Data Visualization and Visual Analytics

Assignment 3 & 4 – Spotify Tracks Dataset

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- **Introduction**

  The aim of the assignment is to implement an integrated system that can show the insight of the Spotify Tracks Dataset. The main tools we used here are the d3 library with Javascript and html. In the implementation, I split the interface into 3 main parts: overall view, genre view, and artist view. In the sections below, I will explain why I choose this way to design the system, what information that I get from the system, and finally conclude this assignment.

- **Interface**

  The interface is split into 3 parts, overall view, genre view, and artist view. The design of the system is aimed for people who have a little knowledge of music, and besides the overall dataset, also want to know more about a specific genre or artist in the dataset. Therefore, rather than showing lots dimensions in one diagram, I choose several simple diagrams (such as pie chart and bar chart), and let the user choose what they want to look into more.

  - **Overall View**

    In this part, I simply show the tempo (how many songs are this fast), and popularity (how many songs are this popular) with a bar chart and pie chart (the user can click the button to change types). I chose a bar chart for clearly showing the difference in the song numbers, and pie chart for showing the proportion. The levels of the tempo data are according to music traditional standards.

    For the scatter plot, the target is to see if there is any relationship between specific tempo and popularity.

  - **Genre View**

    In this part, the implementation is very similar to the overall view, but here users can choose the genre they want to see.

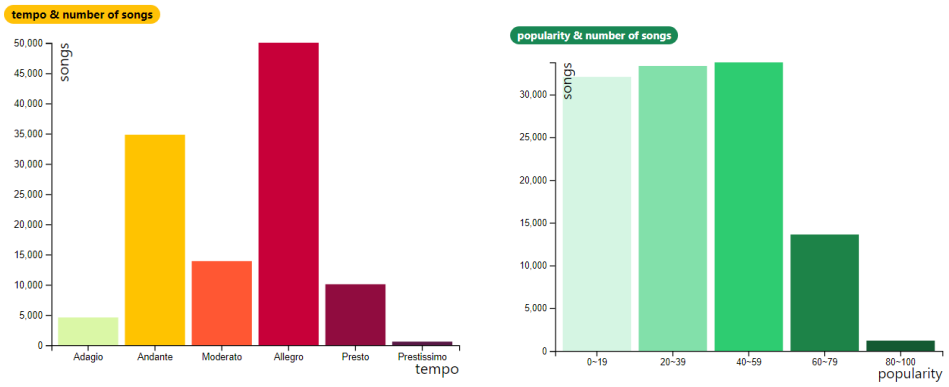
    In the original design, I wanted to show the number of songs for each genre and put the information in the overall view, but things come out that there are over 100 genres which will be a heavy load to read the information, therefore, I split this part from the overall view.

  - **Artist View**

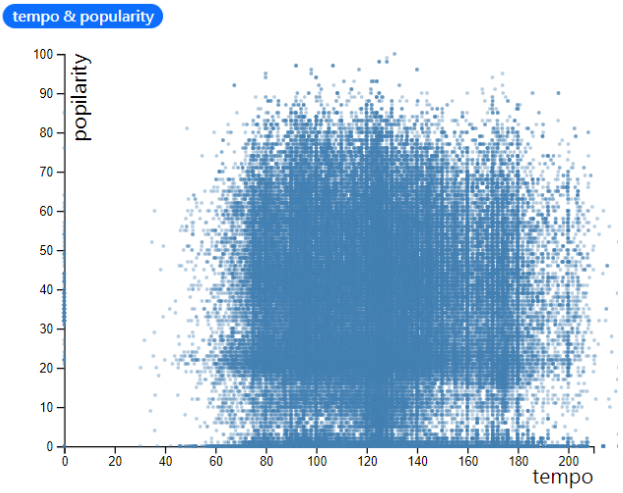
    In this part, the user can see the individual information of a specific artist. Here the system still shows the tempo information and the popularity information , and the system also shows the genre information (how many songs this artist created in this genre).

Besides, the user also can search for the artist's specific song to see the song's features.

