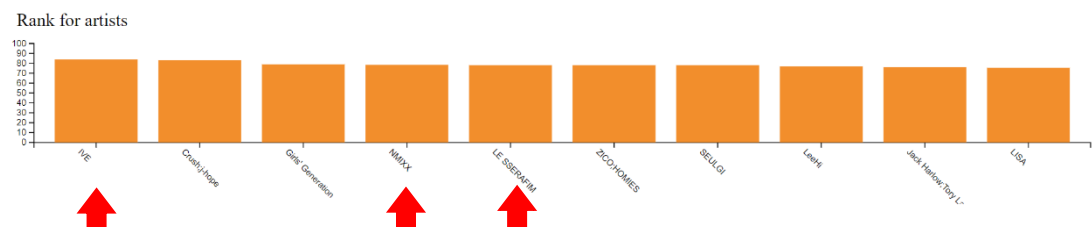
(3) Findings

a. The top genre



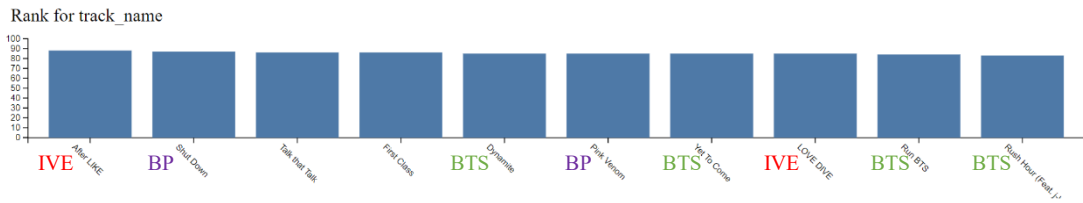
We can observe that the most popular genre is 'pop-film,' with 'kpop' and 'pop' also ranking in the top ten. This aligns well with their name meanings, as 'pop' stands for popular.

b. The top artist



Due to my limited familiarity with most artists, I chose to analyze a genre I am more acquainted with—kpop. I found that the artist rankings are closely tied to their current level of activity, meaning those who have recently released new songs are more likely to make the list. This speculation is supported by the fact that three out of the top ten on this leaderboard are rookie girl groups.

c. The top tracks

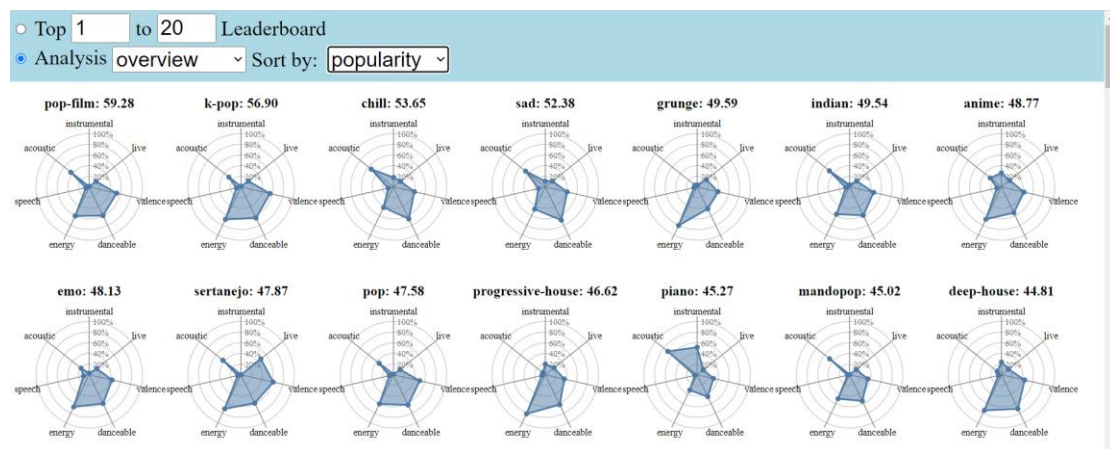


Unlike the artist leaderboard, which is heavily influenced by recent activity, the song rankings clearly illustrate the current trends. For example, in the top 10 songs, although the newcomer girl group IVE's song 'After LIKE' claims the first position, four of the top ten songs are actually works of the highly popular boy group BTS, and two are from the most renowned girl group, BLACKPINK.

Analysis

In this part, I provide two kinds of analysis. The first is an overview, utilizing a radar plot to compare different genres. The second focuses on a single genre, providing a more comprehensive chart analysis.

