The Sparks Foundation

DATA SCIENCE AND BUSINESS ANALYTICS

TASK 4 - EXPLORATORY DATA ANALYSIS - TERRORISM

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Data Science & Business Analytics Tasks

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Exploratory Data Analysis – Terrorism
(Level – Intermediate)

- Perform 'Exploratory Data Analysis' on dataset 'Global Terrorism'
- As a security/defense analyst, try to find out the hot zone of terrorism.
- What all security issues and insights you can derive by EDA?
- You can choose any of the tool of your choice (Python/R/Tableau/PowerBI/Excel/SAP/SAS)
- **Dataset:** https://bit.ly/2TK5Xn5
- **Intermediate Level** - Create storyboards. Screen-record along with your audio explaining the charts and interpretations. Use images.
- Task submission:
  1. Create the dashboards and/or storyboard and record it
  2. Upload the recording on Youtube, share the link on LinkedIn
  3. Submit LinkedIn post link in Task Submission Form when shared
  4. Please read FAQs on how to submit the tasks.

Overview

- Define the problem
- Data source
- Make header in 2nd row
- Remove unless columns
- Remove blank and undefined values
- Modify types
- Renamed Columns
- Data Visualization Of Terrorist Attacks
- Results and Discussion

Define the problem

- Perform ‘Exploratory Data Analysis’ on dataset ‘Global Terrorism’
- As a security/defense analyst, try to find out the hot zone of terrorism.
- What all security issues and insights you can derive by EDA?

Data source

```
= Csv.Document(File.Contents("D:\Data Analysis\The Sparks Foundation\Task 4\globalterrorismdb_0718dist.csv"),
    [Delimiter=",", Columns=135, Encoding=1252, QuoteStyle=QuoteStyle.None])
```

	Column1	Column2	Column3	Column4	Column5	Column6
1	eventid	iyear	imonth	iday	approxdate	extended
2	197000000001	1970	7	2		0
3	197000000002	1970	0	0		0
4	197001000001	1970	1	0		0
5	197001000002	1970	1	0		0
6	197001000003	1970	1	0		0
7	197001010002	1970	1	1		0
8	197001020001	1970	1	2		0
9	197001020002	1970	1	2		0
10	197001020003	1970	1	2		0
11	197001030001	1970	1	3		0
12	197001050001	1970	1	1		0
13	197001060001	1970	1	6		0
14	197001080001	1970	1	8		0
15	197001090001	1970	1	9		0
16	197001090002	1970	1	9		0
17	197001100001	1970	1	10		0
18	197001110001	1970	1	11		0
19	197001120001	1970	1	12		0
20						

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Make header in 2nd row

```
= Table.PromoteHeaders(Source, [PromoteAllScalars=true])
```

	eventid	iyear	imonth	iday	approxdate	extended
1	197000000001	1970	7	2		0
2	197000000002	1970	0	0		0
3	197001000001	1970	1	0		0
4	197001000002	1970	1	0		0
5	197001000003	1970	1	0		0
6	197001010002	1970	1	1		0
7	197001020001	1970	1	2		0
8	197001020002	1970	1	2		0
9	197001020003	1970	1	2		0
10	197001030001	1970	1	3		0
11	197001050001	1970	1	1		0
12	197001060001	1970	1	6		0
13	197001080001	1970	1	8		0
14	197001090001	1970	1	9		0
15	197001090002	1970	1	9		0
16	197001100001	1970	1	10		0
17	197001110001	1970	1	11		0
18	197001120001	1970	1	12		0
19	197001120002	1970	1	12		0
20	197001130001	1970	1	13		0
21	197001140001	1970	1	14		0
22	197001150001	1970	1	15		0
23	197001190002	1970	1	19		0
24						

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Remove unless columns

```
= Table.RemoveColumns(#"Make header in 2nd row",{"eventid", "approxdate", "extended", "resolution", "provstate",
    "latitude", "longitude", "specificity", "vicinity", "location", "summary", "crit1", "crit2", "crit3",
    "doubtterr", "alternative", "alternative_txt", "multiple", "attacktype1", "attacktype1_txt", "attacktype2",
    "attacktype2_txt", "attacktype3", "attacktype3_txt", "targtype1", "targsubtype1", "corp1", "target1",
    "natlty1", "natlty1_txt", "targtype2", "targtype2_txt", "targsubtype2", "corp2", "target2", "natlty2",
```

