

# Project Plan

## Crime Data Analysis for Control and Prevention

### Project Overview:

This project aims to analyze crime data from 2020 to the present to identify patterns and trends that can help control crime rates in specific areas. By understanding key factors such as crime types, locations, and timing, I will generate insights that assist law enforcement agencies and policymakers in implementing targeted crime prevention strategies.

### Dataset Overview:

Data set was obtained from Data.gov (<https://catalog.data.gov/dataset/crime-data-from-2020-to-present>). The dataset contains records of crimes committed from 2020 to the present. It includes the following fields:

- **Crime Type:** The type of crime (e.g., robbery, assault, vandalism).
- **Date and Time:** When the crime occurred.
- **Location:** The area or address where the crime happened.
- **Arrest:** Whether an arrest was made.
- **Weapon Used:** Information on whether a weapon was involved.

The dataset will be cleaned and explored to identify trends and outliers that can guide decision-making.

### Data Structure:

The dataset consists of multiple columns, including crime type, location, date, and arrest information. A thorough analysis of each field will help understand the relationships between these variables and how they contribute to crime trends.

### Data Quality:

- **Completeness:** The dataset will be checked for missing values, particularly in crucial fields like "Crime Type" and "Location."
- **Accuracy:** The date and time formats will be validated, and I will check for duplicate records.
- **Consistency:** I will ensure consistent labelling of crime categories and geographical data.
- **Timeliness:** The data will be evaluated to confirm that it includes recent crime incidents, ensuring its relevance for current decision-making.

### Challenges and Questions that data might not address:

- **Motivations for Crimes:** The data does not capture the social or psychological motivations behind criminal behaviour.
- **Unreported Crimes:** Crimes that are not reported to the police are not included, leading to gaps in understanding the full scope of criminal activity.

### Questions to Address the Initiative:

To understand and control crime, the following basic questions will be explored:

1. **What are the most common types of crime in specific areas?**

Helps allocate resources effectively by identifying crime hotspots and targeting specific types of crime.

2. **When do crimes occur most frequently (by time of day, day of the week)?**

Aids in planning police patrols and community outreach during peak crime periods.

3. **Are certain crime types more likely to involve weapons or lead to arrests?**

Helps law enforcement predict the severity of crime and adapt response strategies accordingly.

**Target Audience for Insights:**

- **Law Enforcement Agencies:** They can use the insights to allocate resources more effectively, schedule patrols, and prioritize investigations.
- **Community Leaders:** Insights can be shared with community leaders to create local initiatives aimed at reducing crime through outreach and engagement.

**Project Milestones:**

1. **Milestone 1: Data Cleaning & Preprocessing**

Clean the dataset, address missing or inconsistent values, and prepare the data for analysis.

2. **Milestone 2: Exploratory Data Analysis (EDA)**

Visualize crime trends, including common crime types, high-crime locations, and time-based patterns.

3. **Milestone 3: Insight Generation & Reporting**

Generate actionable insights for law enforcement and policymakers and create a report outlining the key findings and recommendations for crime prevention strategies.