MiniCapstone Project

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- Temporal Analysis
- Spatial Analysis
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Introduction

This project involves analyzing a dataset of crime records using Python and MySQL. The primary objective is to extract meaningful insights from the data, such as temporal crime trends, geographical hotspots, and victim

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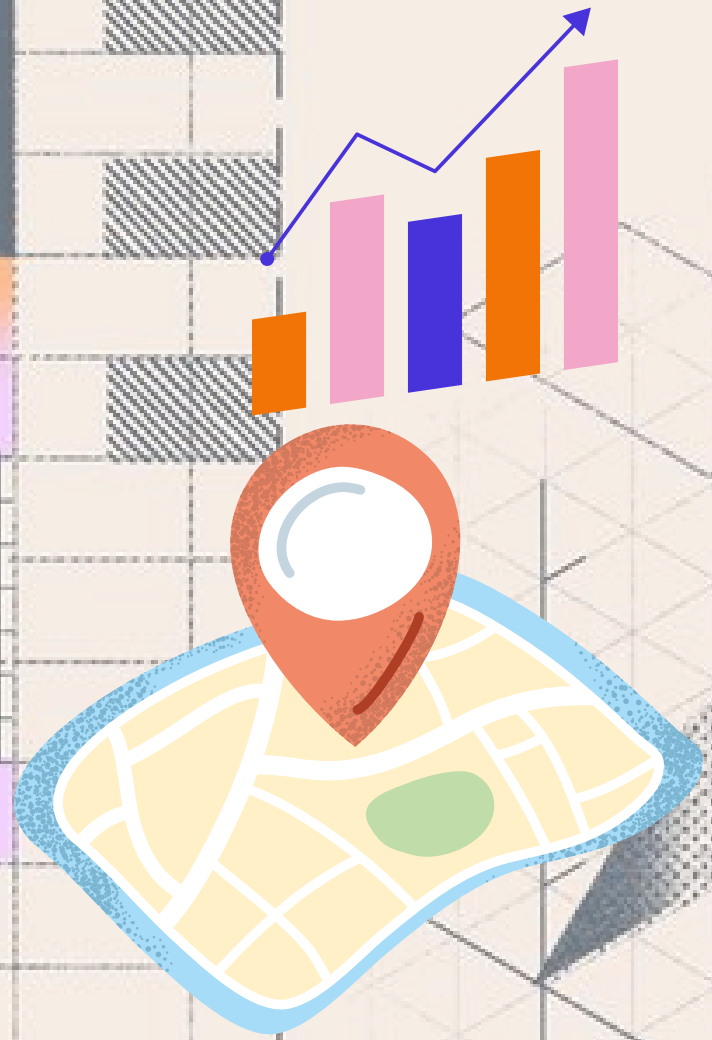
Objectives

To understand crime trends over time.

To identify crime hotspots based on geographical data.

To analyze victim demographics.

To visualize crime data distribution by crime codes and locations.



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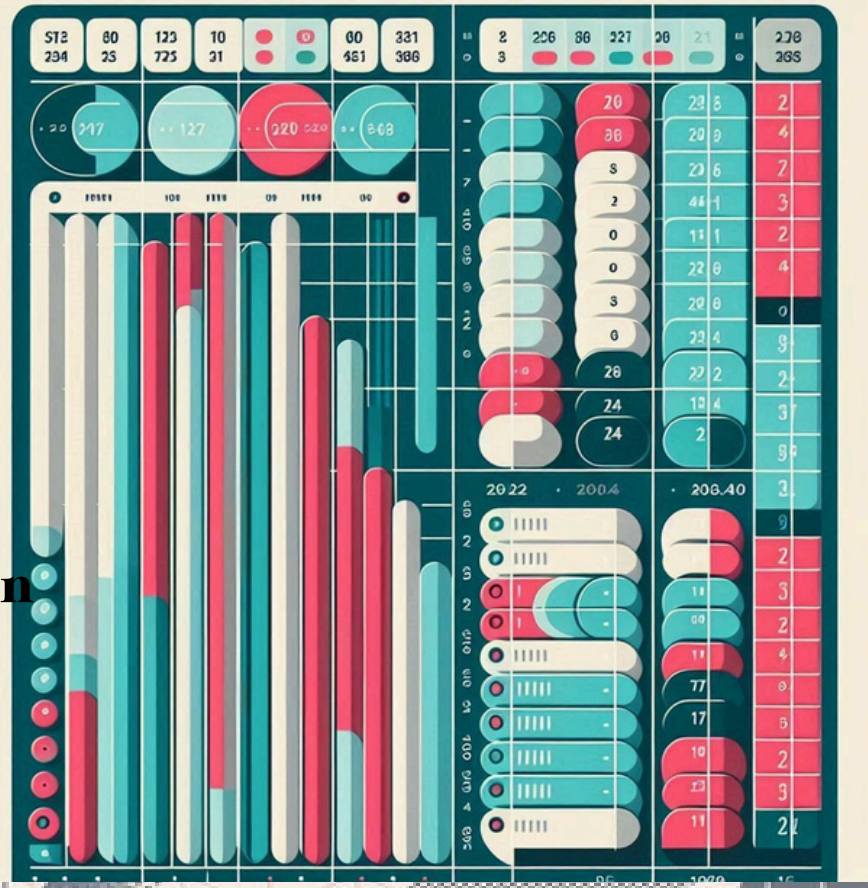
Data Overview