	iyear	imonth	iday	country_txt	region_txt	city
1	1970	7	2	Dominican Republic	Central America & Caribbean	Santo Dom
2	1970	0	0	Mexico	North America	Mexico cit
3	1970	1	0	Philippines	Southeast Asia	Unknown
4	1970	1	0	Greece	Western Europe	Athens
5	1970	1	0	Japan	East Asia	Fukouka
6	1970	1	1	United States	North America	Cairo
7	1970	1	2	Uruguay	South America	Montevide
8	1970	1	2	United States	North America	Oakland
9	1970	1	2	United States	North America	Madison
10	1970	1	3	United States	North America	Madison
11	1970	1	1	United States	North America	Baraboo
12	1970	1	6	United States	North America	Denver
13	1970	1	8	Italy	Western Europe	Rome
14	1970	1	9	United States	North America	Detroit
15	1970	1	9	United States	North America	Rio Piedras
16	1970	1	10	East Germany (GDR)	Eastern Europe	Berlin
17	1970	1	11	Ethiopia	Sub-Saharan Africa	Unknown
18	1970	1	12	United States	North America	New York (
19	1970	1	12	United States	North America	Rio Grande
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Remove blank and undefined values

```
= Table.SelectRows(#"Remove unless columns", each ([targsubtype1_txt] <> "") and ([targsubtype2_txt] <> "") and (
    [targsubtype3_txt] <> "") and ([gname] <> "Unknown") and ([weapdetail] <> "" and [weapdetail] <> "Two unknown
    types of handguns were used in the attack." and [weapdetail] <> "Unknown explosives were used in the attack."
    and [weapdetail] <> "Unknown explosives were used in the bombing attack and unknown weapons were used in the
    attack against the villagers." and [weapdetail] <> "Unknown explosives were used in the bombing attack and
```

	iyear	imonth	iday	country_txt	region_txt	city
1	1973	1	7	United States	North America	New Orlea
2	1976	6	16	Lebanon	Middle East & North Africa	Beirut
3	1977	6	2	United Kingdom	Western Europe	Ardboe
4	1978	2	18	Cyprus	Western Europe	Nicosia
5	1978	12	5	Spain	Western Europe	San Sebast
6	1981	5	7	Spain	Western Europe	Madrid
7	1981	10	16	India	South Asia	Chandigarh
8	1982	12	9	Mozambique	Sub-Saharan Africa	Beira
9	1984	2	8	Colombia	South America	Las Palmas
10	1984	3	14	United Kingdom	Western Europe	Belfast
11	1985	3	29	France	Western Europe	Paris
12	1985	5	3	Spain	Western Europe	Unknown
13	1986	2	21	Peru	South America	Lima
14	1986	2	21	Peru	South America	Lima
15	1986	2	21	Peru	South America	Lima
16	1986	2	21	Peru	South America	Lima
17	1986	2	21	Peru	South America	Lima
18	1986	2	21	Peru	South America	Lima
19	1986	2	21	Peru	South America	Lima
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Modify types

```
= Table.TransformColumnTypes(#"Remove blank and undefined values",{{"iyear", Int64.Type}, {"success", Int64.Type},
    {"suicide", type number}})
```

	iyear	imonth	iday	country_txt	region_txt	city
1	1973	1	7	United States	North America	New Orlea
2	1976	6	16	Lebanon	Middle East & North Africa	Beirut
3	1977	6	2	United Kingdom	Western Europe	Ardboe
4	1978	2	18	Cyprus	Western Europe	Nicosia
5	1978	12	5	Spain	Western Europe	San Sebast
6	1981	5	7	Spain	Western Europe	Madrid
7	1981	10	16	India	South Asia	Chandigarh
8	1982	12	9	Mozambique	Sub-Saharan Africa	Beira
9	1984	2	8	Colombia	South America	Las Palmas
10	1984	3	14	United Kingdom	Western Europe	Belfast
11	1985	3	29	France	Western Europe	Paris
12	1985	5	3	Spain	Western Europe	Unknown
13	1986	2	21	Peru	South America	Lima
14	1986	2	21	Peru	South America	Lima
15	1986	2	21	Peru	South America	Lima
16	1986	2	21	Peru	South America	Lima
17	1986	2	21	Peru	South America	Lima
18	1986	2	21	Peru	South America	Lima
19	1986	2	21	Peru	South America	Lima
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Renamed Columns

```
= Table.RenameColumns(#"Modify types",{{"country_txt", "Country"}, {"success", "Success"}, {"imonth", "Month"},
    {"iday", "Day"}, {"iyear", "Year"}, {"targsubtype1_txt", "Target subtype 1"}, {"gname", "Group name"},
    {"region_txt", "Region"}, {"targsubtype2_txt", "Target subtype 2"}, {"targsubtype3_txt", "Target subtype 3"},
    {"targtype1_txt", "Target type 1"}, {"city", "City"}, {"suicide", "Suicide"}})
```

