**Crime Analysis Dashboard using Tableau**

**1. Introduction**

Crime analysis is crucial for law enforcement agencies to track crime trends, allocate resources efficiently, and develop preventive strategies. This project aims to create an interactive Tableau dashboard for crime analysis using historical crime data.

**2. Data Source**

Dataset: Crime\_data.xlsx

Columns: ID, Case Number, Date, Block, Primary Type, Description, Location Description, Arrest, Domestic, Beat, District, Ward, Community Area, NIC Code, X Coordinate, Y Coordinate, Year, Updated On, Latitude, Longitude, Location

**3. Steps to Implement**

**Step 1: Data Preparation**

Load the dataset into Tableau.

Ensure correct data types:

Date → Date format

Latitude, Longitude → Geographical fields

Primary Type, Description → Categorical fields

**Step 2: Creating the Overall Crime Statistics Dashboard**

Map of Crime Locations

Drag Latitude and Longitude to create a geographic map.

Use Primary Type as a color-coded filter.

Adjust size to reflect crime density.

Crime Frequency by Type

Create a bar chart with Primary Type on the x-axis and COUNT(ID) on the y-axis.

Sort in descending order to highlight the most reported crimes.

Live Crime Feed Panel

Display total crimes for the year using COUNT(ID).

Show the most recent crime using MAX(Date) and related details.

**Step 3: Time Period Analysis**

Crime Distribution by Day of the Week

Create a bar chart using WEEKDAY(Date) to show incident counts per day.

Crime Percentage by Time Blocks

Create a calculated field for time categories:

Early Morning: 12 AM - 6 AM

Morning: 6 AM - 12 PM

Afternoon: 12 PM - 6 PM

Night: 6 PM - 12 AM

Display the distribution as a pie chart.

**Step 4: Trend Analysis**

Yearly Crime Trends

Use a line chart with Year(Date) as the x-axis and COUNT(ID) as the y-axis.

Comparison of Crimes on Same Dates Across Years

Create a filter to select specific dates.

Display trends for multiple years.

**Step 5: Comparative Analysis**

Crimes with Arrests vs. Without Arrests

Create a stacked bar chart with COUNT(ID), grouped by Arrest (Yes/No).

Percentage of Domestic Crimes per Type

Use a pie chart to show domestic crimes as a percentage of total crimes.

Calculate using SUM(Domestic)/COUNT(ID) \* 100.

**Step 6: Interactive Features**

Add filters for incident type, location, and time periods.

Enable hover tooltips and drill-down options.

**4. Conclusion**

The Tableau dashboard provides insights into crime patterns, locations, and trends. It helps law enforcement plan resource allocation, predict high-crime periods, and develop crime prevention strategies.