Capstone Project
on
Global Terrorism Analysis

Present By: Ruchira Umesh Shrawagi

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Data Summary

- The dataset is very comprehensive and contains a lot of terrorism-related information. We have the entire dataset Global Terrorism Data. It contains 180,000 terrorist attacks x 135 features.
- The scope of this project is to drill down the terrorist events around the world from 1970 through 2017.
- It enables aggregation on many geographical levels including the globe, regions, countries, states, and cities.
- Includes systematic data on domestic as well as international terrorist incidents that have occurred during specific time period.
- This data contains month, year, days, longitude, latitude, number of killed, number of wound, weapons, attack types, and many more.
- This data is updated annually.

Objective

- Study the source and do some quick research to understand more about the dataset and its topic.

- Clean the data.

- Prepare the data for processing and analysis.

- Analyse the data more deeply and extract insights.

- Visualize the data using Python.

Work Flow

- We will divide our work flow into 3 steps:

Data Collection & Analysis ❯ Data Cleaning & Manipulation ❯ Exploratory Data Analysis (EDA)

Data Collection and Analysis

- It contains more than180,000 rows and 135 columns.

- Lets understand about the columns: month, year, days, longitude, latitude, number of killed, number of wound, weapons, attack types, country, country code, region, cities, motive, summary and many more.

- After exploring the codebook I discovered some columns to be redundant, or not relevant, which I removed. See the corresponding notebook Cleaning Data for further details on how we approached.

- Also I discovered most of the columns has the null values, which I have updated the values on that rows/columns.

Data Cleaning

- We ended up working on 18 columns from 135. See below screen print:

- Created new DataFrame with necessary columns:

```
[6] # Create DataFrame with necessary columns
    df = df[['Year', 'Month', 'Day', 'Country', 'provstate', 'region_txt', 'city', 'latitude', 'longitude', 'attacktype1_txt', 't
```

```
itude', 'attacktype1_txt', 'target1', 'nkill', 'nwound', 'summary', 'gname', 'targtype1_txt', 'weaptype1_txt', 'motive']]
```

- Filling Null values:

```
# Need to fill null values, we will use maximum values from the above
df['provstate'].fillna(value = 'Baghadad', inplace = True)

df['city'].fillna(value= 'unknown', inplace = True)
df['longitude'].fillna(value = 44.371773, inplace = True)
df['latitude'].fillna(value = 33.303566, inplace = True)
df['target1'].fillna (value = 'civilians', inplace = True)
df['nkill'].fillna(value = 0.0, inplace= True)
df['nwound'].fillna(value = 0.0, inplace = True)
df['motive'].fillna(value = 'unknown', inplace = True)
```
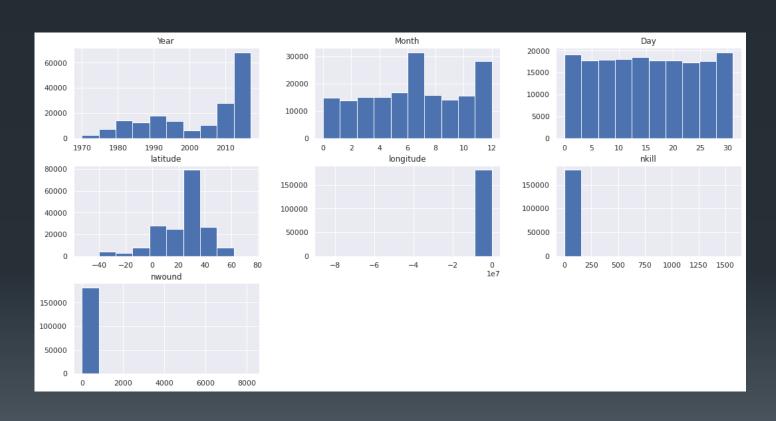
New Columns:

```
(df.columns)
```

```
Index(['Year', 'Month', 'Day', 'Country', 'provstate', 'region_txt', 'city',
       'latitude', 'longitude', 'attacktype1_txt', 'target1', 'nkill',
       'nwound', 'summary', 'gname', 'targtype1_txt', 'weaptype1_txt',
       'motive'],
      dtype='object')
```

Now lets see the shape:

Before   After

```
[ ]  df.shape

     (181691, 135)
```
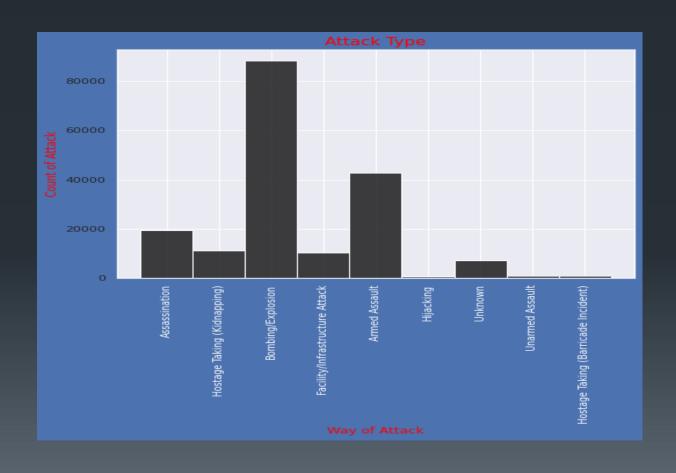
```
[▶]  df.shape

     (181691, 18)
```

