Narrative Visualization: Netflix Interactive Analysis

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July 27, 2023

Project link: here *Code Repository:* here

1 Review Criteria

The following sections provide a comprehensive review of the narrative visualization completed in this project *Netflix Interactive Analysis*. This includes details regarding its messaging, narrative and visual structure, scenes, annotations, parameters, and triggers.

2 Messaging

The narrative visualization in this project, *Netflix Interactive Analysis*, builds upon the work completed in the Dashboard Project from Week 5. The aim of this narrative visualization project is to facilitate a deeper understanding and exploration of Netflix's content dataset by encouraging active user interaction with the data visualization techniques learned in this course.

The journey is laid out to begin with Scene 1, though the users have full control of what scene they would like to explore first. Scene 1 introduces the users to the wide range of content categories available on Netflix using a Bubble chart. The message here is for the user to intake the vast array of options available to viewers on the Netflix platform, emphasizing its comprehensive offerings.

In Scene 2, the narrative messaging is shifted to present the growth of Netflix's content over the years, illustrated using a Line chart. The interactive filter allows users to engage with the data, exploring the trajectory of TV Shows and Movie content on the platform since Netflix launched online streaming. The message here is to demonstrate Netflix's evolution and content acquisition over time, providing insight into the platform's growth as a major streaming service.

Lastly, Scene 3 takes an international perspective on the dataset, featuring the top 10 countries with the most extensive content offerings on Netflix using a Bar chart. The scene offers details on both a total content count and an interactive drill-down feature that allows the users to delve deeper into each country's data. Allowing the user to examine a breakdown of TV Shows and Movies specific to the country. The messaging in Scene 3 aims to highlight the geographical distribution and diversity of Netflix's content, showcasing the global reach of the platform.

Overall, this narrative visualization project aims to communicate the message of Netflix's vast content selection, its growth over time, and its international presence, all while urging the users to explore the data according to their interests, as well as fostering an interactive and engaging user experience.

3 Narrative Structure

Netflix Interactive Analysis project is designed to follow the narrative structure of an interactive slideshow. This is evident from when the web page is initially loaded and the user is presented with three buttons, each representing a different scene. This approach gives users the freedom to select a path they prefer or follow the author-intended path in ascending order. This allows for an interactive and personalized experience.

In each scene, the user is guided through different trends of the Netflix dataset. Scene 1 serves as an introduction, presenting the vast range of content categories offered by Netflix. Scene 2 enables users to

filter and observe the growth of TV Shows and Movies content over the years since Netflix adopted online streaming. Finally, Scene 3 showcases the top 10 countries with the most content on Netflix, offering a drill-down option to view individual countries' TV Shows and Movie data. Each builds upon the information presented in the previous scenes.

In addition, we've added a drill-down feature to Scene 3 to enhance user interaction and allow for a deeper exploration of the data. Combining the interactive slide show to organize the Scenes primarily and then incorporating a drill-down feature within a story, presents users with a variety of visualization, keeping them engaged throughout.

4 Visual Structure

In Scene 1, the visual structure is a Bubble chart to represent Netflix's various content categories. The size of each bubble corresponds to the count of content in that category, with larger bubbles indicating higher counts. As learned in Week 3, categorical data is generally discrete and unordered. By using area and spatial positioning, the Bubble chart ensures easy comprehension of the category data presented. Initially, only the count is displayed on the bubbles, drawing users to interact with the chart and hover over the bubbles to view the corresponding category. This approach provides a quick glance at the count data without overwhelming users with information about the categorical data.

In Scene 2, the visual structure primarily consists of a Line chart with circles representing data points for each year, illustrating the trend of TV Shows and Movies added over time. The x-axis, *Year*, and y-axis, *Number of Movies/TV Shows Added*, are both quantitative continuous values. As *Number of Movies/TV Shows Added* is a dependent value to *Year* a Line chart ensures a clear representation of the data and allows the user to understand the temporal progression of content over time. Interactive elements, such as hovering over data points to reveal additional information, enhances user engagement and contextual understanding. Different colors for TV shows and Movies aid visual distinction, while the legend and checkboxes enable selective viewing for comparison. A bold red arrow and explanatory text emphasize a pivotal point in the timeline— the launch of Netflix's online streaming.

