

Spotify Tracks Dataset

DATA VISUALIZATION AND VISUAL ANALYTICS

0816137 HW #3+4.

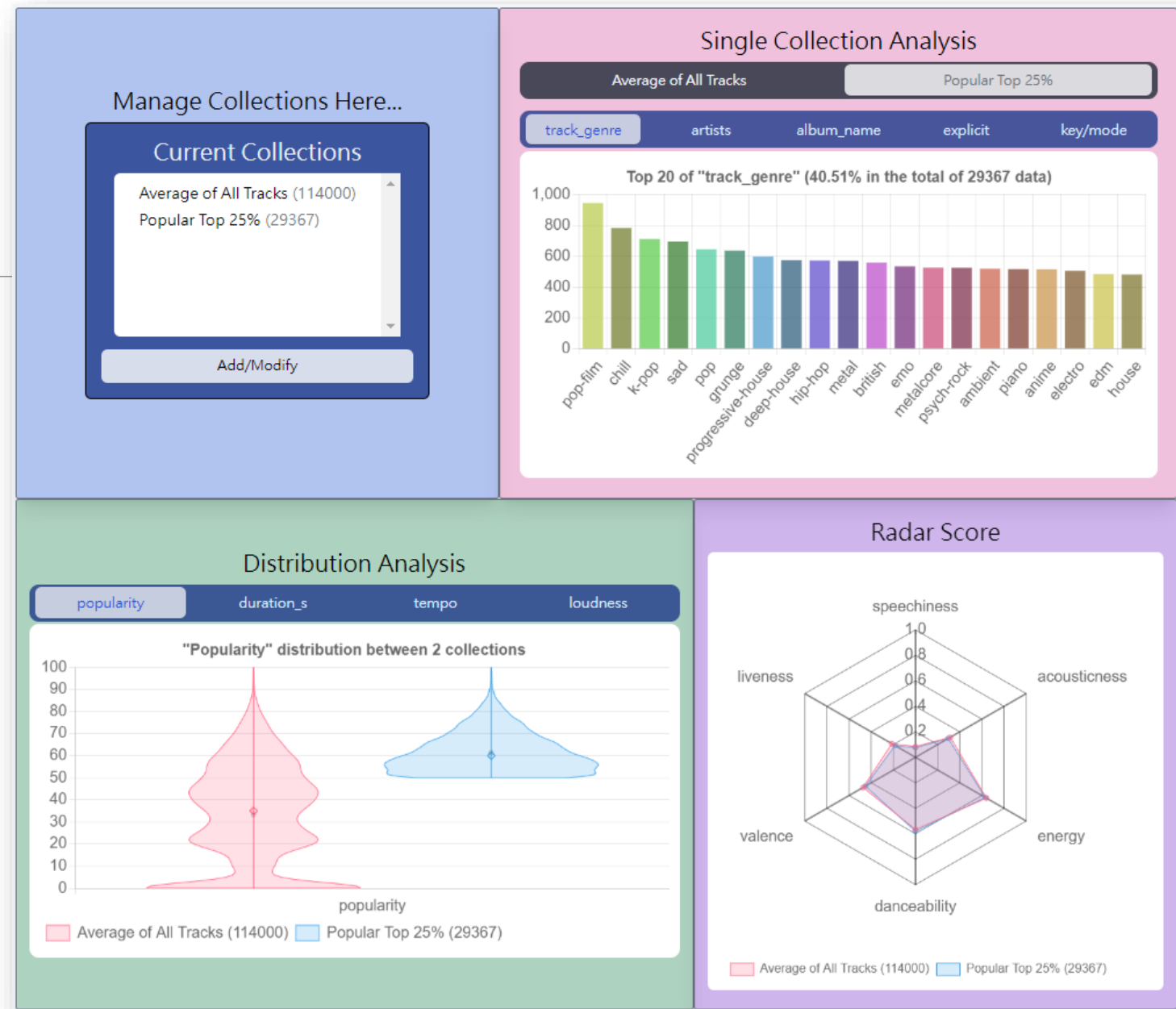
Definition of "collection" :
A set of tracks

General Picture

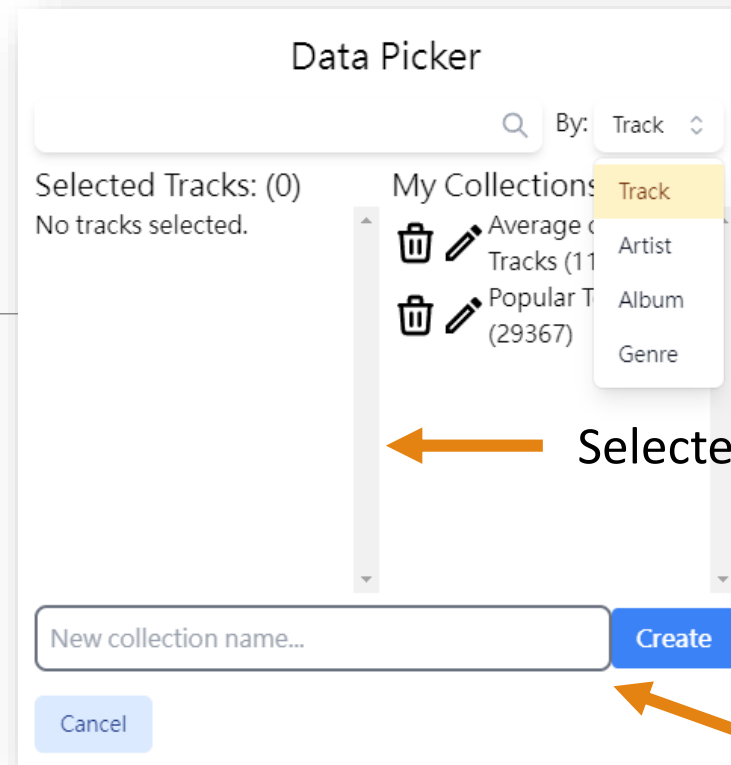
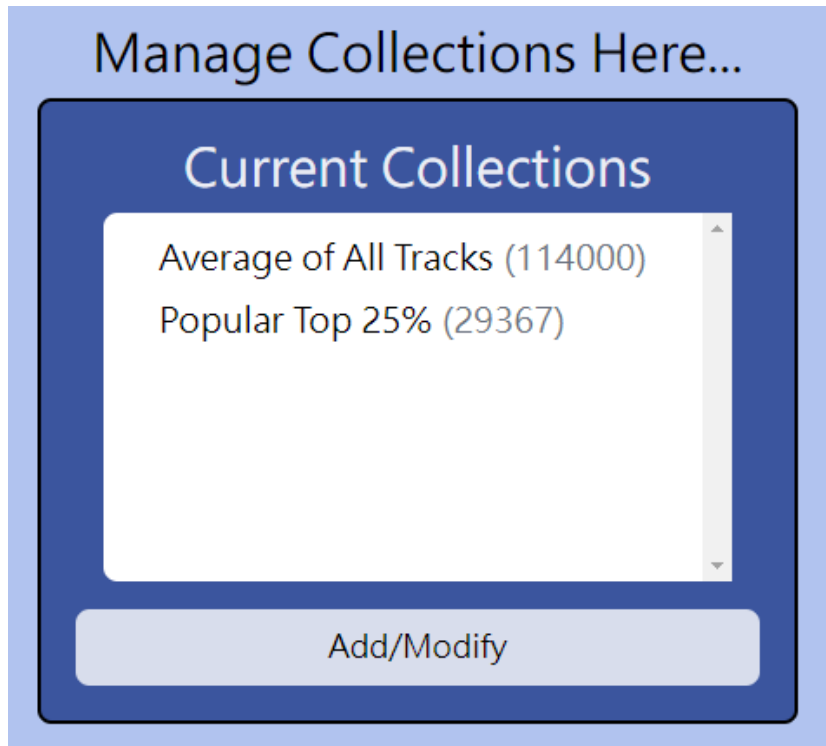
➤ This is a general analysis tool – SpotiTracks, built for analyzing Spotify tracks.

