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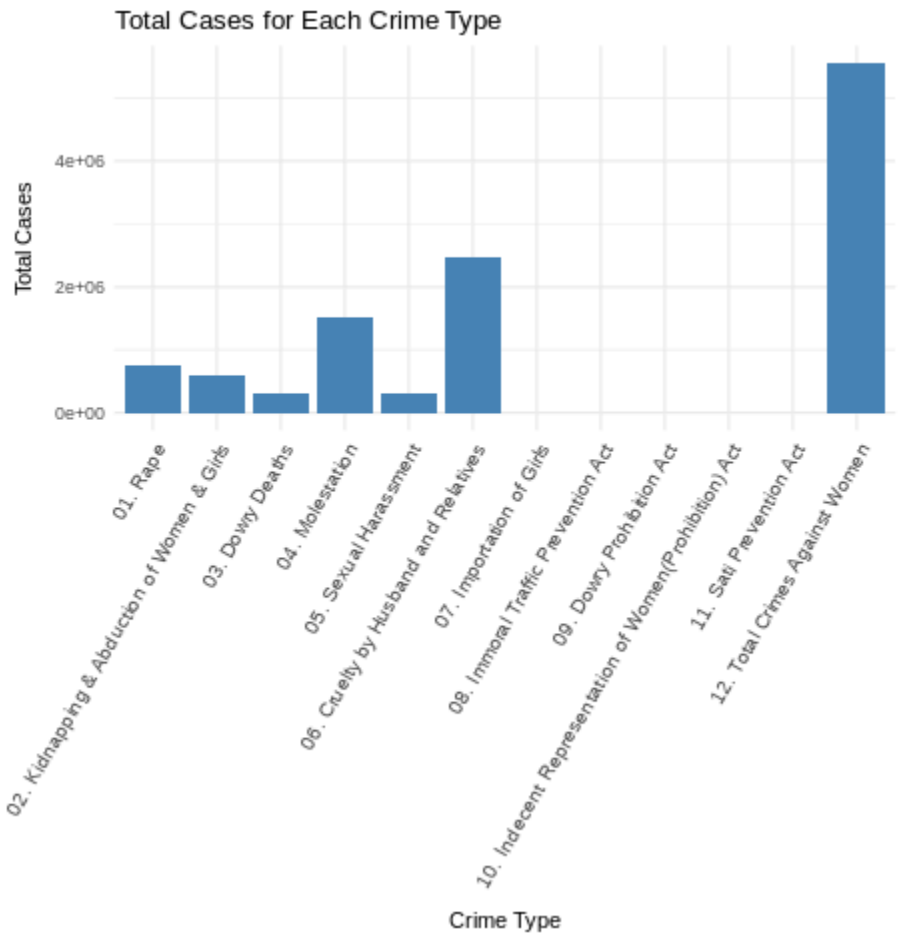
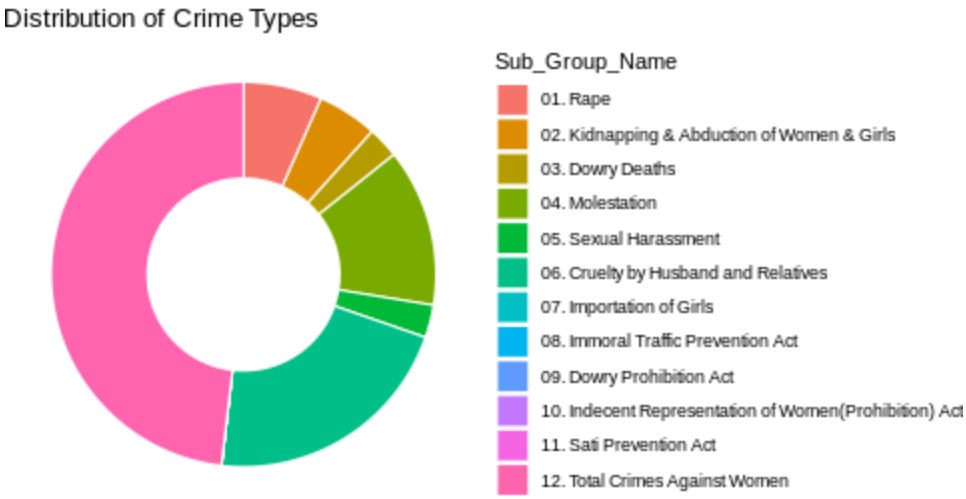
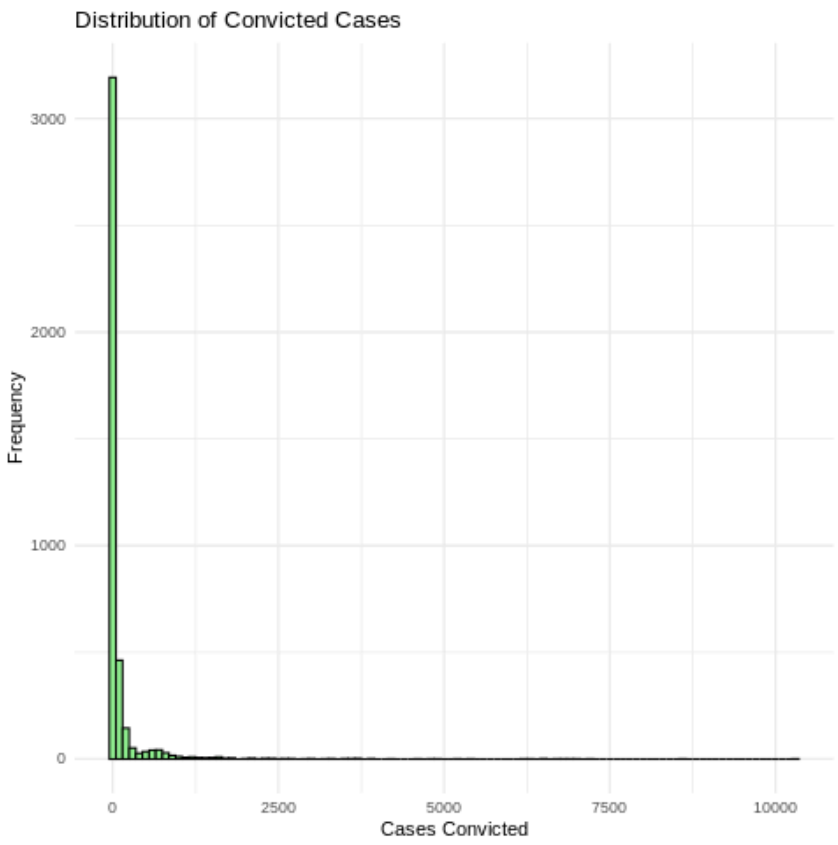
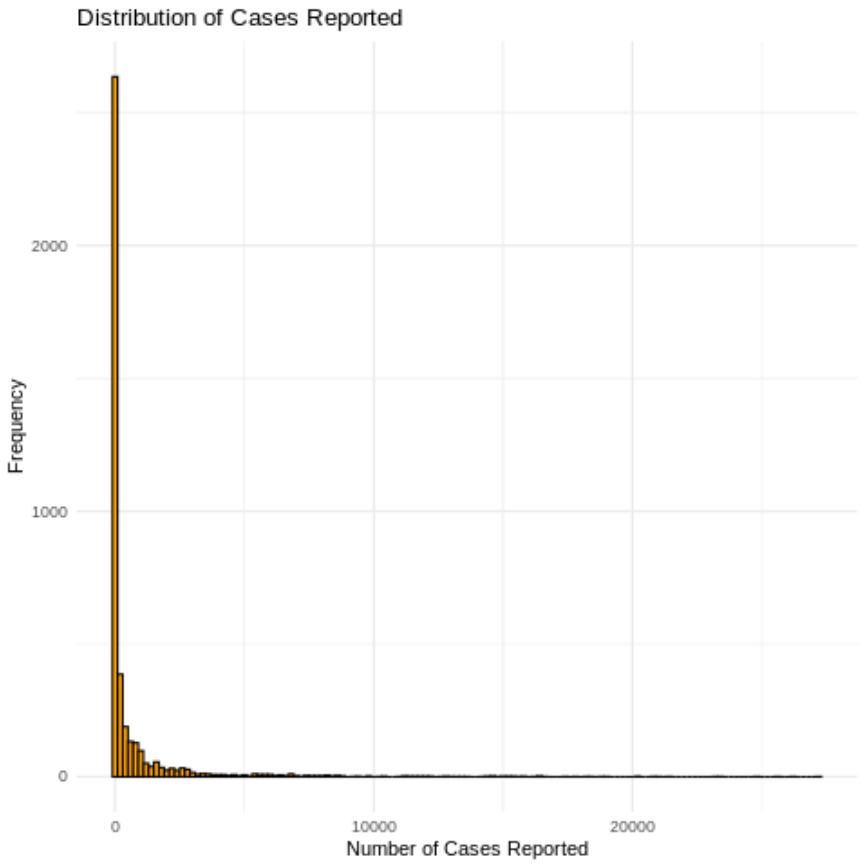
UID:	2021600029
Experiment No:	04
Batch:	B
Aim:	Create basic charts using R programming language on dataset Crime or Police / Law and Order
Dataset link:	https://www.kaggle.com/datasets/rajanand/crime-in-india?select=42_Cases_under_crime_against_women.csv
Results / Outputs	 Bar Chart: The bar chart displays the total number of cases for various crime types. Each bar represents a different crime type, with the height of the bar corresponding to the total number of cases reported for that crime type.