In Scene 3, the visual structure features a Bar chart with tooltip and color gradients for enhanced comprehension. The chart initially presents an overview of the total content (TV Shows and Movies) originating from different countries. With the Bar chart positioned on the y-axis, clear axis labels represent countries and the corresponding content amount, ensuring a smooth understanding of the orientation. The y-axis represents the countries as a discrete nominal value, while the x-axis represents the total count of TV Shows and Movies as a quantitative dependent value. As learned in Week 3, by leveraging the benefits of position and length provided by Bar charts, it becomes the natural and effective choice for representing this dataset. Each country's data is represented as a separate bar, with the bar length indicating the quantity of content. Interactive tooltips provide detailed information when hovering over a bar, aiding navigation and engagement. To highlight important parts, data is sorted in descending order, positioning the country with the most content at the top, immediately drawing attention. Gradient colors differentiate countries visually with darkest color being at the top. Upon clicking a bar, viewers can access detailed data, revealing the distribution of content between TV Shows and Movies for that country.

Each scene ensures the visual structure provides ease of data comprehension and navigation, enabling viewers to interact and gain insights effectively. The scenes are linked through interactive elements, encouraging smooth transitions between them. Users can explore content categories in Scene 1, observe content growth in Scene 2, and delve into content production by country in Scene 3. This cohesive design allows viewers to understand how the data connects across scenes, aiming to create a seamless and informative narrative journey.

5 Scenes

Netflix Interactive Analysis unfolds through three distinct scenes, each offering unique insights into the Netflix content dataset:

Scene 1 - Content Categories on Netflix: The Bubble chart visually presents the diverse categories of content available on Netflix. The size of each bubble corresponds to the count of content in that category.

Placed at the beginning of the narrative, Scene 1 serves as an introductory overview, captivating the users' interest by introducing the breadth of content offerings on the platform.

Scene 2 - Trend of TV Shows and Movies over the Years: Next in Scene 2, the visualization adopts a Line chart to illustrate the evolving trend of TV Show and Movie content added to Netflix over time. Following Scene 1, this progression is deliberate, building upon the viewer's initial understanding of content diversity. Exploring the temporal evolution of TV Shows and Movies allows users to grasp how Netflix's content library has expanded over the years.

Scene 3 - Content Production by Country: Placed as the final scene, Scene 3 features a Bar chart, providing an in-depth analysis of content production by different countries, encompassing both TV Shows and Movies. After comprehending content diversity (in Scene 1) and temporal trends (in Scene 2), the viewer may naturally be curious about the geographical origin of the content. Scene 3 aims to satisfy this curiosity, offering insights into the contribution of various countries to Netflix's extensive repository.

The scenes are thoughtfully ordered to facilitate an intuitive and logical progression of exploration. Users first gain a broad understanding of content categories (Scene 1), then follow the trajectory of content growth (Scene 2), and finally delve into the geographical distribution (Scene 3). This sequence encourages user engagement and deeper interaction with the data, ensuring a seamless and informative journey through the Netflix content dataset.

6 Annotations

In Scene 1, the annotations are presented in the form of a Bubble chart template, utilizing categories and counts. The size of each bubble conveys the count, while the color represents the category. This template effectively reinforces the message that larger bubbles indicate higher counts within a specific category. The annotations themselves display the count for each category, but they also reveal the category name when a user hovers over a bubble. This interactive approach greatly supports the messaging by allowing users to explore data details and gain insights into both the count and corresponding category names.

In Scene 2, the annotations utilize a Line graph template, incorporating crucial elements such as year, type of content (TV Show or Movie), and count. The y-axis showcases the count of the content, the x-axis represents the year, and the colors of lines and circles distinguish between TV Shows and Movies. This template effectively reinforces the message that both types of content have seen increasing counts over the years. Within this scene, the annotations take on different forms to enrich the user interaction experience. An arrow annotation draws attention to the significant milestone of Netflix's online streaming launch in 2008, providing contextual information for a better understanding of the surge in content growth. Another annotation is presented as tooltips, providing users with comprehensive information, including the year, content number added, as well as content type when hovering over a data point. These tooltips enhance users' understanding of the data at specific points in time. Unlike in Scene 1, the annotations in Scene 2 do not change within the scene itself, as the scene remains static.

