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DATA VISUALIZATION: INDIVIDUAL PROJECT

FIRST VERSION

The article about America's gun violence problem[1] describes in detail the gun control and homicide issues that the USA has been facing since the past couple of years. This is explained through various charts, graphs and maps utilizing multiple data sets from different data sources.

Like all data products, a redesign on this article can help improve the cohesiveness of the data product and the point that it is trying to put across.

As my First Version in redesigning and developing a deceptive version of the data product, I have chosen the first 3 visuals of the article. The matter that these 3 graphs are trying to put forward can be summarized as below:

1. Graph 1: Number of firearm homicides in the USA compared to other countries of the world.
2. Graph 2: (World v/s USA) Total population compared to the number of civilian owned guns among the population.
3. Graph 3: The increase in the number of mass shootings in the USA since the Sandy Hook incident in 2012.

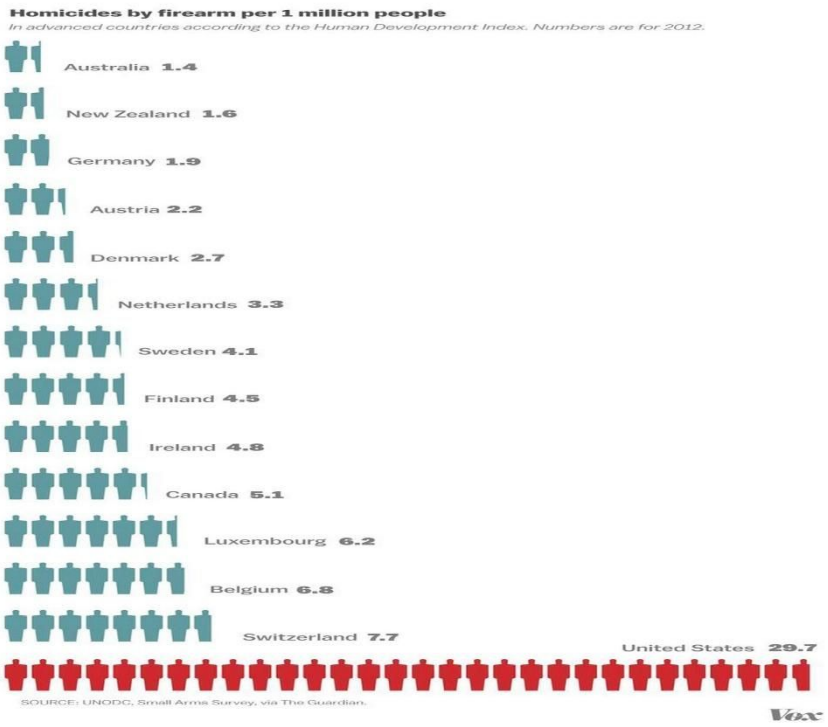
➢ **The redesigned graphs, their making and other details are explained below.**

1. **Graph 1 : Firearm Homicides per Country**
   a. Datasource: https://docs.google.com/spreadsheets/d/1chqUZHuY6cXYrRYkuE0uwXisGaYvr7durZHJhpLGycs/edit#gid=0

   b. Original Visualization:

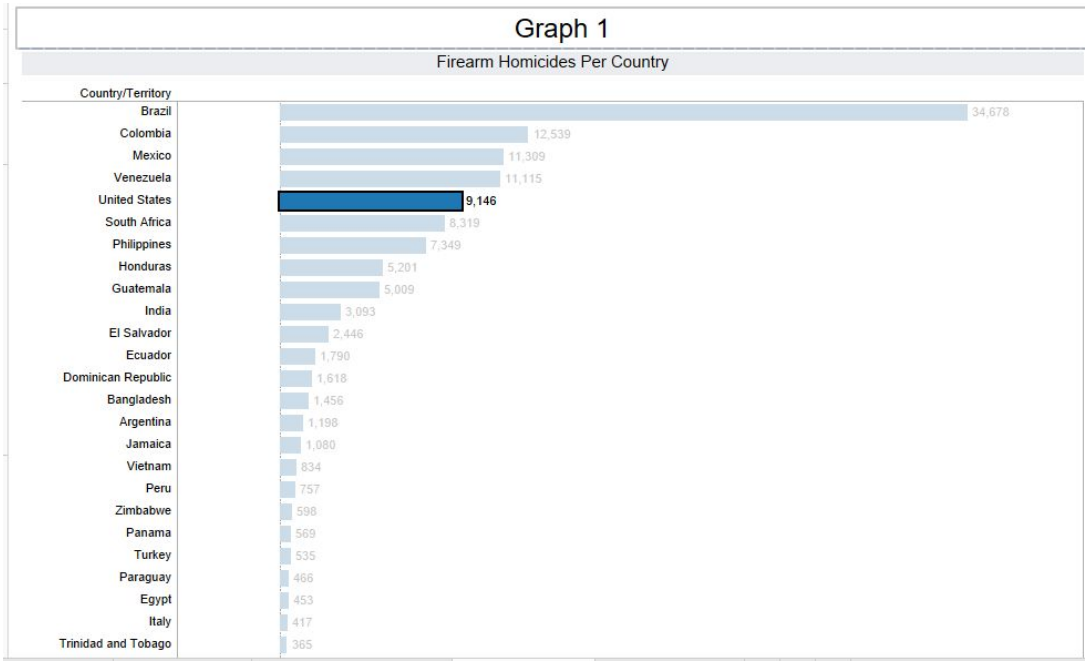
      The original visualization of the 1st graph in the article is as follows:

[1] https://www.vox.com/policy-and-politics/2017/10/2/16399418/us-gun-violence-statistics-maps-charts



c. Redesign: : https://public.tableau.com/profile/saloni.sharma#!/vizhome/Graph1_redesign/firearm_redesign?publish=yes

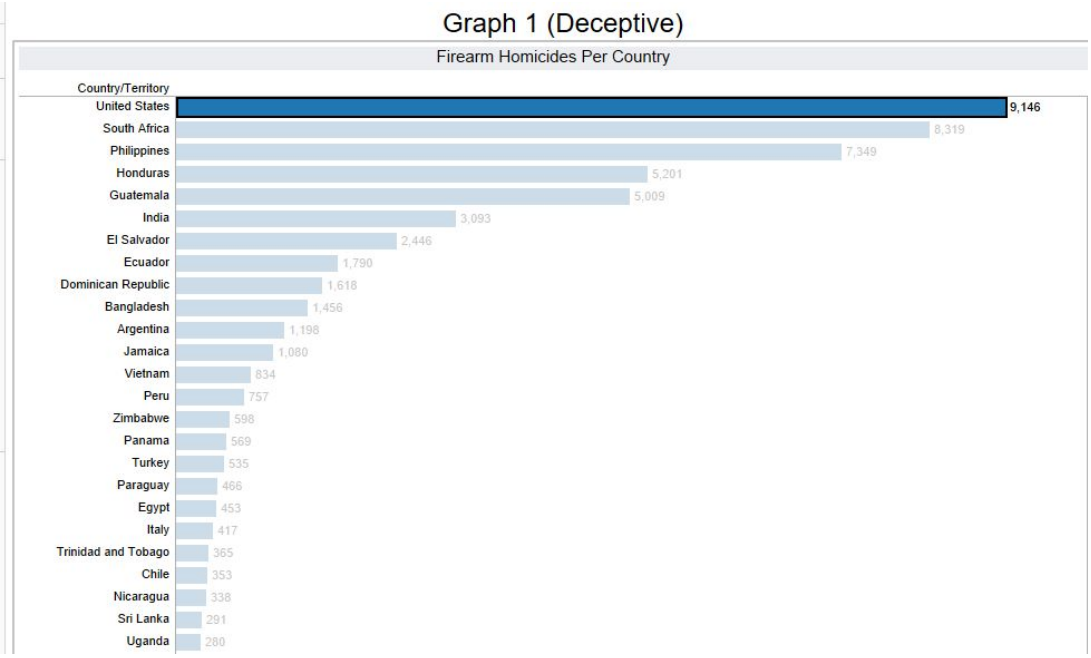
The redesigned visualization is as follows:



As it can be seen from the redesigned version of the chart, USA is NOT the country with the highest number of firearm deaths. Brazil, Colombia ,etc. precede USA in this matter.

d. Deceptive Design:
https://public.tableau.com/profile/saloni.sharma#!/vizhome/Graph1_deceptive/firearm_deceptive?publish=yes

The deceptive visualization is as follows:



By hiding the countries above USA, i.e. Brazil, Colombia, Mexico and Venezuela, the redesigned visual could be turned into a deceptive visual, which shows that USA has the highest number of firearm homicides in the world.

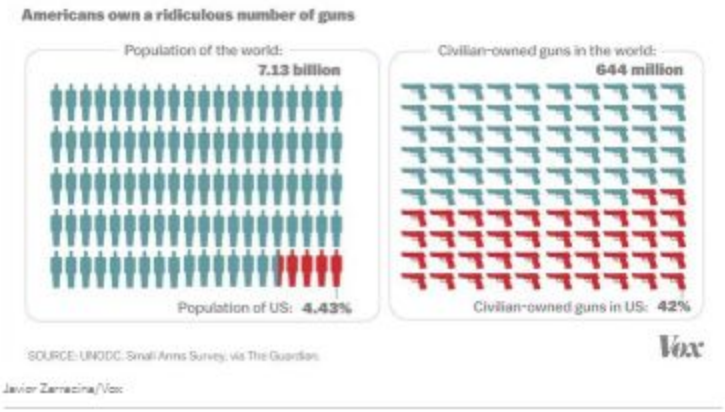
e. Data Cleaning :
This Jupyter file contains the data cleaning process:
https://github.com/SaloniS95/DATA-VIZ-SPRING-2018-SCU/blob/graphs/Graph1%2Bvox_data_viz.ipynb

2. GRAPH 2 : (WORLD vs USA) Number of civilian owned guns compared to the Population

a. Datasource:

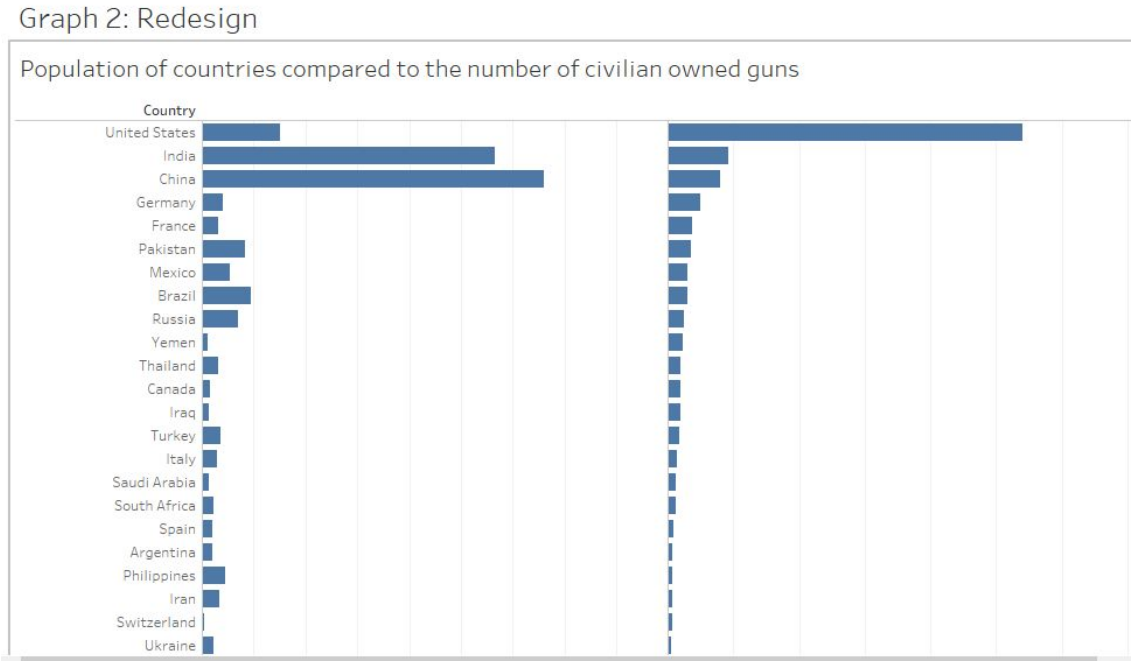
https://photius.com/rankings/population/population_2007_0.html , https://docs.google.com/spreadsheets/d/1chqUZHuY6cXYrRYkuE0uwXisGaYvr7durZHJhpLGycs/edit#gid=0

