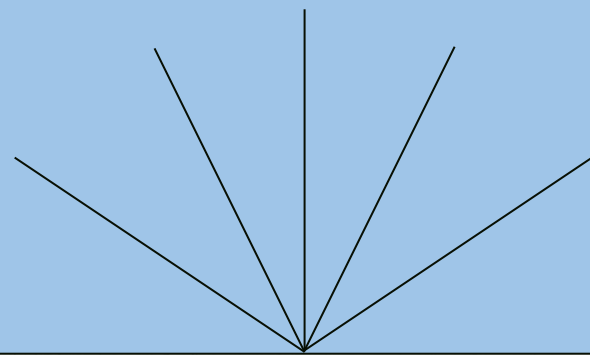


IS EDUCATION THE ANSWER?

*An investigation into the relationship
between education level and crime rates
in the United States*



Problem Statement

The project intends to investigate whether there is a correlation between the rate of crime in various states of the US and the level of education in those states.

Specifically, the research aims to ascertain whether a lower level of education correlates with a higher crime rate. This study is pertinent as understanding such correlations can help in informed policy-making and the allocation of resources in sectors like education and law enforcement.

CONTEXT

"...the typical offender is undereducated, unemployed and living in poverty before incarceration."

– United States Department of Justice

"... the first wave of school finance reforms in the 1970s and 1980s—which substantially increased school funding in low-income school districts—could have played a role in the Great Crime Decline..."

– National Bureau of Economic Research

PROJECT OVERVIEW

1. Exploration of Education Data

2. Exploration of Crime Data

3. Investigation Correlation Between Education and Crime

4. Creating a classifier

Data

Education Data

- Educational Attainment, United States Census, 2020
- For each state, lists the percent estimate of residents in that state who meet the following educational attainments, split up into 10-year age groups:
 - Less Than 9th Grade
 - Some high school
 - High school graduate
 - Some college
 - Associate's Degree
 - Bachelor's Degree
 - Graduate or other professional degree
- Accessed via file download

Crime Data

- Crimes Against Persons, Federal Bureau of Investigation, 2022
- Includes totals for:
 - Total offenses
 - Assault Offenses
 - Homicide Offenses
 - Human Trafficking Offenses
 - Kidnapping/Abduction
 - Sex Offenses
- Accessed via file download

Additional Data (Classifier)

Substance Abuse Data

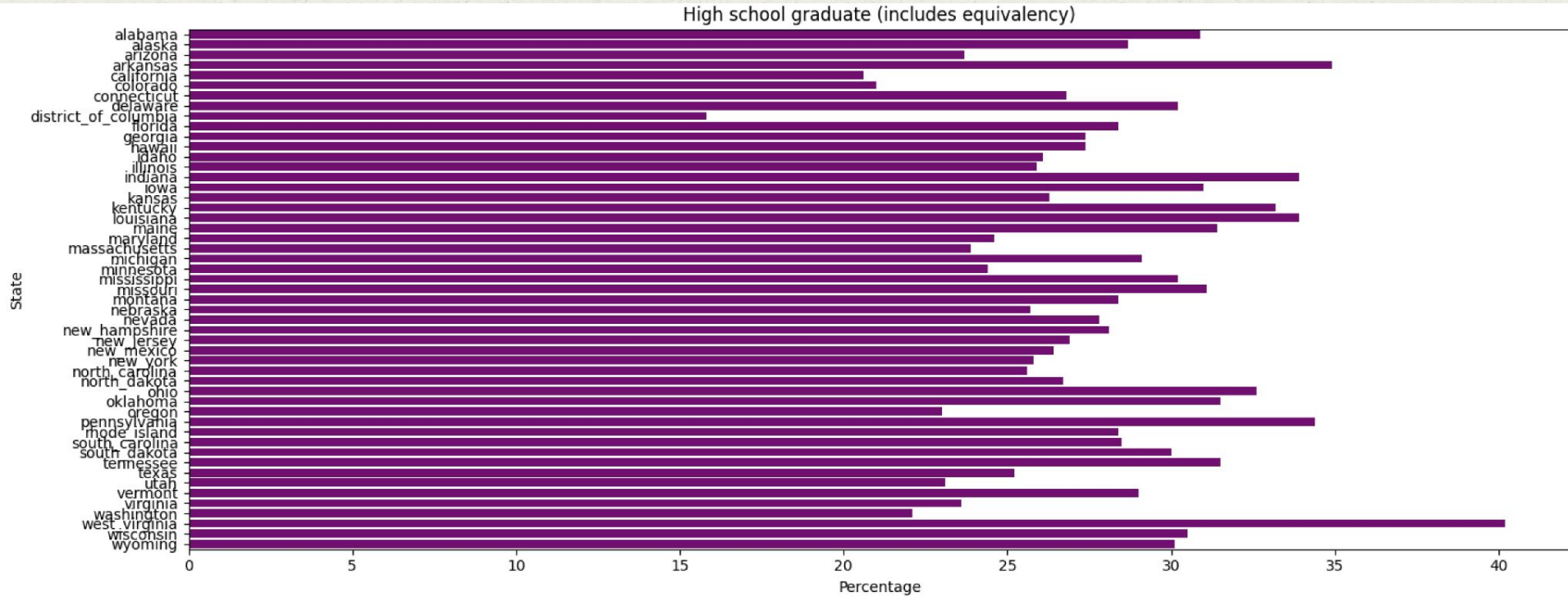
- Underlying Cause of Death - Unintentional Overdose, CDC, 2018-2021
- Includes Crude Rate of Unintentional Overdose per state
 - Crude rate = rate per 100,000 population
- Accessed via CDCWonder Database Query