In Scene 3, the data visualization benefits from several supporting annotations that enhance user comprehension. A Bar chart is employed, accompanied by *mouseover* tooltips, which clarify the content for each country when users hover over a bar. Furthermore, when the bar is clicked a legend is shown, explaining the colors used for TV Shows and Movies, which aids users in accurately interpreting the data. Axis labels further enhance clarity, detailing the data representation on each axis. An instruction message in red encourages users to explore further, triggering updates to display individual TV Show and Movie data for the selected country.

These cohesive annotations effectively support the messaging and create a seamless and informative user experience in this narrative.

7 Parameters

In Scene 1, the parameters consist of an array of objects, with each object containing 'category' and 'count', representing the genre of content and its quantity, respectively. The initial state of the visualization showcases a packed bubble layout, where each bubble's size corresponds to the 'count' and its color represents the

'category'. When a user hovers over a bubble, the visualization transitions to a new state, revealing the category name and enlarging the bubble slightly to show interaction.

Scene 2 illustrates the growth of TV Show and Movie data on Netflix over the years. The parameters include 'year', 'content type', and 'count', representing the year, content type (TV Show or Movie), and the quantity added each year, respectively. The initial state features a Line graph with two lines, one for TV Shows and one for Movies, displaying their progression over time. Data points are represented by circles, with colors distinguishing between the content types. A tooltip appears, when a user hovers over a circle data point, providing information about that specific year.

In Scene 3, the parameters are structured as an array of objects, where each object represents a 'country' and includes properties for the total number of 'content' items, 'tvshow', and 'movie'. The initial state consists of a horizontal bar chart, with each bar representing a country and its length indicating the total content quantity. The bars are colored in a gradient from dark to light turquoise. When hovering over a bar, the color changes to orange and a tooltip appears, displaying the country's name and total content count. Clicking on a bar transitions the visualization to a new state, revealing a breakdown of TV Shows and Movies for the 'country's bar clicked on. In this new state, the horizontal bar chart splits into two bars per country, each representing the count of 'tvshow' and 'movie' separately. Different colors distinguish between the two content types, and a legend is displayed for clarity. The chart's axes and titles update accordingly, facilitating a more detailed exploration of the data.

8 Triggers

Various triggers are employed across the three scenes to connect user actions with alterations in the scene visualizations.

In Scene 1, the primary interaction trigger is the *mouseover* event, where hovering over a bubble prompts it to reveal the content category, and on *mouseout*, the bubble returns to displaying the content count.

Scene 2 relies on both mouse events and HTML checkboxes to influence its state and allow user interaction. When a user hovers over each data point, the *mouseover* and *mouseout* events become activated and the data point in the Line chart changes in color and additional tooltip details, recede upon *mouseout*. Checkboxes for TV Shows and Movies allow users to control the visibility of the corresponding data lines and points in the chart.

Scene 3 utilizes mouse clicks and hovers as triggers for interaction. Clicking on any bar in the chart transitions the display from total content by country to a breakdown between TV Shows and Movies for the clicked-upon country. Hovering over a bar changes its state by highlighting it and showing a tooltip with extra information, such as Country Name, Content Type, and Content Count, which disappears on *mouseout*.

These scenes provide several affordances to communicate the available interactive options to the user. In Scene 1, annotations encourage the user to hover over the bubbles, signaling their interactive nature. Scene 2 presents instructions to hover over the data point and use checkboxes to manipulate the data. Also, the presence of checkboxes for TV Shows and Movies directly implies that users can alter the data visibility according to their preferences. In Scene 3, the color change upon hovering and the appearance of a tooltip when hovering over a bar are used to indicate the bar is clickable. Along with instructional text in the chart to further aid users by directing them to click on bars for a more detailed analysis, signifying the potential for a deeper level of data exploration.