Project 1: U.S Murders Analysis

Created by: Darina Diaz

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Intro to Dataset

Total Murders

- The total number of murders reported in each state for the given period.
- Serves as the main variable of interest for understanding crime distribution across states and regions.

Region Murders

- Enables regional comparisons, helping us understand if certain areas have distinct patterns in population or murder totals.

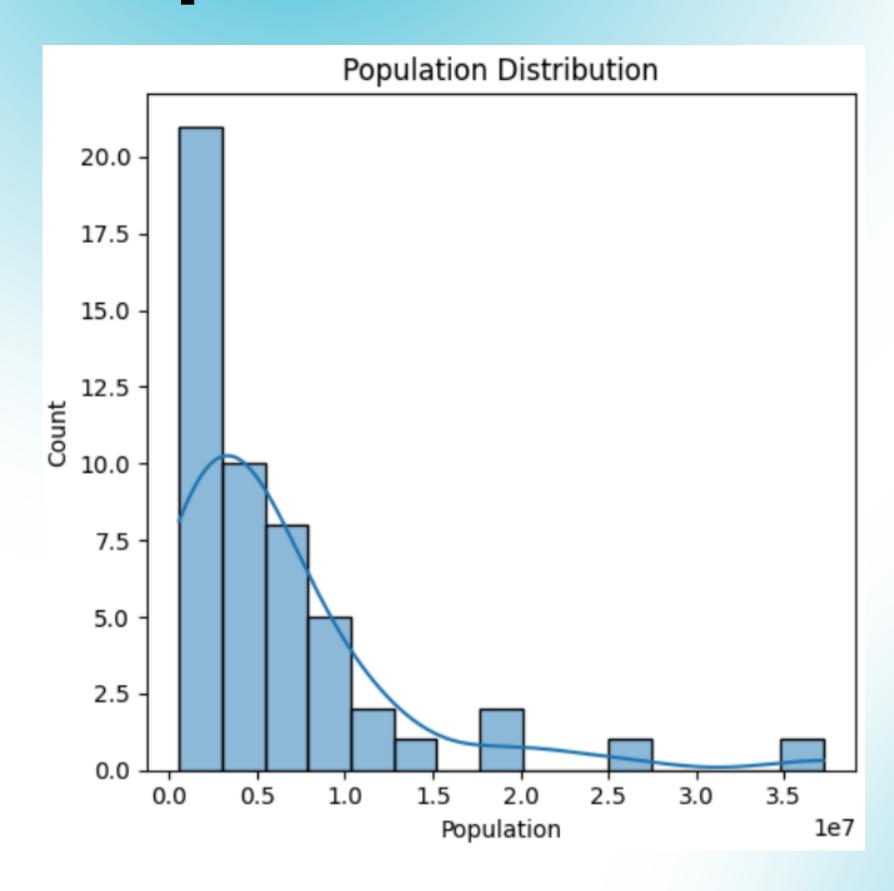
Population Murders

- The total population for each state.
- Provides context for murder counts, allowing us to investigate the relationship between population size and crime rates.

EDA Overview

- Descriptive Statistics
 - Summarized Population and Murder totals for central trends and variability.
- Distribution Analysis
 - Plotted histograms to explore spread in Population and Murder totals across states.
- Regional Comparison
 - Used boxplots to examine population and murder totals by region.
- Correlation Analysis
 - Created a scatterplot to explore the relationship between Population and Total Murders.