Pie Chart: The pie chart visualizes the proportion of total cases for each type of crime within the dataset. Each slice of the pie represents a different crime type, with the size of each slice corresponding to the fraction of total cases attributed to that crime type.


Distribution of Convicted Cases
Frequency
3000
2000
1000
0
0
2500
5000
7500
10000
Cases Convicted

(i)


Distribution of Cases Reported
Frequency
2000
1000
0
0
10000
20000
Number of Cases Reported

(ii)

Histogram:

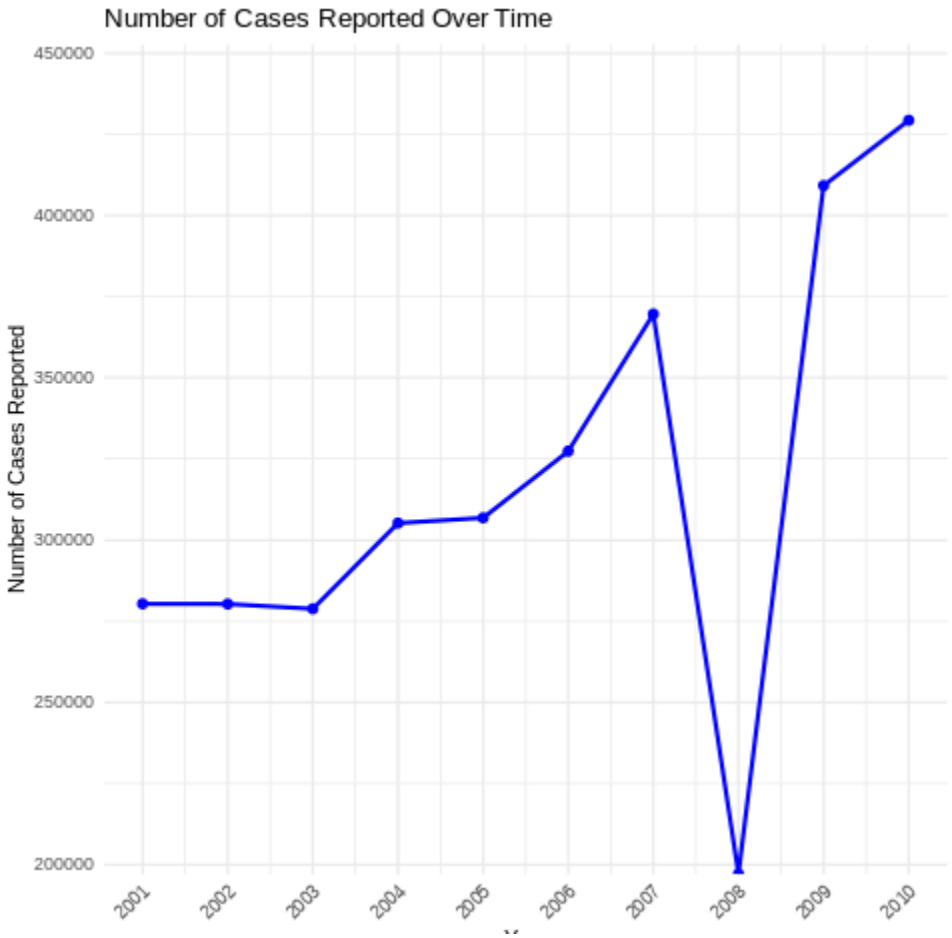
(i) Distribution of Convicted Cases

This histogram visualizes the distribution of the number of convicted cases across different ranges.