➤ Users can create custom collections, and compare between them easily.

This feature introduces a wide flexibility of how a user can dig information from the dataset.



How to Use It...



Search tracks by
track/artist/album/genre
(Fuzzy search implemented)

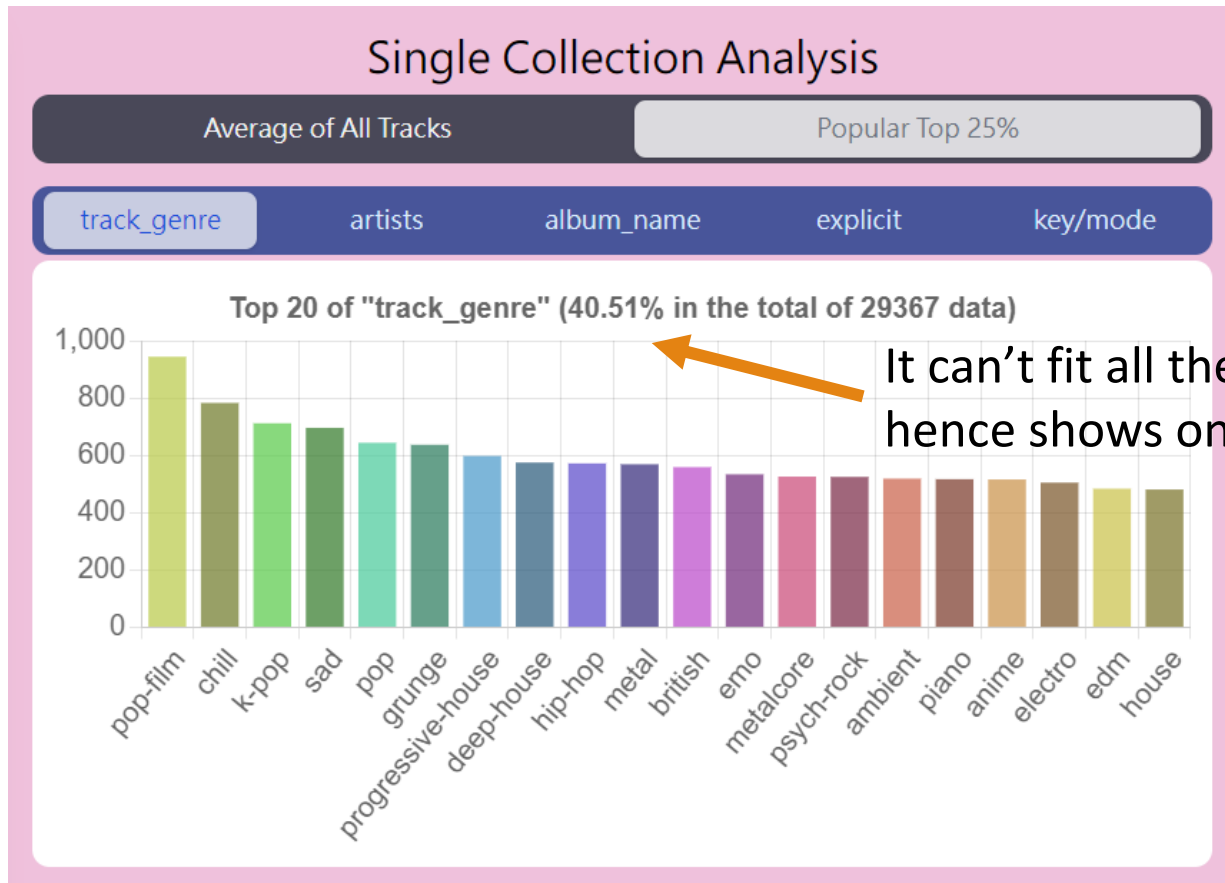
Selected tracks will appear here

Name your custom set
of tracks and click "create"
to add to collections

Click button opens modal

Users are able to add/modify
his own set of tracks for analysis

How to Use It...



