Crime Data Analysis and Visualization

1. Problem Statement

Understanding crime trends is crucial for law enforcement, policymakers, and communities. The objective of this project is to analyze historical crime data to identify trends, patterns, and hotspots, providing actionable insights for better decision-making.

2. Dataset Summary

Total Rows: 474,565

Total Columns: 13

Key Columns: Date, Type of Crime, Location (Latitude, Longitude), Hour, Year, Day of the Week

3. Key Insights from Visualizations

Crime Trends Over Time:

* Crime Trends Over Time: Crimes have shown an increasing trend over the years.

1. Crimes have shown an increasing trend over the years.
2. Certain months have higher crime rates, possibly due to seasonal factors.

* Crime Distribution by Type:

1. Some crimes occur significantly more than others.
2. Theft and assault are among the most common offenses.

* Crime by Time of Day:

1. Nighttime hours (especially 6 PM–2 AM) have the highest crime rates.

* Crime Hotspots (Geospatial Analysis):

1. Certain areas experience repeated incidents, forming hotspots.
2. Urban centers and commercial districts see more crimes.

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*   Day-Wise Crime Patterns:
1.   Weekends generally have more crimes compared to weekdays.
2.   Certain types of crimes spike on specific days.
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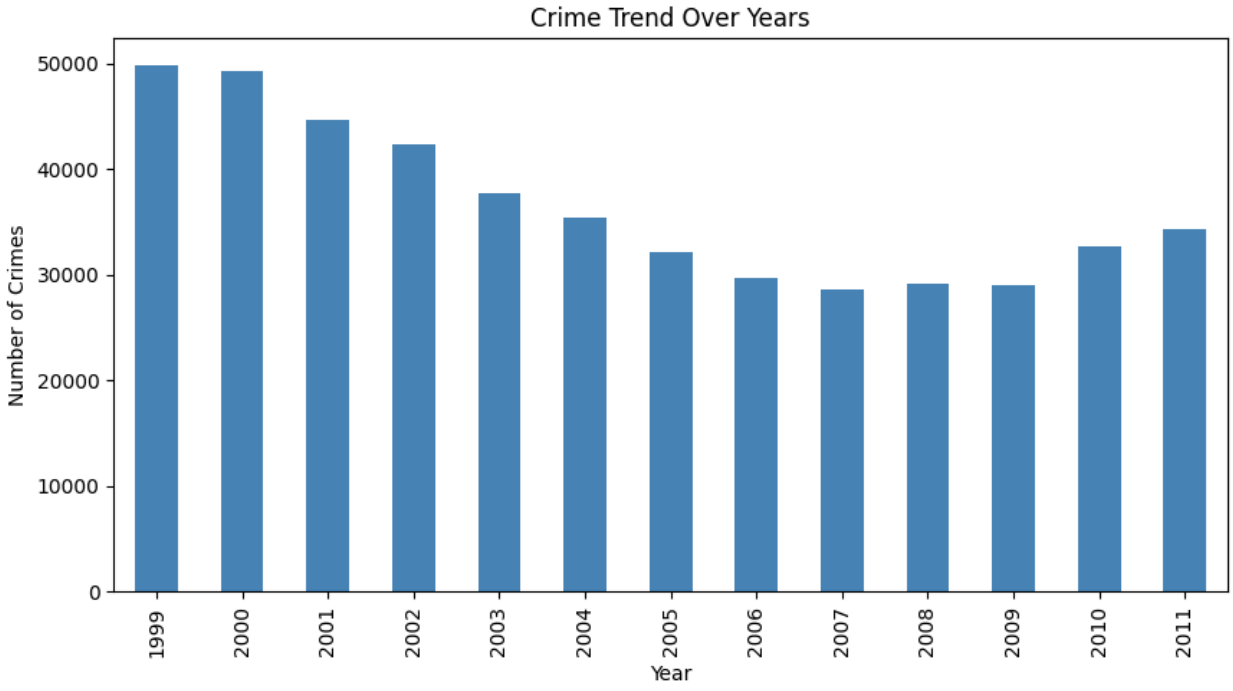
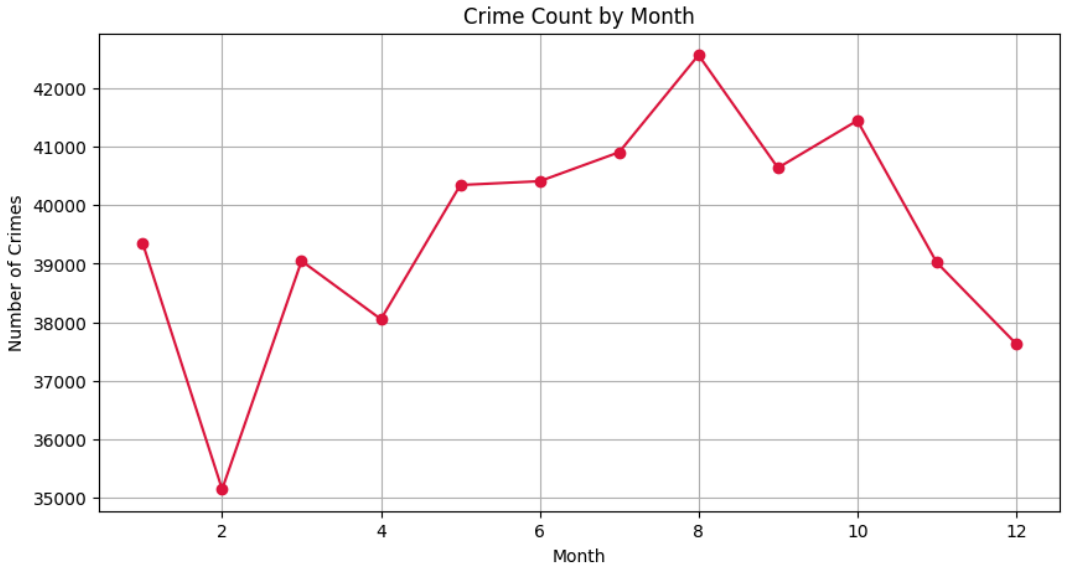
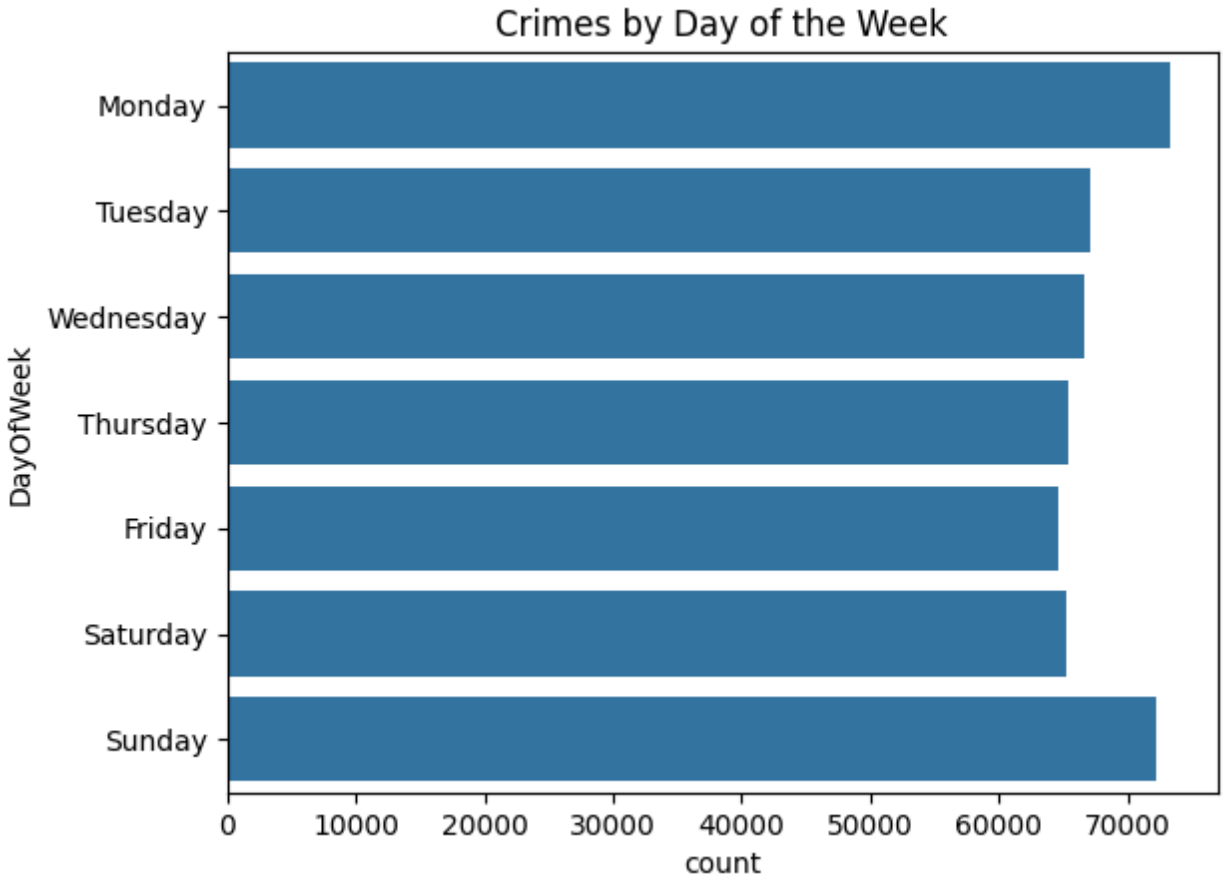
1. Crime Trends Over Year