Exploratory Data Analysis (EDA)
Geographical Descriptive
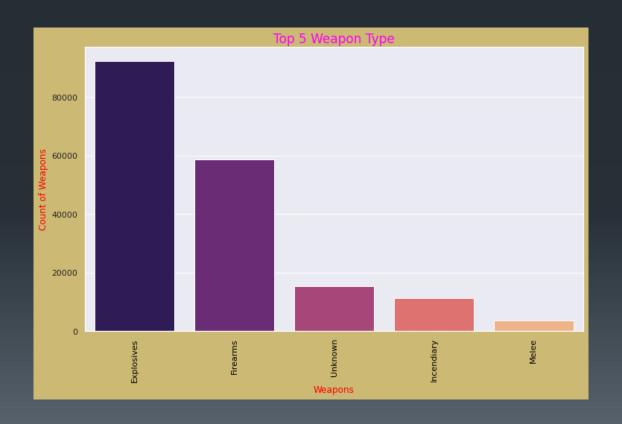
Exploratory Data Analysis (EDA)
Attack Type
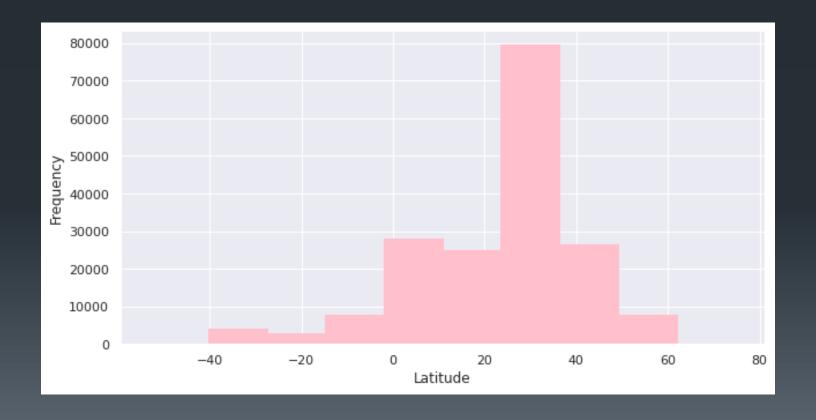
Exploratory Data Analysis (EDA)
Top 5 Weapon Attack
https://colab.research.google.com/drive/1Anv5NCrPkHU2Zjcs3IWqqkrS9_W0XPlz#scrollTo=Lk3Z8MYqtZoo&line=6&uniqifier=1
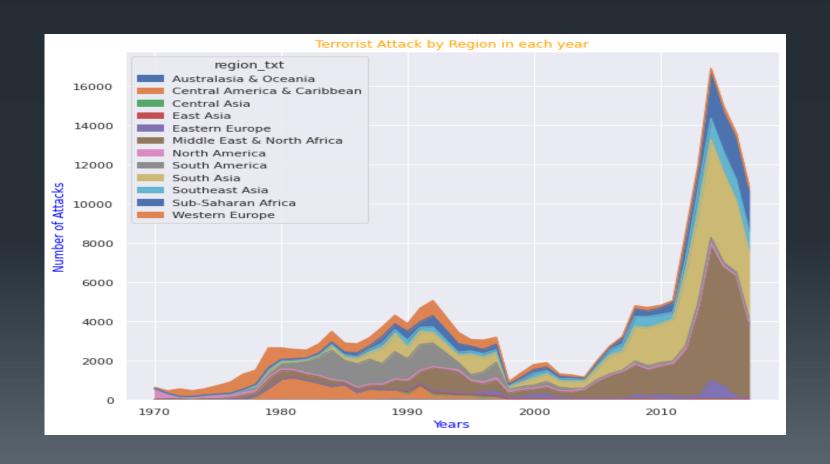
Exploratory Data Analysis (EDA)
Histogram

