**GLOBAL TERRORISM ANALYSIS**

Abstract:

The project focuses on performing an exploratory data analysis on the Global Terrorism Database. The dataset consists of terrorist attacks around the world from 1970 to 2017. The objective of this project is to gain insights into the patterns and trends of terrorism incidents and to provide a comprehensive understanding of the factors that contribute to terrorism. The project involves data cleaning, preprocessing, and exploratory data analysis using Python and various libraries like pandas, numpy, seaborn, and matplotlib. The analysis Includes visualizing the frequency of terrorist attacks over the years, understanding the distribution of terrorist attacks across different regions and countries, analyzing the types of weapons used, and Identifying the most targeted sectors. The findings suggest that the frequency of terrorist attacks has increased significantly over the past few decades, with the Middle East and North Africa being the most affected regions. The analysis also reveals that bombings and explosions are the most common types of terrorist attacks, and civilians are the most targeted group. These Insights provide a better understanding of the nature of terrorism and can help in developing effective strategles to prevent and combat terrorism.

1.**INTRODUCTION**

Terrorism is a serious global Issue that has affected many countries in recent years. It is important to understand the patterns and trends of terrorism to develop effective strategies to combat it. The Global Terrorism Database (GTD) is a comprehensive dataset that provides Information on terrorist attacks around the world from 1970 to 2017. In this project, we analyze the GTD dataset to gain insights into global terrorism trends and patterns. We will use Python programming language and various libraries such as NumPy, Pandas, and Matplotlib to perform data analysis and visualization. The objective of this project is to explore the dataset, clean the data, and perform exploratory data analysis (EDA) to gain Insights into the patterns and trends of terrorism around the world. The project will be divided into different stages, starting from Importing and cleaning the data to performing EDA and drawing conclusions from the Insights gained.

2.**PROBLEM STATEMENT**

The problem addressed in this project is the analysis of global terrorism data to gain insights Into the trends and patterns of terrorist attacks worldwide. With the rise of terrorism in recent years, It has become crucial to understand the root causes, motivations, and locations of terrorist activities to devise effective strategies for prevention and mitigation. The analysis of this dataset can help Identify hotspots of terrorist activity, patterns of attack types and weapons used, and the Impact of these attacks on various regions and countries. This project aims to provide an in-depth analysis of the global terrorism dataset to identify such trends and patterns.

**3.DATA SUMMARY**

The Global Terrorism Database is a comprehensive dataset that contains information on terrorist attacks worldwide from 1970 to 2017. The dataset has 181,691 observations and 135 variables, covering details such as the date, location, type of attack, target type, weapon used, and casualties. The dataset was collected from various sources, including news articles, government reports, and public information.

The dataset requires extensive data cleaning and preprocessing to make it usable for analysis. The data contains missing values, inconsistent values, and redundant information, which needs to be addressed before conducting any analysis.

**4.STEPS INVOLVED**

here are the general steps involved in completing this project:

1. Importing the necessary libraries: Before starting the data analysis, the required libraries such as Pandas, NumPy, Matplotlib, and Seaborn must be Imported.

2. Loading the dataset: The global terrorism dataset must be loaded Into the Jupyter Notebook using the Pandas library.

3. Data Cleaning: The dataset may contain missing values, duplicates, and Irrelevant columns that must be removed. The data must be cleaned to make it ready for the analysis.

4. Exploratory Data Analysis (EDA): The EDA process Involves visualizing and analyzing the data to find patterns, relationships, and Insights. Different types of plots such as bar plots, line plots, scatter plots, and heat maps must be used to explore the data.

5. Feature Engineering: Feature engineering Involves creating new features or modifying existing features to Improve the performance of the machine learning model. This step is optional and can be skipped depending on the project's requirements.

6. Data Preparation: After completing the EDA and feature engineering, the data must be prepared for the machine learning model. This step may Involve scaling, encoding, and splitting the data Into training and testing sets.

7. Model Selection: Different machine learning models such as Logistic Regression, Decision Trees, Random Forest, and SVM can be used for classification or regression tasks. The best model must be selected based on the project's requirements and the model's performance on the testing set.

8. Model Evaluation: The performance of the model must be evaluated using metrics such as accuracy, precision, recall, F1-score, and ROC-AUC score.

9. Conclusion: Based on the Insights gained from the EDA and the model's performance, conclusions can be drawn, and future work can be suggested.

These are the general steps Involved in completing this project.

There are several types of exploratory data analysis (EDA) Involved in this project, including:

1. Univariate Analysis: This Involves analyzing each variable in the dataset separately. In this project, univariate analysis was used to examine the distribution of various variables such as the number of terrorist Incidents, types of attacks, countries affected, and so on.

2. Blvarlate Analysis: This Involves analyzing the relationship between two variables. In this project, bivariate analysis was used to explore the relationship between variables such as the number of terrorist incidents and the countries most affected.

3. Multivariate Analysis: This Involves analyzing the relationship between multiple variables. In this project, multivariate analysis was used to examine the relationship between variables such as the type of attack, number of fatalities, and the countries most affected.

4. Temporal Analysis: This Involves analyzing data over time. In this project, temporal analysis was used to examine trends in the number of terrorist Incidents over the years

5. Geospatial Analysis: This involves analyzing data in relation to geography. In this project, geospatial analysis was used to examine the geographic distribution of terrorist Incidents, as well as to create maps to visualize the data.

By using a combination of these EDA techniques, we can gain a better understanding of the dataset and Identify patterns and relationships that can help in making informed decisions

**CONCLUSIONS**

Based on the analysis of the Global Terrorism Database, some conclusions that can be

drawn are:

1. Terrorism has been a global problem, with Incidents reported in nearly all countries.

2. The number of terrorist attacks Increased sharply after the 9/11 attacks in 2001, peaking In 2014 and declining slightly in recent years.

3. Iraq and Afghanistan have been the most affected countries by terrorism, with the highest number of attacks and fatalities.

4. Terrorist attacks are not evenly distributed across the world, with certain regions like the Middle East, South Asia, and North Africa being more affected.

5. Bombing/explosions are the most common type of terrorist attack, followed by armed assaults and assassinations.

6. Terrorist groups like the Tallban, Islamic State, and Boko Haram are responsible for the majority of attacks and fatalitles.

7. The analysis also indicates that there is a significant correlation between the number of terrorist Incidents and the number of fatalities.

8. Counterterrorism efforts by governments have resulted in a decrease in the number of terrorist Incidents In some countries, but the threat of terrorism remains a significant concern globally