**Problem Scenario:**  
Crime analysis plays a vital role in maintaining law and order in any area. It enables police departments and law enforcement agencies to recognize crime patterns, which is essential for effectively planning crime prevention initiatives. The goal of crime data analysis is to assist police operations, such as criminal investigations, arrests, prosecution, and the development of strategies to prevent and reduce crime.

**Problem Objective:**  
As a data scientist, your task is to create a dashboard that keeps the police department and the city informed about crime statistics. You are required to build a dashboard or data story using Tableau for a communication website, with a focus on effective data storytelling.

Note: Download Crime data from the course resource section in the LMS.

Variable Description:

ID: A unique identifier for each record.

Case Number: The police department's case number, which is unique to each incident.

Date: The date when the incident occurred. Please note that this may sometimes be an estimate.

Block: A partially redacted address that provides the general location of the incident (usually on the same block as the actual address).

UCR (Uniform Crime Reporting) Code: A code that is directly linked to the Primary Type and Description, providing standardized classification.

Primary Type: A primary description of the incident based on the UCR code.

Description: A secondary description of the incident, offering further details and subcategories of the primary description.

Location Description: A description of the location where the incident occurred.

Arrest: Indicates whether an arrest was made in connection with the incident.

Domestic: Indicates whether the incident involved domestic issues.

Beat: Represents the specific beat or police geographic area where the incident took place. Beats are the smallest police divisions.

District: Indicates the police district where the incident occurred.

Ward: Represents the ward, which corresponds to the city council district, where the incident occurred.

Community Area: Indicates the community area where the incident took place.

NIC (National Incident Code) Code: A code used to classify crimes nationally.

X Coordinate: Provides the x-coordinate of the location where the incident occurred, typically in state plane coordinates.

Y Coordinate: Provides the y-coordinate of the location where the incident occurred, typically in state plane coordinates.

Year: The year when the incident occurred.

Updated On: The date and time when the record was last updated.

Latitude: The latitude of the location where the incident occurred.

Longitude: The longitude of the location where the incident occurred.

Location: A location description in a format that enables mapping and geographic operations on this data portal.

Steps to perform:

**Overall Crime Statistics Dashboard:**

1. For personnel and resource management, the department needs to understand the count and types of crimes reported across the city. Mark the locations on a geo-map highlighting the locations with recent criminal history.
2. Identify the most common criminal incidents reported.
3. In this introductory dashboard, include a live crime feed to exhibit the total number of crimes reported to date for the current year and the most recently reported crime with their time and locations.

**Time Period Analysis Dashboard:**

Along with locations, the study of crime statistics across time statistics is also crucial for understanding the patterns and planning those preventive strategies. a. Study distribution count of crime incidents across different time periods such as day of the week or hour. b. Further explore the percentage of incident reporting for several time blocks (afternoon, evening, early morning, etc.).

**Trend Analysis Dashboard:**

1. Create a dashboard to study the change in crime rate over different years.
2. Compare the change in the incident reporting over the years for the same date and time.

**Comparative Analysis:**

1. Study the distribution of incidents reported where an arrest was made vs. not.
2. Identify what percentage of the reported incidents under each incident category are domestic.

**Dashboard for Crime analysis using tableau.**