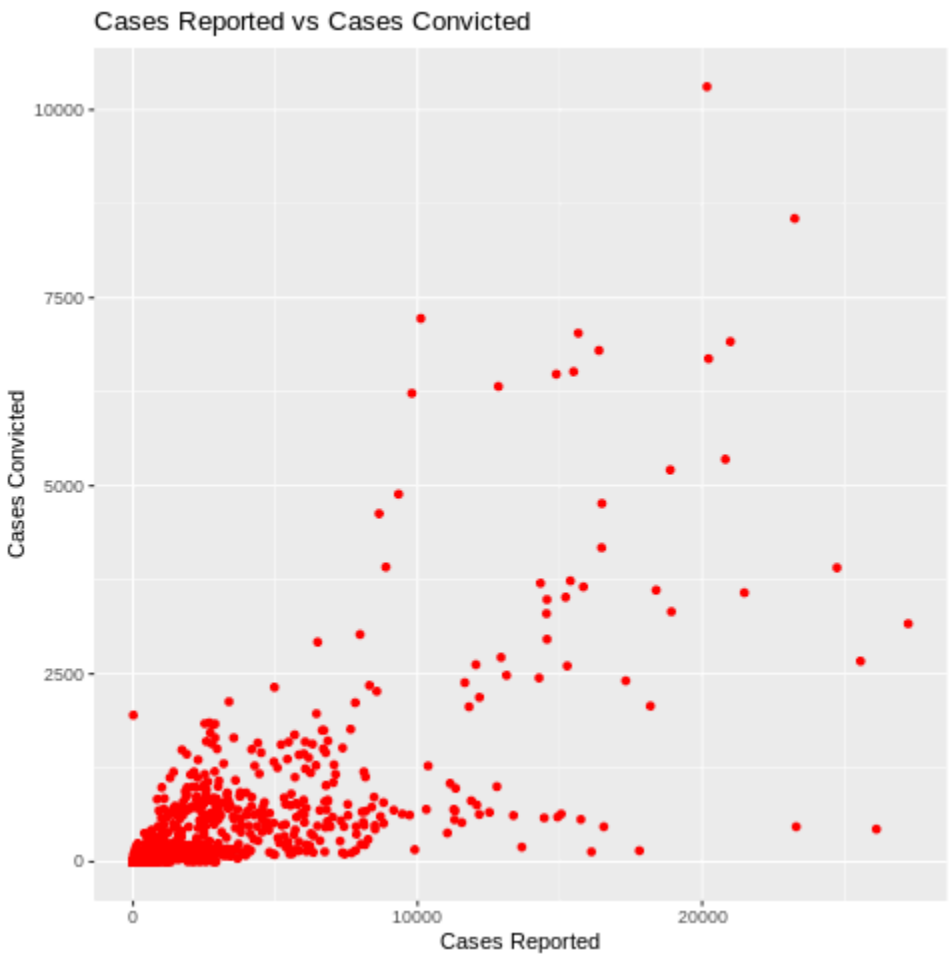
(ii) Distribution of Cases Reported

This histogram displays the distribution of the number of reported cases across different ranges.

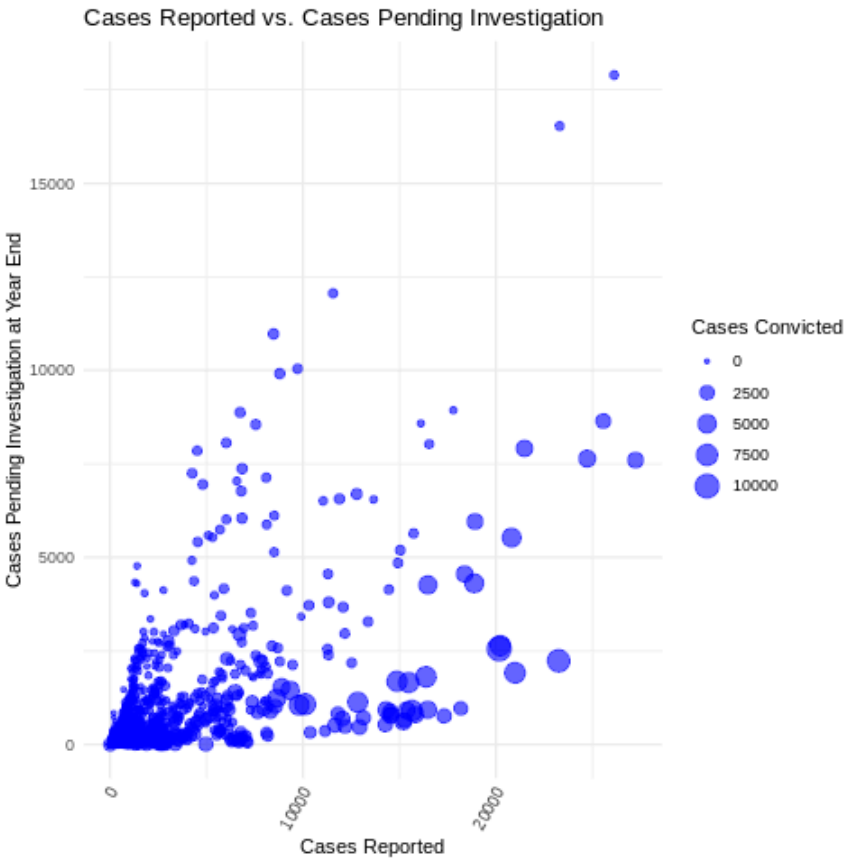
Both histograms provide insights into the distribution of cases based on convictions and reports, respectively, and help identify patterns or concentrations in the data.