Mental Health Data

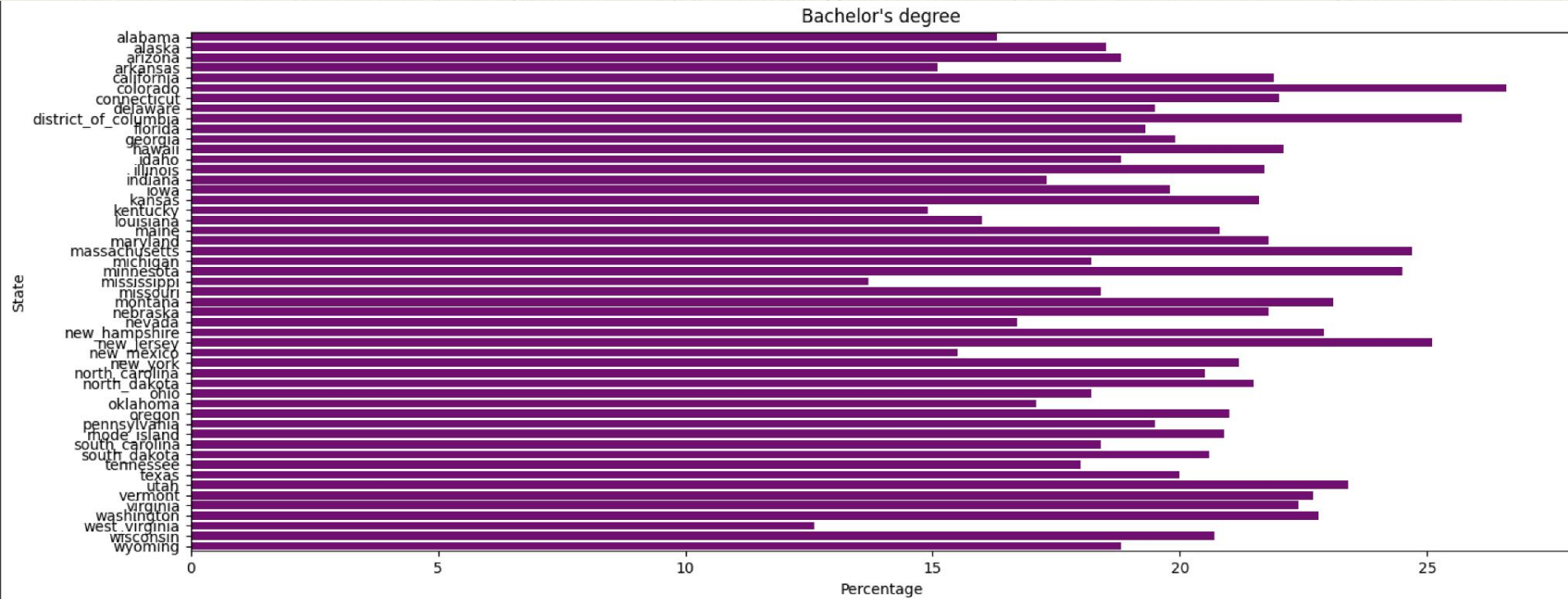
- Adults with Any Mental Illness, Mental Health America, 2022
- Includes percentage of people in each state with any mental illness
- Accessed via web scraping



