Create a Narrative Visualization

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The Message

The message of this narrative visualization project is to show you how the U.S. number of Olympics medals changes overtime. This visualization also aims to show that the number of earned medals every 5 years is an effective measurement of Olympics popularity in the USA. With the increased number of medals received, the Olympics popularity has significantly increased since its inception.

Narrative Structure

The narrative visualization structure that I chose was an interactive slide show. For the first two scene of the visualization, the above message is delivered directly to the user and only a few interactions are allowed. These interactions are links to potentially interesting articles if the users decide to dive deep on his own over the internet.

The third scene allows the users to drill down into the visualization by supplying tooltip popups for extra information and several buttons that the user can activate to provide annotations that help supporting several points made in the message.

Visual Structure

The first two scenes try to convey the message to the users by providing context and lead the users toward the conclusions that the creator wants to transfer across. The information is conveyed mostly by text and links to external resources if the users want to do a deep dive into the subject matters. The goal for the first two scenes is to make the message clear with enough context so that

the user can effectively navigate the third scene, which is where most user interactions will be in.

In this third scene, the user will be presented with a chart that shows the number of medals that the USA received each 5 years since the inception of the Olympics. There are many conclusions that one can draw from this visualization. In this chart, the most important conclusions are highlighted with different sets of annotations. One of the obvious conclusions is that we have been trending up in our earned medals per year since the inception of Olympics. Moreover, another critical point to get across here is its popularity among Americans has been on an upward trend since World War 2. A significant uptick in the number of medals happened right after the end of World War 2. Moreover, the number of sports in the Olympics has been increased significantly since its inception. In 1896 Summer Olympics, there were only nine sports in forty-three events. Nowadays, in 2022 Summer Olympics, there are almost 50+ sports that are currently available and more are being added every few years. Thus, based on the points listed above, the significant increase in medals shows that the Olympics has become quite a popular event in the USA.

All these mentioned conclusions are separated into big, obviously-displayed buttons that users can interact with in the third scene.

Scenes

We have a total of three scenes for this visualization. The first two scenes, as explained in the earlier section, are used to convey the message across to the users. The format of these two scenes is mostly text with links to different external resources that users can use to gain more context. However, these first

two scenes will provide enough context so that the users can effectively use the third scene to explore the data further.

The third scene will contain a chart with interactive elements so that the users can drill-down into the data features. This third scene has three different states that highlight the conclusions mentioned in the previous section.

Annotations

I used the d3-annotation package to create several annotations that accompanied with each trigger in the third scene. Whenever a trigger is activated, its set of annotations is displayed to the user to support the conclusions that we mentioned in the visual structure section of this document. Since I was using the d3-annotation package, the templates of these annotations are abstracted. However, the d3-annotation package worked as intended and delivered excellent annotations without adding extra complexity to the codebase. Each set of annotations helps guide the user toward the visual elements of the chart that indicate the conclusion for that set. The annotation groups are hidden or shown depending on which trigger gets activated. Initially, at runtime, these annotation groups are not displayed for the sake of visual clarity.

These annotation groups are hidden or shown within the third scene according to the currently activated conclusion. There are a total of 3 different conclusions with their own set of annotations and parameters.

Parameters

In the third scene, we have several parameters to control the state of the narrative visualization. The annotations in this scene are all created at runtime and will become visible/invisible to the users depending on which button that they click on. Each button initiates a state change that highlights a different

conclusion. There are a total of three states (3 buttons) for this third scene. Accordingly, there are three parameters used in this scene (e.g., buttons with these ids: "conclusionButton1", "conclusionButton2", and "conclusionButton3"). Each of these three parameters is attached to a single button with a clear label. Every time you click on one, a different conclusion and its set of annotations will show on screen to provide the users with more information, which helps guiding the users toward the conclusions.

Triggers

The triggers in this case are the three buttons that will be shown on screen. Clicking on one of these buttons will initiate a state change in this narrative visualization. The buttons are obvious to the user with clear wordings so that anyone, who is exploring the data, will be able to detect them immediately. Whenever the user is ready, he/she can click on one of these buttons and the chart will take care of the rest.

By making these triggers obvious, the users are presented with a better user experience, in which they do not need to find the elements that are interactable.