**FBI Crime Analysis Dashboard Report**

**Dataset Selection :**

I used the FBI Crime Dataset in my EDA Project. The data includes information such as crime types, geographical coordinates (latitudes and longitudes), neighbourhood details, and time stamps, allowing for a comprehensive analysis of both spatial and temporal patterns in crime data. By understanding when and where crimes are most likely to occur, law enforcement agencies can optimize patrol schedules, allocate personnel more efficiently and deploy resources where they are needed most.

**Dataset Description:**

**TYPE:** Category of the crime (e.g.,”Other Theft”)

**HUNDRED\_BLOCK:** Street block where the crime occured.

**NEIGHBOURHOOD:** Neighbourhood where the crime took place

**X:** X-coordinate of the crime location

**Y:** Y-coordinate of the crime location

**Latitude:** Latitude of the crime location

**Longitude:** Longitude of the crime location

**HOUR:** Hour of the day when the crime occured.

**MINUTE:** Minute of the hour when the crime occured.

**YEAR:** Year of the crime

**MONTH:** Month of the crime

**DAY:** Day of the month when the crime occured.

**Date:** Full date when the crime occured.

**Overview of the Dashboard:**

I have done the Data Preprocessing and Data cleaning and using that train\_clean dataset here for the visualization.

The FBI Crime analysis dashboard provides an interactive and visual representation of crime data. It offers insights into various crime types, their distribution across time, neighbourhoods and other key dimensions. The dashboard enables users to filter the data by crime type, year and month for a more focused analysis.

**Key Metrics and Insights**

**1- Total Crimes**

* 429.9K total crimes recorded in the dataset
* The most common crime type is “Theft from Vehicle”.

**2- Crime Distribution by Type**

* The crime distribution is represented in a pie chart.
* Theft from Vehicle accounts for the highest percentage (35.8%)
* Other major crime types include:
* – Mischief (14.71%)
* – Break and Enter Residential (13.16%)
* – Other Theft (10.14%)
* – Several other crime types contribute to the remaining percentages.

**3- Crimes by Neighbourhood and Type**

* A treemap visualization categorizes crimes by neighborhoods.
* The Central Business District, Fairview, and Mount Pleasant seem to have a higher concentration of crimes.
* Different colors and sizes in the treemap help differentiate crime intensities across areas.

**4- Crime Patterns by Hour**

* A bar chart shows crime occurrences by hour.
* Crime incidents peak around evening and night hours (16:00 - 22:00).
* Early morning hours (0:00 - 6:00) show lower crime rates.

**5- Crime Trends by Year**

* A line graph represents the trend of crime occurrences over the years.
* Some crime types have seen a decline, while others have remained steady or fluctuated over time.

**6- Crime Distribution by Day Type**

* A donut chart differentiates crimes occurring on Weekdays vs. Weekends.
* Weekdays account for 70.94% of crimes.
* Weekends have a lower crime count (29.06%), but still a significant proportion.

**Dashboard Design and Functionality**

* The dashboard follows a dark-themed modern UI with a gradient background.
* Filters for Type, Year, and Month allow users to explore specific datasets.
* A mix of pie charts, bar charts, treemaps, and line charts ensures a comprehensive visualization.

**Key Takeways and Recommendations**

**Crime Prevention Strategies:**

* **Vehicle Security:**
  + Since vehicle-related crimes dominate, improved parking lot surveillance and anti-theft campaigns are necessary.
* **Nighttime Patrolling:**
  + With crime peaking at 11 PM - 12 AM, increased police presence is recommended.
* **Targeted Neighborhood Watch:**
  + Central Business District and West End should have more frequent patrolling.
* **Time-Based Measures:**
  + Use the time slicers to create time-specific strategies, such as weekend crime patrols.

**Dashboard Usage Tips:**

* Combine the Date and Hour slicer with the Crime Type slicer for detailed, time-specific crime analysis.
* Use the Geographical Map with the Crime Type slicer to visualize hotspot areas by crime type

**Conclusion :**

* The dashboard provides a comprehensive analysis of crime patterns, helping law enforcement and policymakers focus on high-crime areas and periods.
* By utilizing the slicers strategically, you can extract granular insights to develop effective crime prevention strategies.