Narrative Visualization

CS 416: Data Visualization

Sofia Godovykh

sofiag5@illinois.edu

https://sofiagodovykh.github.io/DataViz/

- **Messaging**

  The visualization explores the phenomenon of the gender pay gap in the USA. The term refers to the difference in earnings between men and women. It is well-known that this disparity exists, but the pay gap can vary due to a range of factors, including occupation, education, work experience, and hours worked. The visualization allows for a more nuanced examination by comparing the income of men and women with the same education level or occupation.

- **Narrative Structure**

  The visualization follows a martini glass structure: the first plot provides an overview of the total population, confirming the existence of a gender gap, and subsequent plots allow the user to examine it across different categories.

- **Visual Structure**

  There are three scenes for users to explore. The interface uses standard controls that are intuitive and easy to understand. Axes are labeled, and plots have descriptions. Income levels are color-coded, and the legend in the top-right corner designates the corresponding categories. The 'Next' button invites users to proceed to the next slide.

- **Scenes**

  The first scene supports the point stated in the introductory article: women earn less money than men. The bar chart shows the data in absolute numbers, and the pie chart displays per capita statistics. The following scenes invite users to explore how income varies across narrower categories of the population. They allow selection of men and women with the same education or occupation. Users can confirm the text in the introduction: while the gap persists in many sub-categories, its scale can vary significantly. Therefore, it is important to show the whole picture first and then let users explore the details.

- **Annotations**

  Plot titles serves as annotations. User is already familiar with the visualization pattern, and title highlights the key point of the current scene. There are also on-hover annotations with number of persons in each categories. This data is not important enough to be displayed statically, and an approximate value can be derived from Y-axis, so, it is shown only on hover. It changes according to the data when user selects a new category from a drop-down list.

- **Parameters**

  Plot titles serve as annotations. The user is already familiar with the visualization pattern, and the title highlights the key point of the current scene. There are also on-hover annotations displaying the number of persons in each category. This data is not important enough to be displayed statically, and an approximate value can be derived from the Y-axis, so it is shown only on hover. The annotations update according to the data when the user selects a new category from a drop-down list.

- **Triggers**

  There are several interactive elements in the visualization. First, there is a 'Next' button that changes the scene. Second, there is a drop-down list of categories. Third, there is an on-hover annotation displaying the precise number of persons in each area of a plot, and the plot area itself gets highlighted. Additionally, the pie chart pieces become enlarged."

Resources:

Data: https://www.kaggle.com/datasets/ddmasterdon/income-adult

Additional information:
https://www.dol.gov/sites/dolgov/files/WB/equalpay/WB_issuebrief-undstg-wage-gap-v1.pdf