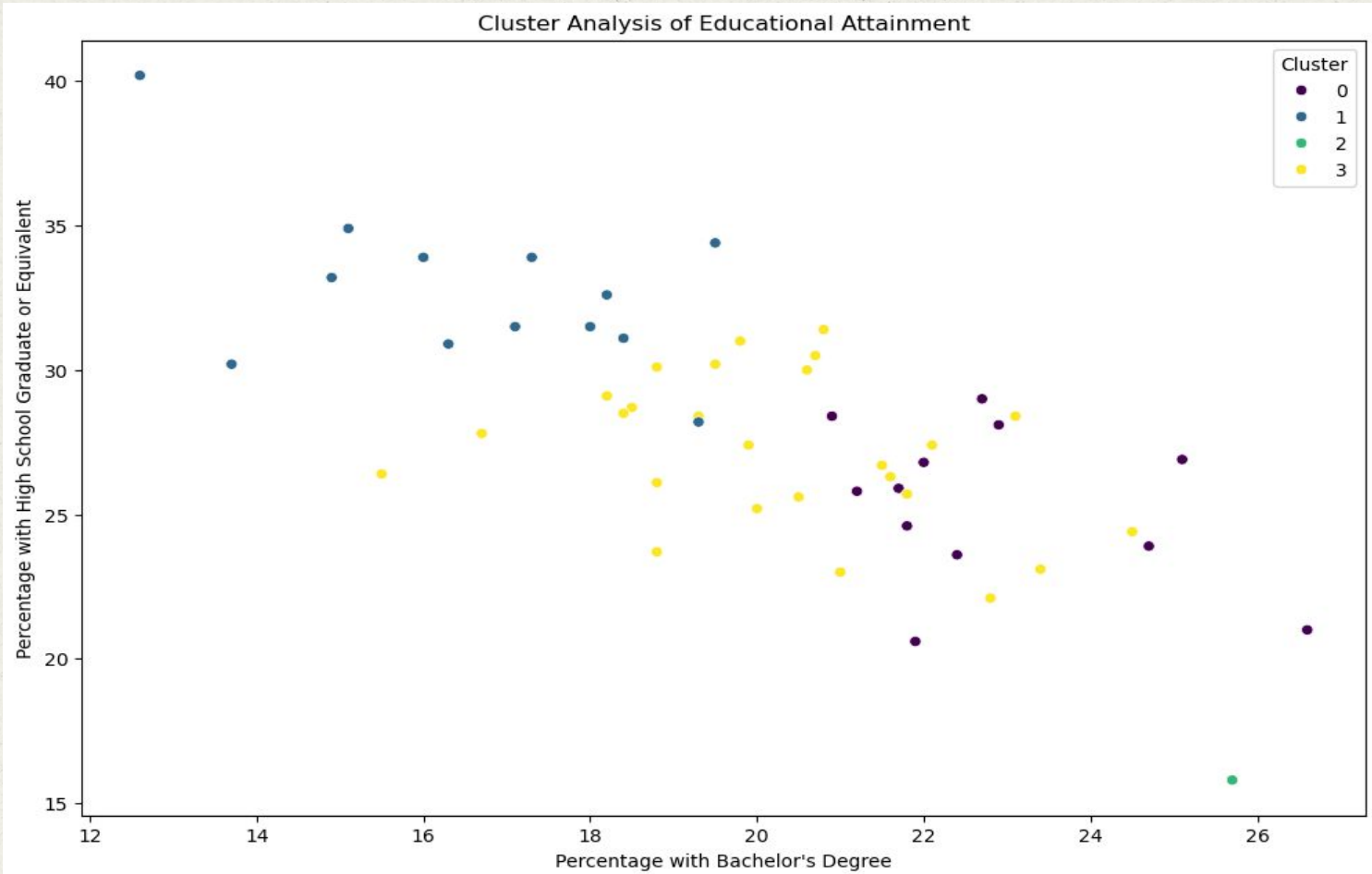
Analysis of Education Data



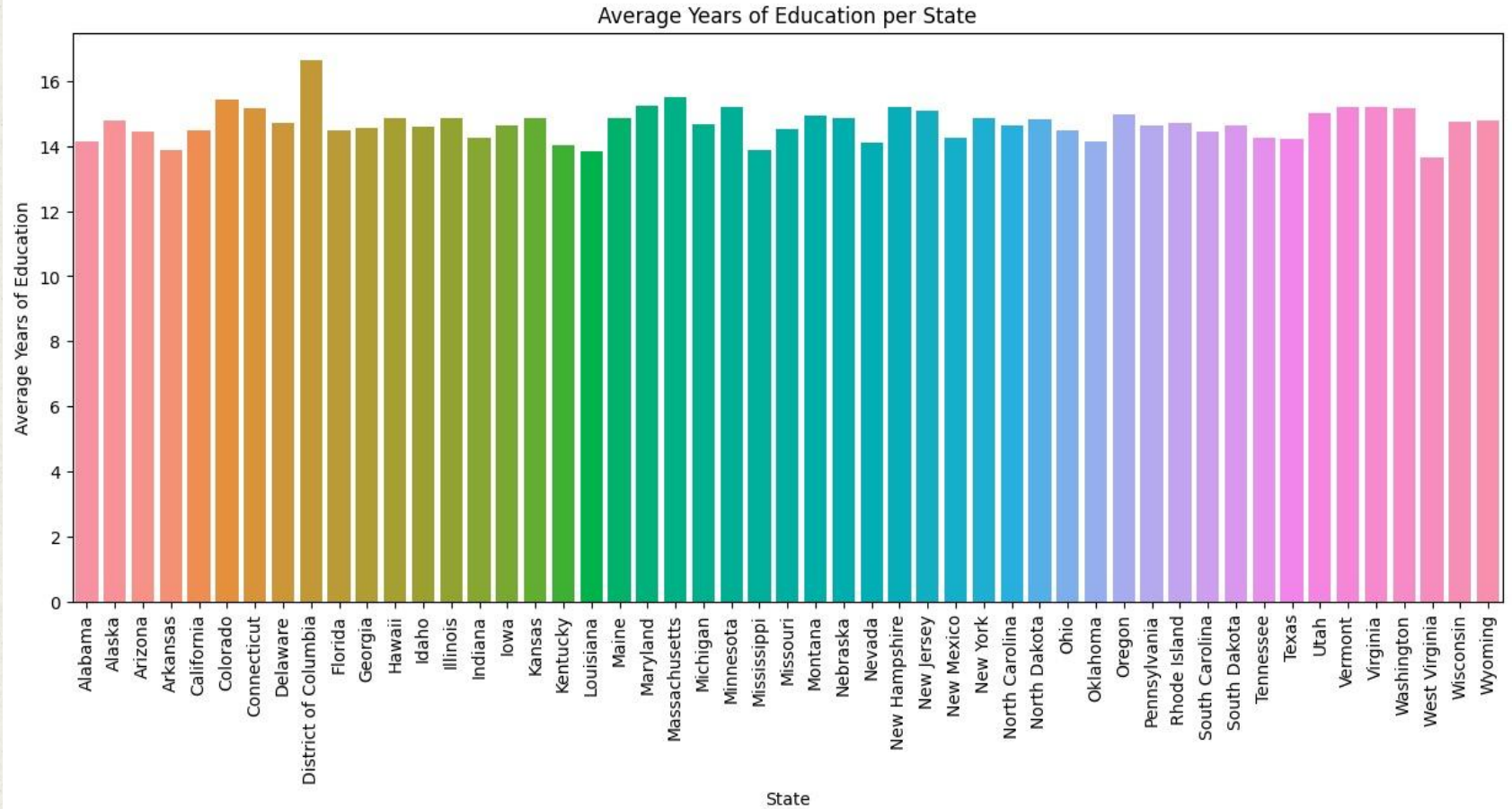
Analysis of Education Data



Analysis of Education Data

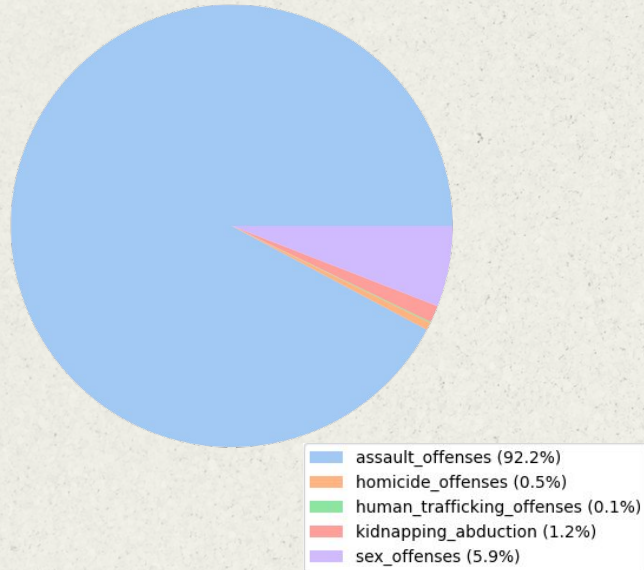


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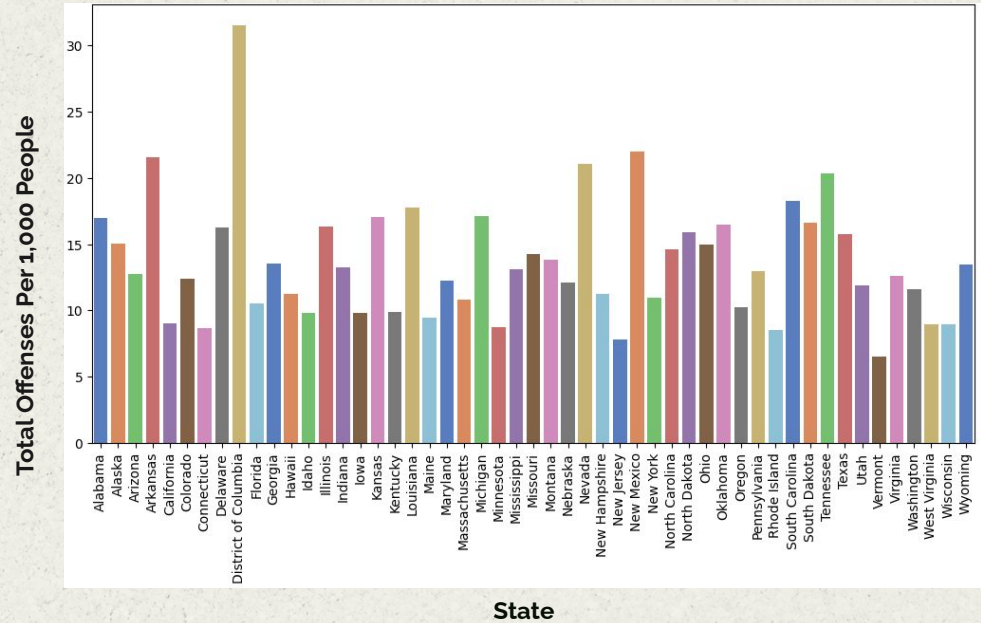