Population Distribution



Summary Statistics:

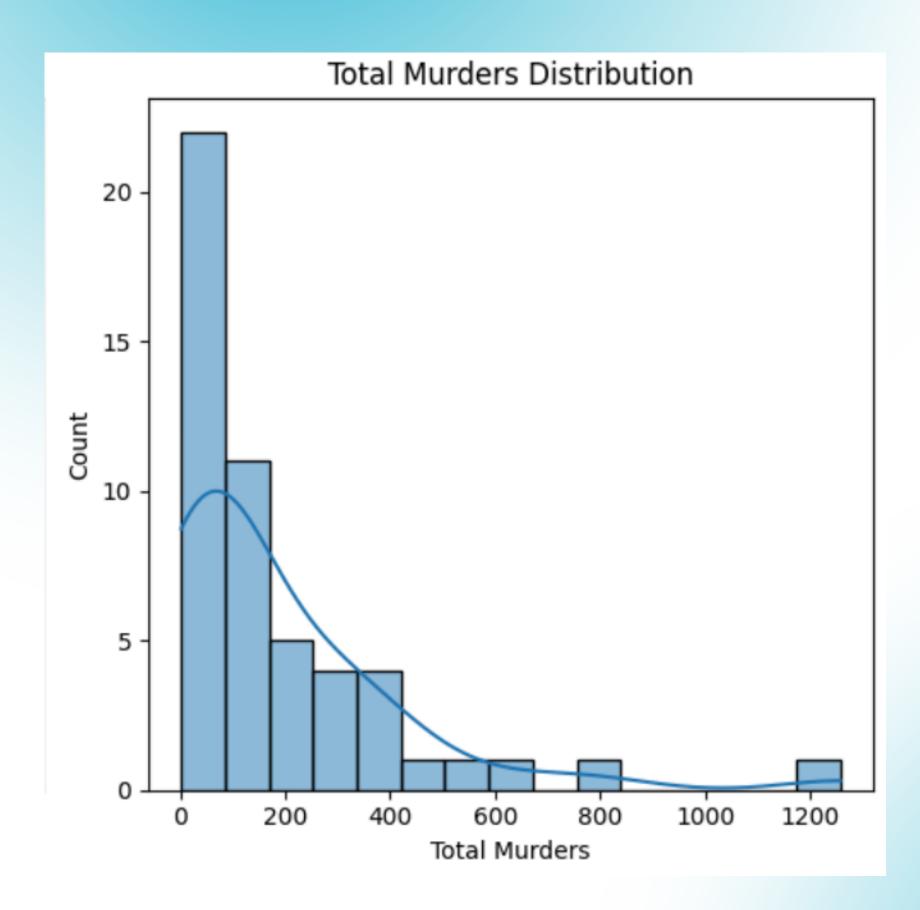
The average population across states is about 6 million, with a large standard deviation indicating significant variation. Total murders per state also vary widely, with a mean of 184 and a maximum of 1,257.

Population Statistics:

The distribution is right-skewed, with most states having populations below 10 million, while a few highly populated states raise the upper limit.