	Year	Month	Day	Country	Region	City
1	1973	1	7	United States	North America	New Orlea
2	1976	6	16	Lebanon	Middle East & North Africa	Beirut
3	1977	6	2	United Kingdom	Western Europe	Ardboe
4	1978	2	18	Cyprus	Western Europe	Nicosia
5	1978	12	5	Spain	Western Europe	San Sebast
6	1981	5	7	Spain	Western Europe	Madrid
7	1981	10	16	India	South Asia	Chandigarh
8	1982	12	9	Mozambique	Sub-Saharan Africa	Beira
9	1984	2	8	Colombia	South America	Las Palmas
10	1984	3	14	United Kingdom	Western Europe	Belfast
11	1985	3	29	France	Western Europe	Paris
12	1985	5	3	Spain	Western Europe	Unknown
13	1986	2	21	Peru	South America	Lima
14	1986	2	21	Peru	South America	Lima
15	1986	2	21	Peru	South America	Lima
16	1986	2	21	Peru	South America	Lima
17	1986	2	21	Peru	South America	Lima
18	1986	2	21	Peru	South America	Lima
19	1986	2	21	Peru	South America	Lima
20						

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Hot zone of terrorism

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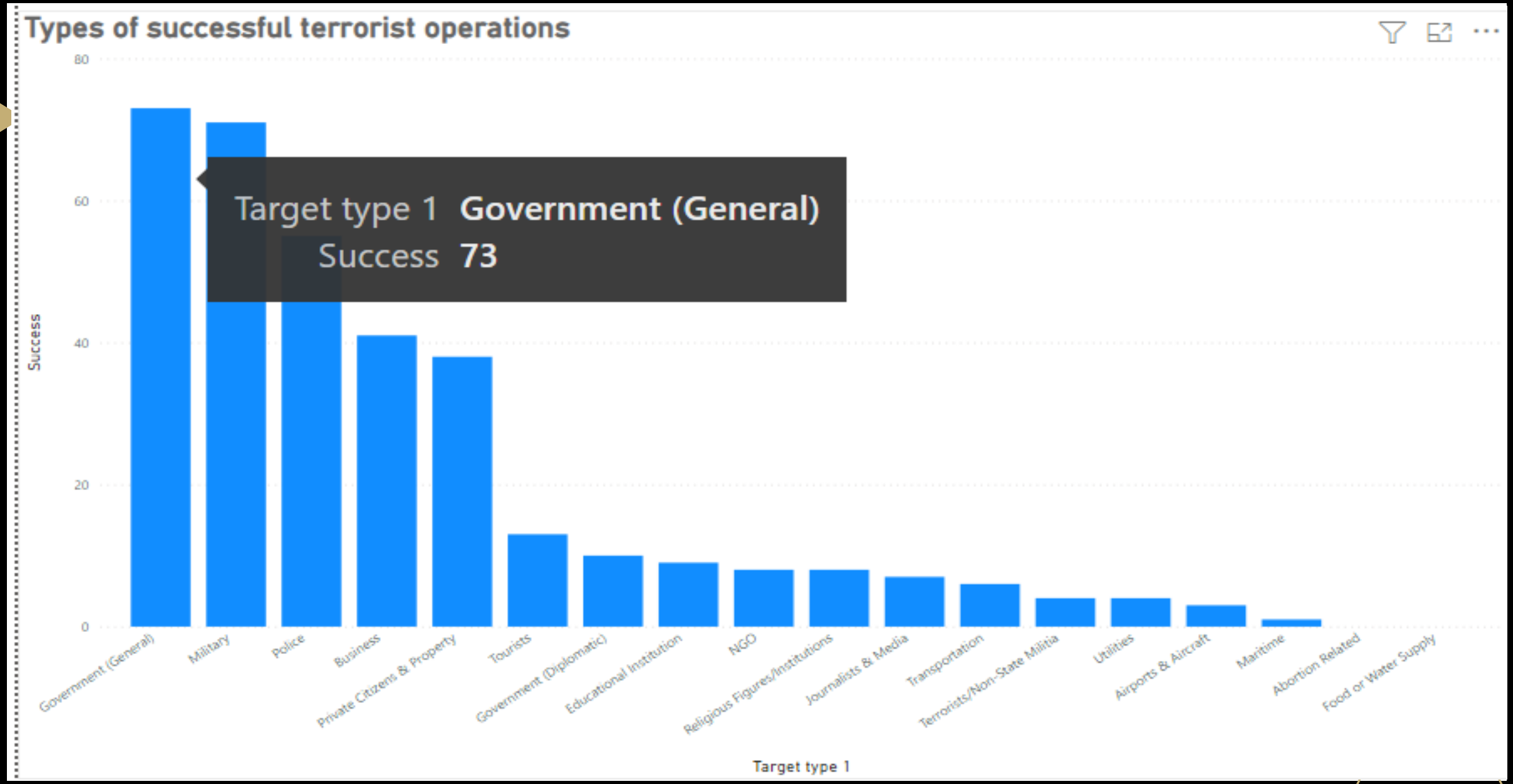

