Exploratory Data Analysis (EDA) - Terrorism Dataset

Project Overview :

- The purpose of this project is to conduct Exploratory Data Analysis (EDA) on a terrorism dataset.
- The primary goal is to extract meaningful insights and patterns from the data, shedding light on trends, high-risk regions, attack characteristics, and potential factors contributing to terrorist activities.
- Through a thorough examination of the dataset, we aim to gain a comprehensive understanding of the dynamics of terrorism over time.

Dataset Description :

- The dataset used for this analysis contains information related to various aspects of terrorist incidents, such as location, time, method of attack, and the groups involved.
- It provides a comprehensive view of global terrorism, allowing us to delve into the underlying patterns and motivations driving these events.

Dataset link - https://www.kaggle.com/datasets/START-UMD/gtd

Libraries Used

The analysis utilizes the following Python libraries:

- NumPy
- Pandas
- Matplotlib
- Seaborn

Data Import

The dataset is loaded from the "globalterrorism.csv" file, and initial observations are made using the **head()**, **info()**, **shape**, and **columns** functions.

Data Cleaning

Columns of interest are selected for analysis, and meaningful names are assigned to them. Missing values in the "Killed" and "Wounded" columns are filled with zeros. A new column "Casualty" is created by summing the killed and wounded columns.

Data Summary

Descriptive statistics are provided for key numerical columns using the **describe()** function.

Observations and Insights

Several observations and insights are derived from the data, such as the distribution of attacks and casualties over the years, region-wise statistics, country-wise statistics, city-wise statistics, and details about terrorist groups, attack types, and target types.

Visualizations

1. Year-wise Analysis

- Number of attacks each year
- Total casualties (killed + wounded) each year.
- Number of people killed and wounded each year.

2. Region-wise Analysis

- Distribution of terrorist attacks over regions
- Total terrorist attacks in each region
- Total casualties (killed + wounded) in each region.
- Number of people killed and wounded in each region.

3. Country-wise Analysis (Top 10)

- Number of attacks in each country
- Total casualties (killed + wounded) in each country.
- Number of people killed and wounded in each country.

4. City-wise Analysis (Top 10)

- Number of attacks in each city
- Total casualties (killed + wounded) in each city
- Number of people killed and wounded in each city.

5. Terrorist Group-wise Analysis (Top 10)

- Number of attacks by each terrorist group
- Total casualties (killed + wounded) by each group.
- Number of people killed and wounded by each group.

6. Attack Type-wise Analysis

- Number of attacks by each attack type
- Total casualties (killed + wounded) by each attack type.
- Number of people killed and wounded by each attack type.

7. Target Type-wise Analysis

- Number of attacks on each target type
- Total casualties (killed + wounded) in each target type.
- Number of people killed and wounded in each target type.

8. Group + Country-wise Analysis (Top 10)

- Countries with the most attacks, casualties, people killed, and people wounded by a particular terrorist group.

9. Humanity Affected

- Total casualties (killed + wounded) due to terrorist attacks.
- Total people killed due to terrorist attacks.
- Total people wounded due to terrorist attacks.

Conclusions

The project concludes with a summary of key findings, highlighting the most affected regions, countries, cities, and groups. Additionally, global statistics on casualties, killed individuals, and wounded individuals are presented.