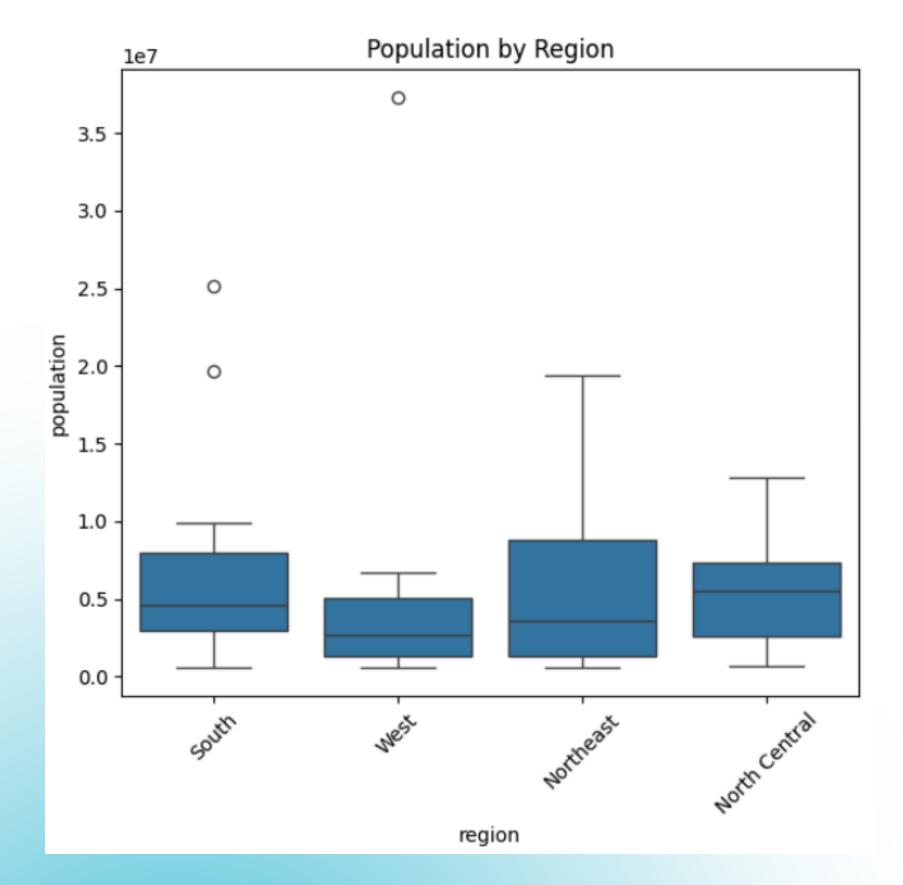
Total Murders Distribution



Total Murders: This distribution is also right-skewed, indicating that while most states have relatively low murder totals, a few states with larger populations have much higher numbers.