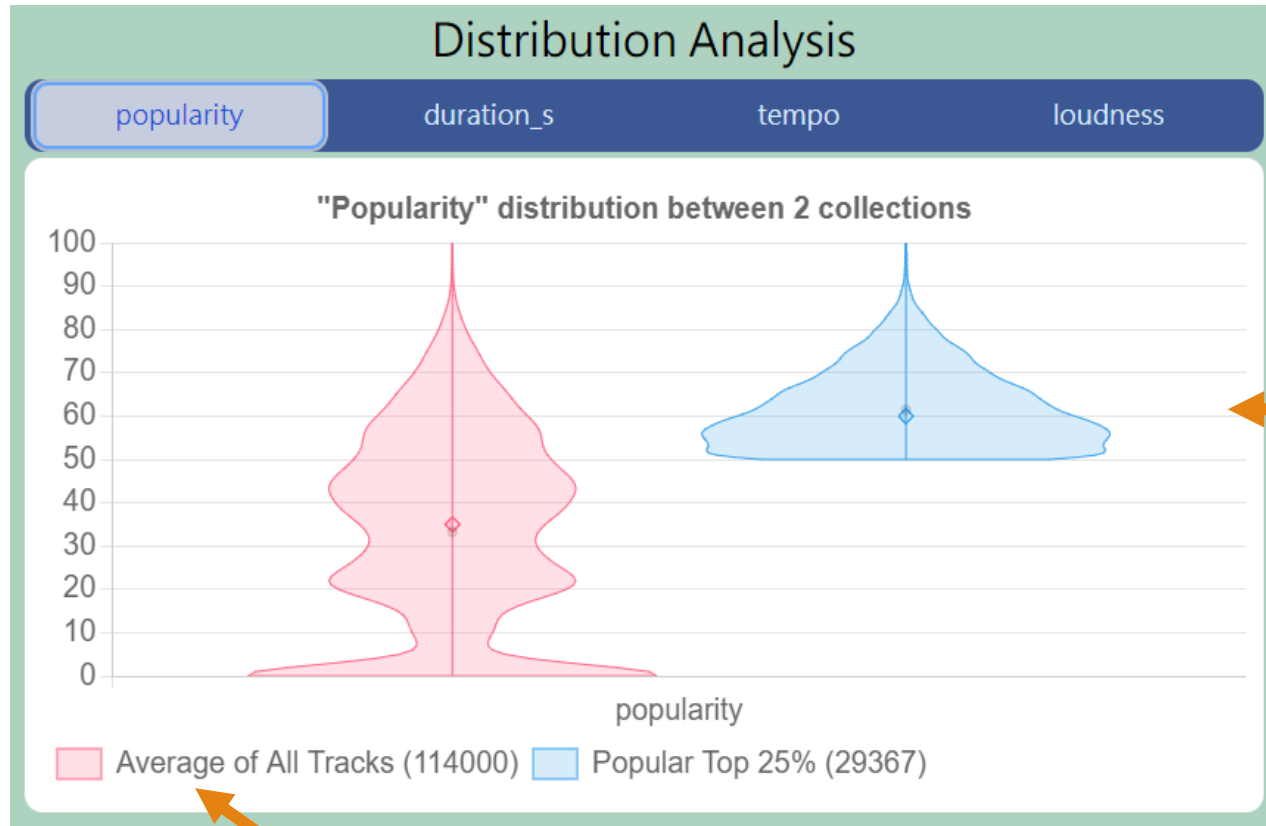
← Choose the collection to analyze

← Discrete aspects in the collection

It can't fit all the types on the graph,
hence shows only 20 types at most.

The pink graph analyzes the discrete aspects of selected collection

How to Use It...



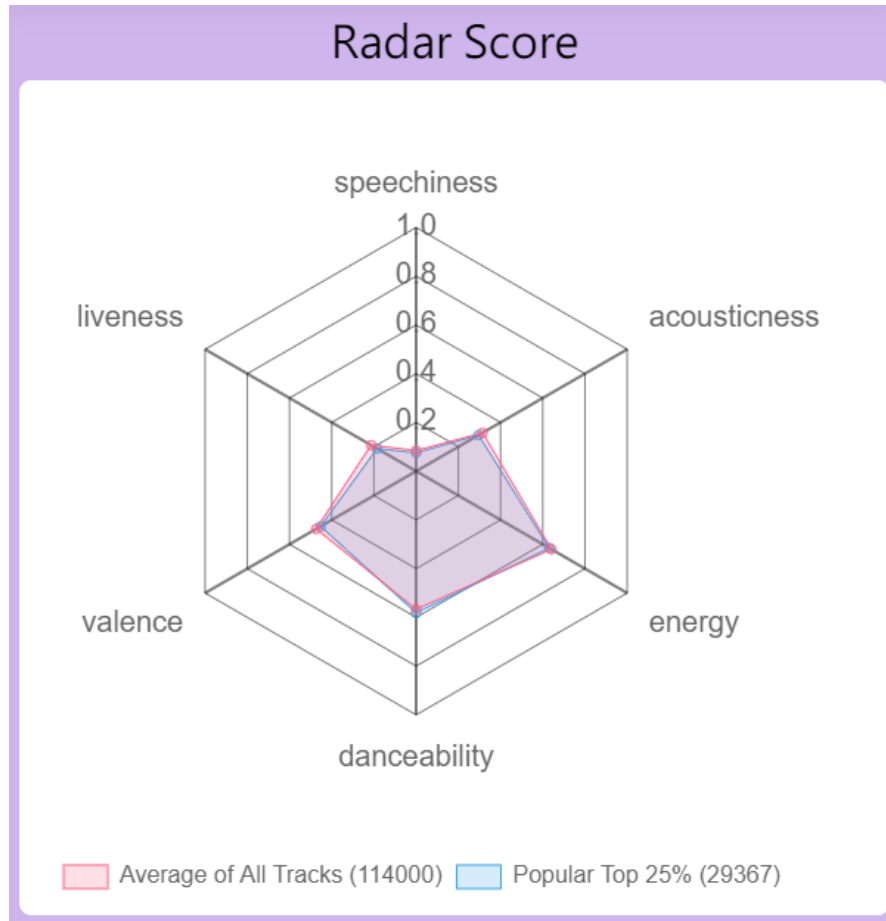
← Continuous aspects in the collection

← Violin plot for each collection

The green graph analyzes the distribution of continuous data **between** each collection

← Toggle (on/off) to hide a collection

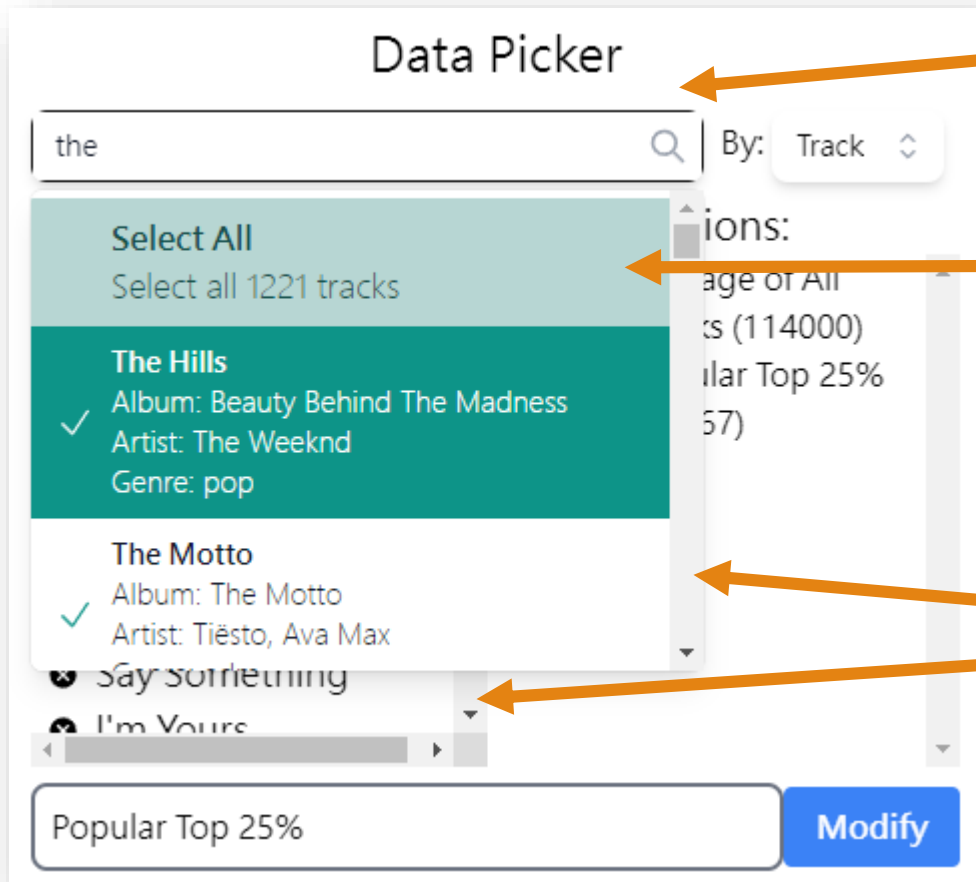
How to Use It...