1. Overall Analysis

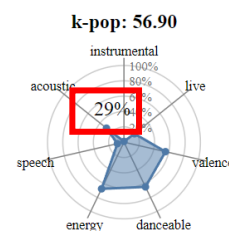


(1) Purpose

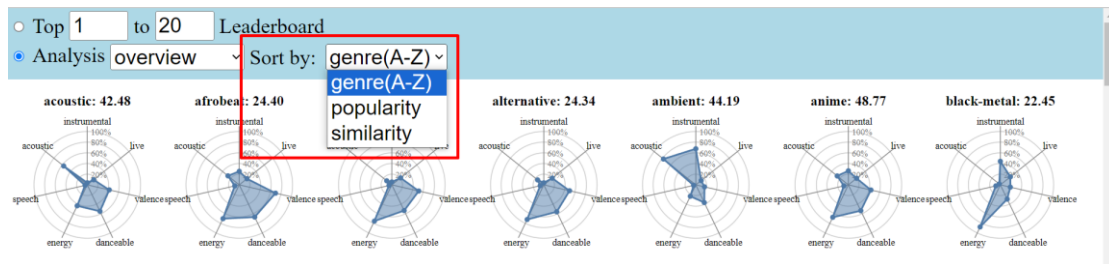
In addition to the rankings, I believe users would also want to compare various music genres based on features. Therefore, I am using a radar chart to allow users to quickly see seven features: instrumentality, liveness, valence, danceability, energy, speechiness, and acousticness.

(2) Interaction

- Users can hover over to see the precise numerical values.

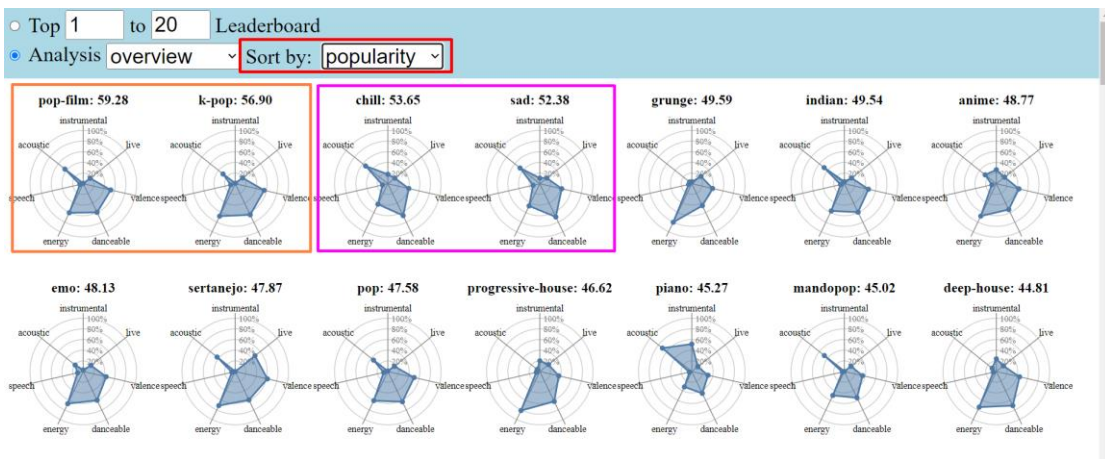


- b. Users can choose to sort based on genre name, popularity, or shape similarity to find associations between similar genres.



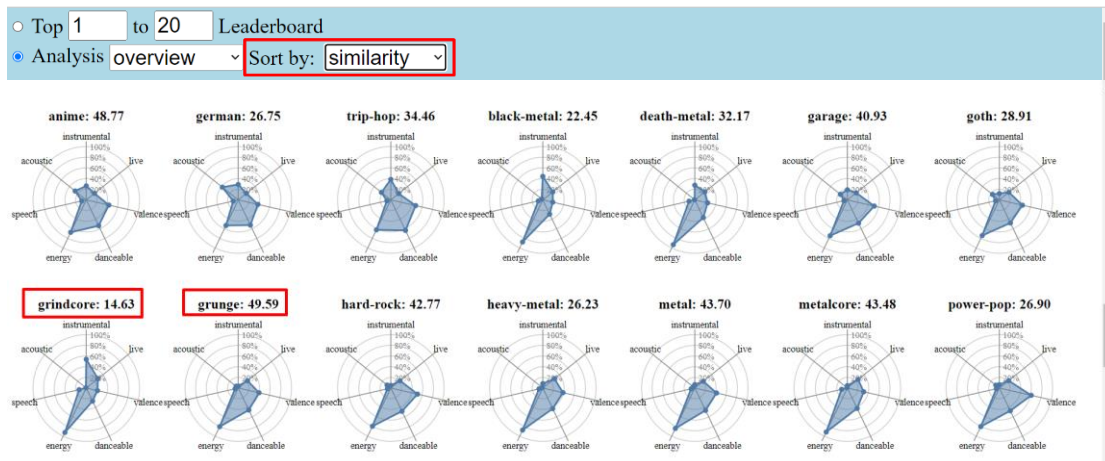
(3) Findings

a. Sort by popularity



The original reason that I created radar charts was to investigate whether the overall features of a music genre would impact its popularity. However, when I sorted them based on average popularity, I found that their radar charts looked quite different. However, we still can notice that there are some similarities in shape between the first and second positions, and the shape of the third and fourth positions has some similarity too.