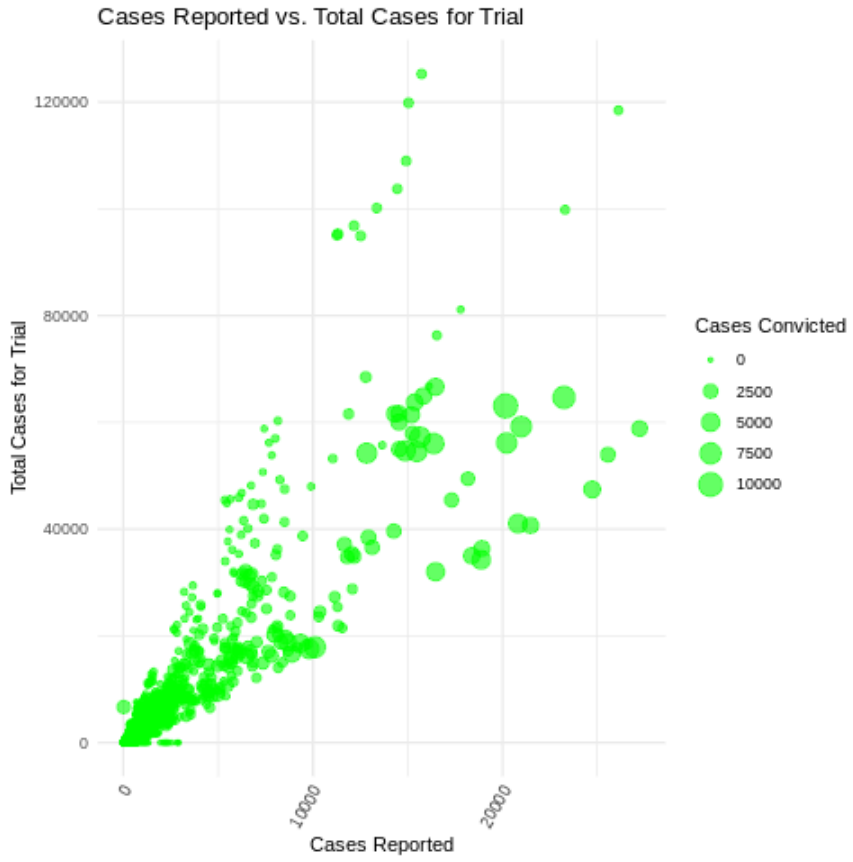
Timeline Chart: This timeline chart depicts the trend in the number of reported cases over different years.This chart allows for a clear visualization of how the number of cases reported has changed over the years, highlighting trends and patterns in the data.



