

CS 498 – Assignment: Narrative Visualization

Author: Anshul Sharma

Dataset: WDI Data - <http://datatopics.worldbank.org/world-development-indicators/>

Narrative Visualization Link: <https://anshuls4.github.io/NarrativeVisualization/>

Messaging

This visualization talks about population of top 5 most populated countries of the world in 2019 (China, India, USA, Indonesia & Pakistan). WDI dataset has been used for this narration. This guided visualization demonstrates the population growth trend for a few countries in last 60 years. Along with general population trend, this visualization also elaborates on population growth in rural & urban population for these countries. With this visualization people gets an idea that India has a continuous growth in population, both in rural and urban areas in past years. With current trend of continuously increasing population India might surpass China in coming years.

This visualization also demonstrates that population is always increasing for urban areas for all these countries but China's rural population is on decline for quite some years and India's rural population growth trend is approaching neutral line beyond which the rural growth becomes negative.

Narrative Structure

This visualization is based upon "**Martini Glass**" structure. The user is given one direction to navigate and follow the story. The user can mouse over first two charts to view & compare the population of the countries. The third Chart is where user can explore the population growth categorized by Rural and Urban population. This chart has a drop down which enable the user to drill down into individual country's population trend.

Visual Structure

Structure: There are three charts in this narrative visualization.

- The first graph is simple bar graph which demonstrates total population of said 5 countries, represent quantitative data on Y axes and nominal data on X axes with clear and efficient use of labels and tooltip.
- Second and third graphs are line charts with quantitative values across both axes. X axes is in increasing order of Year whereas Y axes has population growth in %

Highlight: Important information is highlighted using the annotations and axis labels in all three graphs.

Transition: To make sure that the user doesn't get disoriented, same dimension for the svg canvas and same color scheme for each country has been used across all the scenes. The text used for annotations, labels etc. are same font and size across all the graphs.

Scenes

Scenes are developed as slides in the presentation following the "Martini Glass Structure", user lands on a scene with story and he has one direction to go to the next scene using a button on the right side of the scene. User's attention is grabbed by highlighting the button which takes user to the next scene. Annotations are added in each scene to highlight a message, this helps deliver the right message to the user.

There are following scenes in this narrative visualization:

- **Scene 1:** Demonstrates the **population** for top 5 most populated countries of the world. Bar charts have been used as this scene plots Population (quantitative data) against Country (nominal data). There's a tooltip to display the population data on demand.
- **Scene 2:** Demonstrates the **population growth** for around last six decades for these 5 countries. This scene presents the information using a line chart as it plots Population (quantitative data) against Year (continuous quantitative data). Tooltips have been used to display the population data for all the countries on demand when mouseover. This scene with population data gives the user an easy way to compare the population growth among these countries.
- **Scene 3:** Once user get an idea for the overall growth trend, this scene presents the growth trend for rural & urban population of one country that user has to select using a drop-down list. At this point, the user is free to explore how the population growth have been in different countries categorized by their Rural and Urban population.

Annotations

Simple text below the chart is used to convey important message of a scene. Clear labels for the axis and tooltip are also used in a few scenes to provide details on demand. This helps user to get a high-level message from a scene. Annotations like "Neutral Growth" is added to the graph to convey a message about the threshold under which population (Rural or Urban) started to decline instead of increase. Even though Annotations change from scene to scene, same color, text and font scheme are used to avoid user disorientation.

Parameters

Parameters are used to transition from one view or scene to another. First two scenes have a button used as parameter for taking the user to the next scene, this helps user to navigate the narration. This scene of rural and urban population graph, a dropdown is used as the parameter at the bottom of the chart. User is encouraged to use this dropdown to select a particular country he or she is interested in, this changes the state of the scene allowing the user to explore into more details.

Triggers

Triggers are used to interact with parameters and change the state of a scene. In first two scenes of this visualization story, a button click triggers the scene change. In third scene, the trigger is a selection in dropdown (Country) to select the data for particular country which in turn plots Rural and Urban population growth for the selected country. These triggers are added at the top & the bottom of the charts to attract user's attention. Same classes for the style and same colors for the country names are used to make sure user is not disoriented in the transition.