# **Crimes in Baltimore**

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**Abstract**

Studying geographic and time-based crime patterns within the city of Baltimore, Maryland is crucial for academic research into the types of crimes committed, as well as for determining and implementing laws and policies to reduce crime within the city. Using this data analysis will allow policy makers for the city of Baltimore to draw more insightful conclusions, as well as make more appropriate geographic and time-based decisions. This presentation utilizes the Open Baltimore database through Kaggle, which consists of more than 80,000 recorded crimes between the years 2012-2017. This dataset is public and open for analysis and distributed by the city of Baltimore. The data was processed to harmonize geographic districts, days of the week, hours of the day, offense categories, and annual crime rates. Various exploratory data visualizations were used to present these findings regarding crime rates in complement to location, time of day, day of the week, offense category, and by the type of offense.

Using the resulting data analysis, conclusions can be drawn regarding four main focuses. First, the data reflects that more crimes are committed in the Northeast and Southeast districts of the city. Second, most crimes are common assaults and committed by hands. Third, the data shows most crimes are committed from the evening to night hours and on weekends. Last, it can be seen from the data that the crime rate tends to rise in the spring and summer months, and that crime was relatively high in 2012, then trended downwards through 2014, where it then trended back upward to its peak in 2016 and was then followed with a dramatic drop off in 2017. This presentation will show the relationships within this data and the resulting conclusions and can serve as a piece for further academic advancement into crime research in Baltimore, and bureaucratic decision making to lower crime rates.

***Keywords****:* Baltimore crime, crime data, geographic crime, time-based crime, exploratory analysis.

*References: Kaggle, stackoverflow.com, plotly.com*