Information Visualization_Assignment2

20181173

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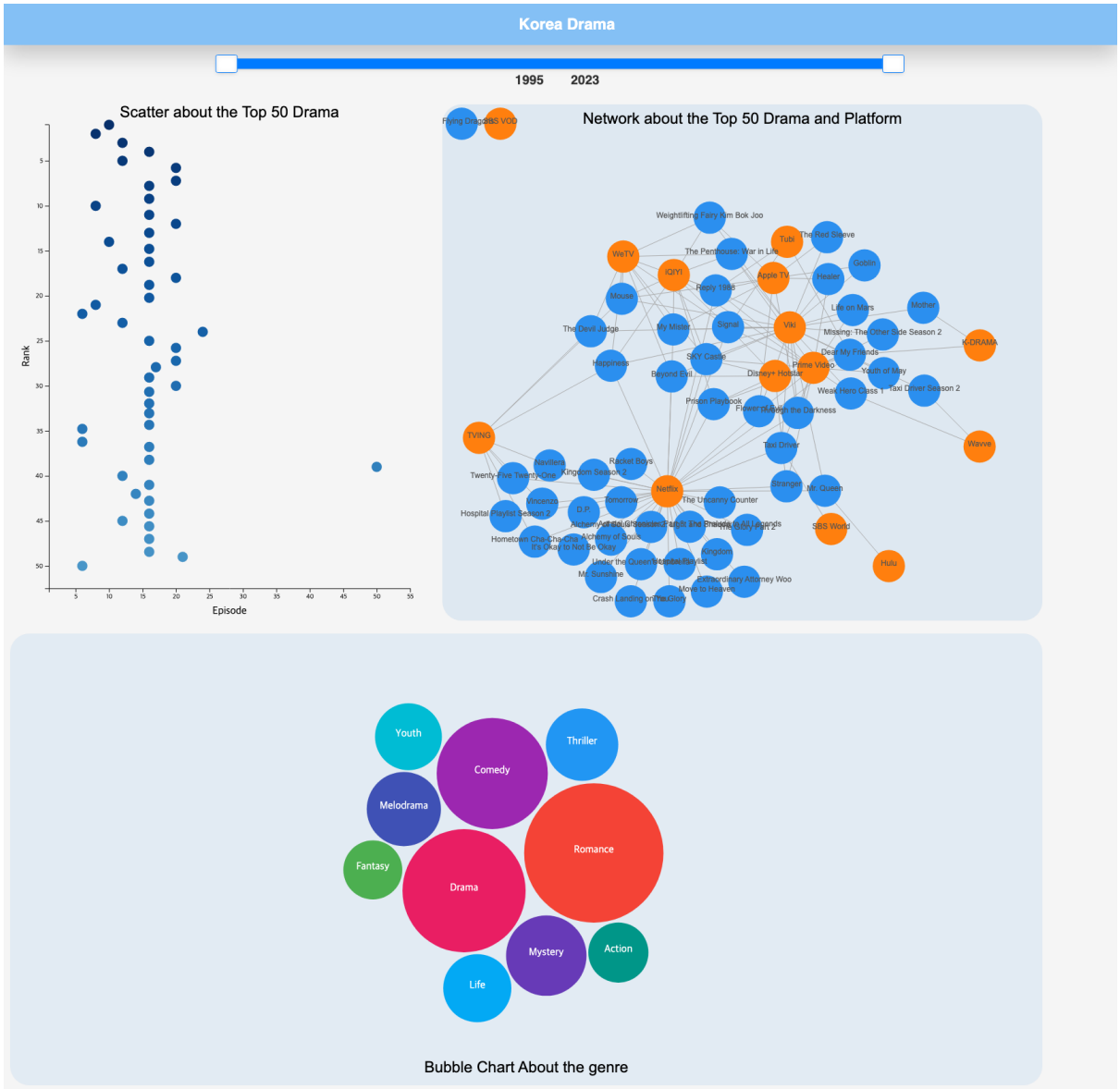
0. Teaser



1. Data Description

Source: https://www.kaggle.com/datasets/noorrizki/top-korean-drama-list-1500

The data is about the Korea Drama from 1995 to 2023 and includes the columns, which are Rank, Name, Year, Genre, Main Cast, Synopsis, Score, Content Rating, Tags, Network, Img Url, Episode.

