Coding Assignment 3 Report

November 08, 2022, by Zikang Xiong

- **Data Question**
  - **Quesiton Iterated Result**
    Is the population of the United States getting aged from the 1900s to the 2000s?

  - **How the Visualization Answers the Question**
    We can tell from the graph that during the 1900s, the age distribution of the United States population was nearly a triangle, which means that young people dominates the whole population. However, in the 2000s, the shape of the graph has become a trapezoid, and people in the age of 20-40s became dominant. The difference between these two data set indicates that there are less people who are willing to give birth to the new born. If this trend cannot be altered, aged people will dominate the population in the future, and the society will be under great pressure of supporting the aged population.

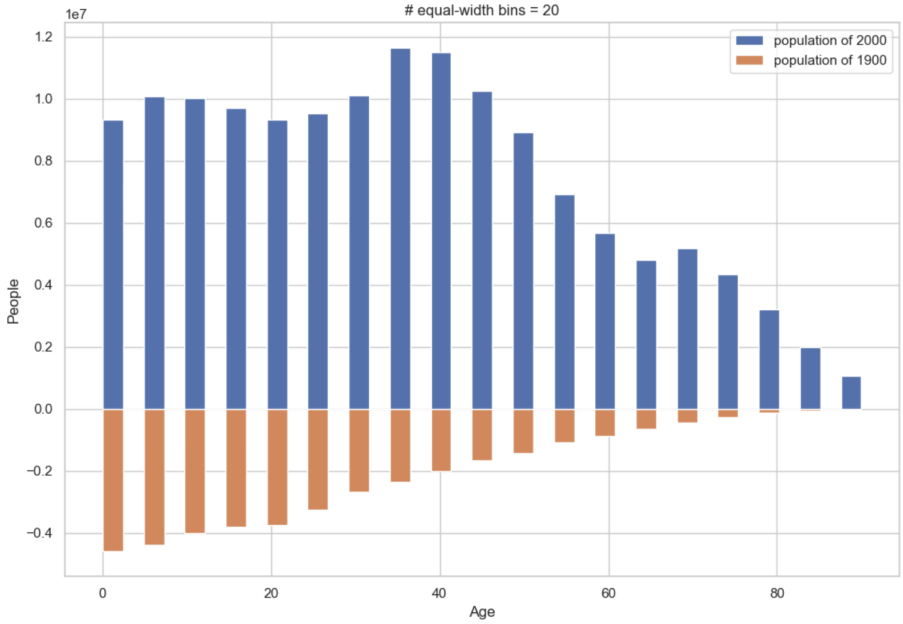
- **Design a static visualization**
  - **Choose a Plot: Mirrored Histogram**

  - **Add Alternative Text**
    "A mirrored histogram that indicates the United States population distribution in different ages. It compares the general population distribution of the 1900s and the 2000s. From the 1900s to the 2000s, the problem of population aging has emerged, but it's still manageable, as the population distribution of age 0-20 has declined."

  - **Employ a Takeaway Title**
    "The age distribution of the population in the United States during the 19th and 20th centuries."

- **Implement the Visualization**

The age distribution of the population in the United States during the 19th and 20th centuries



- **Short Writeup Summary**

  Data Question Design Process

  The first question I tried to interpret was "Was the portion of the female in the United States population growing or declining from the 1900s to the 2000s?" However, I found this question could be illustrated by simply drawing a bar graph that indicates the total number of females and the United States population.

  To fully utilize the information provided by the CSV file and reflect more information, I decided to design my data question as "Is the population of the United States getting aged from the 1900s to the 2000s?"
  I'm interested in this question because the general age trend of population reflects if a country is energetic or not, since the more younger people means that the society will have more labors which leads to productivity. Also, the willingness of people to give birth to new borns represents whether citizens are hopeful to the future or not. This also indicates their level of happiness.

  Plot Choice Design Process

Since the problem I'm trying to solve is the general trend of age of the population, I should reflect the portion of people in each age group. By showing the distribution of people in each age group, it can easily tell from the shape of the graph whether the population is getting older or not. At the same time, I designed to interpret the exact number of the population which would be clearer for readers. Thus, I eliminated the density plot and chose the histogram to be the plot type.

Since the information I'm trying to get is the overall age distribution of the population but not the gender distribution, I chose not to use the stacked histogram. To compare the data of the 1900s and the 2000s population, the final choice is mirrored histogram.

Alternative Text Design Process

For alternative text, I need to clarify the type of data, the chart type and the key takeaway. The type of chart is a histogram. The key takeaway of the graph should resolve my designed data question, which is the general age trend of the United States population. Thus, the alternative text I designed was like this:

"A mirrored histogram that indicates the United States population distribution in different ages. It compares the general population distribution of the 1900s and the 2000s. From the 1900s to the 2000s, the problem of population aging has emerged as the population distribution of age 0-20 has declined, but it's still manageable."

Takeaway Title Design Process

The keytake away title summarize the content of data, and it should reflect the information of my designed data question. I summarized the key point of my data question to be the takeaway title.