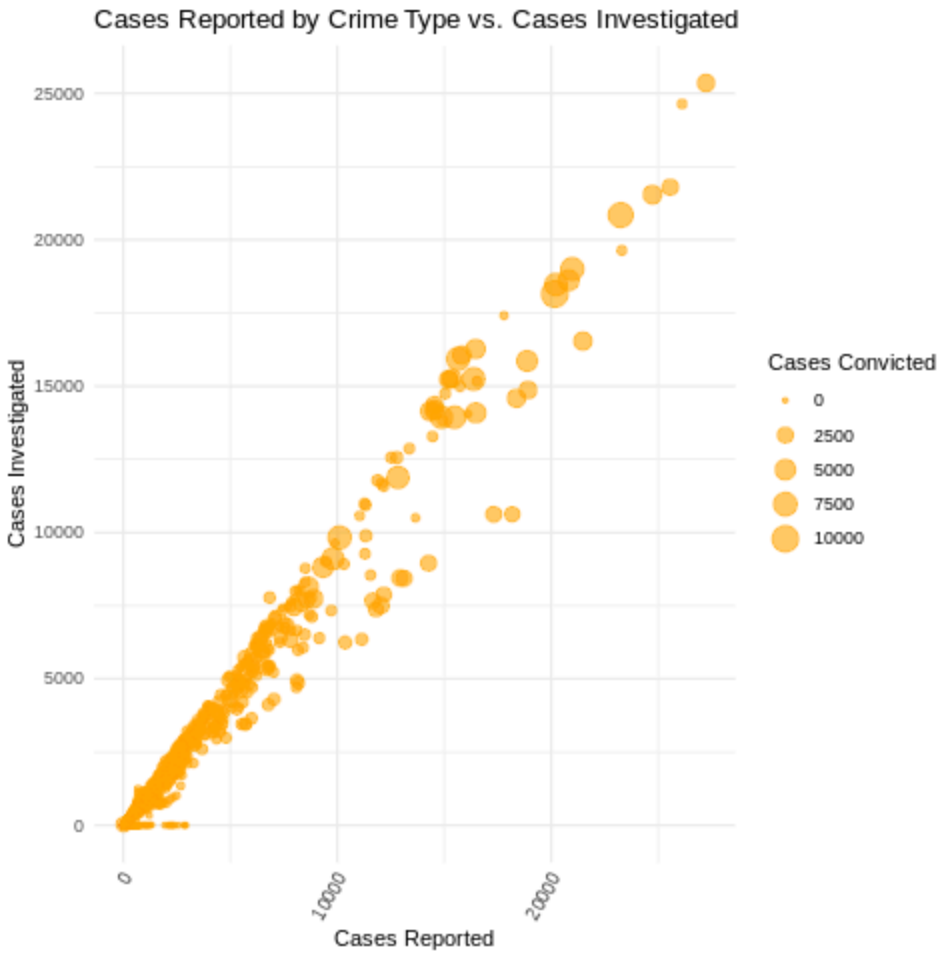
Scatter Plot:This scatter plot illustrates the relationship between the number of cases reported and the number of cases convicted.This plot is useful for analyzing whether there is a relationship between the number of cases reported and the number of cases convicted.


Cases Reported vs. Cases Pending Investigation
Cases Pending Investigation at Year End
15000
10000
5000
0
0
10000
20000
Cases Reported
Cases Convicted
0
2500
5000
7500
10000

(i)


Cases Reported vs. Total Cases for Trial
Total Cases for Trial
120000
80000
40000
0
0
10000
20000
Cases Reported
Cases Convicted
0
2500
5000
7500
10000

(ii)



(iii)

Bubble Plot:

(i) Cases Reported vs. Cases Pending Investigation at Year End

This bubble plot visualizes the relationship between the number of cases reported and the number of cases pending investigation at the end of the year.

(ii) Cases Reported vs. Total Cases for Trial

This bubble plot examines the relationship between the number of cases reported and the total number of cases set for trial.

(iii) Cases Reported by Crime Type vs. Cases Investigated

This bubble plot illustrates the relationship between the number of cases reported and the number of cases investigated.

These bubble plots provide a multidimensional view of crime data by combining three variables: the number of cases reported, the number of cases in different stages of the legal process (pending investigation, for trial, investigated), and the number of cases convicted.

Conclusion	In this experiment we analyzed and visualized crime data using various types of plots, including bar charts, pie charts, histograms, timelines, and bubble plots. Each plot served a specific purpose in understanding different aspects of the data.These visualizations facilitated a comprehensive understanding of the crime data, allowing for the identification of trends, patterns, and correlations. **Bar Chart:** Compared total cases for trial across different crime types. **Pie Chart:** Showed the distribution of crime types within the total cases for trial. **Histogram:** ● **Convicted Cases:** Displayed the frequency distribution of convicted cases. ● **Reported Cases:** Illustrated the distribution and frequency of reported cases. **Timeline Chart:** Tracked changes in reported cases over time. **Bubble Plot:** ● **Pending Investigation:** Analyzed the relationship between reported cases and those pending investigation, with bubble size indicating convictions. ● **Total Cases for Trial:** Compared reported cases with total cases for trial. ● **Cases Investigated:** Examined the correlation between reported cases and those investigated.