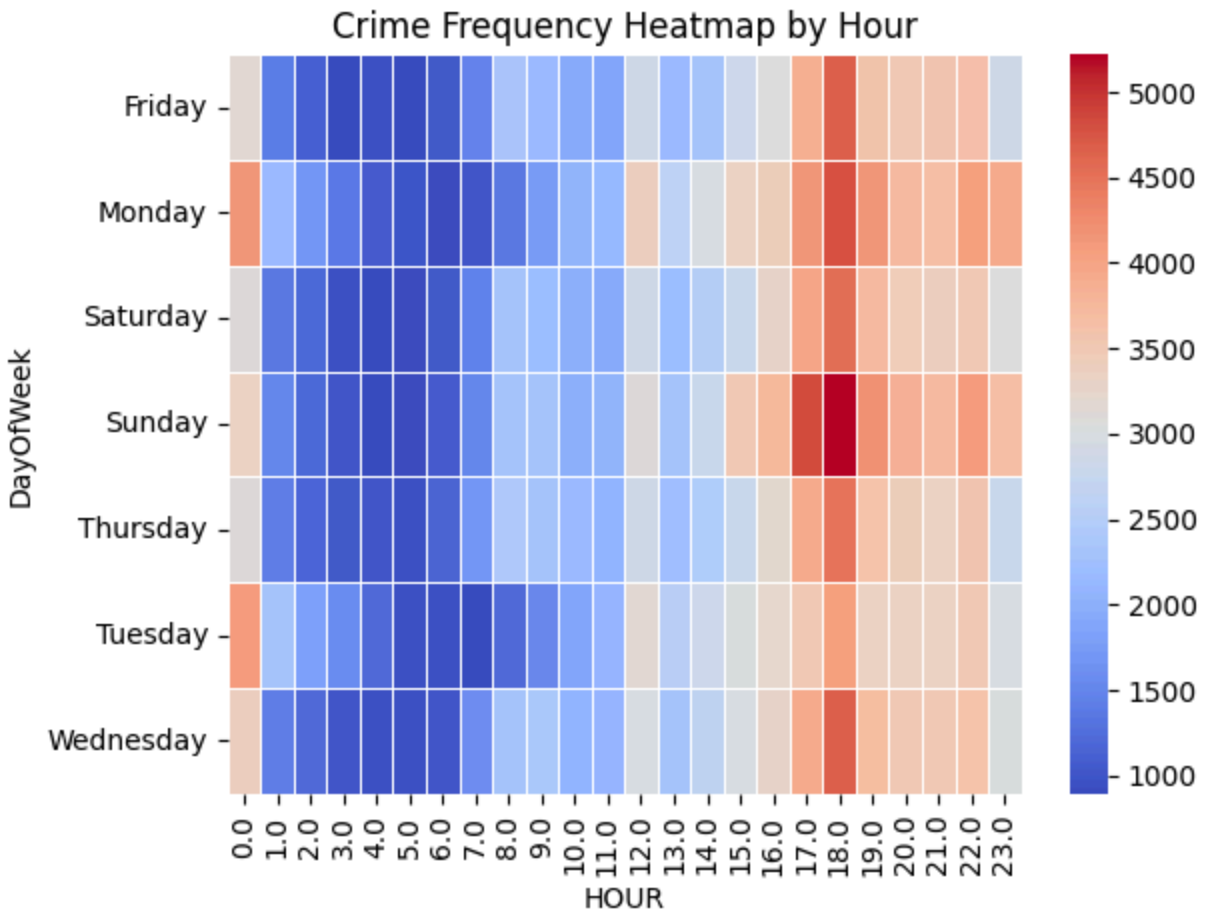
2.Crime Count By Month



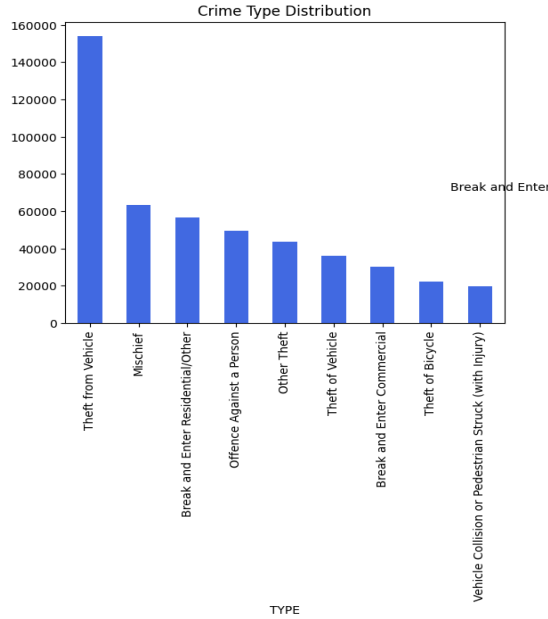
3.Crime By Day of the Week