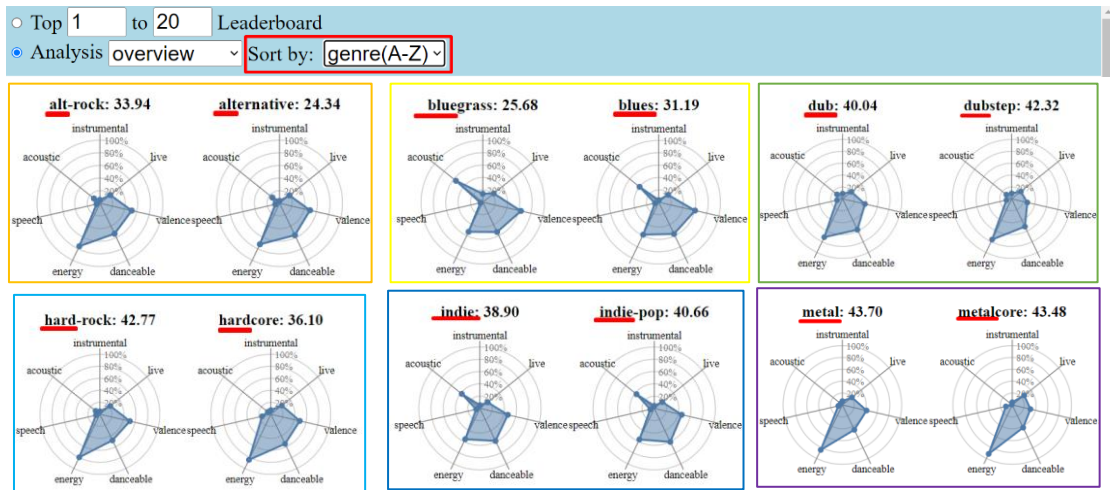
b. Sort by shape similarity



Similar to the previous results, when I sorted them based on shape similarity, I

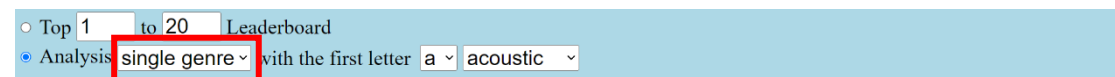
did not find that similar charts corresponded to similar popularity. Looking at the charts, these genres have similar values, but “grunge” has a high popularity of 49.59, while “grindcore” has only 14.63.

c. Sort by name



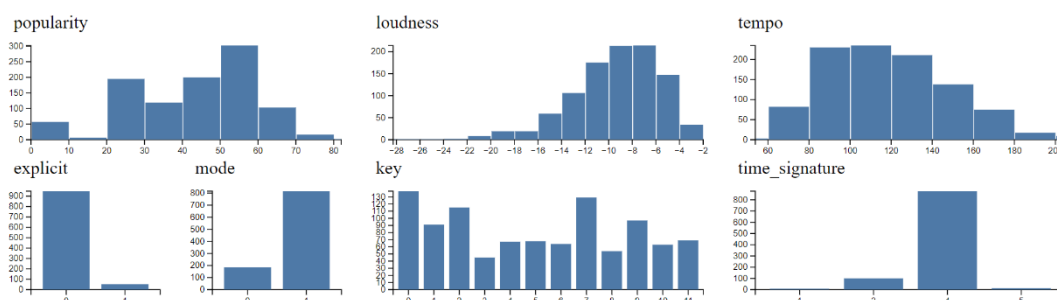
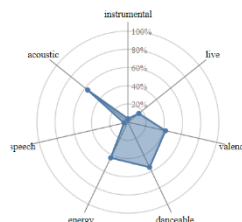
The most revealing sorting method for similarity turned out to be ordering by genre names. You can observe that genres with similar names, such as alt-rock vs. alternative or metal vs. metalcore, have more similar shapes in their charts.

2. Single genre analysis



acoustic

Number of songs: 1000.00
Average popularity: 42.48
Average tempo(BPM): 119.01
Average loudness(DB): -9.45
Major key: 0.00
Major time signature: 4.00



In addition to comparing different music genres, I believe users would also want to examine detailed information about a single genre. Therefore, when the user selects "single genre" in the Analysis section, they will be directed to this page. In the top-left corner, numerical information will be displayed, including the number

of songs in that genre, popularity, average tempo, and more. In the top-right corner, there will be a radar chart similar to the overall analysis, providing a quick overview of the seven features. The next row will feature histograms for three features: popularity, loudness, and tempo. The bottom row will include bar charts for categorical features such as explicit, mode, key, and time signature.