- **Speechiness:** Presence of spoken words in a track
- **Acousticness:** Confidence of whether the track is acoustic
- **Energy:** Perceptual measure of intensity and activity
- **Danceability:** How suitable a track is for dancing
- **Valence:** Musical positiveness conveyed by a track
- **Liveness:** Presence of an audience in the recording

The **purple graph** shows the radar chart of the scores **between** each collection.

Some Details on Data Picker...



Implemented fuzzy search, “auto completes” for the user even if there are some typos.

User can select all the tracks once, or tick the tracks one by one.

The data inside scroll bars are virtualized, which only renders as you scroll to it. (Instead of spending few seconds rendering everything)
This massively improves performance, giving good user experience.

Story in the Dataset: Use Cases

There are many use cases for this tool.

I will demo 2 use cases, and show only the key steps and graphs.

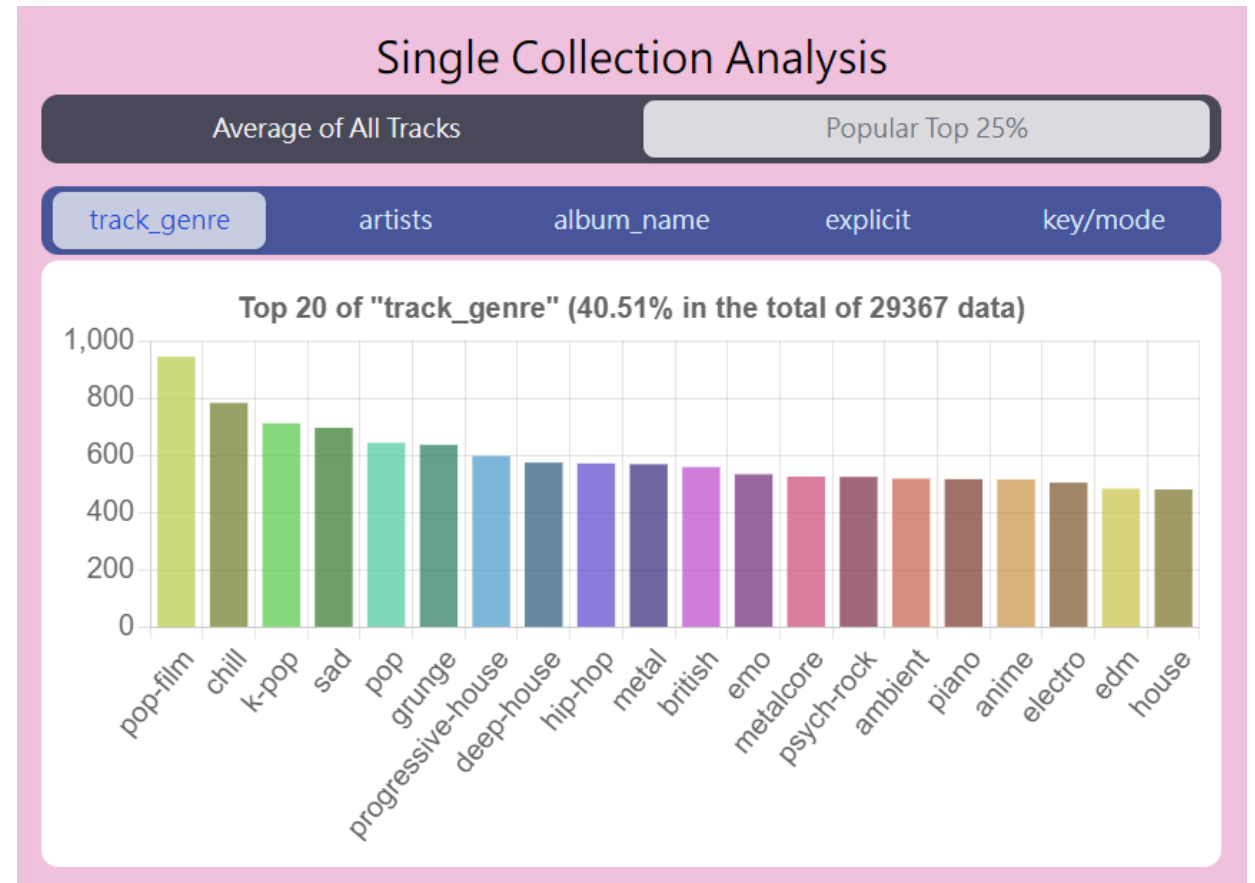
Use Case #1: Specific Genre Analysis

Compare between popular genres

Specific Genre Analysis (1)

1. Inspecting popular top 25% tracks, we find out genre: “pop-film” has the largest portion.

I would like to take a look at what’s special for this genre, compared to the average.



Specific Genre Analysis (2)

2. Search “pop-film” by genre in data picker, and create a new collection called “Pop Film”.

The screenshot shows a 'Data Picker' window. At the top, there is a search bar containing 'Pop Film' and a magnifying glass icon. To the right of the search bar is a dropdown menu labeled 'By:' with 'Genre' selected. Below the search bar, a list of results is displayed. The first result is 'Select All' with the subtext 'Select all 1000 tracks'. The second result is 'Megham Karukatha (From "Thiruchi...)' with details: 'Album: Megham Karukatha (From "Thiruchi...', 'Artist: Dhanush, Anirudh Ravichander', and 'Genre: pop-film'. The third result is 'Thenmozhi (From "Thiruchitrambala...)' with details: 'Album: Thenmozhi (From "Thiruchitramb...', 'Artist: Santhosh Narayanan, Anirudh Rav...', and 'Genre: pop-film'. To the right of the list, there is a vertical scrollbar and some statistics: 'ations:', 'rage of All', 'ks (114000)', 'ular Top 25%', and '(67)'. At the bottom of the window, there is a text input field containing 'Pop Film', a blue 'Create' button, and a light blue 'Cancel' button.

