



DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)
MAWLANA BHASHANI SCIENCE AND TECHNOLOGY UNIVERSITY
SANTOSH, TANGAIL-1902
“STUDENT TRAINING PROGRAM FOR DIGITAL SKILLS DEVELOPMENT”



Course Title: Basic Python

Project Name: Crime Rate Analysis

Submitted by
<p>Name: Md. Nasif Amer</p> <p>Department of Criminology and Police Science Mawlana Bhashani Science and Technology University Santosh, Tangail- 1902, Bangladesh</p>

Uses of Crime Rate Analysis:

Crime analysis is the process of systematically examining and interpreting data related to criminal activities to identify patterns, trends, and links between incidents.

This analytical approach helps law enforcement agencies better understand the nature and scope of crime within a given area, anticipate future criminal behavior, and allocate resources more efficiently.

By using data from police reports, crime statistics, and other sources, crime analysts can generate insights that support proactive policing, crime prevention strategies, and community safety efforts.

Crime analysis typically involves techniques like geographic profiling, statistical analysis, and criminal pattern recognition, all aimed at improving decision-making and reducing crime.

Python Code:

```
import pandas as pd

import matplotlib.pyplot as plt


def get_crime_data():

    city = input("Enter the name of the city: ")

    # Input different crime counts

    theft = int(input("Enter the number of Theft incidents: "))
    assault = int(input("Enter the number of Assault incidents: "))
    burglary = int(input("Enter the number of Burglary incidents: "))
    rape = int(input("Enter the number of Rape incidents: "))

    # Create a dictionary to hold the data
    crime_data = {

        'Crime Type': ['Theft', 'Assault', 'Burglary','Rape'],

        'Number of Incidents': [theft, assault, burglary,rape]
```

```
}
```

```
return city, pd.DataFrame(crime_data)
```

```
def plot_crime_data(city, crime_df):
```

```
    plt.figure(figsize=(10, 6))
```

```
    plt.bar(crime_df['Crime Type'], crime_df['Number of Incidents'], color=['blue',  
'orange', 'green', 'red'])
```

```
    plt.title(f'Crime Incidents in {city}')
```

```
    plt.xlabel('Crime Type')
```

```
    plt.ylabel('Number of Incidents')
```

```
    plt.xticks(rotation=45)
```

```
    # Show the bar chart
```

```
    plt.show()
```

```
def main():
```

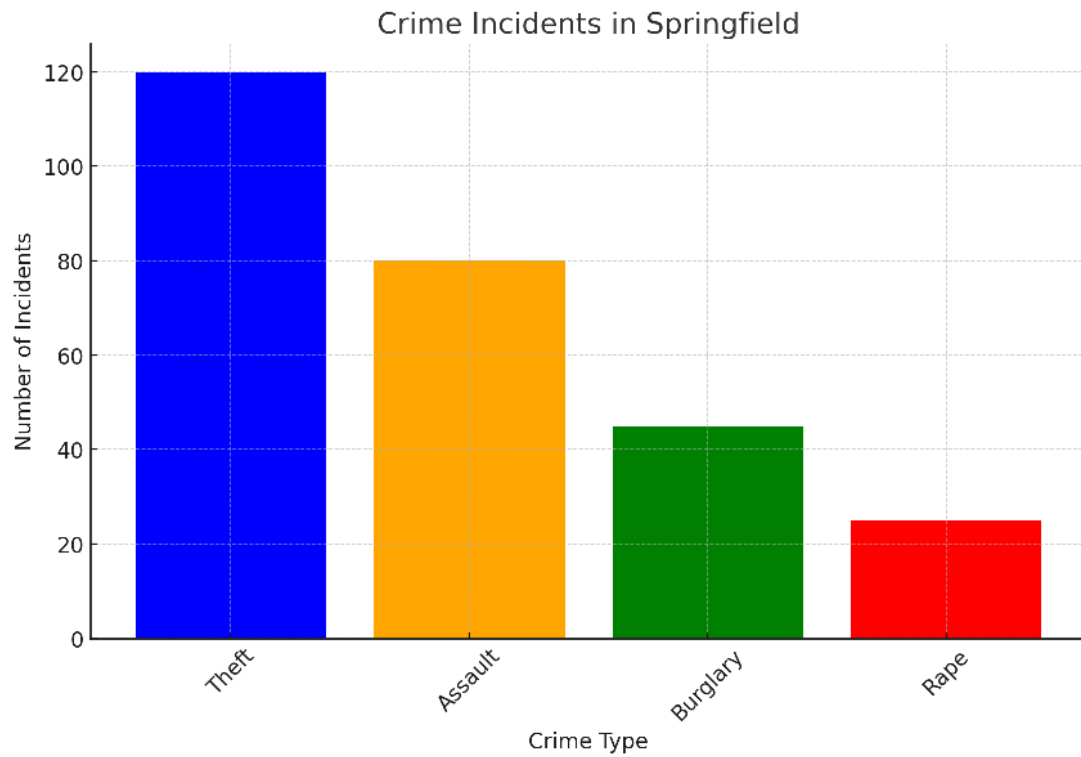
```
    city, crime_df = get_crime_data()
```

```
    plot_crime_data(city, crime_df)
```

```
if __name__ == "__main__":
```

```
    main()
```

Result:



The bar chart displayed shows the simulated crime data for "Springfield," with different colors representing each crime type. Each bar's height corresponds to the number of incidents:

Theft: 120 incidents

Assault: 80 incidents

Burglary: 45 incidents

Rape: 25 incidents

Some features of Crime Analysis Project:

- 1.Data Collection: Gathering and organizing crime data from various sources like police reports and surveillance systems.
- 2.Geospatial Analysis: Using mapping tools to identify crime hotspots and trends in specific locations.
- 3.Crime Pattern Recognition: Detecting recurring crime patterns, such as methods or locations, to identify serial offenders.
- 4.Temporal Analysis: Examining when crimes occur (e.g., time of day, day of the week) to optimize patrol schedules.
- 5.Predictive Analysis: Using historical data to forecast potential crime locations and times, enabling proactive policing.
- 6.Link Analysis: Identifying connections between people, places, and events related to criminal activities.
- 7.Crime Classification: Categorizing crimes to assess trends in different types of offenses.
- 8.Hot Spot Analysis: Identifying areas with high crime rates to allocate resources efficiently.