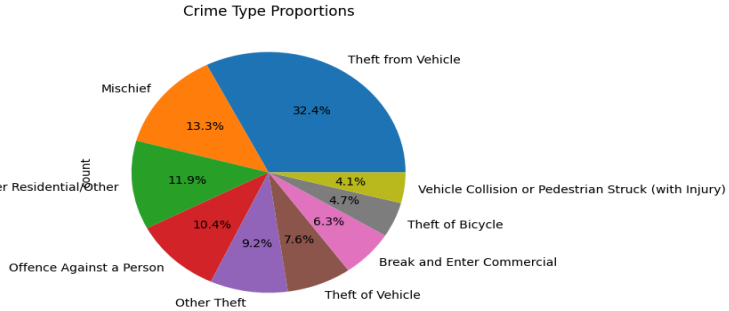


4.Crime Frequency Heatmap By Hour

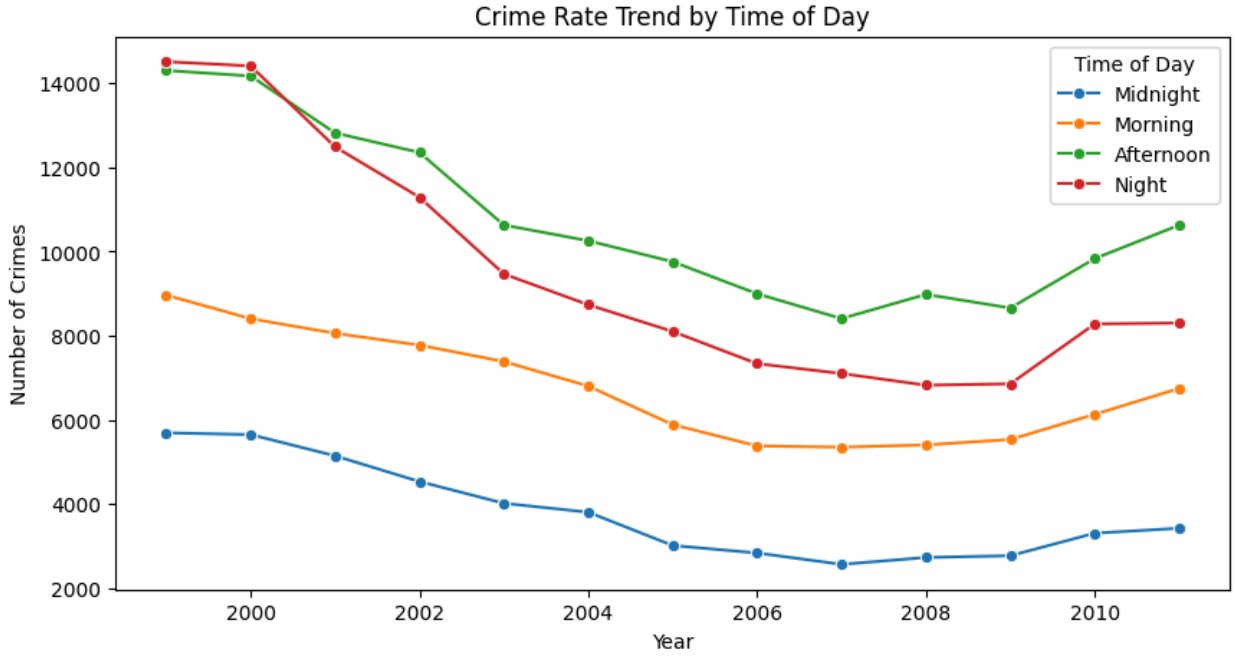