Data Picker

Pop Film

By: Genre

Select All
Select all 1000 tracks

Megham Karukatha (From "Thiruchi...
Album: Megham Karukatha (From "Thiruchi...
Artist: Dhanush, Anirudh Ravichander
Genre: pop-film

Thenmozhi (From "Thiruchitrambala...
Album: Thenmozhi (From "Thiruchitramb...
Artist: Santhosh Narayanan, Anirudh Rav...
Genre: pop-film

ations:
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ks (114000)
ular Top 25%
(67)

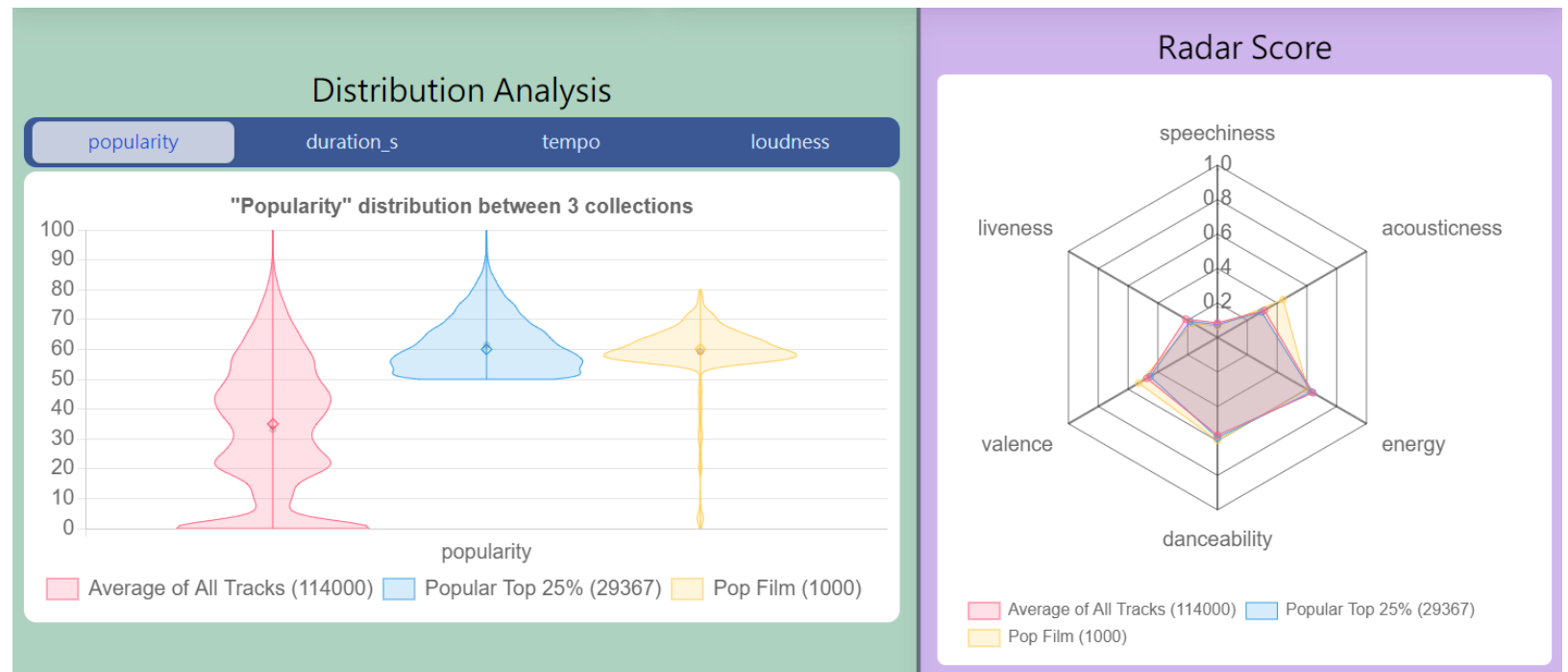
Pop Film

Create

Cancel

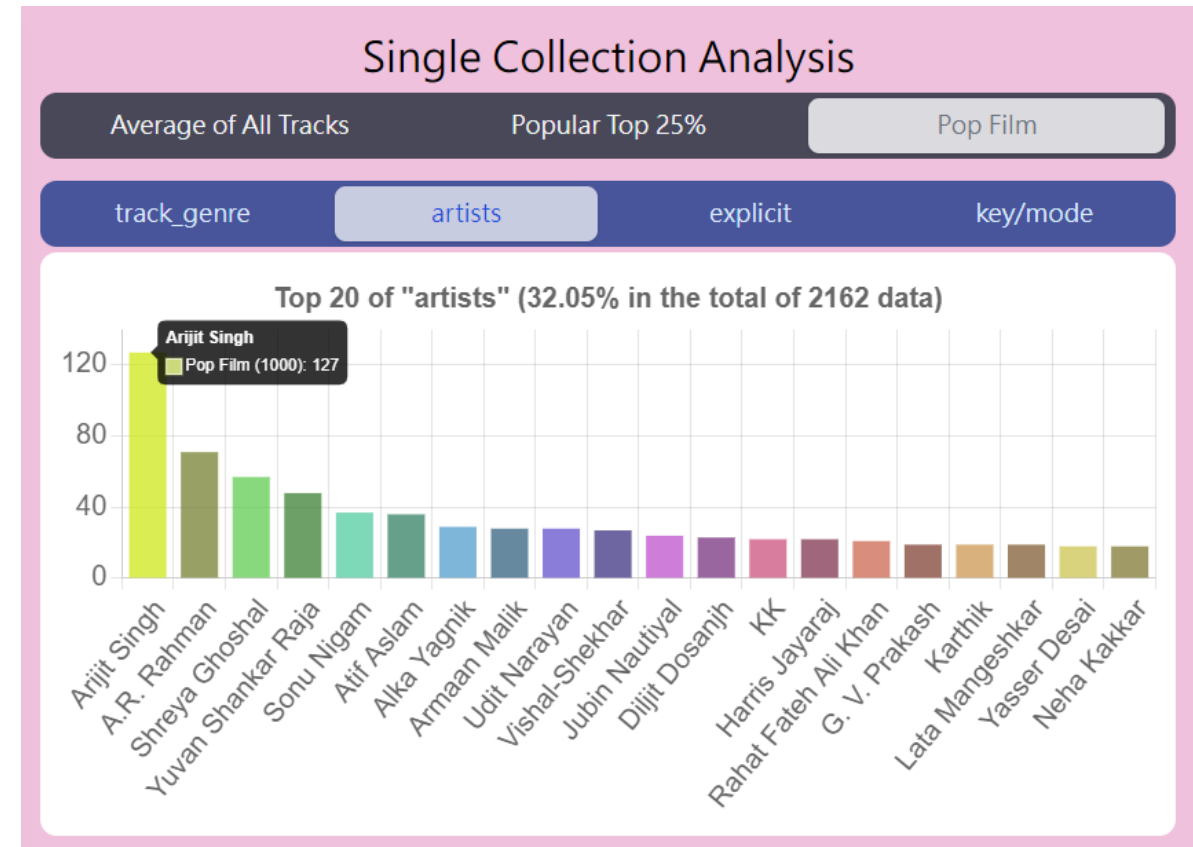
Specific Genre Analysis (3)

3. We can see acousticness and valence of pop film tracks are much higher, and most of the tracks have much higher popularity than average.