Analysis of Crime Data

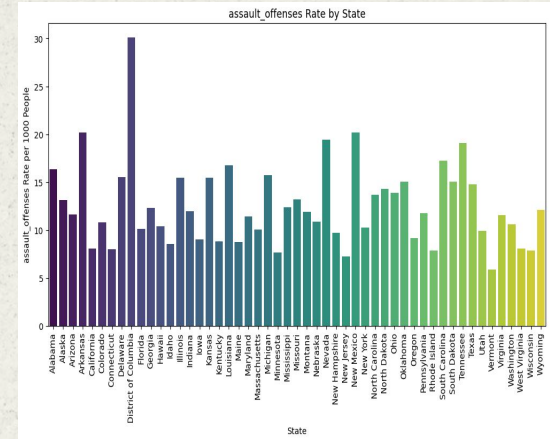
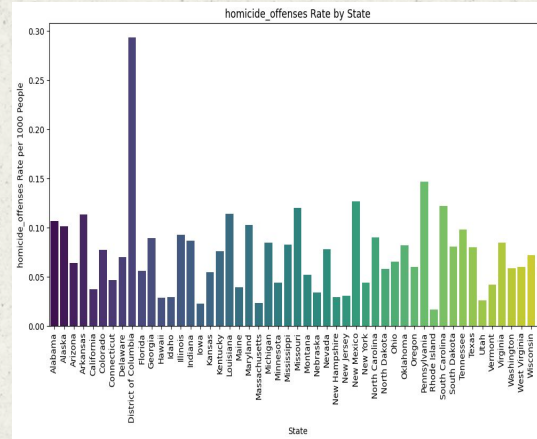
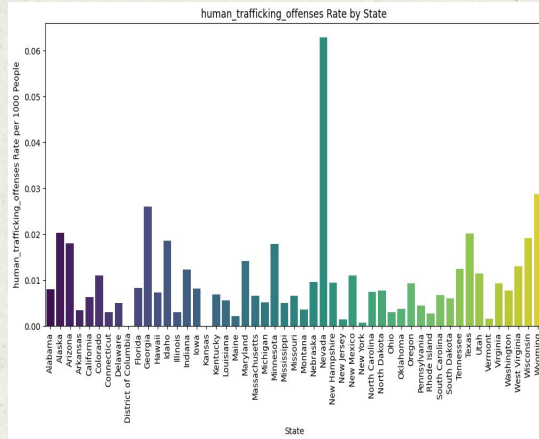
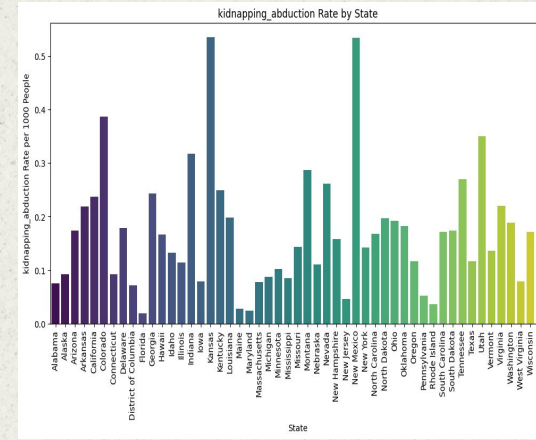
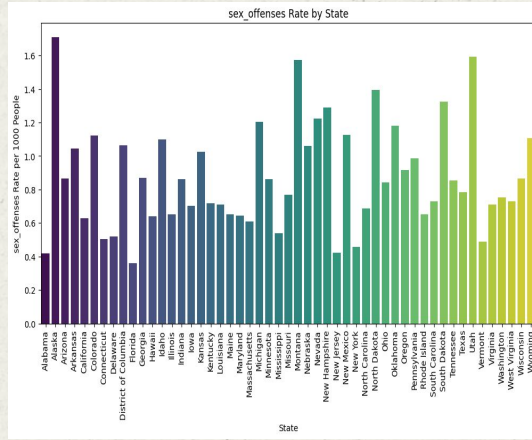
Distribution of Offenses



