



IE400 - Crime Data Analysis

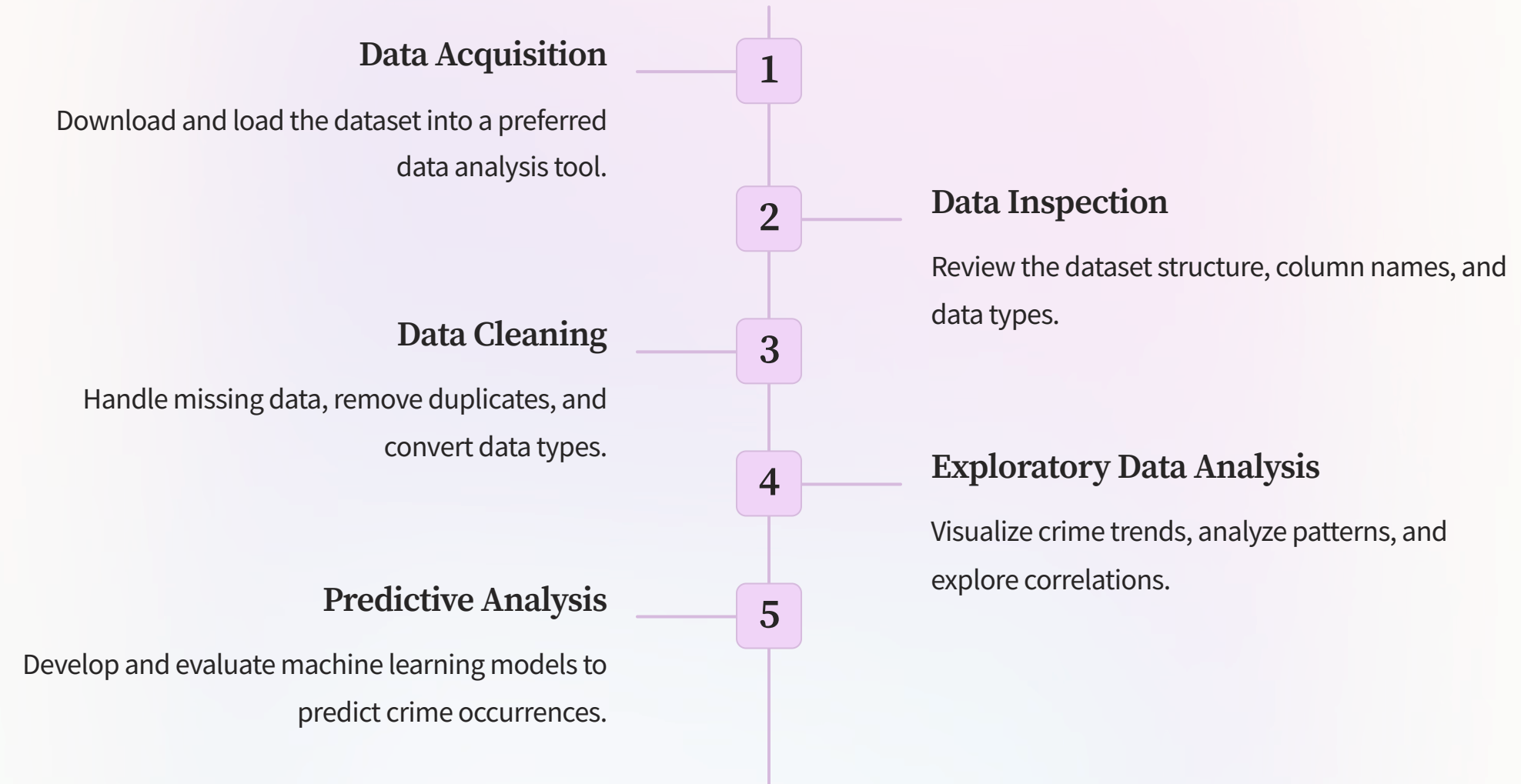
Project - I (Group-8)

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Project Objectives and Dataset



Data Cleaning and Preparation

1

Handling Missing Data

We identified and appropriately dealt with missing values in the dataset.

2

Removing Duplicates

We checked for and eliminated duplicate rows to ensure data integrity.

3

Data Type Conversion

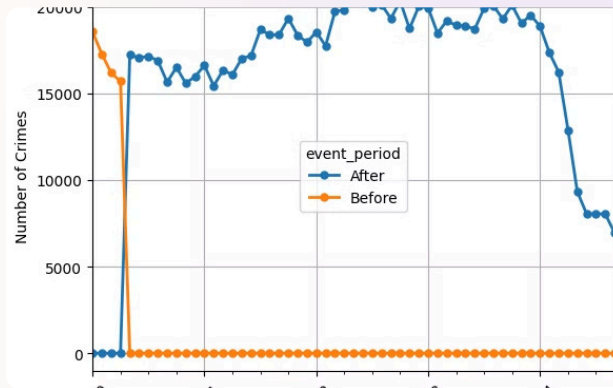
We converted data types as needed, such as formatting dates and numerical values.