Specific Genre Analysis (4)

4. By checking Single collection Analysis, We can see the artists contributing the most pop-film tracks.



Specific Genre Analysis (drill down)

Assume I am curious about pop-film top1

“Arijit Singh”, I can again create a collection of his:

The screenshot shows a 'Data Picker' window. At the top, there is a search bar containing 'Arijit Singh' and a magnifying glass icon. To the right of the search bar is a dropdown menu labeled 'By:' with 'Artist' selected. Below the search bar, there is a list of results. The first result is 'Select All' with the subtext 'Select all 111 tracks'. Below this, there are two other results: 'Khairiyat' with details 'Album: Chhichhore', 'Artist: Pritam, Arijit Singh', and 'Genre: indian'; and 'Shayad' with details 'Album: Love Aaj Kal (Original Motion Pict', 'Artist: Pritam, Arijit Singh', and 'Genre: indian'. To the right of the list, there is a vertical scrollbar and some partially visible text: 'ions:', 'age of All', 'cs (114000)', 'lar Top 25%', '67)', and 'Film (1000)'. At the bottom of the window, there is a text input field containing 'Arijit Singh', a blue 'Create' button, and a light blue 'Cancel' button.

Data Picker

Arijit Singh

By: Artist

Select All
Select all 111 tracks

Khairiyat
Album: Chhichhore
Artist: Pritam, Arijit Singh
Genre: indian

Shayad
Album: Love Aaj Kal (Original Motion Pict
Artist: Pritam, Arijit Singh
Genre: indian

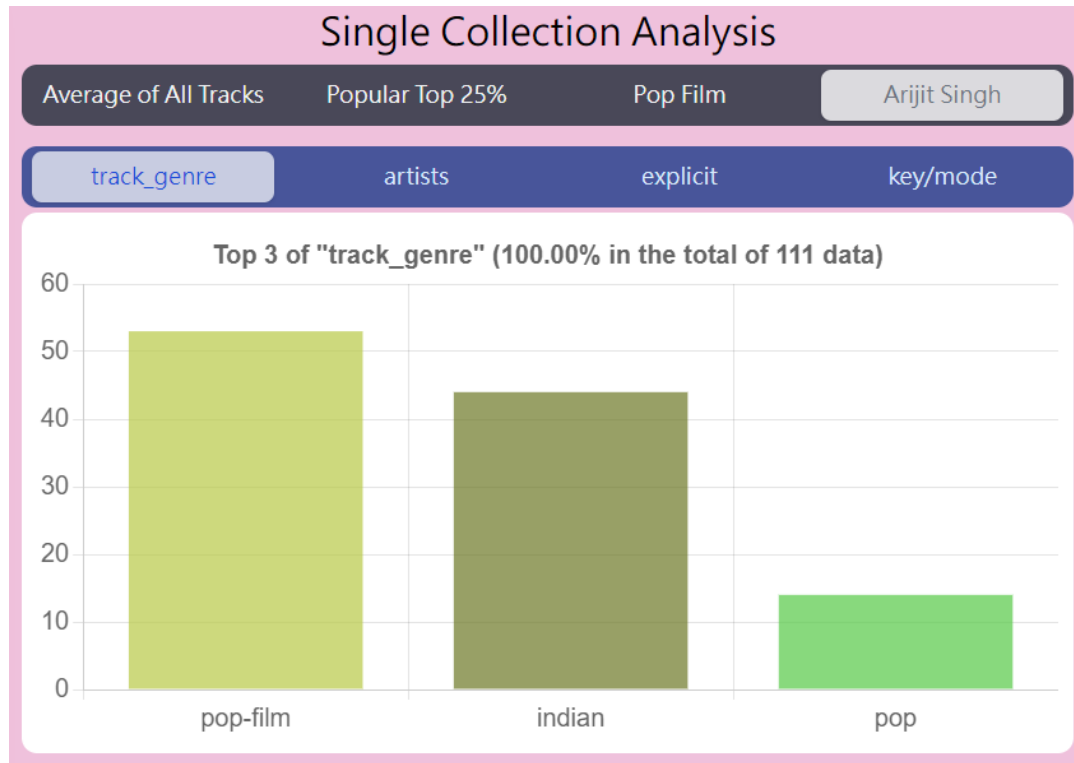
Arijit Singh

Create

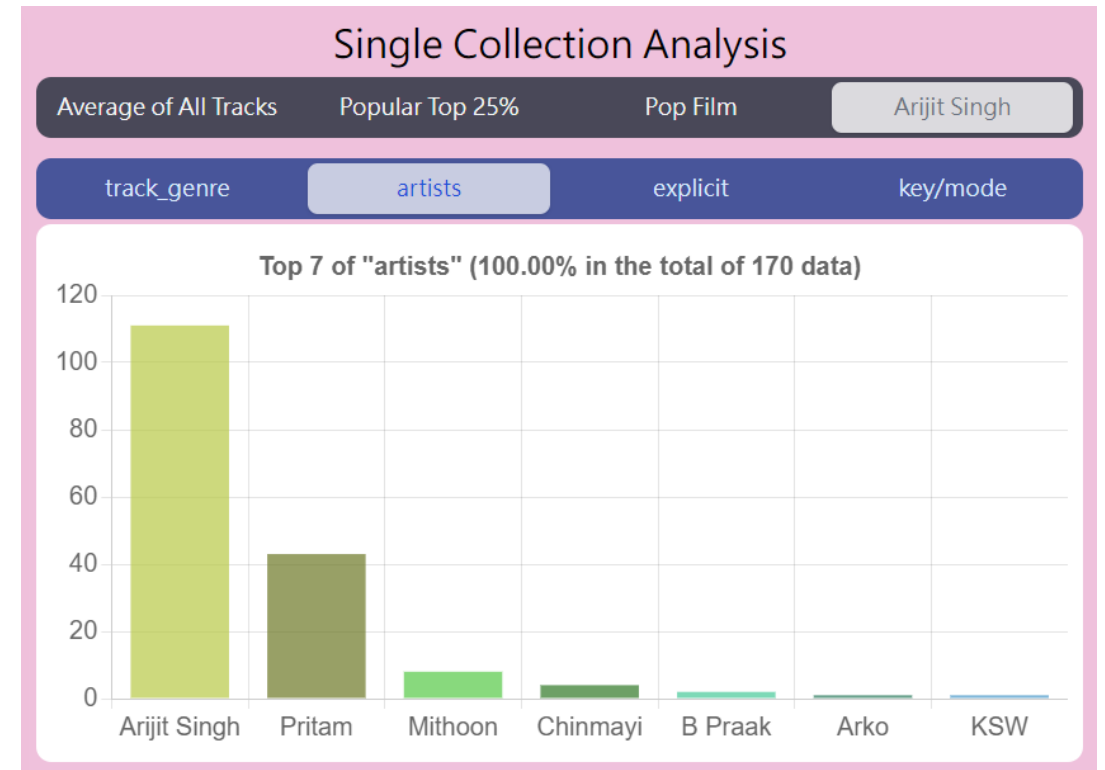
Cancel

Specific Genre Analysis (drill down)

Arijit Singh also does other genres!