Total Offenses Rate Per 1,000 People by State

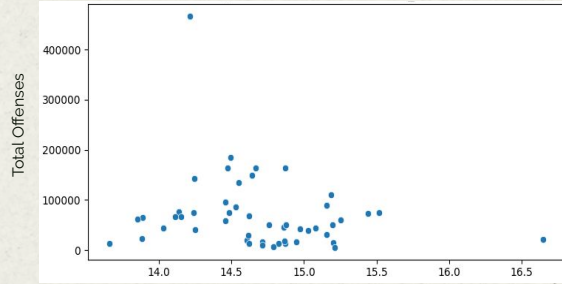


Analysis of Crime Data



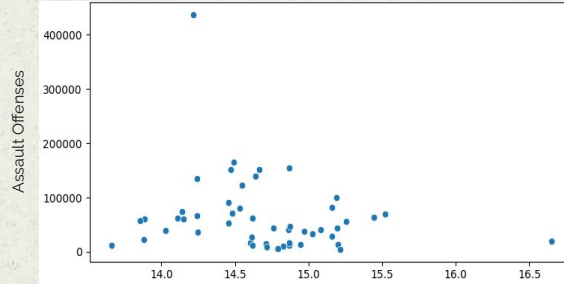
Investigation Into The Correlation Between Education and Crime