Exploratory Data Analysis (EDA)
Region Chart

Exploratory Data Analysis (EDA)
Bar Plot
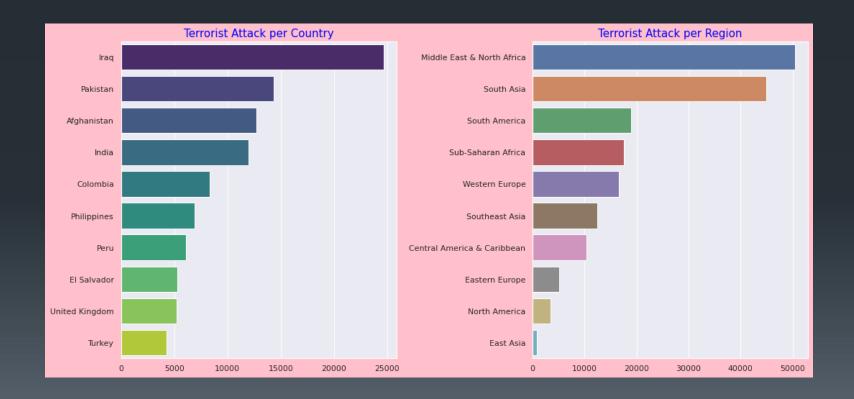
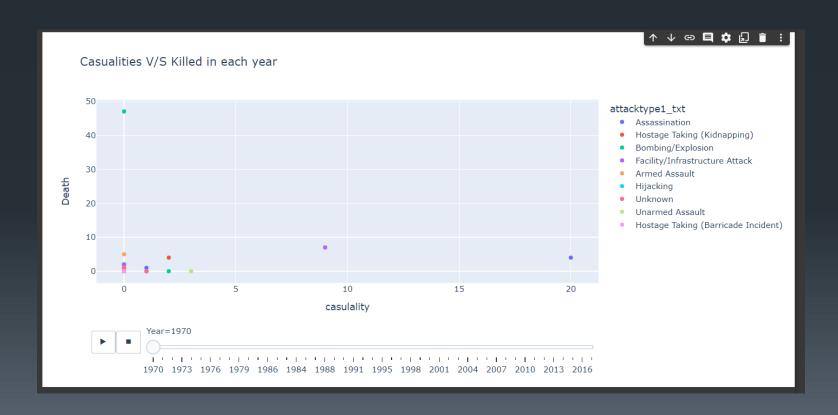# Exploratory Data Analysis (EDA)
KDE Plot

Exploratory Data Analysis (EDA)
Sub Plot
[https://colab.research.google.com/drive/1Anv5NCrPkHU2Zjcs3IWqqkrS9_W0XPlz#scrollTo=UbuopJW CwDwC&line=4&uniqifier=1](https://colab.research.google.com/drive/1Anv5NCrPkHU2Zjcs3IWqqkrS9_W0XPlz#scrollTo=UbuopJWCwDwC&line=4&uniqifier=1)

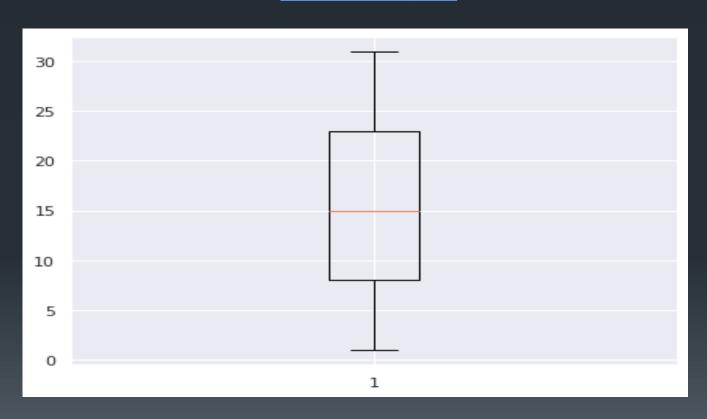# Exploratory Data Analysis (EDA)
Scatter Chart

Exploratory Data Analysis (EDA)
Heatmap
https://colab.research.google.com/drive/1Anv5NCrPkHU2Zjcs3lWqqkrS9_W0XPlz#scrollTo=qM3b7B6A wi0h&line=1&uniqifier=1
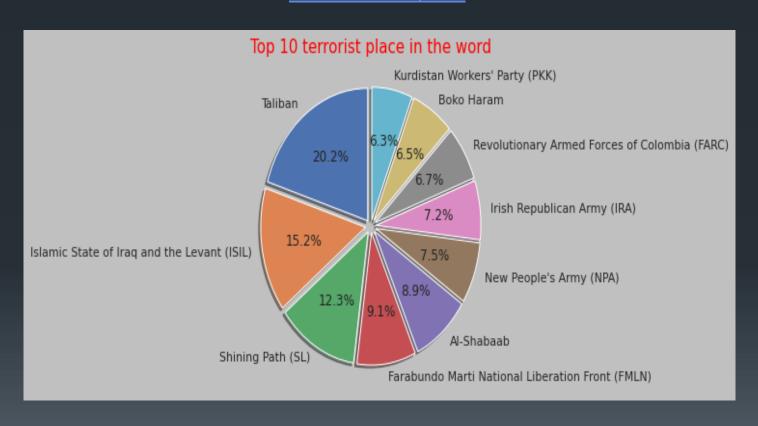
Exploratory Data Analysis (EDA)
Box Plot

Exploratory Data Analysis (EDA)
Pie Chart

Top 10 terrorist place in the word

Conclusion

- The conclusion of this project is to build a tool which helps users to understand and interpret the nature of terrorism. A visualization which can be used to calculate the total number of attacks, total kill counts and location based on the selected region, attack type, terrorist place and year provides interactive interface to explore this dataset.

THANK YOU