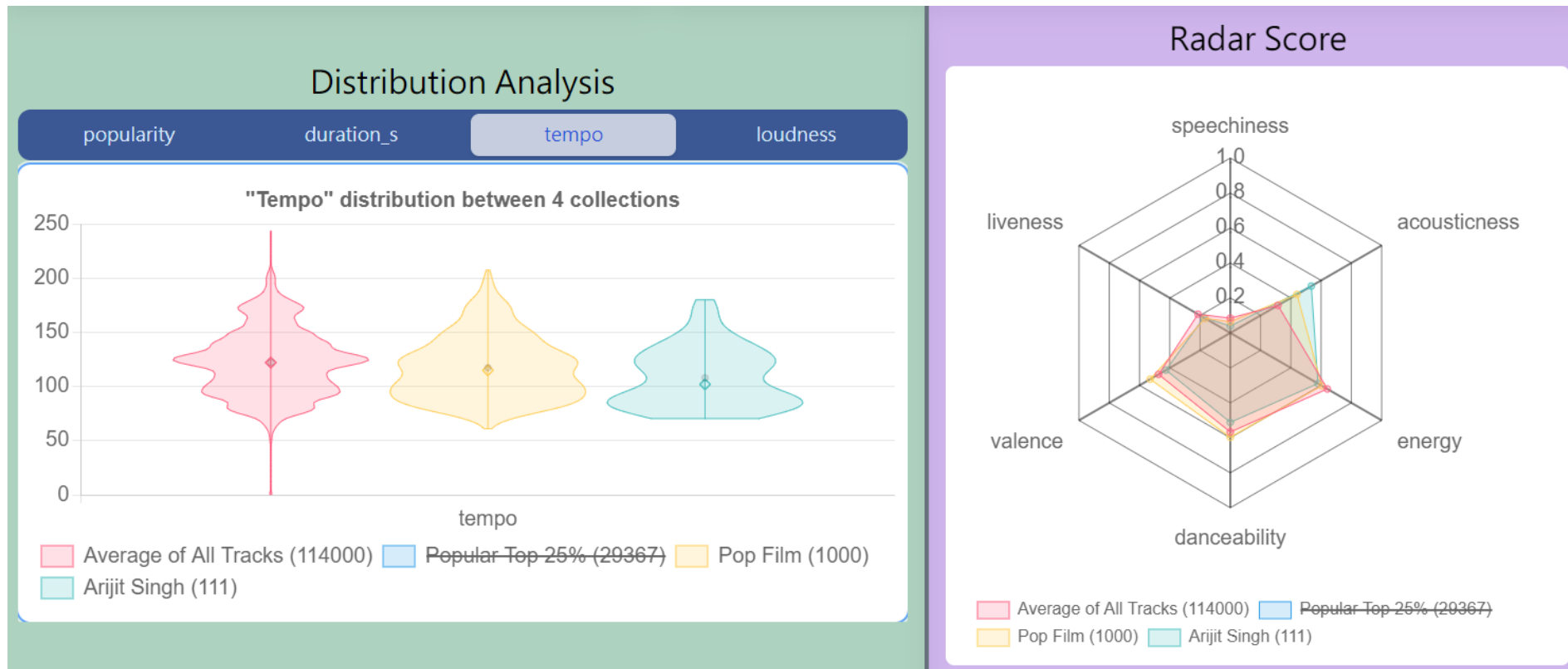


... and his collaborations with other artists



Specific Genre Analysis (drill down)

Arijit Singh tends to have lower tempo and valence, with way higher acousticness.



Use Case #2: Artist's Album Analysis

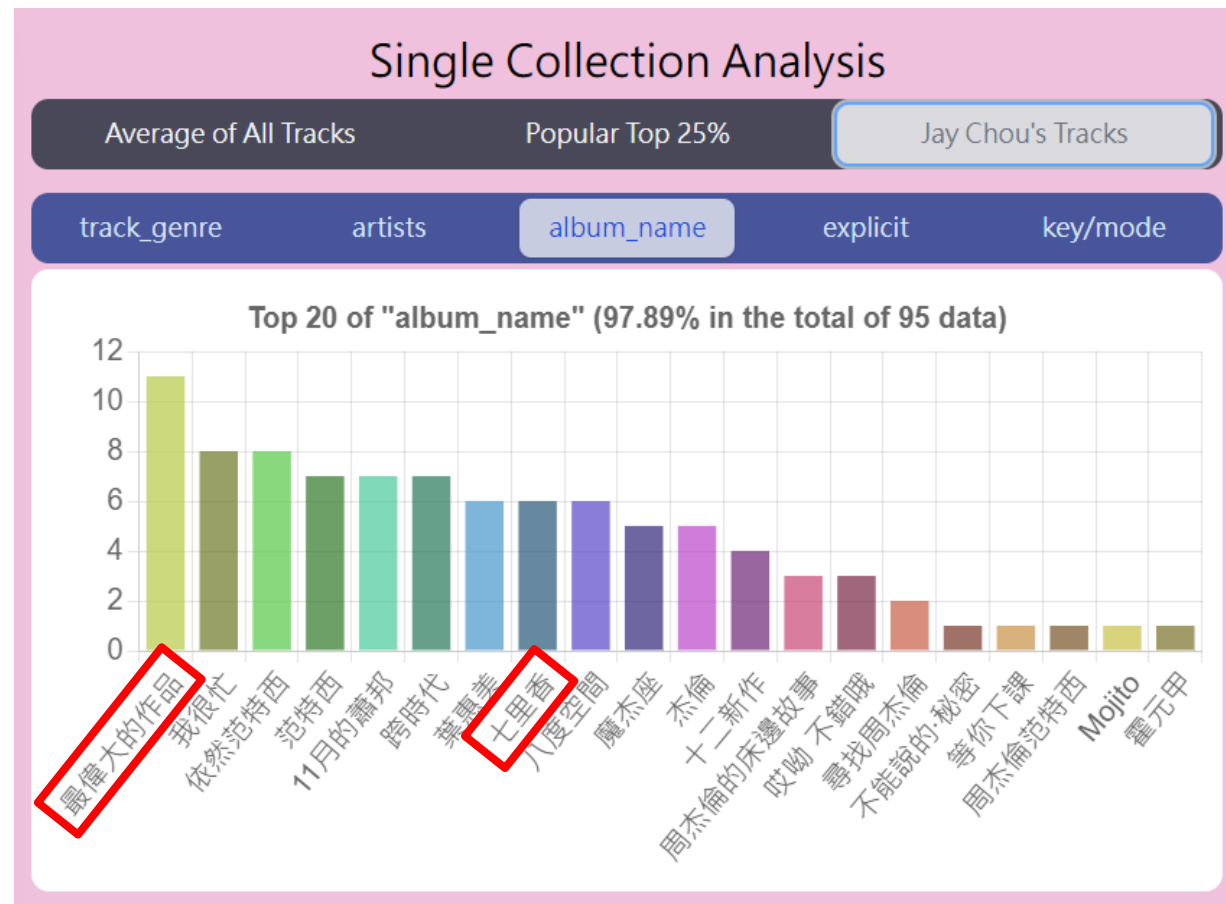
Compare between an Artist's Album

Artist's Album Analysis (1)

1. First analyze all Jay Chou's albums.

We can see that the newest album,
“最偉大的作品” records the most tracks.

