For my analysis I took a look at the FBI gun dataset along with the US census data.

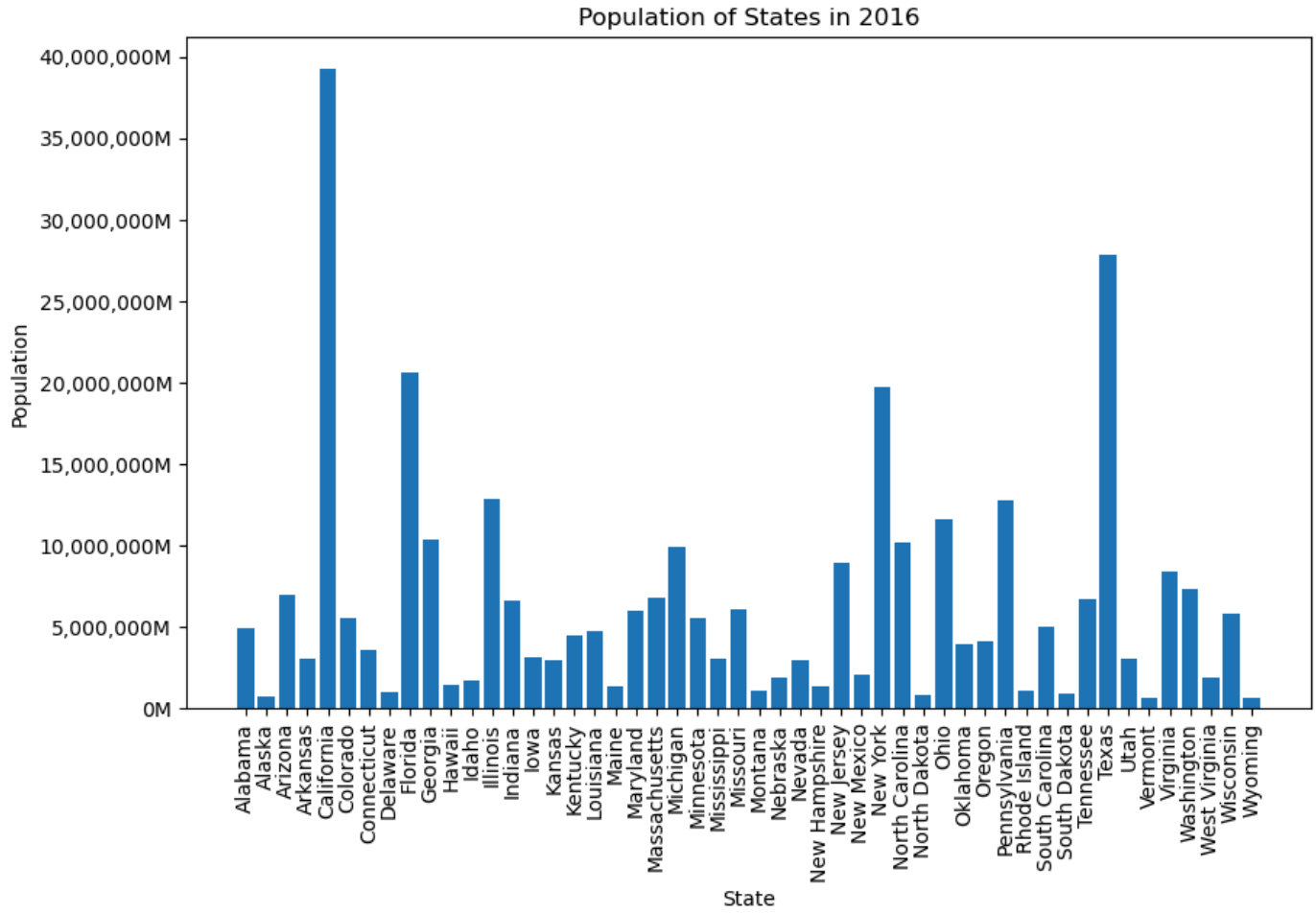
The main question I answered in my analysis was whether or not population was correlated to the number of permit checks in that state for 2016. This involved investigating the populations of each state and the number of checks in each state for 2016 and then combining them together and visualizing it on a scatter plot.

