

CS 416: Data Visualization

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Messaging

The message I'm trying to communicate with the narrative visualization is using last 62 years world GDP data from World Development Indicators Data Bank to look at the development and changes of countries around the world. Find the countries that have the most influence on the world economy, and observe the trend of GDP growth, to analyze the world economic pattern and current economic situation. Finally, analyze the cooperation and competition between the world's two largest economies by comparing their GDP growth trend.

Narrative Structure

The narrative visualization is designed to follow interactive slide show. I have a linear ordering, from the high level to talk about the world economic situation in the past 62 years and then the viewer can drill down into more detail by clicking the next button. There will be a presentation of the top 10 countries that have the most GDP in the world. The viewer can still drill down further to look at US and China's GDP.

In each of these cases, the viewer is following a predefined path: World -> Top 10 Countries -> US VS China. The viewer has certain level options based on the defined paths to go to next and previous pages. So that the visualization can deliver stronger messages than other narrative structures.

Visual Structure

To keep the viewer oriented through transactions and avoid disorienting the viewer when switching scenes, I provide a consistent visual structure. In this narrative visualization, there are three scenes on different pages connected by the next and previous button at the bottom. In each scene, the structure is the same as others. The top is the topic of this scene, the middle part is the graph with clear tool tips and text represent the trend important information, the bottom part is the message what this scene wants to deliver and provide the button to help the viewer transition to other scenes.

Scenes

As mentioned before, there are 3 scenes I created following a linear ordering following as below:

Scene 1: Use the GDP data from World Development Indicators Data Bank to look at the development and changes of countries around the world in the past 6 decades. As the first scene, I high levelly provide the world DGP growth trend and deliver the message that the GDP of the world is keeping growing even there a few financial crises in recent 2 decades.

Scene 2: Based on scene 1, I present the top 10 countries that have the most influence on the world economy and show the GDP growth trend over the past 60 years in this scene. I use different colors to represent each country, so that we can easily find out the GDP contribution for each country over the years. It can deliver the message that US and China are different than other countries, we need further drill down to focus on US and China.

Scene 3: Following scene 2, I drill down to US and China only. Based on the graph, the viewer will have clearer picture to compare the GDP growth trend between US and China. It can deliver the message that the trend of the GDP growth of the two countries is largely consistent, especially in the recent 20 years.

With this order, the viewer can easily get the message that the world GDP is keeping growth, majority contribution is from US and China, and the economies of two major powers in the same world environment are mutually influenced, and this influence is a zero-sum game. One prospers and one loses, the other will inevitably be adversely affected.

Annotations

I mainly use text to deliver a clear message of each scene. At the same time, to help viewer easily read the graph. I added a clear tooltip to show the details of each year's GDP value. Besides that, I use the color to represent country to help viewer easily differentiate GDP growth trend of each country. I also use a piece of text to highlight the important information of the scene. The annotations vary from scene to scene.

Parameters

To move from scene to scene, I use button as parameter. The scene changes and data selection are also controlled by buttons, that will help viewer to navigate the narration by clicking prev and next buttons. The main reason that I didn't display all parameters in all scenes is I want the viewer to follow up the path which I defined to get the whole message.

Triggers

Same as parameters, the buttons are also the triggers that connect viewer actions to change of state in the narrative visualization. Next button can help viewer follow the narration to drill down the details step by step. Prev button can help viewer to track by previous message.