We did 2 lines of investigation.

**Line of investigation #1:** We researched the relationship between state violence (FBI) and lead service lines per state. Our hope was that this data would be highly correlated. We did 4 separate workbooks for this investigation, numbered 01-04. The first 2 workbooks were for cleaning the data, then a merge workbook, and then a workbook to look at the data.

The data was negatively correlated (at the state level). So, that means that we found no quantitative indication that the number of lead service lines (LSLs) per state was related to violent crime. In other words, the number of lead pipes servicing any given population in the United States had no effect on the rates of criminally violent incidents.

We relied heavily on the correlation matrix available within Pandas. This gave a comprehensive comparison of the different variables. However, we found that the state of Missouri had a higher correlation than the other states. Choosing Missouri, we decided to investigate further.

**Line of investigation #2:** we researched based upon available data the relationship of violent crime per city in Missouri and the number of lead discharges into water for the years prior to 2016 (EPA data). Notebooks 05-08 were used to clean the data, merge the data, and then investigate the data. The results were positively correlated, however, to what would be considered by a “very weak amount”.