

Capstone Project

GLOBAL TERRORISM ANALYSIS

By: Team Connecting Dots

- ☐ Introduction to team “Connecting Dots” Slide 3
- ☐ What is Terrorism? Slide 4
- ☐ How do countries define terrorism? Slide 5 & 6

- ☐ Brief about base data for the project Slide 7
- ☐ Step by step approach to Data Analysis Slide 8
- ☐ Resources used Slide 9

- ☐ Overview of dataset Slide 10
- ☐ Data Analysis Slide 11 - 17
- ☐ Challenges Slide 19
- ☐ Conclusion Slide 20

TEAM CONNECTING DOTS



SAAQUIB MUSTAFA



ARABINDA PATTNAIK



SAHIL KOLAMBKAR



SANDEEP



RAHUL MUKHERJEE

WHAT IS TERRORISM?

The term “**Terrorism**” is derived from Latin word “**Terror**”, which refers to “**great fear**”. The word “**Terrorism**” was first used during **French Revolution** in the year **1795**.

The term was used to refer to **intentional** or **planned** use of **brutality and violence** to create an **environment of fright, panic, distress and fear** in general public with the sole purpose of establishing a **certain political or social native**.

In today's world Terrorism is used by different parties in different perspective under different circumstances. Though **UN Security Council** recognises **Terrorism as a threat** to peace and security, but **fails to define Terrorism in any of its resolutions** and urges member countries to define Terrorism in their respective national law.

Accordingly different countries define Terrorism & Terrorist differently in their Laws.

HOW DO COUNTRIES DEFINE TERRORISM?

US Government / FBI defines and classifies terrorism as below:

International terrorism: Violent, criminal acts committed by individuals and/or groups who are inspired by, or associated with, designated **foreign terrorist organizations** or **nations** (state-sponsored).

Domestic terrorism: Violent, criminal acts committed by individuals and/or groups to further ideological goals stemming from domestic influences, such as those of a political, religious, social, racial, or environmental nature.

HOW DO COUNTRIES DEFINE TERRORISM? (cont.)

The Indian National Security Guard Act, 1986, defines a 'Terrorist' as: "Terrorist means any person who with intent to overawe the Government as by law established or to strike terror in the people or any section of the people, does any act or thing by using bomb, dynamite or other explosive substance or inflammable substances or firearms or other lethal weapons or poisons or noxious gases or other substances (whether biological or otherwise) of a hazardous nature, in such a manner as to cause or as is likely to cause, death or injuries to any person or persons or damage to or destruction of property, or disruption of any supplies or services essential to the life of community."

(Who counts as a terrorist and what counts as terrorism is a debate that remains unresolved)

(Source: <https://www.mea.gov.in/articles-in-indian-media.htm?dtl/15985/Terrorism+and+the+law++I>)

BRIEF ABOUT BASE DATA FOR THE PROJECT.

We have use **Global Terrorism Database** (GTD) as base data for this project which is an open source online database and consists of detailed information regarding **terrorists attacks** that happened around the world since **1970 till 2017**. The GTD is maintained by **National Consortium for Study of Terrorism and Response to Terrorism** (START), a Department of Homeland Security (DHS) Science and Technology (S&T) Center of Excellence. The data provides insights about date of event, number of casualties, target and location, type of attack, group claiming responsibilities and weapons used.

Users of this data include:

- Department of Homeland Security
- Department of Defence
- Department of State
- State Fusion Centres
- Intelligence Community Agencies (federal, state and local)
- Researchers and Students

Source:

https://www.dhs.gov/sites/default/files/publications/start_global-terrorism-database_coe-factsheet_1611-508.pdf

STEP BY STEP APPROACH TO DATA ANALYZE.

- ✓ Importing the necessary libraries in Python.
- ✓ Mounting Google drive and creating the file path.
- ✓ Importing Dataset from Drive.
- ✓ Printing the information about a DataFrame including the index, dtype and columns, non-null values and memory usage.
- ✓ Using Pandas library we did statistical analysis of the data whereas for visualization we used Matplotlib and Seaborn.

RESOURCES USED.



We used Python as programming language for analysing this data as it one of the most popular languages for machine learning and artificial intelligence. It's well known for the great flexibility it offers.