Average Years of Education vs. Total Offenses



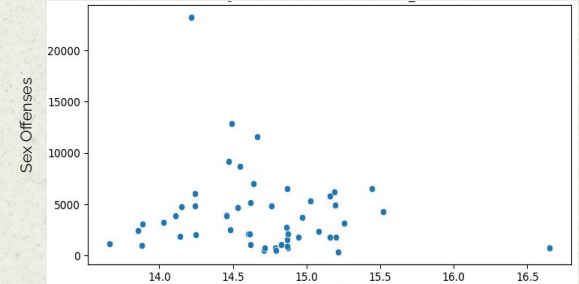
Average Years of Education

Average Years of Education vs. Assault Offenses



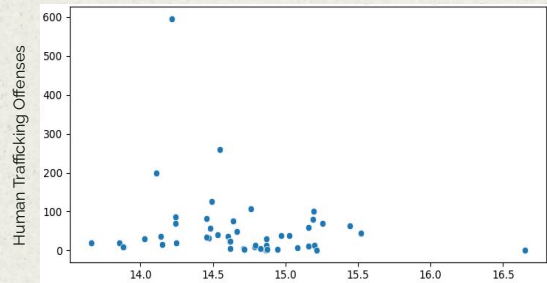
Average Years of Education

Average Years of Education vs. Sex Offenses



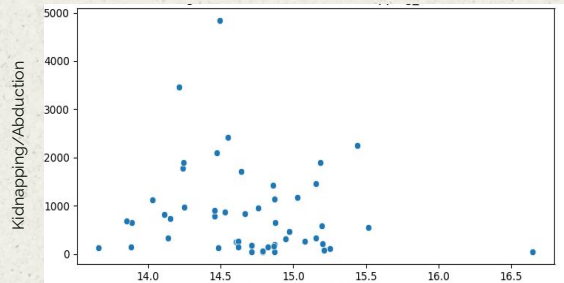
Average Years of Education

Average Years of Education vs. Human Trafficking Offenses



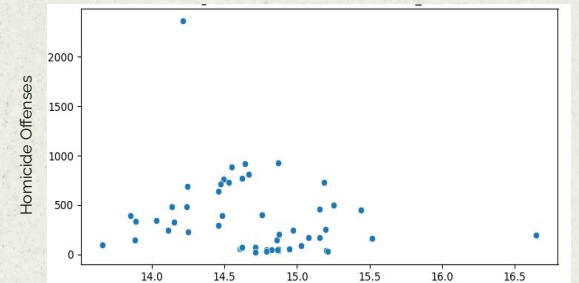
Average Years of Education

Average Years of Education vs. Kidnapping/Abduction



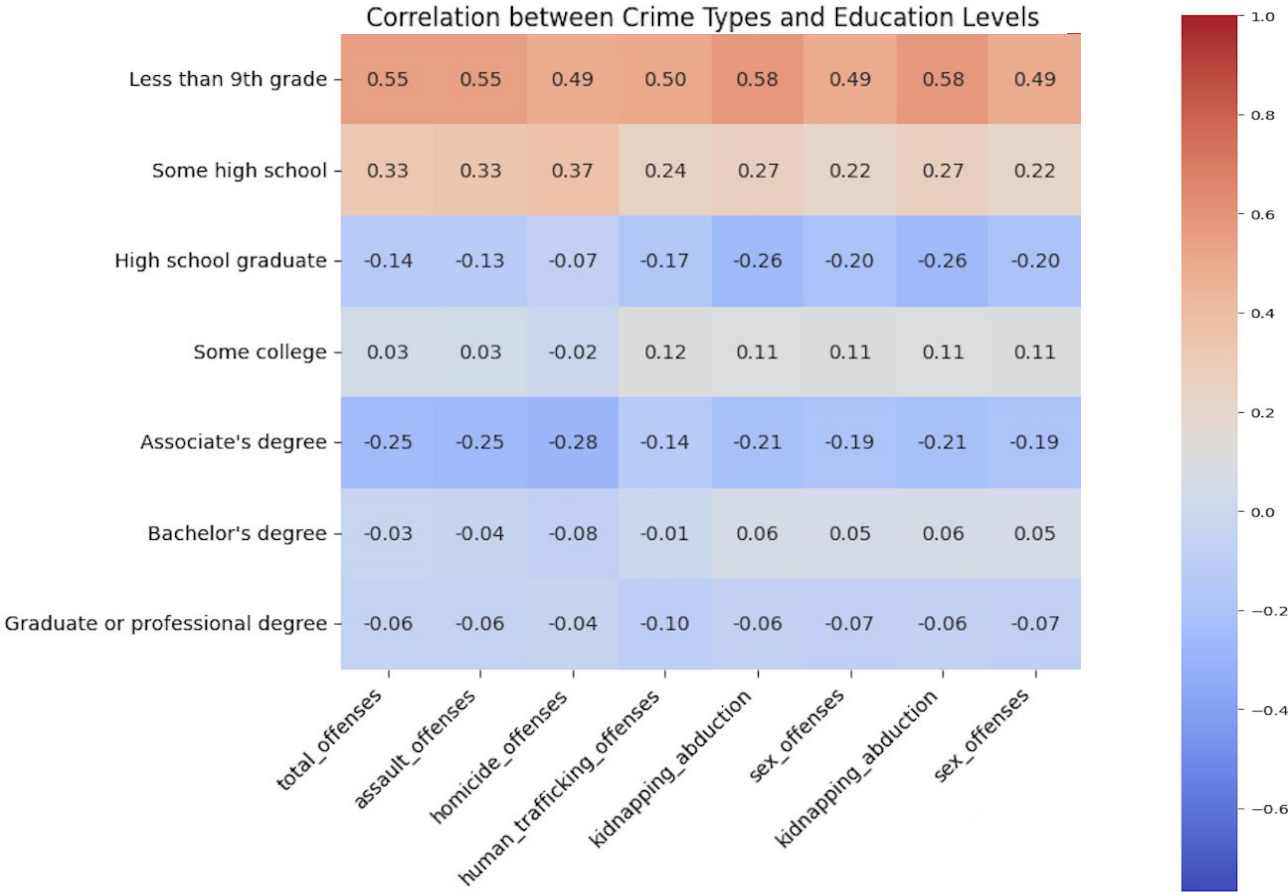
Average Years of Education

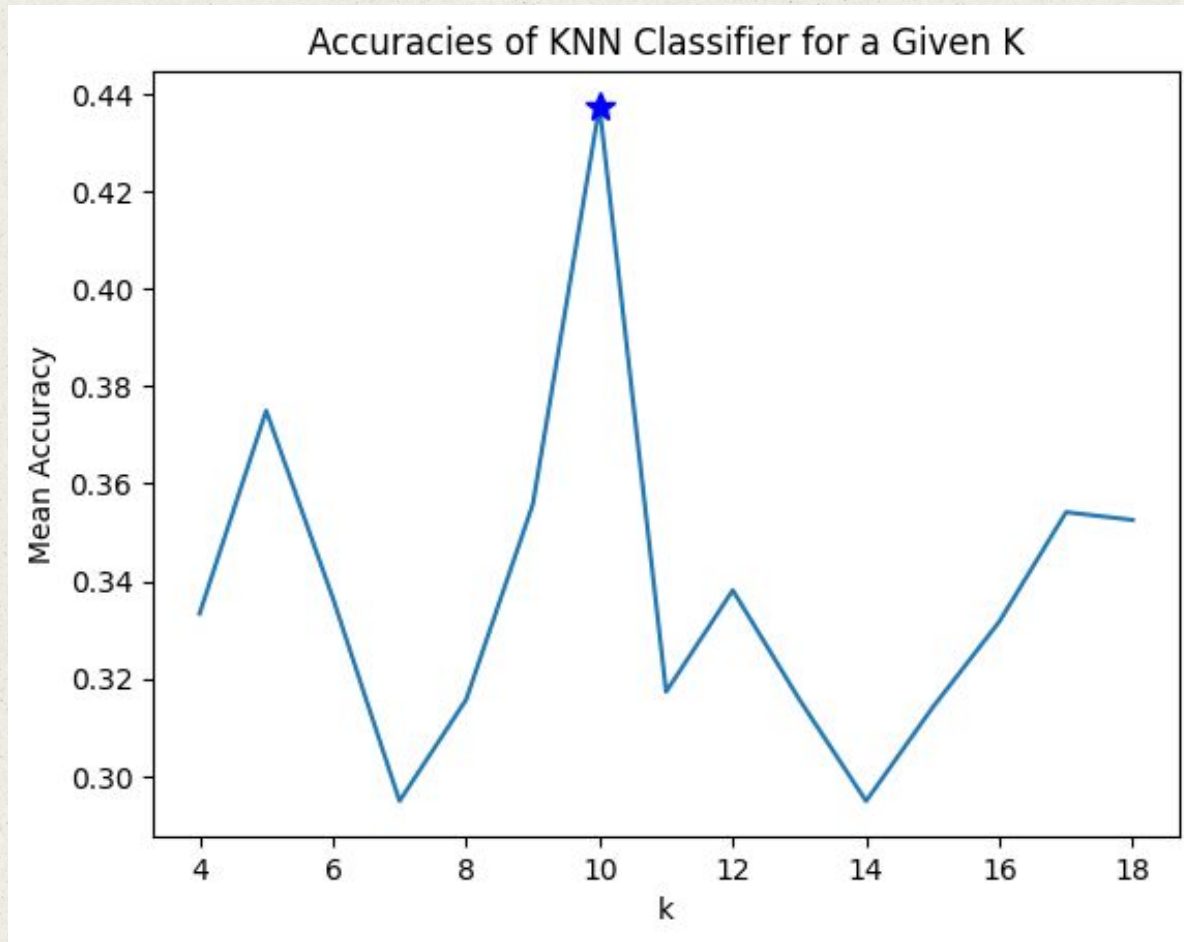
Average Years of Education vs. Homicide Offenses