4

Outlier Detection

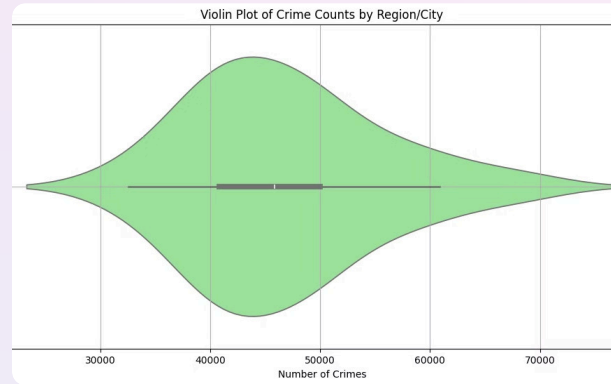
We identified and handled outliers that may skew the analysis results.

Exploratory Data Analysis (EDA)



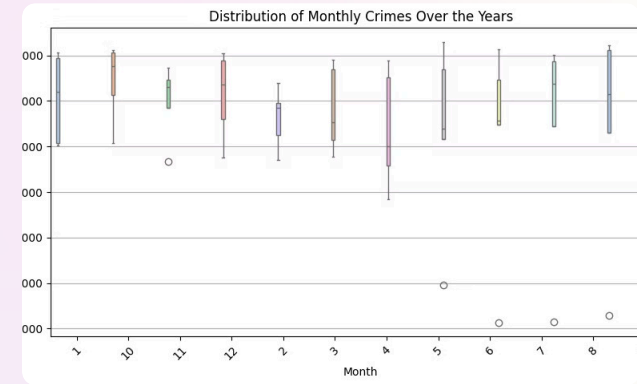
Overall Crime Trends

Visualize crime trends from 2020 to the present, identifying any significant changes over time. This will involve analyzing the trends across various crime categories such as theft, assault, and drug-related offenses.



Seasonal Patterns

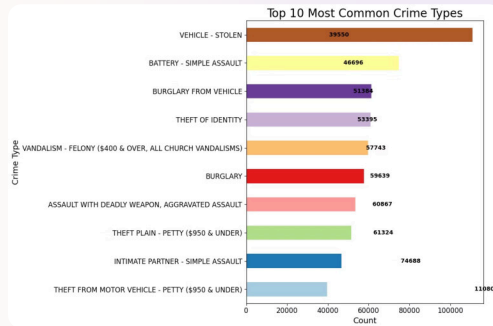
Analyze how crime rates fluctuate throughout the year, looking for seasonal variations. This includes exploring whether specific types of crimes are more prevalent during certain seasons.



Common Crime Types

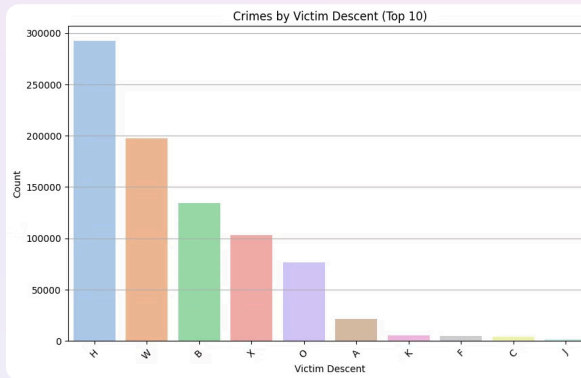
Identify the most prevalent types of crimes and track their trends over the study period. This analysis will help determine which crimes are most common in our dataset and how they have evolved over time.

Advanced Analysis and Predictive Modeling



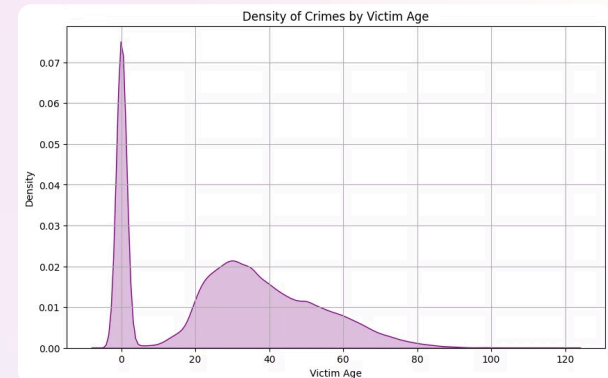
Time Series Forecasting

Forecast future crime trends by applying techniques like ARIMA or Prophet to historical data.



Hypothesis Testing

Formulate and test hypotheses related to crime patterns or influencing factors.



Machine Learning Models

Utilize machine learning algorithms to uncover intricate patterns or predict crime occurrences.

Conclusion

Valuable Experience

We gained valuable insights into crime patterns and trends through thorough data analysis.

Key Deliverables

Our deliverables include a detailed Jupyter Notebook, a professional report, and a presentation.

Skill Development

We developed essential skills and knowledge in data science and analysis.





Thank you !