We used Google Colaboratory, popularly known as Google Colab for writing and execution of Python codes because of its inherent benefits like Zero Configuration, free access to GPU and ease of sharing.



We used Pandas open source data manipulation and analysis tool for statistical analysis of the data. Pandas is well known for being fast, flexible, powerful and ease of use



Matplotlib was used in the project for creating static interactive visualizations in Python.

OVERVIEW OF THE DATASET.

Original Dataset

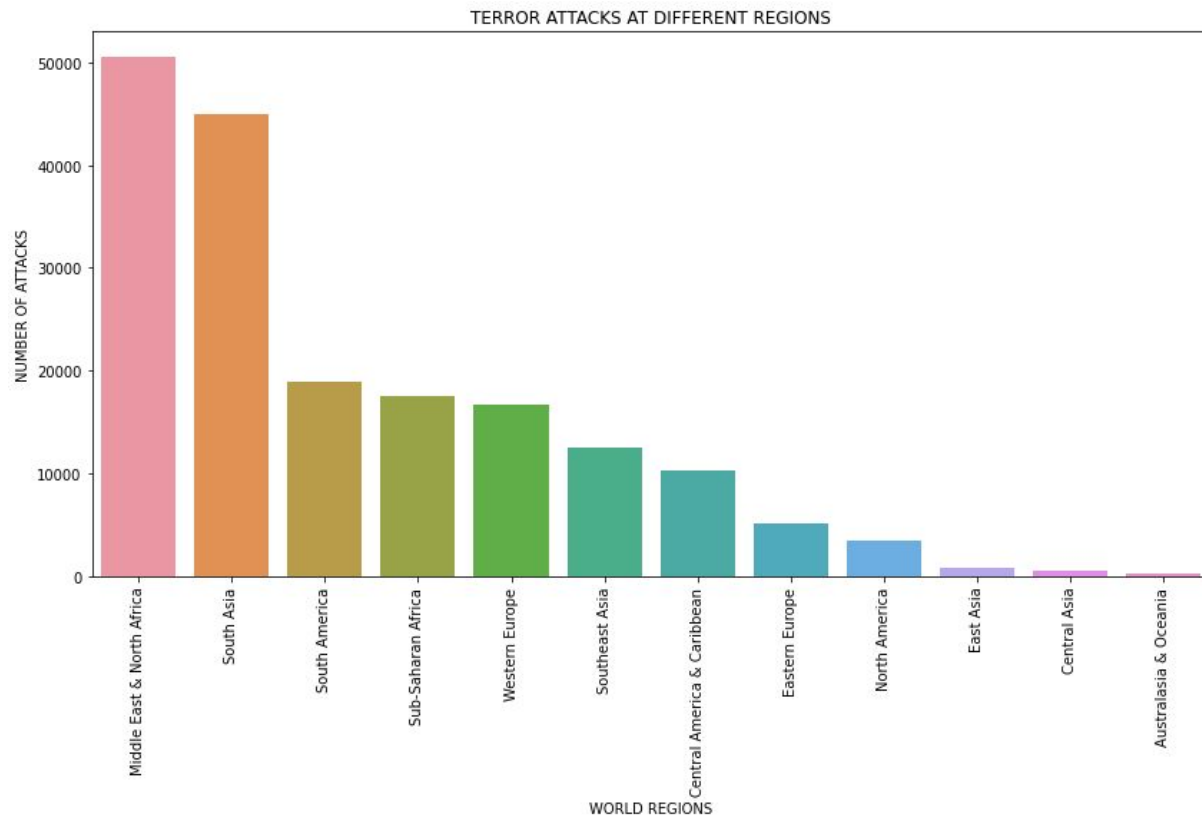
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 181691 entries, 0 to 181690
Columns: 135 entries, eventid to related
dtypes: float64(55), int64(22), object(58)
memory usage: 187.1+ MB
```

- Originally dataset had **181691** Rows and **135** Columns.
- Post filtration of the data we have considered **181691** Rows and **14** Columns for the purpose of the analysis.

Filtered Dataset

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 181691 entries, 0 to 181690
Data columns (total 14 columns):
#   Column                Non-Null Count  Dtype
---  -
0   eventid               181691 non-null int64
1   iyear                181691 non-null int64
2   country_txt          181691 non-null object
3   attacktype1_txt      181691 non-null object
4   targtype1_txt        181691 non-null object
5   gname                181691 non-null object
6   nkill                171378 non-null float64
7   nwound               165380 non-null float64
8   weaptype1_txt        181691 non-null object
9   ransomamt            1350 non-null  float64
10  propvalue             38989 non-null float64
11  motive               50561 non-null object
12  region_txt           181691 non-null object
13  weapsubtype1_txt     160923 non-null object
dtypes: float64(4), int64(2), object(8)
memory usage: 19.4+ MB
```

