Narrative Visualization

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Overview

The narrative is located at the following link: https://hgp33.github.io/data_viz_narrative.html

The narrative looks at Covid-19 in the United States. The data is sourced from https://www.covidexitstrategy.org/ as of July 12, 2020.

The narrative is meant to be viewed on an average modern laptop/desktop monitor. It was tested primarily with Chrome and is limited to 1000-1200px width to ensure the text was easy to read.

Messaging

The constructed narrative attempts to convey the message that the United States is severely impacted by Covid-19, but the impact is not uniform across the United States. The narrative walks the user through the different aspects of the primary overview data. This data includes the Gating Score, Total Deaths and Total Covid+ cases by state. The narrative guides the user through overall Covid-19 status and the best/worst state highlights.   It also provides the user and opportunity to explore additional dimensions of Covid-19 by state.

Narrative Structure

The narrative structure used by this narrative is the martini glass. The narrative starts with five author driven scenes. In those five scenes the user is not allowed to interact with the data; only allowed to navigate between the scenes. During those scenes the author make observations about the data and raises questions on why the observation may be as shown. Such as the reasons why New York or Alaska may be at extremes in the overview data. On the last scene the user is allowed to transition to a point where the data is interactive and becomes reader driven. In this final state the user can see more information by hovering over the data points, such as state name and numerical values for the current scatterplot. The user can also explore different data by changing the x and y axis of the plot and choose their own path in discovering the data. At this point the user is also allowed to restart the narrative.

Visual Structure

The guided scenes are all structured in a consistent manner to help the user stay oriented. The author driven scenes have a blue box with a scene number identified, a message from the author and navigation buttons for user to move forward or backward in the narrative. The blue color was used to help it stand out from the scatterplot. Also, in each scene the majority of the scene is darkened and only select areas are full brightness. This allows the author to guide the focus of the user to the subset of the screen that needs their attention. Therefore, as we change between each scene the same dark/light section with the blue box help bring user to right part of the screen without becoming disoriented. Throughout the author driven scenes, the scatterplot is held constant to avoid confusing the user and stay focused on the primary data discussed by the author.

Also, moving from each scene is also done via consistent transitions for a given object. For example, when the next button or previous button is clicked, the main messaging box (blue box) is faded out and faded back in the new location. The same is applied to any detail data annotations for a data point in scenes three and four. The focus area (dark vs light area) is also handled via a consistent transition across all scenes; where the box is moved to the new location via an animation style transition. This helps guide the user's eyes to the next area of focus.

Scenes

There are five author guided scenes followed by a final state that allows the user to interact with and explore the data. The first scene introduces the narrative using an overview scatterplot chart defined by Total Deaths vs Total Covid+ in the background. The next three scenes point out aspects of the chart. These observations are used to guide the message of the narrative.

Scene two highlights to the user the overall Gating Score across the nation and helps frame the current overall status in the United States. Scene three illustrates and describes the state with the most deaths to date. Then to contrast, screen four illustrates and describes the state with the least deaths to date. Then, to guide the user into deeper exploration, scene five is used to communicate to the user that different perspectives of the data can be informative and explains how they are available for exploration.

Finally, the user is taken to a state where they can interact with the data. The user can view details about the various points by hovering over them. The user can also change the x and y axis data sources to further explore more perspectives on Covid-19 in the United States or choose to restart the narrative.

Annotations

The annotations in this narrative follow a consistent template. In the first five scene's the entire narrative is made darker; except areas that need to be pointed out the user. Additionally, the message is provided as a new block in a light blue color in every scene to make it stand a part form the normal data on the chart. In scenes three and four, key data points are described with a text box shown with their detailed data, such as State name. This detailed data is shown with the same positioning and format as the final mouse over feature when the user is allowed to explore the data. The format is again kept consistent when shown to the user to ensure they do not get disoriented from scene to scene. The detailed data is shown in scene three and four to provide a data view to support to the message given to the user in these scenes. Additionally, the messages in each scene also highlight specific visual components to bring out specific information to the user. As another example in scene two, the message describes how many of the data points are a RED gating score while highlighting the part of the scene that represents the data points. Also, the annotations in each scene are kept constant and only changed as the user requests a transition to a different scene.

Parameters

Scene Number

The scene number is an integer that starts at one and ends at six. The first five scenes display a scene number in each message heading. The final explore scene does not display this parameter. This parameter controls what scene is shown to the user.

Message Box/Text

In first five display a message in the 'blue box' with navigation buttons (Next/Previous/Explore). The entire message box/text is changed based on the scene number and fully removed in the final scene.

X and Y Axis Data

The x and y axis data fields are also parameters. These parameters control the x and y axis label, the data points on the scatterplot, the plot axis and the data that is displayed on data point mouse hover in the exploration scene. During the first five scenes the user is not allowed to change the x and y axis data field. During this time the x axis is set to 'TOTAL COVID+' and the y axis is set to 'TOTAL DEATHS'. In the explore scene the user is allowed to change the x and y axis, which will then reflect in the various components of the visualization.

Triggers

Next Button

In the first four scenes the user is provided a 'Next' button. This button will increase the scene number by one and transition to the next scene.

Previous Button

In scene two through five the user is provided a 'Previous' button. This button will decrease the scene number by one and transition to the previous scene.

Explore Button

In scene five, the user is provided an 'Explore' button. This will allow the user to move to the state where they can explore data in more detail. This action will increase the scene number by one and enable the use of the restart narrative button, x axis selection and y axis selection. It will also allow the user to mouse hover over the data points to see more detailed information.

Restart Narrative Button

This button's functionality is provided to user only in the explore scene. It sets the scene number back to one and changes the x axis and y axis to 'TOTAL COVID+' and 'TOTAL DEATHS', respectively. It also disables the use of the restart narrative button, x axis selection, y axis selection and mouse over data point options.

X Axis Selection

This drop-down menu functionality is provided to the user only in the explore scene. It allows the user to select the x axis data field from a list of data fields. Once changed the scatterplot points, plot labels, plot axis and mouse over detail data will be updated to reflect the selection.

Y Axis Selection

This drop-down menu functionality is provided to the user only in the explore scene. It allows the user to select the y axis data field from a list of data fields. Once changed the scatterplot points, plot labels, plot axis and mouse over detail data will be updated to reflect the selection.

Affordances

Each trigger shown as buttons provides affordances to the user a similar manner. All of the triggers appear raised when the user is allowed to click on them and not when the trigger is disabled. They also have border highlighting when the user moves the mouse over the given trigger when the trigger is enabled; to provide additional feedback that the this is a trigger meant for user interaction. For example, the Restart Narrative button is not raised and does not provide any border highlighting to invite the user to interact with it in the first five scenes. The Restart Narrative button in the explore stage appears raised and provide border highlighting because it is enabled for the user interaction. Also, each button is labeled with a description of its function, such as 'Next'.

For the x and y axis selection triggers, there is also a 'down' arrow to hint there are more options that may be selected. Again, these triggers are non-responsive and visually dulled when they are not available for user interaction.

Note: The appearance of the affordance measures may slightly vary based on web browsers.