b. Original Visualization:
The reason I wanted to redesign this data visual is that the original visualization does not convey the meaning effectively.



c. Redesign:
https://public.tableau.com/profile/saloni.sharma#!/vizhome/Graph2_redesign/merged_graph2_redesign1?publish=yes

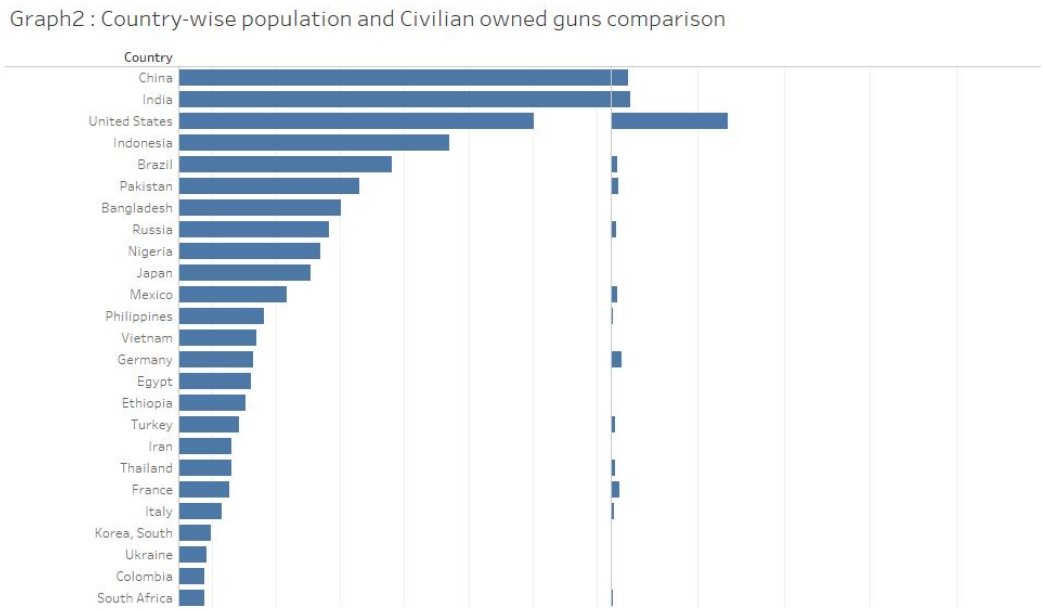
The redesigned data visualization, utilizing the merged dataset that shows the total number of people affected(injured + killed) is as follows:



The redesign effectively compares the population of each country with the number of civilian owned firearms.

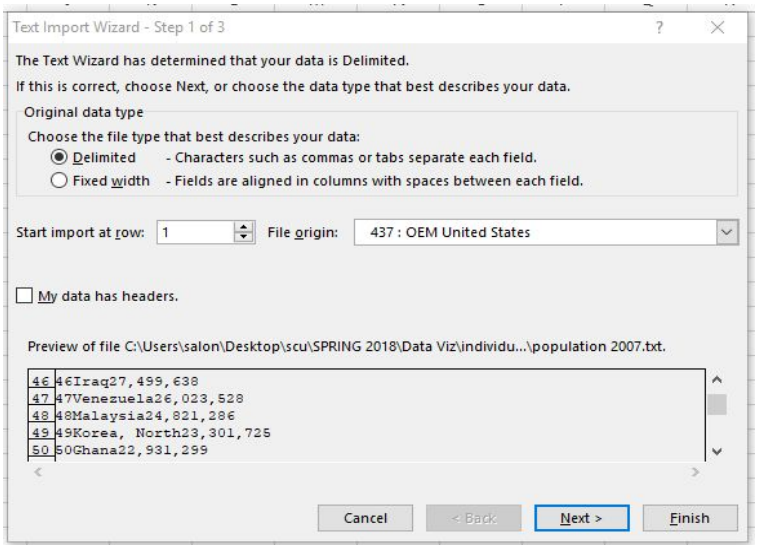
d. Deceptive Design : https://public.tableau.com/profile/saloni.sharma#!/vizhome/Graph2_deception/merged_graph2_deception?publish=yes