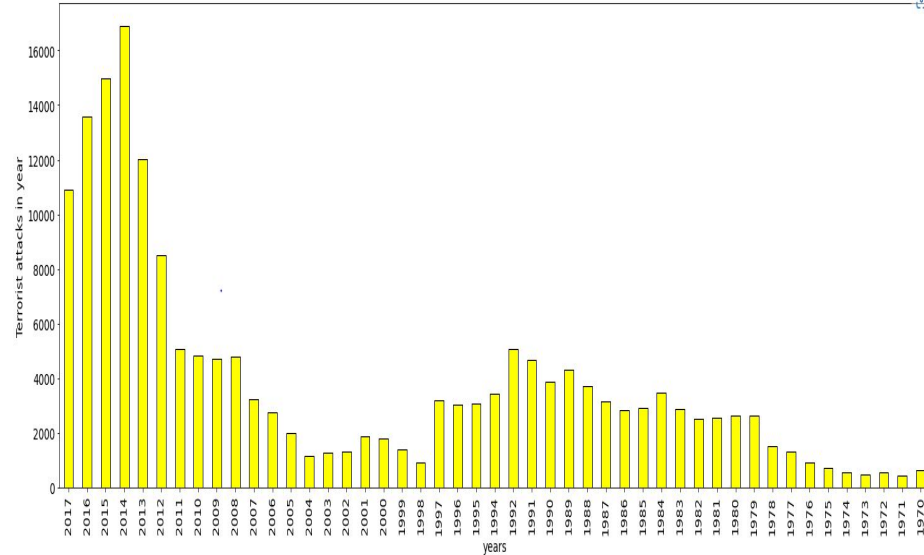
REGIONS SUFFERING MAXIMUM TERRORIST ATTACKS



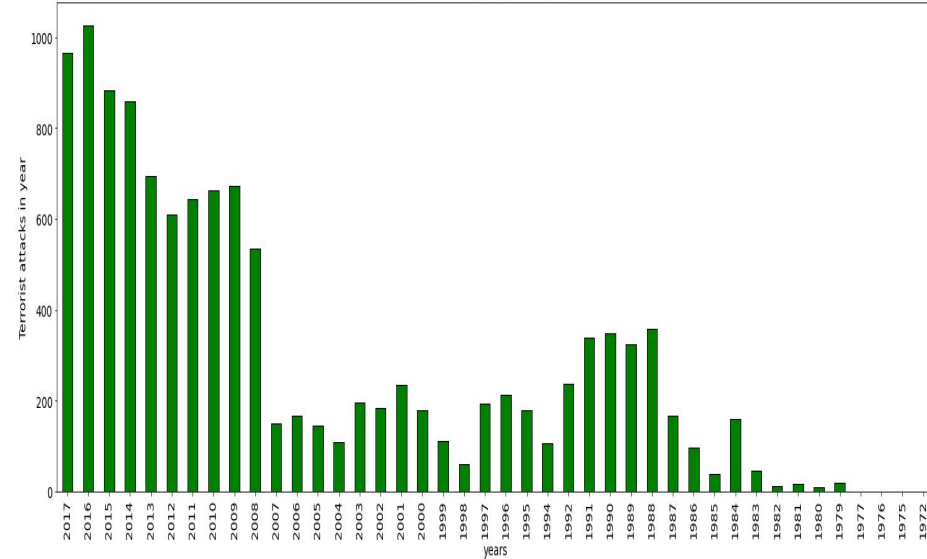
Middle East and North Africa witnessed the highest number of terrorist attacks during the 1971 to 2017, followed by South Asia and South America.