Let's compare it with
another popular album, “七里香”



Artist's Album Analysis (2)

1. Add 2 collections reffering to the two albums: “最偉大的作品”，“七里香”

By: Album

Select All
Select all 12 tracks

還在流浪
Album: 最偉大的作品
Artist: Jay Chou
Genre: mandopop

最偉大的作品
Album: 最偉大的作品
Artist: Jay Chou
Genre: mandopop

Options:
Average of All
Tracks (114000)
Popular Top 25%
(367)
Jay Chou's Tracks
七里香 (6)

By: Album

Select All
Select all 6 tracks

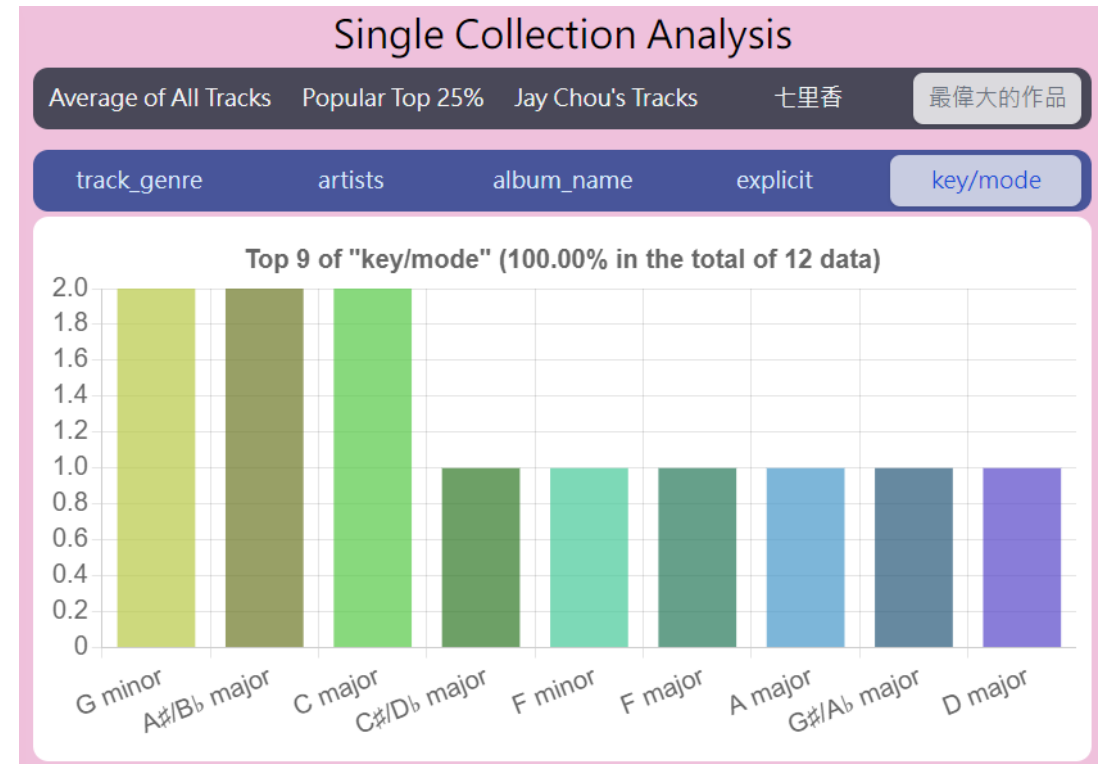
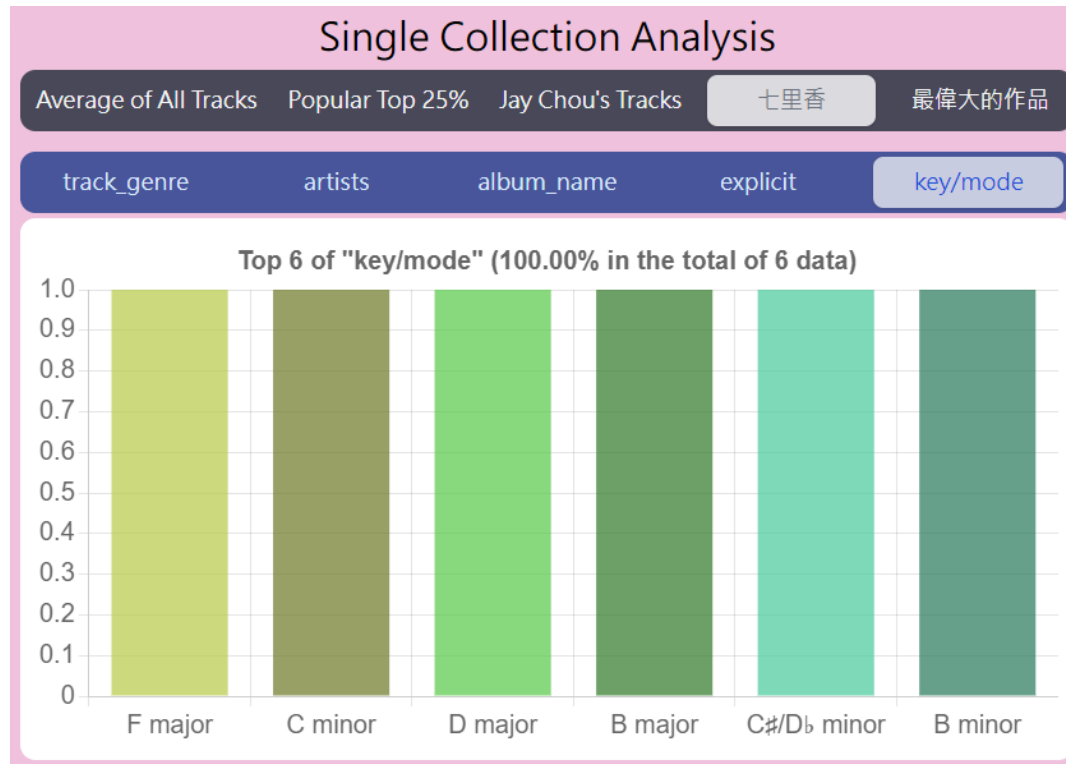
擱淺
Album: 七里香
Artist: Jay Chou
Genre: mandopop

七里香
Album: 七里香
Artist: Jay Chou
Genre: mandopop

Options:
Average of All
Tracks (114000)
Popular Top 25%
(367)
Jay Chou's Tracks

Artist's Album Analysis (results)

“七里香”，“最偉大的作品” almost all uses different keys on each track.
This shows Jay Chou have additional thoughts in arranging songs for his albums.



Artist's Album Analysis (results)

Tracks in “最偉大的作品” have higher tempo, and “七里香” have higher acousticness, compared with the average of his tracks.