- **Data Insight**
  - **Overall View**



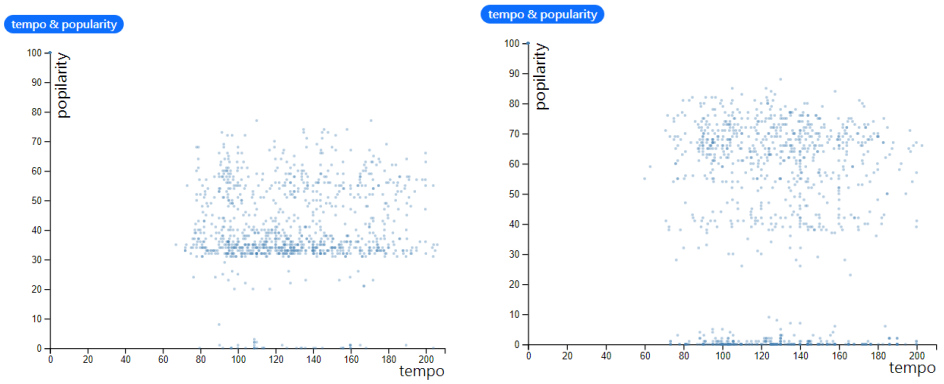
As shown from the diagram, most of the songs are Andante (76-108 bpm) and Allegro (120-168 bpm), and the popularity is usually under 60 which means that it is quite difficult to create a very popular song.



For the scatter plot, unfortunately, it doesn't show lots of information, since there are too many songs.

  - **Genre View**

In my opinion, tempo is very related to song genre, so in this part we can see more information, and also for the scatter plot, different genres show different distribution.

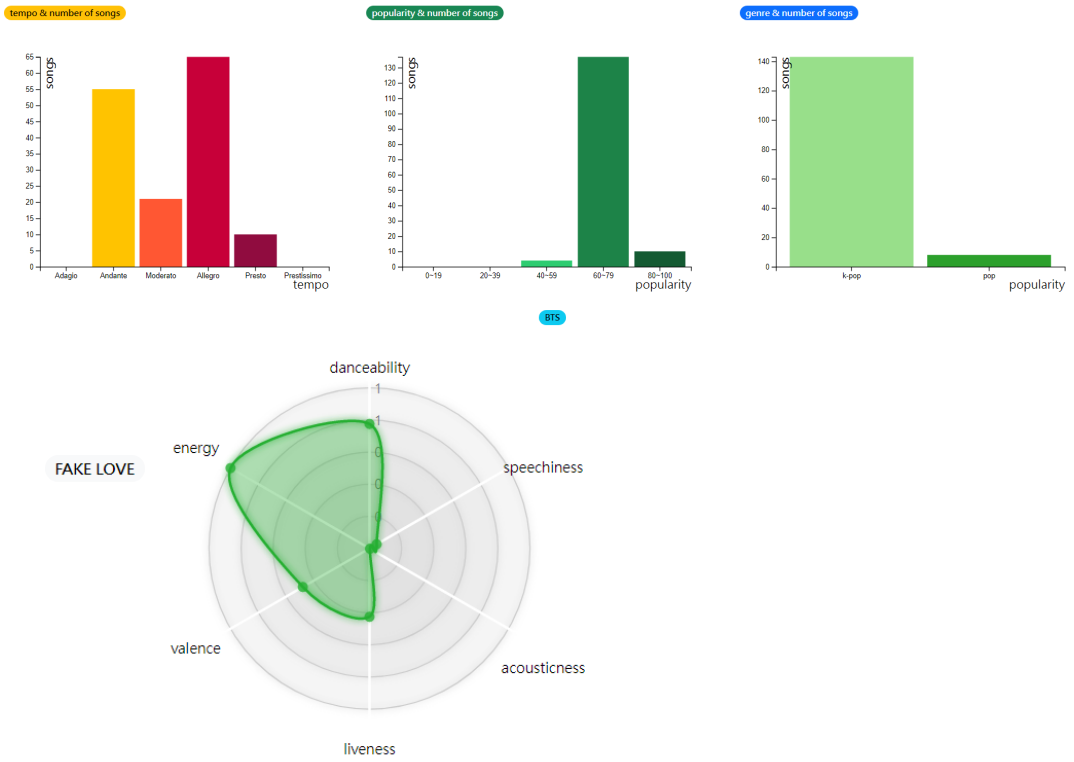


The plot on the left is j-rock, and on the right is mental.

