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ETL Project Topic: **Weather Relation to Crime**

Hypothesis: Weather forecasts (e.g. rain, temperature, snow, etc.) affect crime types, rates, and demographics.

Null Hypothesis: Crime occurs irrespective of weather overcast.

Description: Weather relates to crime rates and crime types, using weather API and crime statistics gathered from Kaggle and local city websites. Visually and analytically evaluate crime patterns by type of crime in relation to weather and time of day. This will potentially include various diagrams such as Sunburst and Sankey as well as geo-mapping techniques such as heat-mapping. Any results could prove useful for law-enforcement agencies to employee flexible staffing during certain types of forecasts.

**Weather Data:**

Dark Ski API: <https://darksky.net/dev>

Description: Weather data including overcast, rain, snow, etc. which can be pulled to correlate with time of day that which the crime was committed.

**Crime Data:**

Chicago, IL: <https://www.kaggle.com/chicago/chicago-crime>

Atlanta, GA: <http://www.atlantapd.org/i-want-to/crime-data-downloads>

Boston, MA: <https://data.boston.gov/dataset/crime-incident-reports-august-2015-to-date-source-new-system>

Los Angeles, CA: <https://www.kaggle.com/cityofLA/los-angeles-crime-arrest-data>

Denver, CO: <https://www.kaggle.com/paultimothymooney/denver-crime-data/downloads/denver-crime-data.zip/39>

Description: Data Ranges over the past 5 years (approx.), summarizing crime type, day, and time of day each with millions of datapoints. Cities are selected for their wide range of weather patterns to allow for a variety of trend possibilities to be analyzed.

**Combined Data:**

Once the data has been cleaned and combined, which was completed with Python and SQL. There are more than 2.87 million rows with 7 applicable columns calculating to approximately 20.9 million datapoints. The data contains the following categories.