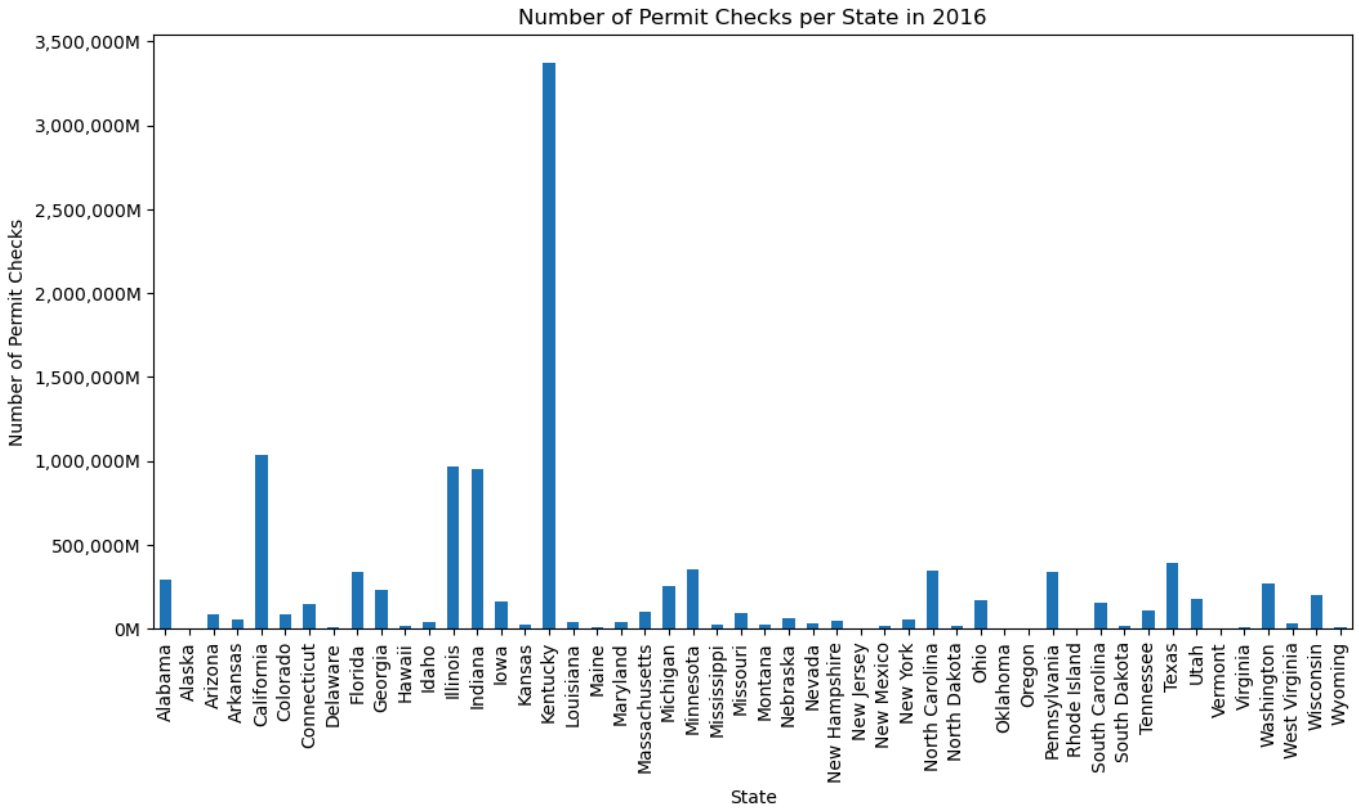
In order to investigate these questions I created two bar charts one for each population of each state and another for the number of permit checks each state had for 2016. Finally, I combined the datasets to produce a scatterplot between the variables.