4.Crime Type Distribution

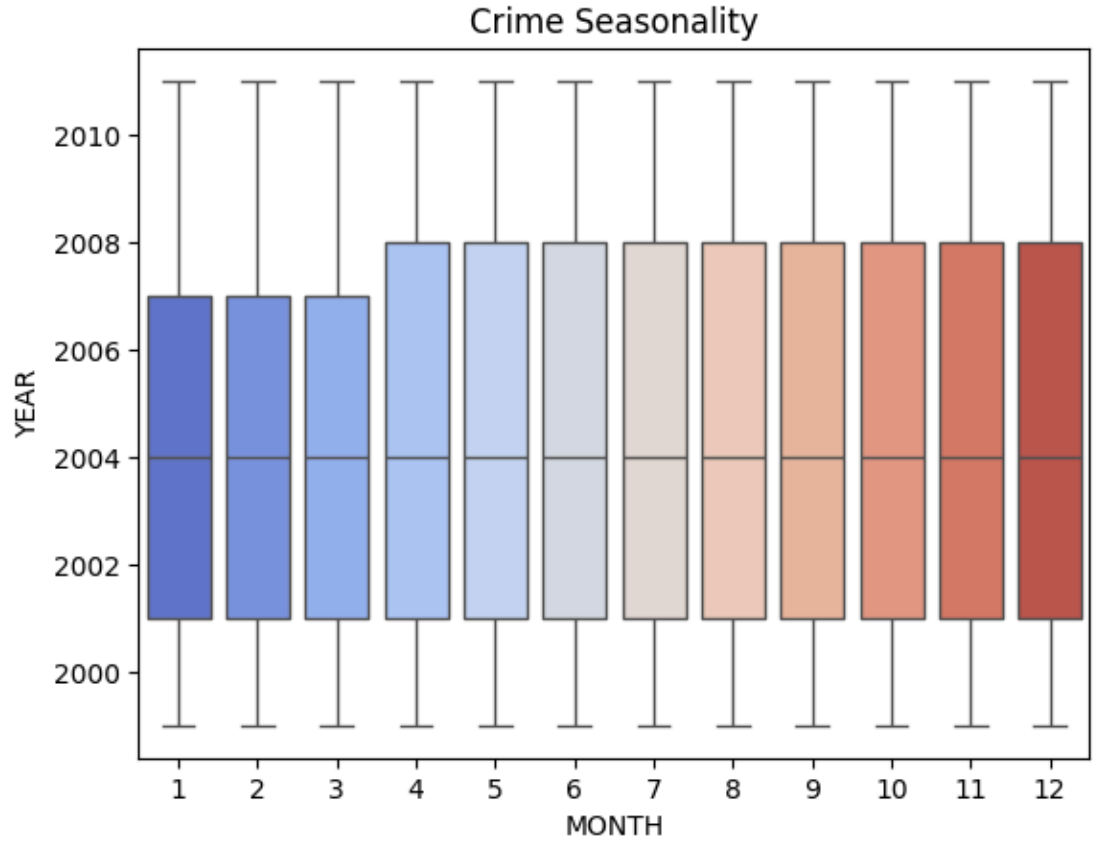




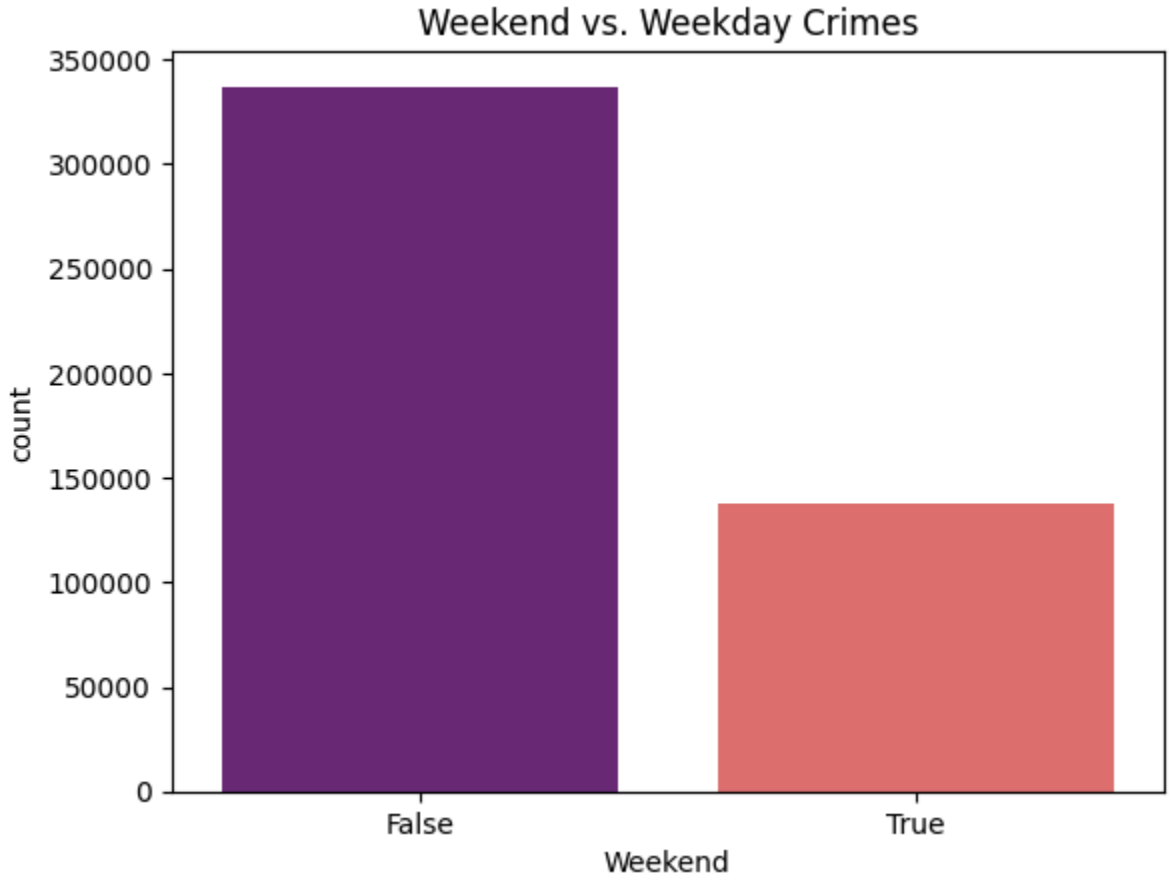