Average Years of Education

Investigation Into The Correlation Between Education and Crime

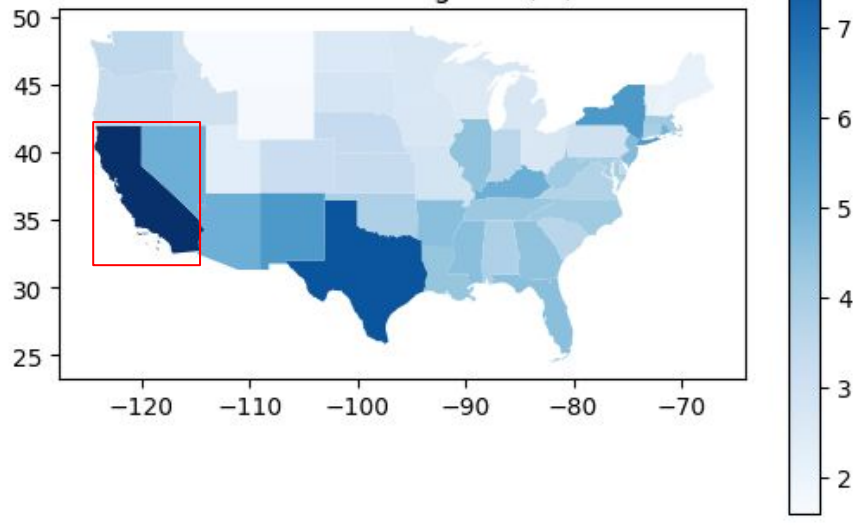




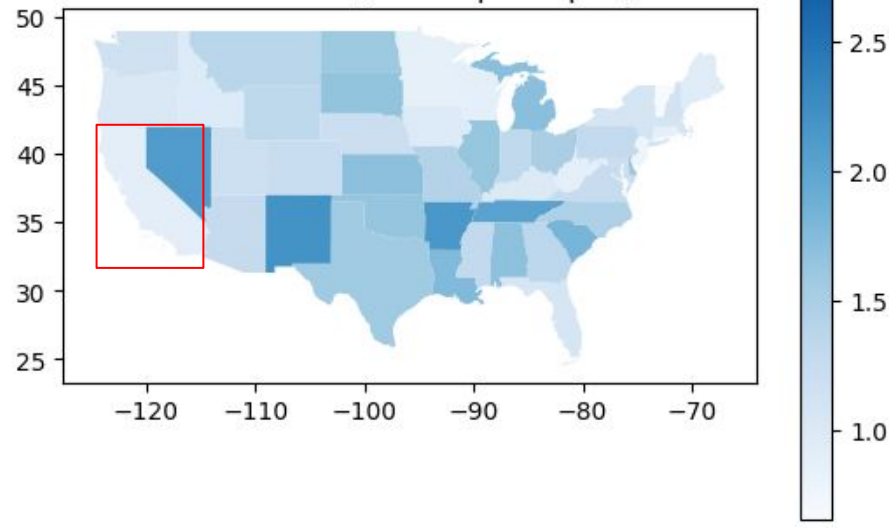
46.15%

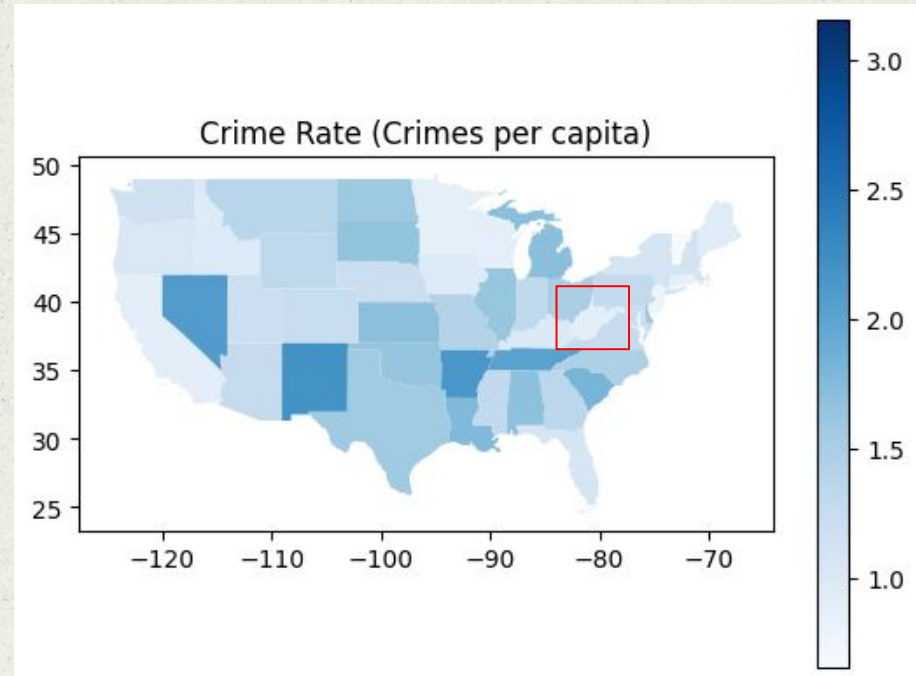
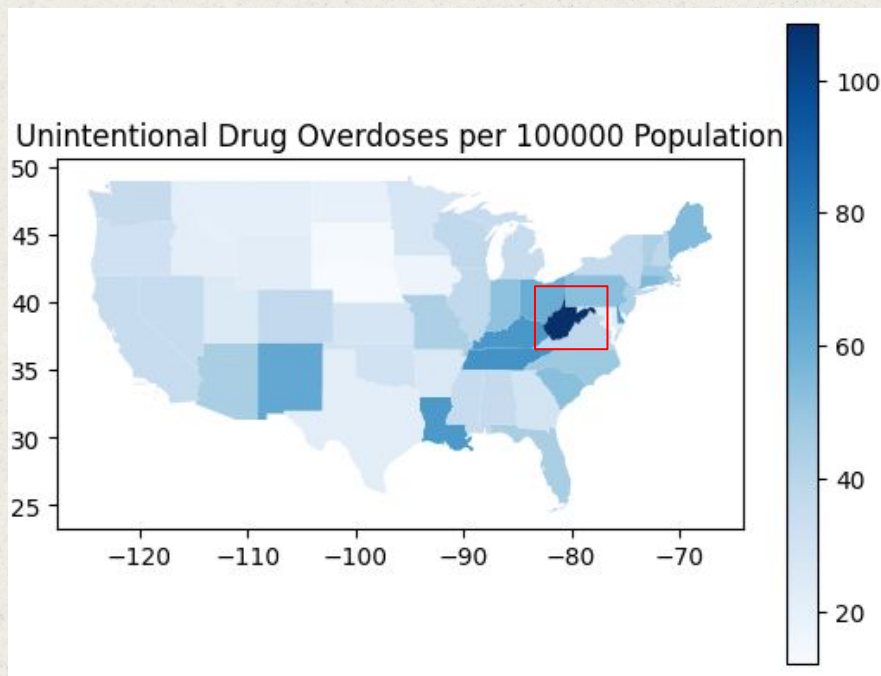
Accuracy of KNN Classifier, $k = 10$