TREND OF TERROSIST ATTACKS

Trend of terror attacks in the world

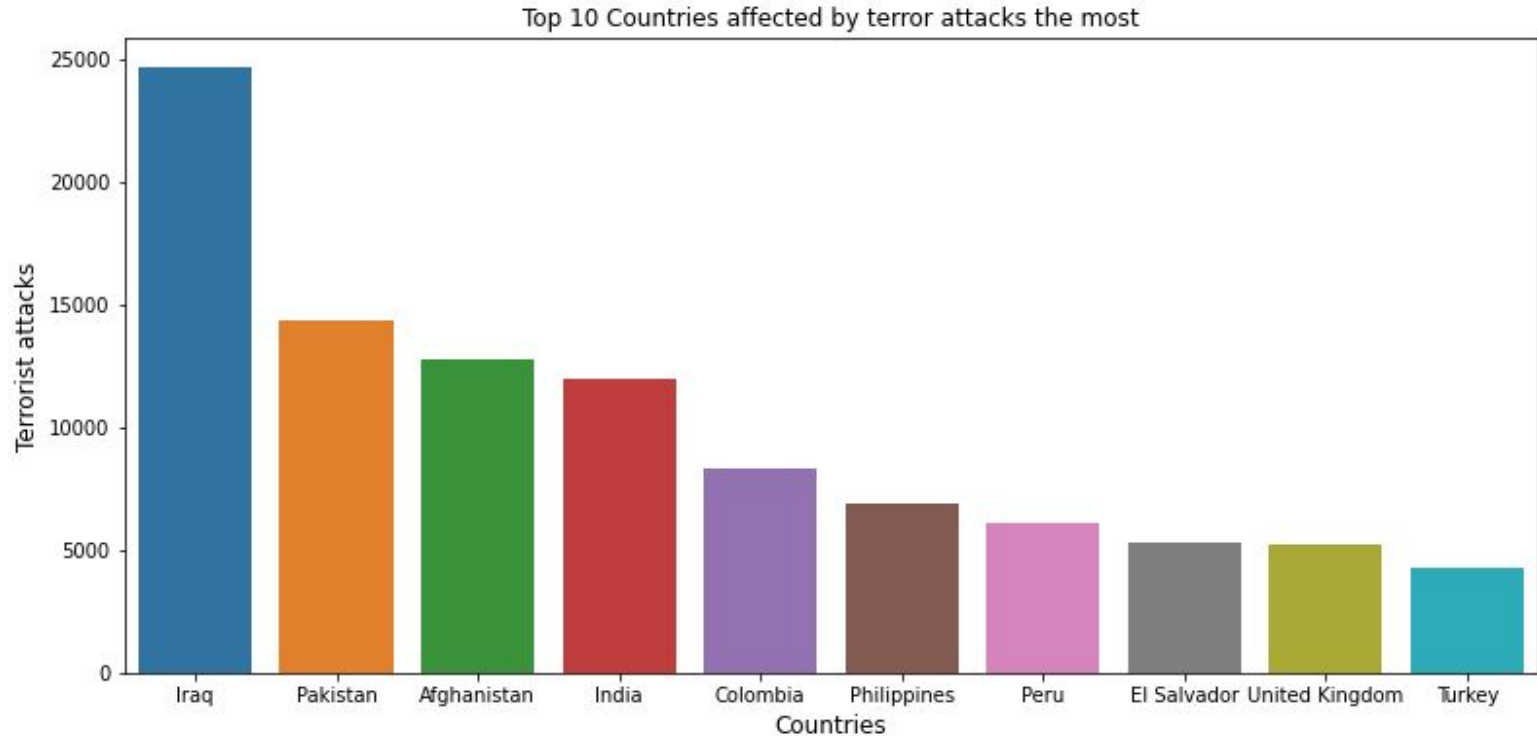


Trend of terror attacks in the India



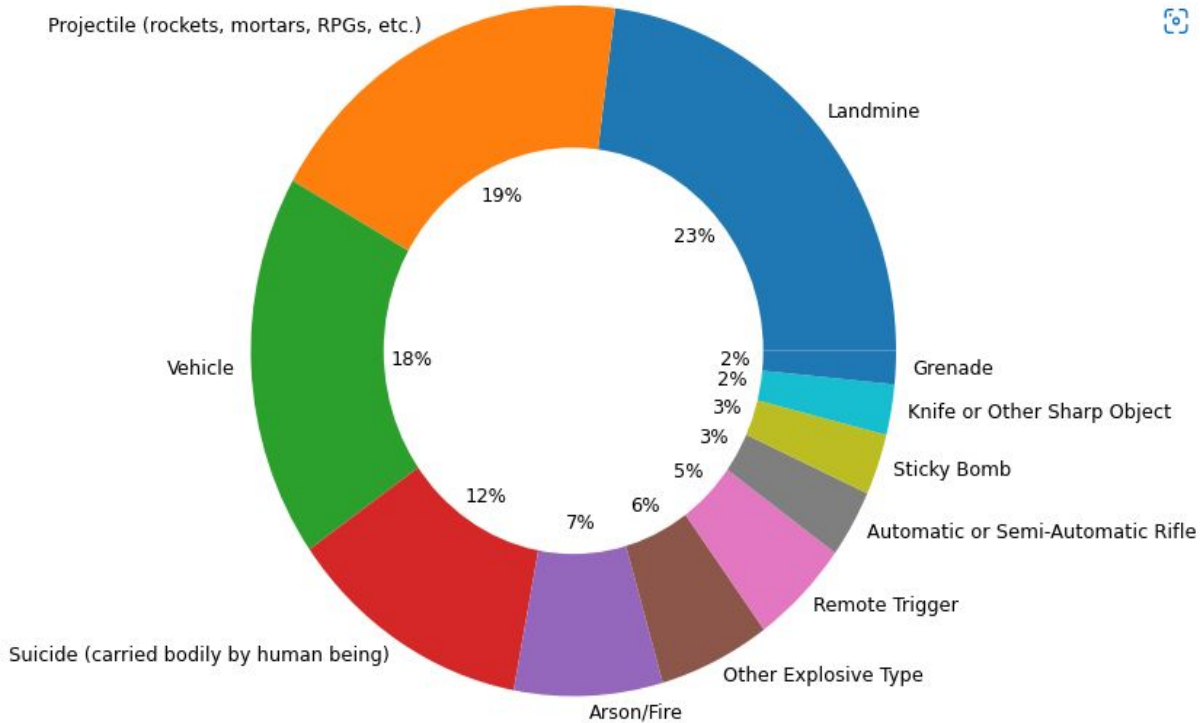
- Though there has been fluctuations the trend however, it is evident that frequency of terrorist attacks has increased over the years.
- Internationally highest number of terrorist attacks were