École Polytechnique fédérale de Lausanne

COM-480 – Data visualization – Spring 2024

# Project : Second Milestone

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# 1 Project Goal

## 1.1 Expected Visualisation

The first focus of our visualisation is to overview the distribution of the hit songs from 2000 to 2019. Each tiny square in figure 1 represent a song. If the user moves the mouse over a small square, they will see some details about this song, such as the singer and popularity. The genres of the songs are presented in colour to give a visual overview of how the songs' popularity trends have changed over the years.

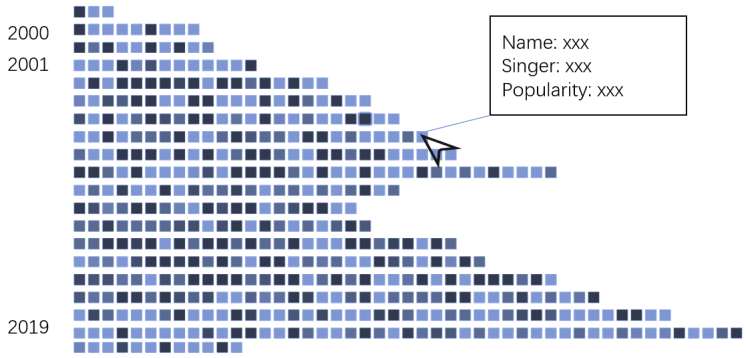


FIGURE 1 – An overview of the evolution of hit songs over time

Figure 2 shows the change in dominance of several famous singers over time. There is a tree diagram for each singer, with each branch of the tree representing a hit song. There is a timeline at the top of the chart, and the position of each branch indicates when the associated song became a hit. The length of each branch shows the popularity of the song. At the same time, a radar chart of each singer's style (based on the average characteristic score of the hit song) is plotted.

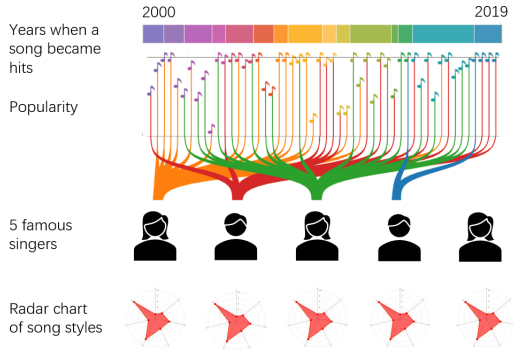


FIGURE 2 – The temporal distribution of songs by selected singers

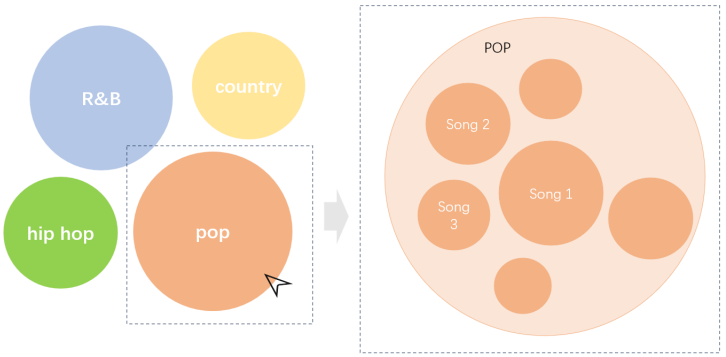


FIGURE 3 – Popularity of each genre

The third visualisation, as shown in figure 3, allows the user to select a year and observe the genre distribution of hits for that year, with the size of the bubble reflecting the number

of songs in the genre. If the user clicks on a genre bubble, they can see the names and singers of all the songs in that genre.

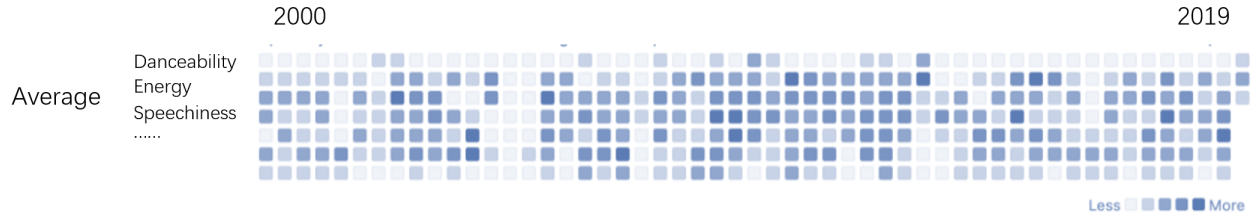


FIGURE 4 – The variation of features over time

The last visualisation focuses on the features, such as danceability, energy, and speechiness. As figure 4 shows, each row represents a feature and each column represents a year, and the saturation of the colour of squares indicate the hit songs' average level of that feature.

## 1.2 Expected Tools

| **Tool** | **Usage** | **Lecture** |
|---|---|---|
| Vite&React | Build the website | Viz, Text Design |
| D3.js | Creatie dynamic and interactive data visualization | Interactive D3.js |
| ApexCharts.js | Create dynamic and interactive chart visualizations | Interaction |

TABLE 1 – Summary of Tools, Usages, and Lectures

## 1.3 Objective Disassembly

Our goal for the data visualization is to complete the interactive visualizations mentioned in section 1.1. The innovations we propose based on this are : 1. For figure4, if the user selects a row, a line graph of the feature over time will be displayed. 2. In the visualization, image data is crawled by a crawler and images of singers or albums are added to represent a certain artist or song to enhance the visualization.

# 2 Functional project prototype review

We built the basic framework of the site using react and vite and deployed it on github. Link to our website :
https ://com-480-data-visualization.github.io/project-2024-VisuaLoom/