As you see the preview, I used scatter plot, network graph, bubble charts. Each chart has different preprocess because required format of data is different.

First, I made the filtering option that select the range of years. After selecting, my code will be filtering data whether contained or not in range of years.

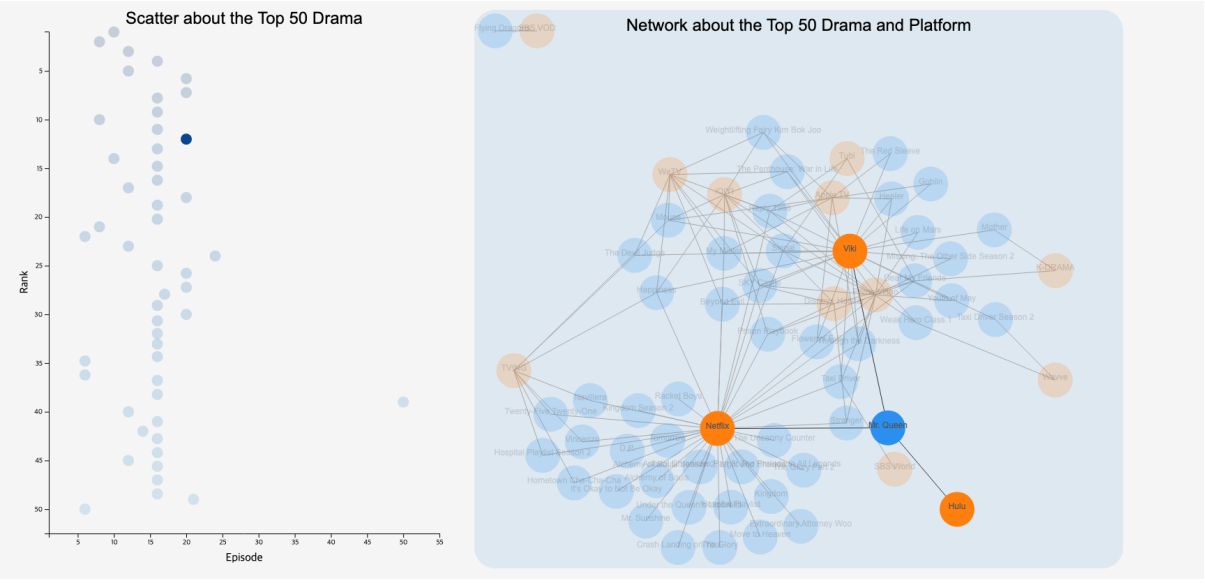
Second, for making network graph, preprocessing about the node and edge is required. So, I declared arrays of nodes and links, respectively node and edge. My code handles the relationship between dramas and the networks that broadcast them. It processes the network information, which can be either a string or an array. For each network, it creates nodes and links. If the network already has a node, it uses that node. Otherwise, it creates a new node for the network. Then, it establishes links between the drama and the network. The resulting node and link information can be used for visualization or other tasks involving the network relationships of dramas.

Third, at the bubble chart, preprocessing about the data categorized by genres is required. So, my code preprocesses the data and transforms it into a flattened format. It performs various operations on each data element, such as converting fields to numbers, splitting strings into arrays, and calculating averages. The data is then flattened and grouped by genre, and genre-specific statistics are computed, including the count of data entries and the average score. This information can be useful for analyzing and visualizing the data based on genres.

Finally, at the scatter plot, it is very simple. Because I limited the number of data is only Top 50 item. And x-axis is the number of episode and y-axis is Rank.