observed in 2014 followed by 2015 & 2016. Whereas, in India the highest number of terrorist attacks were observed in 2016 followed by 2017 & 2015.

TOP 10 COUNTRIES IMPACTED BY TERROSISM



Iraq faced the highest number of terrorist attacks followed by Pakistan, Afghanistan and India.

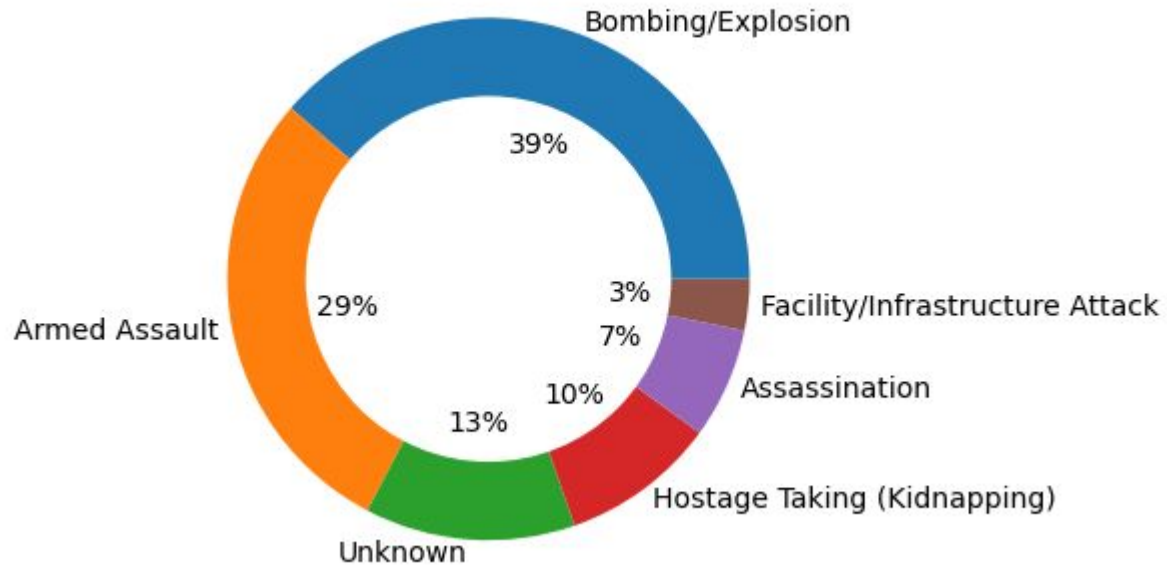
TERRORIST ORGANIZATION RESPONSIBLE FOR MOST ATTACKS