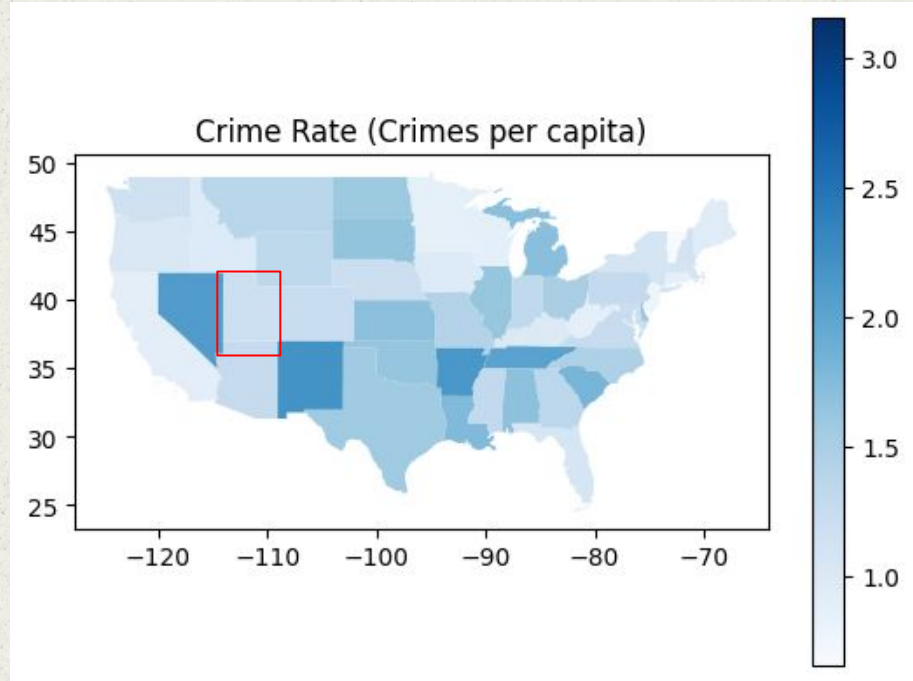
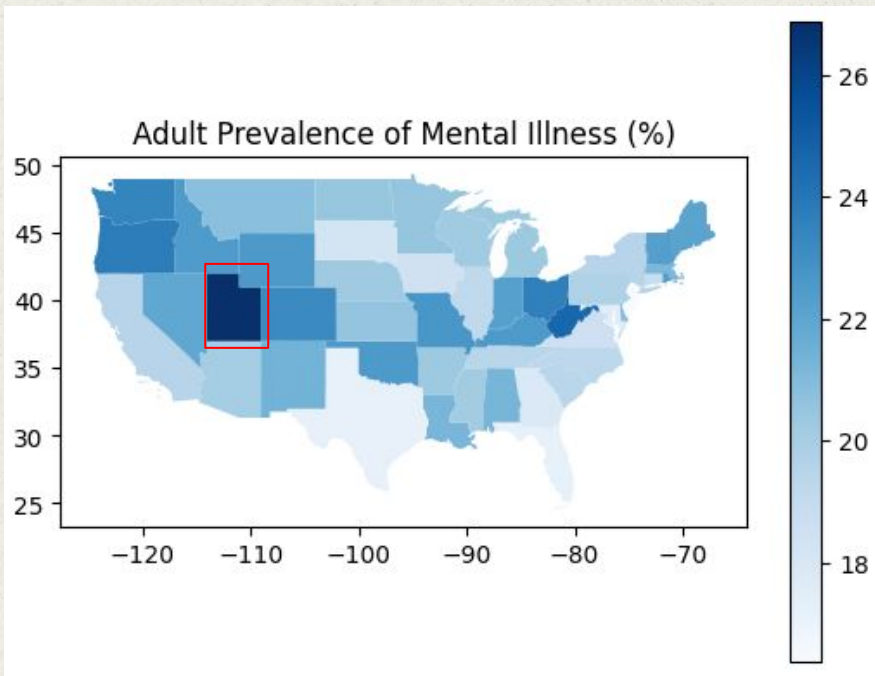
Less than 9th grade (%)



Crime Rate (Crimes per capita)







CONCLUSIONS



EDUCATION

Although we anticipated the correlation between education and crime to be high, our results showed that crime is not largely dependent on education.



FUTURE WORK

Investigate correlation between income levels and crime rates, using data on average household income and poverty rates.