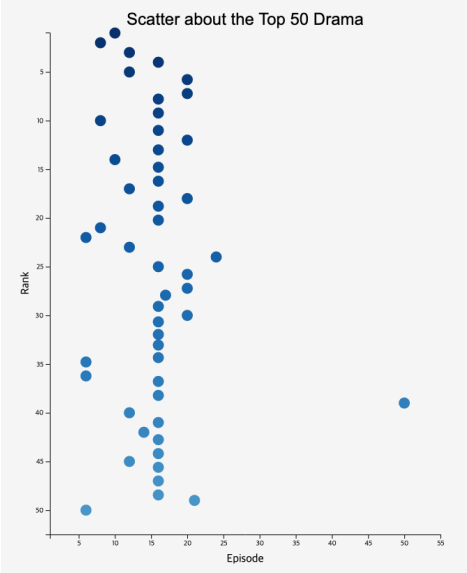
2. Features

1. Bidirectional between scatter and network



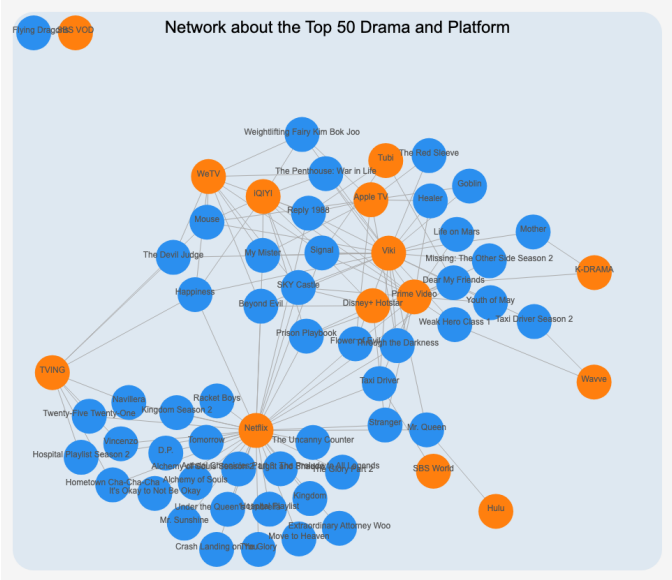
- I used linking of interactive techniques to link bidirectionally between scatter a nd network. When you click the dot in scatter, it shows that non-click dots become little transparently and other node and network in network chart become little trans parently except the node and network related by click dots. Conversely, if you click on a node in the network graph, it will work the same as before.

2. Show the scatter plot



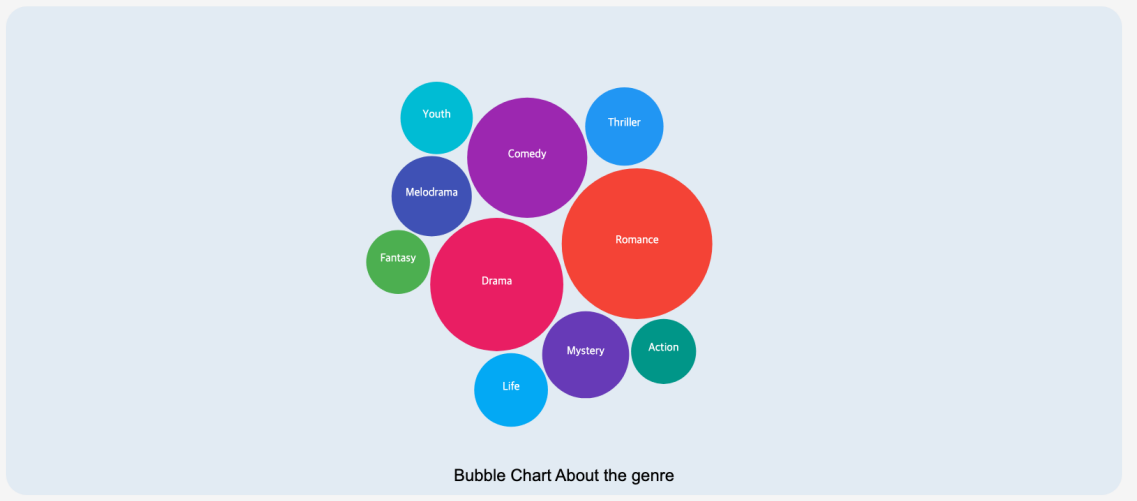
- It shows the relationship between the number of episodes and Rank of data and only show Top 50 drama in range of years. When you hover on the dot, you can see the tooltip to provide information about the drama.