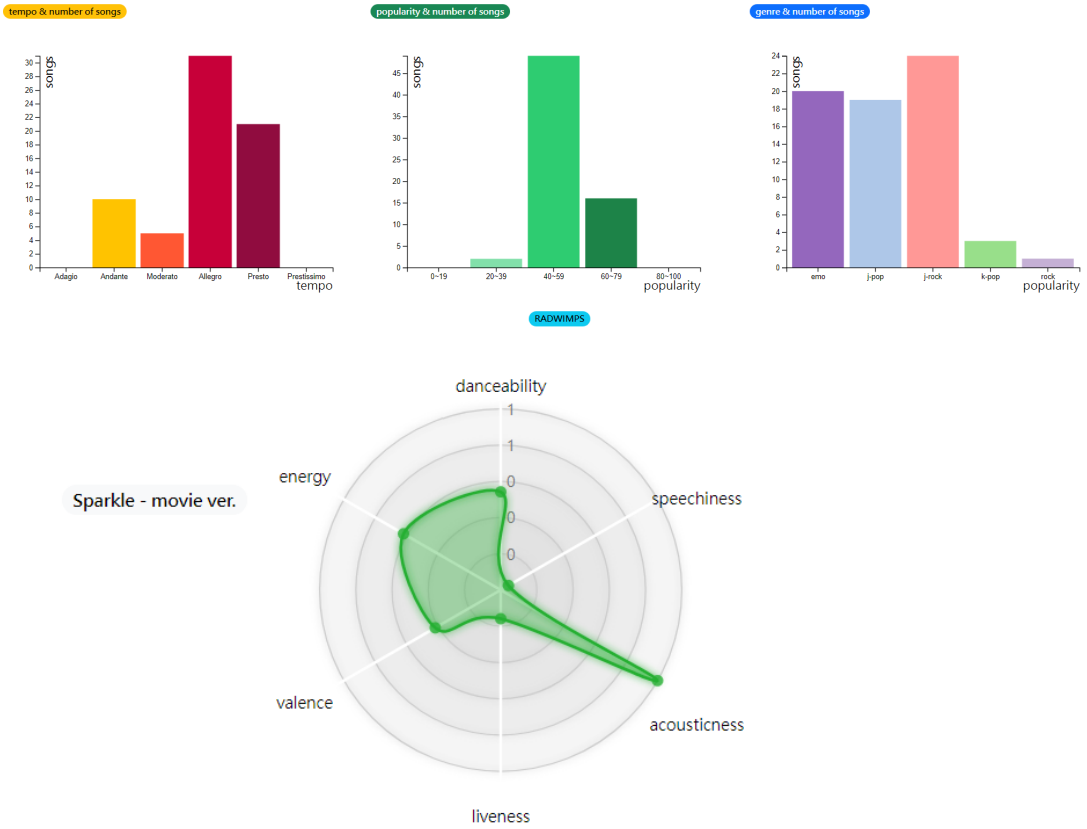
- **Artist View**

  Here showing more information about a specific artist. From tempo data and genre data we can briefly understand the artist's style.

  The user can also search for a specific song, and he might understand what the song might be.



This is the information about BTS.



This is the information about RADWIMPS.

From the comparison, we can see that songs of BTS are mainly k-pop, but songs of RADWIMPS may show a border style and also they are more like a rock band .

Also, from the popularity data, we might be able to say that BTS is more famous.

- **Conclusion**

  In this assignment, we try to implement a system to show the insight of the dataset. To make the target, the ability to interpret the dataset is very important. I think I still need to put more effort into this part, since the design I use in this assignment is very naive, but still, by very naive design and chart, we can still find information. Beside the design, the program and algorithm of the system are also simple and need improvement.