- DR NO: Case identifier
- Date Reported, Date Occurred: Temporal data
- Area Name: Crime location
- Crime Code, Crime Code Description: Crime classification
- Victim Age, Victim Sex: Demographic data
- Latitude, Longitude: Geographical information



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Data Exploration

We explored basic statistics of the dataset such as the total number of crime records, unique crime codes, and distribution of victim ages.

Temporal Analysis

Analyzed how crime occurrences have varied over time using year and month. This helps understand trends and patterns.

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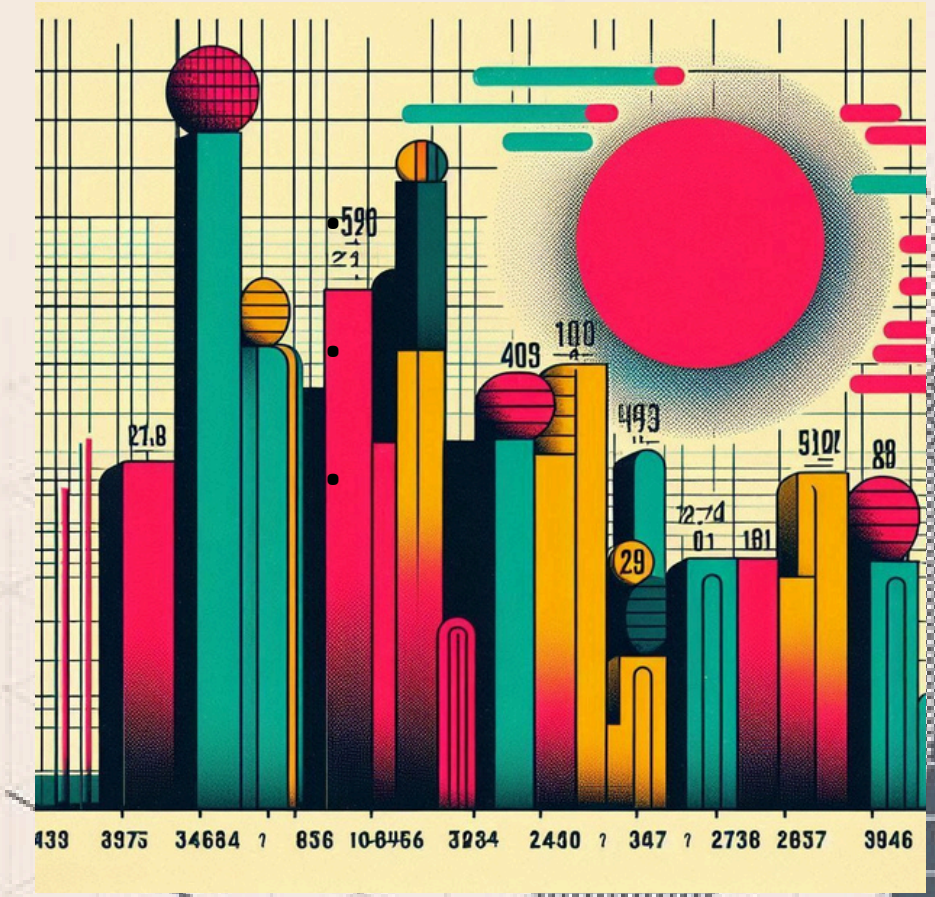
Spatial Analysis (Geographical Hotspots)

The dataset includes latitude and longitude, which were used to plot crime hotspots.