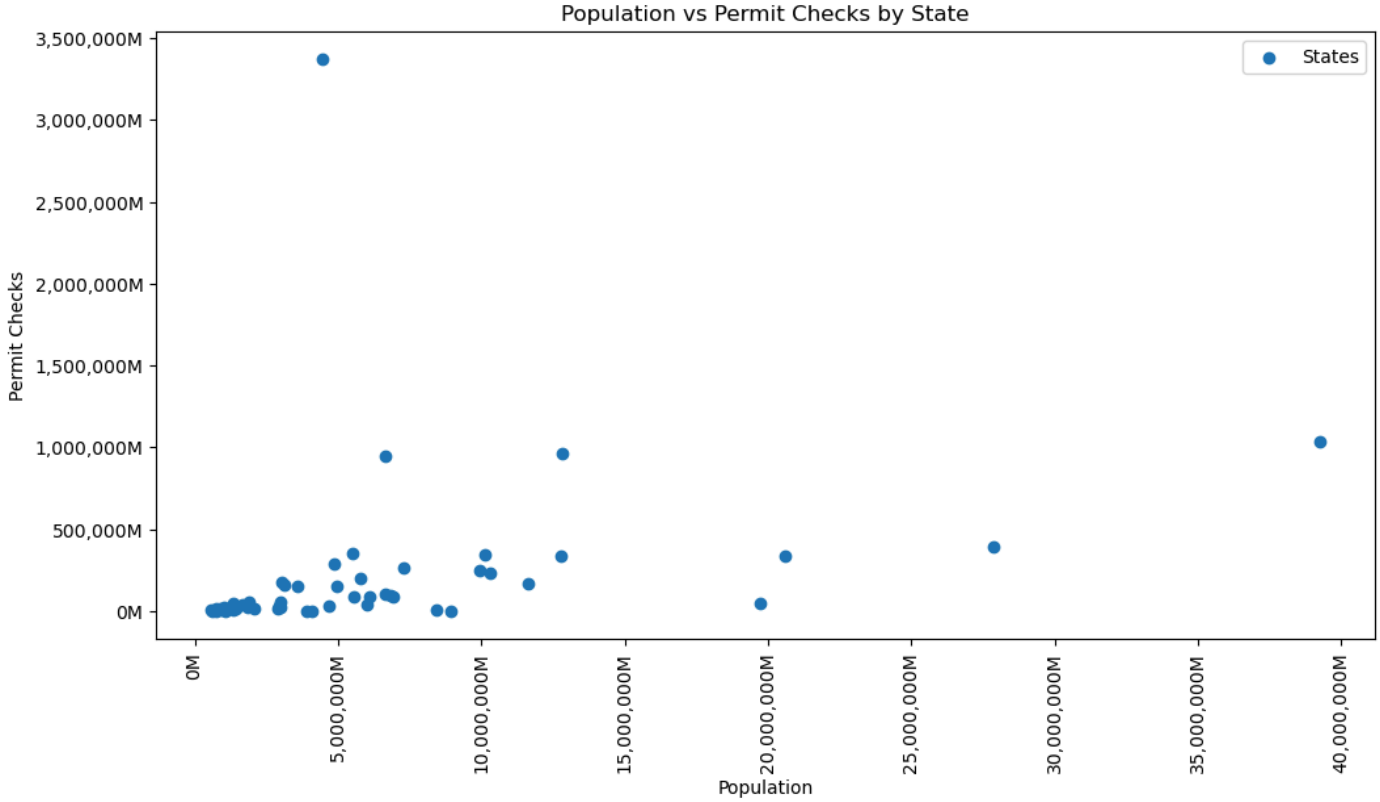
In terms of data wrangling, I first looked to see if both datasets had any duplicated values and if they did I would drop them. Then, I noticed that my census data was in wide format and I knew I would have to transform it into a long format to allow me to combine the two datasets down the line. I also dropped and renamed a few columns to make it easier to read and to remove unnecessary data. Additionally, for my census data frame I had to change the data type of my population column to allow me to use it in building graphs by removing the commas and making it an integer. For my FBI gun data frame I had to specifically filter out the 2016 values from the dataframe by using a function that allowed me to pick out just the first four characters of the month column which contained the year. Afterward, to get the total permit checks per state I used a group by function to group it by the state. Lastly, I merged the two dataframes into one dataframe called final_df which I used for creating the visualizations.

In terms of outside resources I used in the creation of my project, those are included within the jupyter notebook.

Plots I created:




Number of Permit Checks per State in 2016
Number of Permit Checks
3,500,000M
3,000,000M
2,500,000M
2,000,000M
1,500,000M
1,000,000M
500,000M
0M
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
State


Population vs Permit Checks by State
States
Permit Checks
3,500,000M
3,000,000M
2,500,000M
2,000,000M
1,500,000M
1,000,000M
500,000M
0M
0M
5,000,000M
10,000,000M
15,000,000M
20,000,000M
25,000,000M
30,000,000M
35,000,000M
40,000,000M
Population