Project Summary

This project focused on crime in various Austin zip codes. In our analysis, we pulled crime statistics using the city of Austin’s crime report as well as census data of median household income, poverty rate, and education. We focused on three main points with our results.

1. How does the time of day, month, household income, poverty rate, and education affect crime rates in Austin?
2. How has the surge in population affected the crime rate in Austin?
3. What can our results suggest about the best places to live in Austin?

Our data was recorded from 2013-2019. As population has increased at a relatively high rate throughout these years, the crime rate in relation to population ratio has decreased, suggesting that crime per person as well as overall crime has decreased over the last few years. On average, crime increased seasonally in the summer months, with February having the lowest rate. We also analyzed crime activity based on quarters of the day. Crime seems to peak during the later hours (6pm - 11:59pm) and is lowest in the morning hours (6am - 11:59am). This was an expected result as people tend to be busier during daytime hours and the night is typically better suited for activities like theft, Austin’s most frequent crime type. Our heat map visualizes the concentration of these crimes by specific areas with most crimes occurring in the Downtown area. This phenomenon is likely due to the concentration of students and working professionals in downtown as well as a high number of people coming into downtown for entertainment purposes. Census data allowed us to look at median household incomes and poverty rates for the main Austin zip codes we were analyzing. We plotted number of crimes as well as the number of crimes per population ratio against poverty rate and saw a general increase in crime relative to poverty rate. Our analysis of crime per population ratio vs. number of crimes yielded an R value of .76, suggesting a correlation. This was only possible by merging data sets by zip codes, and we understand there may be discrepancies between census data and crime report data. Plotting household income against number of crimes provided similar results, suggesting that higher household income generally results in lower crime rates for a given area . When looking at education, we only used a bachelor’s degree level of education as the threshold. Looking at education levels against number of crimes, we found a lack of correlation between bachelor’s degree and crime rate. This could be due to the fact that bachelor’s degrees have become more common among people as well as a minimum requirement for many jobs. Considering more levels of education would improve our model.

These statistics on poverty, education, and household income were useful in looking at crime distribution throughout Austin’s zip codes. Taking this analysis into account, we can also point to specific areas of Austin that would be appealing to live in based on these key factors. The more livable zip codes would likely have higher income levels, lower poverty levels, and would likely be farther from downtown (if crime is a serious consideration).