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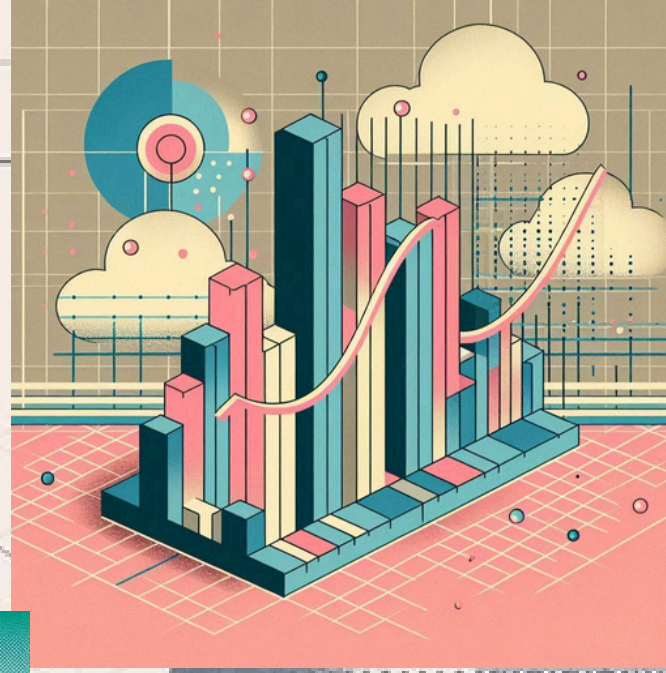
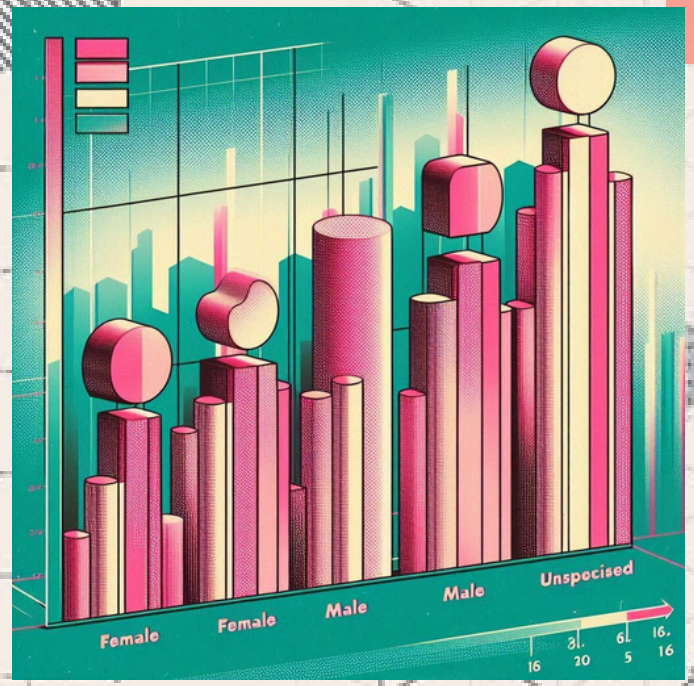
Victim Demographics

We analyzed the distribution of victim age and gender to understand which groups are most affected by crimes.





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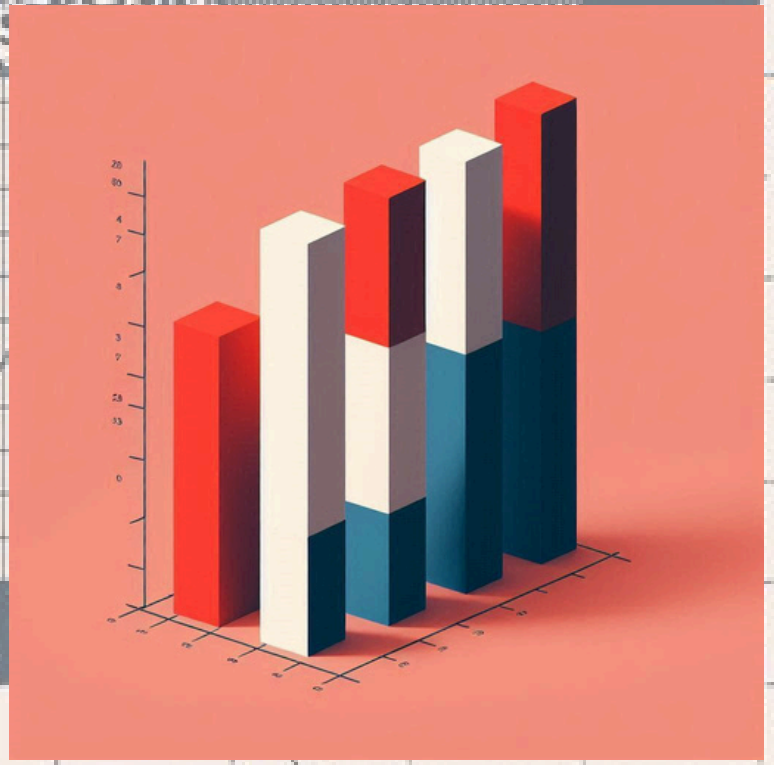
Crime Code Analysis



Crime codes represent the type of crime. We visualized the top 10 most frequent crime codes to understand what types of crimes are most common.

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Conclusion

The Crime Data Analysis project used Python and MySQL to reveal critical insights into crime patterns, analyzing data across time, locations, and demographics. Temporal analysis showed cyclical crime patterns, highlighting spikes in certain months or years, which can help law enforcement allocate resources during high-crime periods. Spatial analysis identified geographical crime hotspots, aiding urban planners and authorities in enhancing surveillance and safety measures. Crime code analysis uncovered the most prevalent types of crimes, guiding policymakers to focus on urgent crime types like theft or assault. Victim demographics provided insight into age and gender disparities, allowing targeted public safety campaigns for vulnerable groups. Lastly, crime status distribution revealed how effectively law enforcement resolves cases, showing the need for increased resources in areas with high unsolved rates.

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Thank you

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