Per our analysis the highest number of attacks is done by **Taliban** and their most preferred weapon has been **Landmine** followed by usage of **Projectiles** like rockets, mortars, RPG, etc.

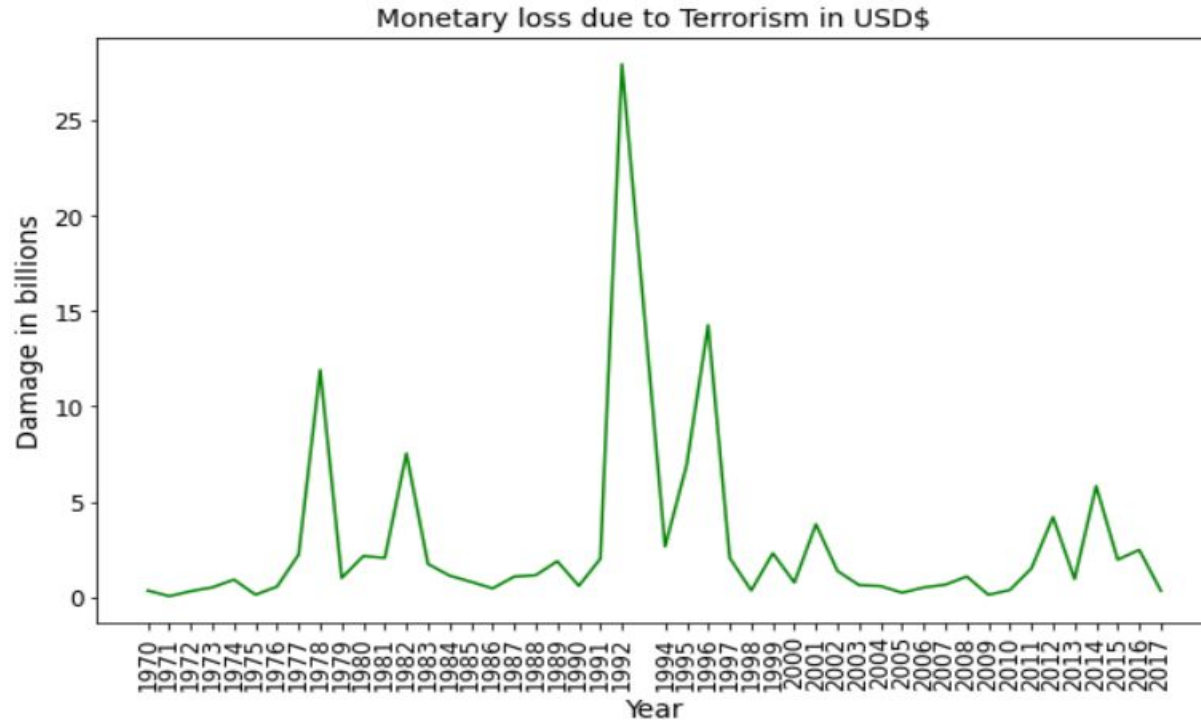
TALIBANS PREFERRED STYLE OF ATTACK

Taliban favorite style of attacks



The preferred style of **Taliban** is Bombing / Explosion followed by Armed Assault.

