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Project Proposal

## Washington, D.C. Crime Incident Analysis & Forecasting

**Introduction**

Data Analysis and visualization are essential tools for law enforcement today. Crime is always a dataset that will, unfortunately, exist and grow. Also, criminals today are getting smarter and smarter as more advanced technology is readily available for communication, surveillance, proactive targeting, and harmful devices to others or their property. As such, the need for innovation in criminal analysis and data visualization must progress as well, so analysts can improve the sharing and use of information.

**Objectives**

The primary objective of this project to visualize crime statistics of the Washington, D.C. area from 2010 to 2020 to date. The data will come from Open Data DC which updates every 2 days with the latest crime incidents that have occurred in the city. There are close to 400,00 records available for analysis and visualization which includes features such as coordinate locations, type of crime, whether a weapon was used and if so what, time of day, and local precinct area. Through inimitable and creative interactivity, we will begin to see how criminal activity has changed over time, begin to understand how it is evolving using time-series forecasting, and ultimately figure out where to prioritize law enforcement resources to deter crime from occurring. Visualizing large datasets can be tricky to prevent overloading the audience. Therefore, careful data pre-processing will have to be implemented to maximize the best visualizations.

**Proposed System and Platform**

The project will be presented in the form of an HTML webpage with CSS. The visualizations for this project will be created with JavaScript Google Visualization API, ArcGIS, and Tableau. Initial data pre-processing and exploratory analysis will be implemented using R and Python programming.