3. Show the network graph



- It shows the connection about the connection between drama and broadcasting platform. And if you drag the node, you will only see other nodes and edges co nnected to the selected node and you can move these around view.

4. Show the bubble chart



- It shows summary of how many genres of drama there are. When you hover on the bubble, you can see the tooltip to provide information about the genre.

3. Reasons

Here are the rational reasons for using each of these visualizations:

1. Bidirectional between scatter and network
    - Ease of Data Exploration: Connections and partial transparency facilitate data exploration. The selected value and its related data points are visually emphasized, and the connected data points are also visually linked. This enables users to intuitively explore related data and understand the relationships between interconnected data points.
    - Visual Emphasis: Partial transparency and bidirectional connections allow for a focused visualization. The selected value appears in a more solid color, while the connected data points are displayed with some level of transparency. This visually highlights the selected value and helps the user quickly perceive related information.
2. Scatter plot (Episode count vs. Ranking):
    - Episode count and ranking are important indicators of a drama's popular ity and success.
    - A scatter plot allows for visual exploration of the relationship between e pisode count and ranking.
    - For example, it can help identify if there is a correlation between highe r episode counts and higher rankings.
3. Network graph (Connections between dramas and broadcasting platforms):
    - Visualizing the connections between dramas and broadcasting platforms helps understand the distribution channels and network relationships.
    - A network graph provides an intuitive representation of the relationships between each drama and its broadcasting platforms.
    - For instance, it can reveal which dramas are simultaneously aired on m ultiple platforms or show how many dramas are associated with a partic ular platform.
4. Bubble chart (Number of genres):
    - Using a bubble chart to visualize the number of genres provides insight

s into the diversity of genres in Korean dramas.
- Bubble size represents the number of dramas in each genre, allowing fo r a relative comparison of genre proportions.
- For example, it can illustrate which genres are the most prevalent or if there is a well-balanced distribution of genres.

These visualizations help analyze and understand various aspects of the data, providin g insights into patterns and relationships. By visually representing the data, they facilit ate intuitive exploration and discovery of valuable information.

4. Usage Scenarios

1. Bidirectional between scatter and network
    - Ease of Data Exploration: Connections and partial transparency facilitate data exploration. The selected value and its related data points are visually emphasized, and the connected data points are also visually linked. This enables users to intuitively explore related data and understand the relationships between interconnected data points.
2. Scatter Plot (Episode count vs. Ranking):
    - Identifying Popular Dramas: Analyze the scatter plot to identify popular Korean dramas based on their episode count and ranking. This visualizat ion can help viewers and producers understand the relationship between a drama's length and its popularity.
3. Network Graph (Connections between Dramas and Broadcasting Platforms):
    - Distribution Analysis: Analyze the network graph to gain insights into h ow Korean dramas are distributed across different broadcasting platforms . This can provide an understanding of market dynamics and highlight o pportunities for partnerships and content acquisition.
4. Bubble Chart (Number of Genres):
    - Genre Diversity Analysis: Utilize the bubble chart to assess the diversity of genres in Korean dramas. Identify which genres are prevalent and which ones are less represented. This can aid content creators, producers , and broadcasters in making decisions regarding genre preferences and market trends.

5. Observation

1. Bidirectional connections and transparency for comparative analysis:
    - The visualization approach of bidirectional connections and partial transp arency allows for intuitive exploration of related data points with similar characteristics to the selected value. It aids in identifying other dramas that share similarities with the selected drama.
2. Scatter Plot (Episode count vs. Ranking):
    - In cases where dramas with lower episode counts have higher rankings, it may suggest that even shorter series can attract significant attention a nd success.
3. Network Graph (Connections between Dramas and Broadcasting Platforms):
    - The network graph visually demonstrates the importance of certain platf orms in the Korean drama market based on their connections. Platforms

with more connections may play a significant role, indicating that they host a diverse range of dramas or have strong collaborations with other platforms.

4. Bubble Chart (Number of Genres):
    - The bubble chart reveals the presence of diverse genres in Korean dram as. Genre diversity reflects audience preferences and the overall market diversity.

6. Explanation

I used the library of “nouislider” to show the slider, but it automatically installs, so don’t worry about that. You just run the index.html.