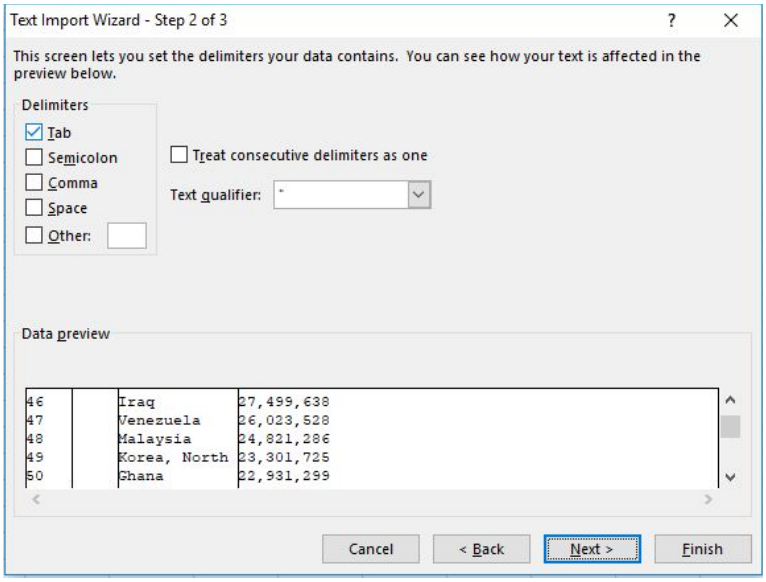
By changing the scales of the above redesigned visual, a deceptive version can be developed as follows:



This deceptively shows that the number of civilian owned firearms in the USA compared to its total population is quite low.

e. Data Cleaning:
For this visual, I used 2 datasets. The dataset from the first link (https://photius.com/rankings/population/population_2007_0.html) had to be first copied and pasted into notepad, from where I opened it in Excel selecting the following criterias:





Once the data opened in Excel, I gave the headers to the last 2 columns as “Country” and “Population” so that the analysis could become easier. The next steps of cleaning the data of the Excel file can be found in this Jupyter notebook : https://github.com/SaloniS95/DATA-VIZ-SPRING-2018-SCU/blob/graphs/Graph2%2Bvox_data_viz.ipynb

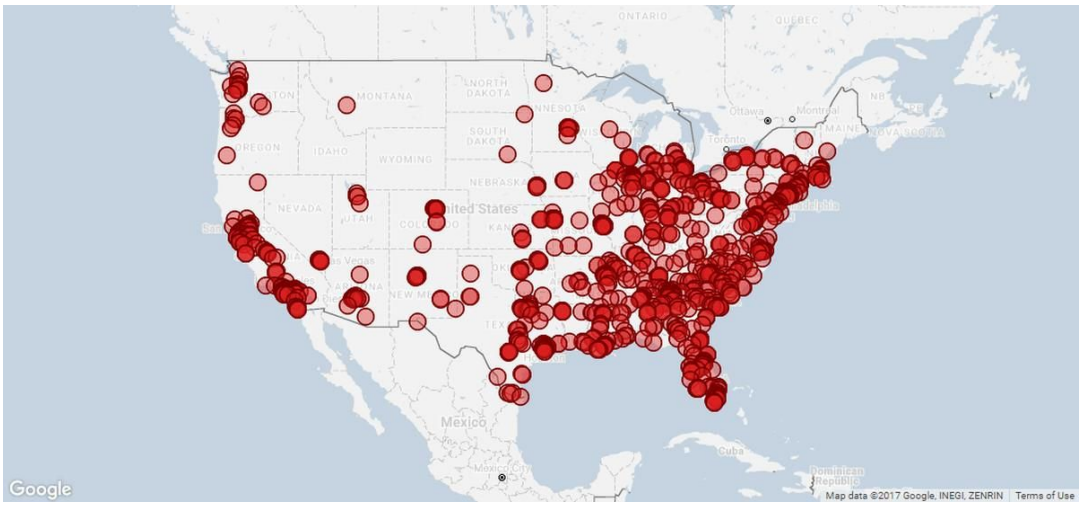
3 . GRAPH 3 : MASS SHOOTINGS:

a. Datasource:

http://www.gunviolencearchive.org/reports/mass-shooting

b. Original Visualization:

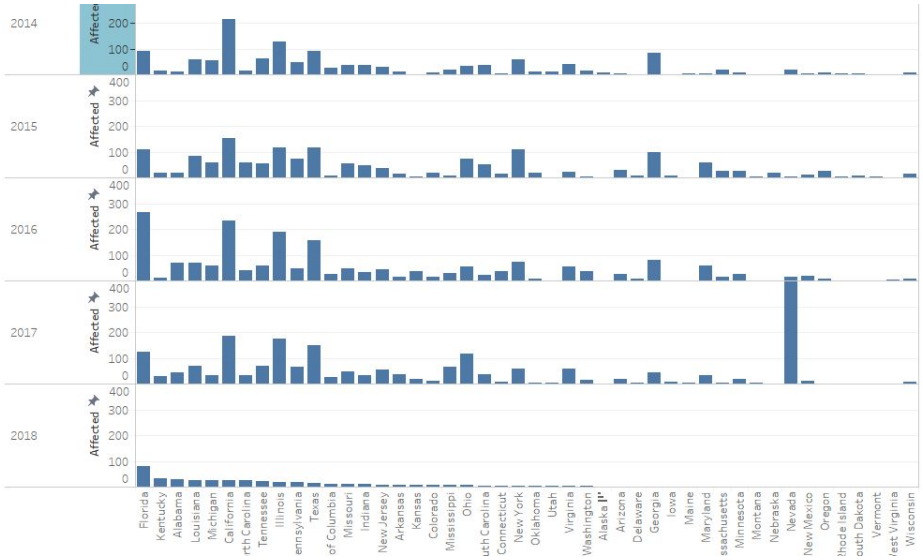
The original visualization is as follows:



c. Redesign and Deceptive Design:

https://public.tableau.com/profile/saloni.sharma#!/vizhome/Graph3_affected_deception/graph3_affected_deception?publish=yes

For this dataset, the redesign and the deception graphs are the same. Like the article states, the number of people injured/affected by mass shootings have increased since Sandy Hook Elementary school shooting, but the number increased till 2016. There was a decrease in that number from 2016 to 2017 in for a lot of states, except for Nevada, Ohio, Pennsylvania, etc.



d. Data Cleaning :

The data cleaning process can be seen here:
https://github.com/SaloniS95/DATA-VIZ-SPRING-2018-SCU/blob/graphs/graph3%2Bvox_data.ipynb

➢ **Roadmap for the Future :**

There is always scope for redesigning and improvements. In the revised versions, I would like to take care of the following issues:

a. The dataset for Graph number 3 that gives information about the number of mass shootings in the US does not give the number of shootings that have occurred, but rather the number of people who have been killed or injured due to the shootings. For the redesign work, I would like to gather data regarding the number of shootings that have occurred in each city/county/state and then develop insights from it.
b. Some datasets are not perfect, meaning there are many null values and missing data-points for many countries. Getting a data with more information will help develop a better visual and in turn provide a better insight on the gun violence problem in USA.
c. I would like to merge datasets about other parameters that affect gun violence like drug and alcohol use and try to analyze them to see if there is any actual effect of other parameters on gun violence