# phase 1: Project requirements

# San Francisco Crime Incidents and Trend Analysis



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**INTRODUCTION**

Crime investigation is a law implementation work that includes methodical examination for recognizing and dissecting examples and patterns in crime. Data on crime activities can help law authorization officers assess crimes in a progressively successful way, and help criminologists in recognizing and catching suspects. Crime investigation likewise assumes a job in contriving answers for criminal activities and planning police counteractive action techniques. Quantitative sociology information investigation strategies are a piece of the crime examination process.

This project deals with analyzing the criminal records for betterment of public safety. The crime analysis process occurs mainly in following phases

* Collection
* Collation
* Analysis
* Dissemination
* Feedback

The crime analysis process is not linear; it is cyclical in that each step in the process can inform subsequent steps as the analyst gains insight and receives feedback.

**MOTIVATION & PURPOSE**

Crime analysis can help the Police department work effectively towards the goal of public safety. This project helps in recognizing various pattern of crime reports and incidents to help the local police department work efficiently. San Francisco is a popular city and there has been surge in population of city, which has led to increase in criminal activities. This Analysis system can help people of San Francisco by making them aware of the threats and crimes being committed in city and carry out preventive measures. This system projects various trends in crimes and can help law enforcement agency to enforce more stricter laws to reduce the disorder in the city.

**Possible Database Queries**

1. Determine the time of day when most crime happen.
2. Find the most committed crime.
3. Find a particular area of city where most of the crime happen.
4. Determine the number of cases resolved in San Francisco.
5. Determine the safest area of the city.
6. Determine the time and a particular area where there is maximum probability of crime scene.
7. Find if reporting the crime online as soon as crime is committed can help resolve the issues faster.
8. Find the most committed crime in every district of San Francisco.
9. Find the type of crime which is hardest to resolve.
10. Determine the time period when the crime is least likely to happen.
11. Determine the most prevalent crime committed in a certain region.

**TRENDS**

**Trend 1:** Find a certain police station which is most active in its affinity and other police station which is least effective.

Graph Type: Maps

**Trend 2:** Find the region in town where the robbery and theft cases are reported more and use a line graph to find the increase in offenses over time.

Graph Type: Line

**Trend 3:** Heat map of the crimes occurring in the specific region per month. The months can be changes with the help of a slider.

**Trend 4:** Find the crime information at a certain location on map within a given radius. The center point and radius can be inputted by users.

**Trend 5:** Find the crime information at a certain location on map within a given polygon. The polygon can be inputted by users.

**Trend 6:** Pie chart of various crimes committed in a single year. The user inputs the year.

**Trend 7:** Top 5 most unsafe college graph with the number of crimes in the college area.

**DATASET**

* Records of police incident filed by law enforcement officers and individuals through the self-service online reporting for non-emergency cases released by the San Francisco police department. <https://data.sfgov.org/Public-Safety/Police-Department-Incident-Reports-2018-to-Present/wg3w-h783>
* SF Police Calls for Service and Incidents <https://www.kaggle.com/san-francisco/sf-police-calls-for-service-and-incidents>
* “American University Data” IPEDS dataset <https://www.kaggle.com/sumithbhongale/american-university-data-ipeds-dataset>

**Software Stack**

Frontend

* HTML
* CSS
* Bootstrap

Backend

* Python- Django Framework

Database

* Oracle database (instance running on CISE servers)

**References**

1. Crime Analysis, <https://en.wikipedia.org/wiki/Crime_analysis>