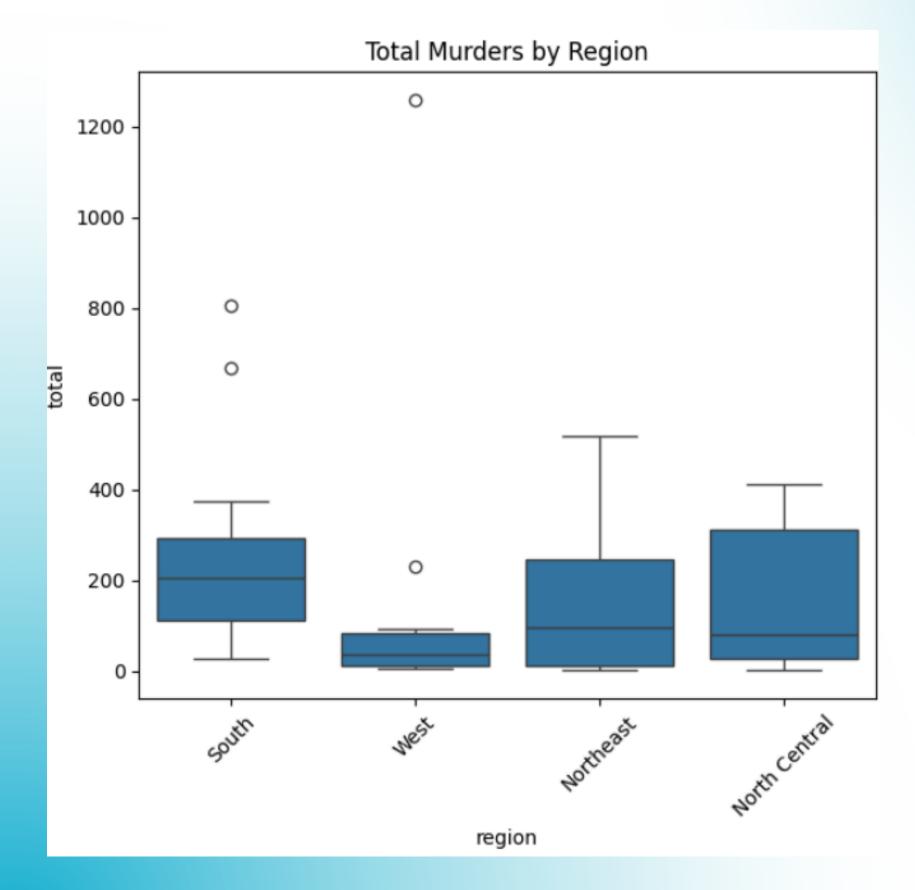


Regional Analysis



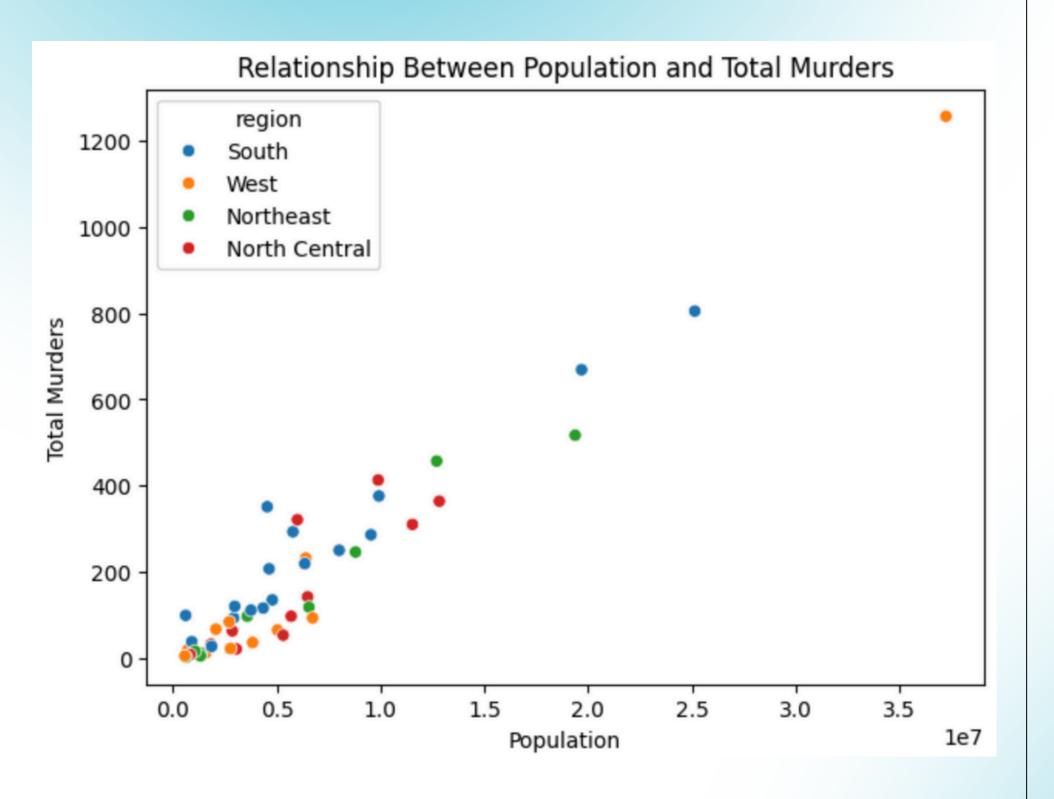
Population: The South and West regions show larger variations in state populations, with some highly populated states. The Northeast has generally lower populations among its states.

Murders By Region



Total Murders: The South has a higher range in murder totals, suggesting some states in this region experience significantly more incidents, potentially linked to higher populations.

Population vs. Total



Population and Total Murders Relationship:

- There's a positive correlation between population and total murders, as expected; states with larger populations tend to have higher murder totals.
- The relationship is consistent across regions, with outliers showing especially high murder rates in some highly populated states.



Conclusion

- Summary of Findings:
 - Population size strongly correlates with total murders, highlighting a potential scaling factor where larger populations have higher murder counts.
 - Regional differences suggest that the South has greater variability in both population and murders, indicating that certain states may need focused policy attention to manage crime rates effectively.

- Recommendations for Further Research:
 - A deeper analysis could examine specific factors (e.g., economic, social, or demographic data) within highpopulation states or regions like the South to understand influences on murder totals.
 - Further exploration of other crime metrics, if available, would offer a more comprehensive view of crime patterns across different regions and state populations.



If any questions

Email me at: ddiaz63@montgomerycollege.edu