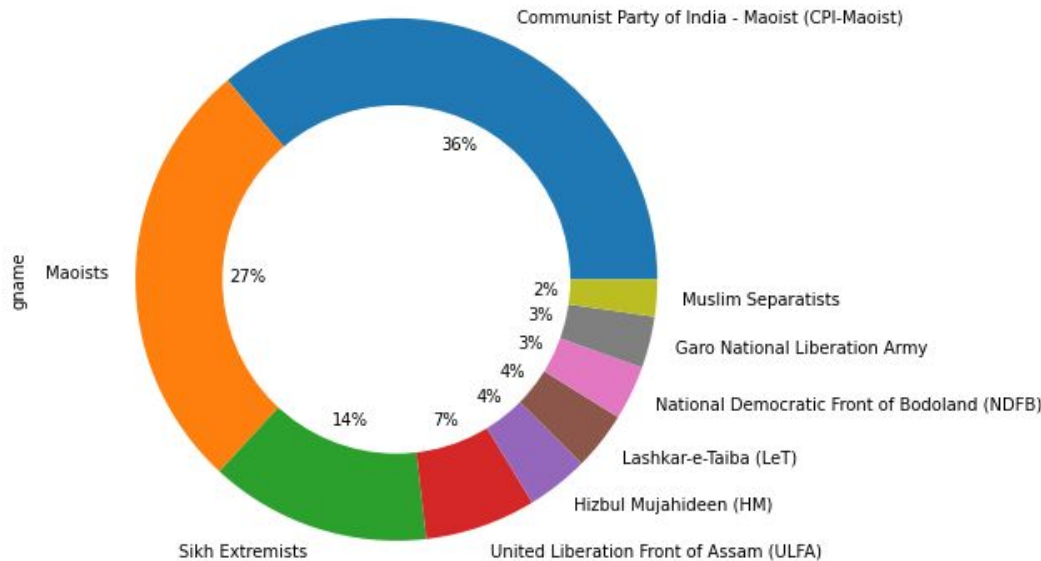
TREND OF ECONOMIC LOSSES FROM TERRORIST ATTACKS



The highest **economic loss** arising due to Terrorist attacks was in **1992**, more than \$25 Billion, followed by **1996** and **1978**.

TERRORIST GROUPS RESPONSIBLE FOR ATTACKS IN INDIA

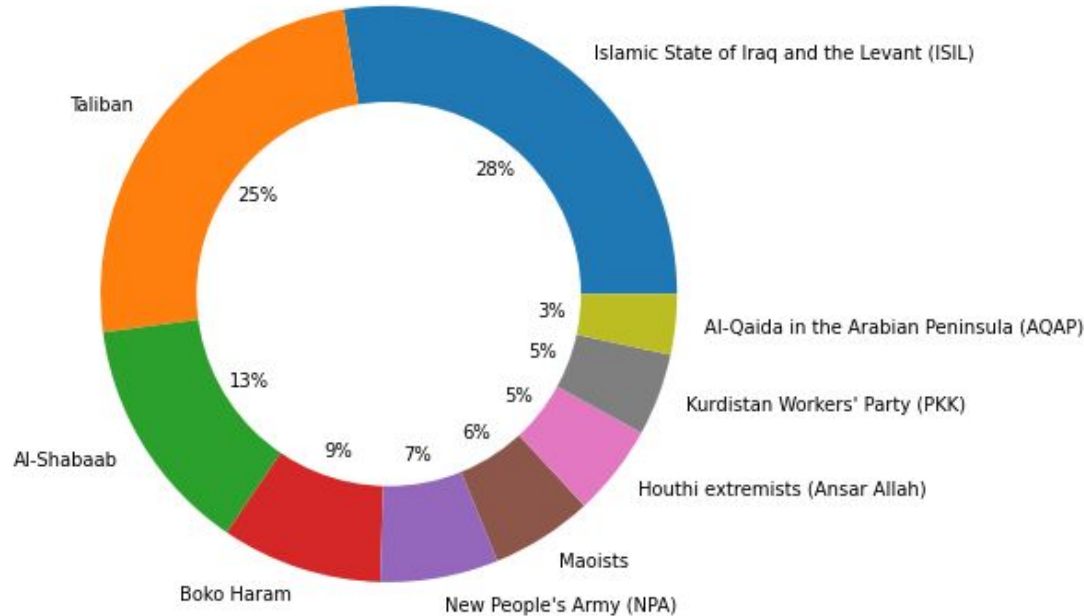
TERROR ATTACKS BY GROUPS IN INDIA



The highest number of terrorist attacks in India are carried out by **CPI – Maoist** followed by Maoist, Esikh Extremists and ULFA.