5. Crime Rate By Time of Day



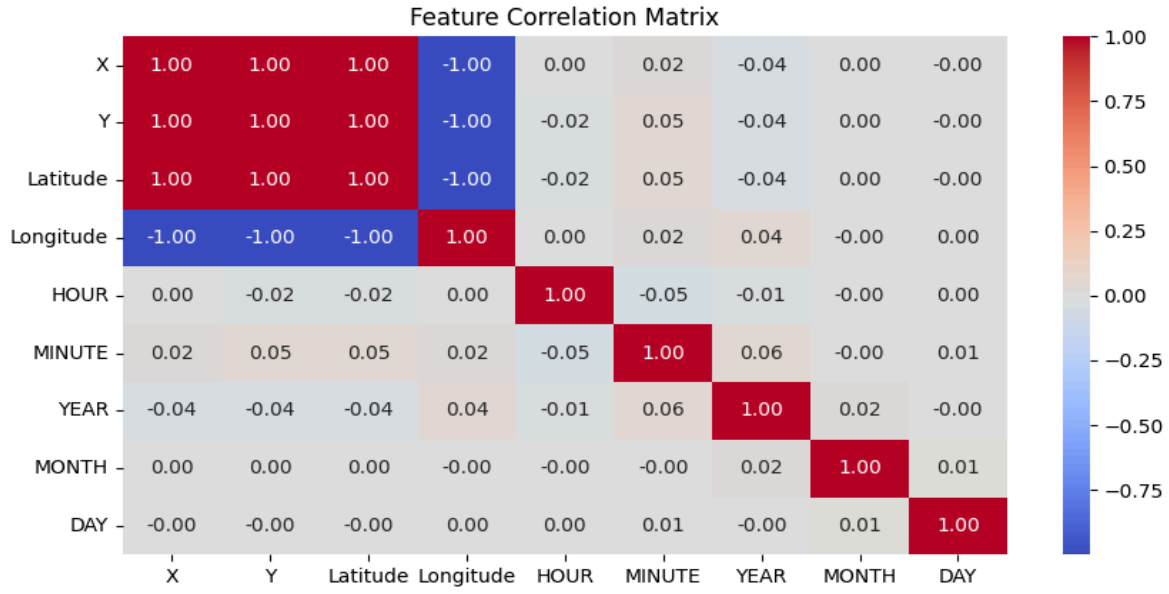
6.Crime Seasonality



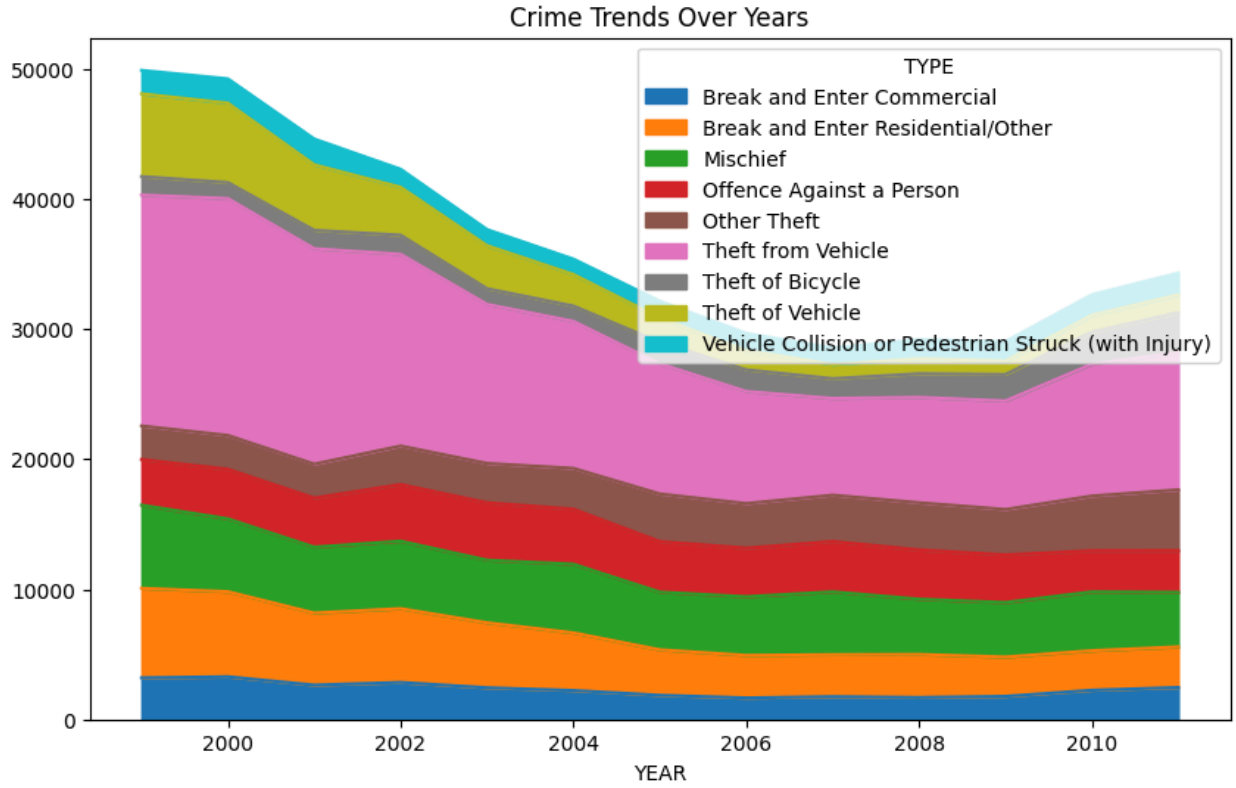
7. Weekend VS Weekday Crimes



8.Feature Correlation Matrix



9.Crime Trends Over Years



10.Crime Forecast for the Next Year