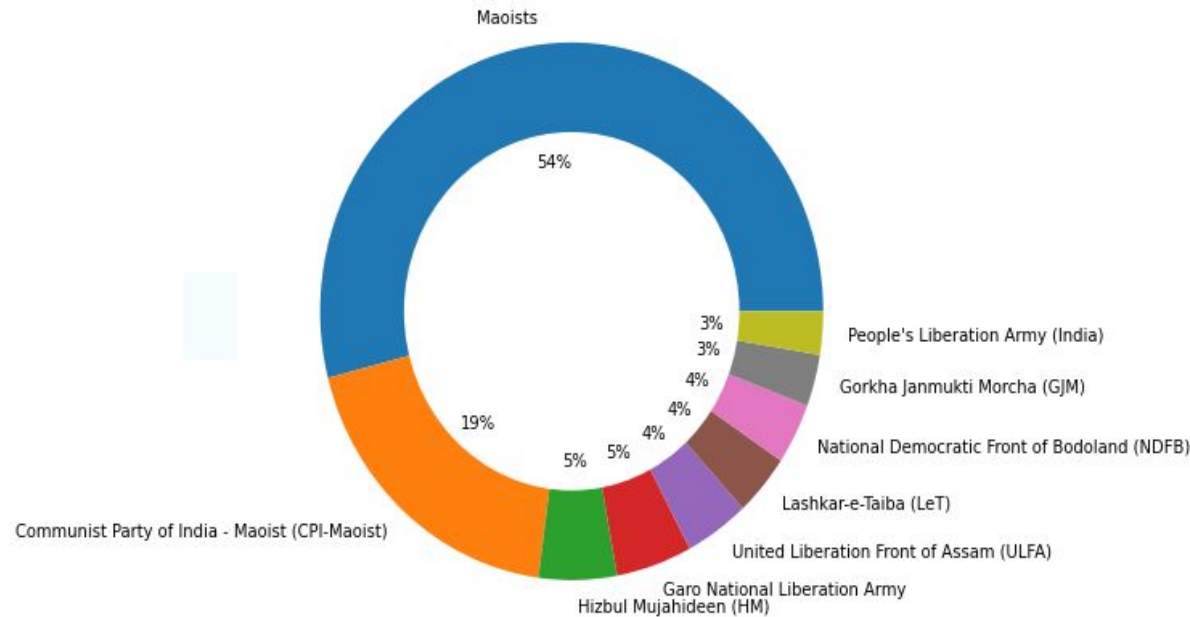
Moreover, **1877 attacks** has been conducted by unidentified Terrorists.

MOST ACTIVE TERRORIST ORGANIZATIONS IN LAST 5 YEARS IN THE WORLD



- **ISIL** is the most active terror organization in the world followed by Taliban.
- While the number of attacks by unidentified terrorists are 5613.

MOST ACTIVE TERRORIST ORGANIZATIONS FOR LAST 5 YEARS IN INDIA



- **MOIST** Group is the most active terror organization in the India followed by CPI-Moist.
- While the number of attacks by unidentified terrorists are 1163.

CHALLENGES

- ✓ Initially we were not able to load data into **Google Colab**. We used **encoding='latin1'** to bypass the error.
- ✓ While plotting the graphs they were getting Overwritten. We used **Subplot** function to solve the issue.
- ✓ In Line Graph by default we get **5 values in x-axis**. We used **plt.Xticks([list of values for X-axis])** to solve the issue.
- ✓ By default values on X-axis are printed at **90° angle**. We used **plt.Xticks(rotation=0)** to solve the same.
- ✓ Creating donut pie chart was also a challenge as we had to **overwrite a solid white circle** on our existing pie chart and make sure our percentage values and pie chart labels don't get overwritten

CONCLUSION

- It is evident from the trend analysis that since 1971 there has been significant increase in terror attacks globally. Terrorist Groups like ISIL, Taliban, Al-Shabaab, Boko Haram, NPA, Maoist are causing havoc throughout the world by bombing, armed assaults, assassination, etc. However, in recent times there has been slight decrease in terrorist attacks.
- We need to understand that every human life is precious and we should take all efforts to curb terrorism and sponsors of terrorism. Development of both socio economic and educational are the only permanent solution to this problem.