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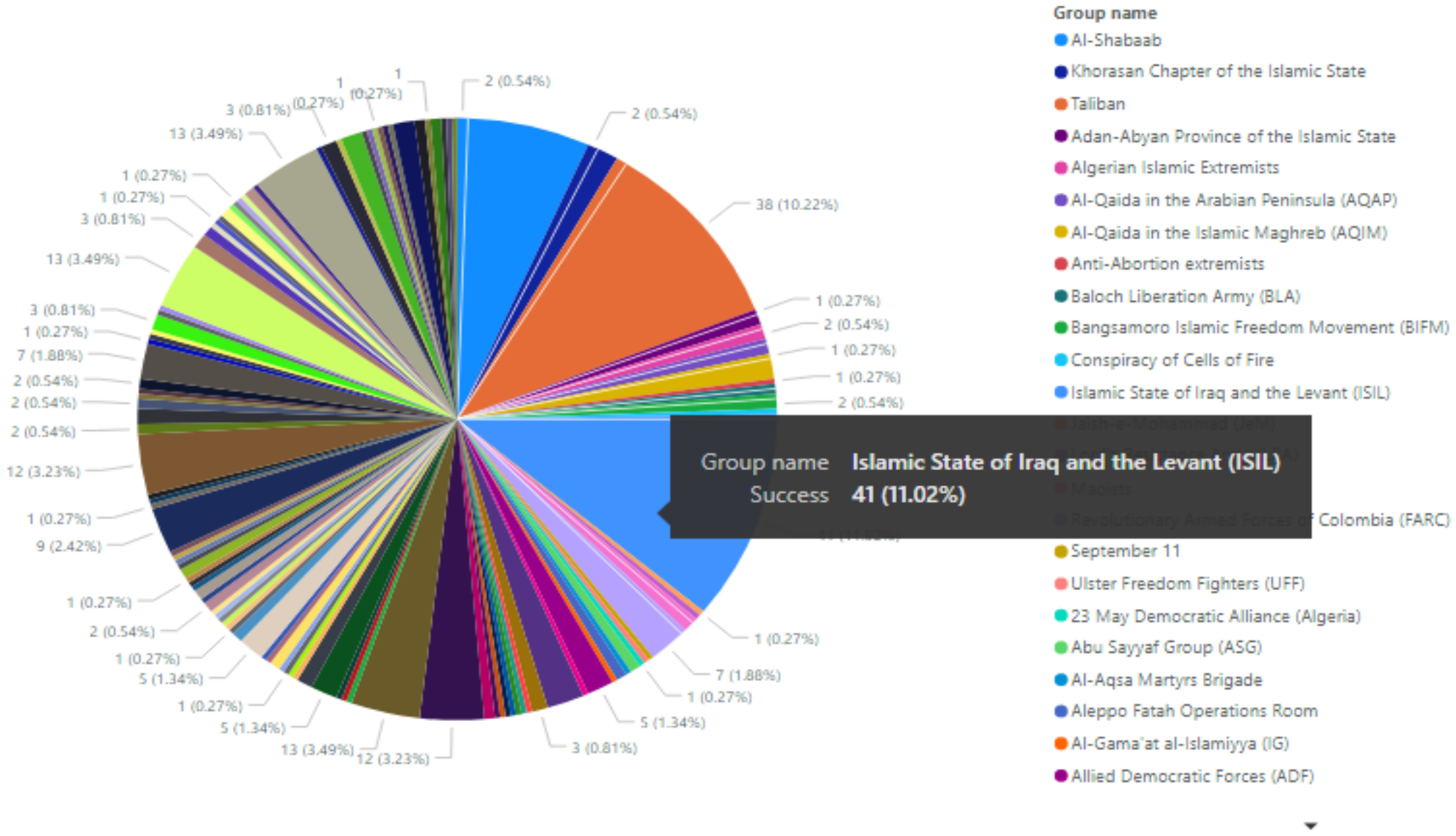
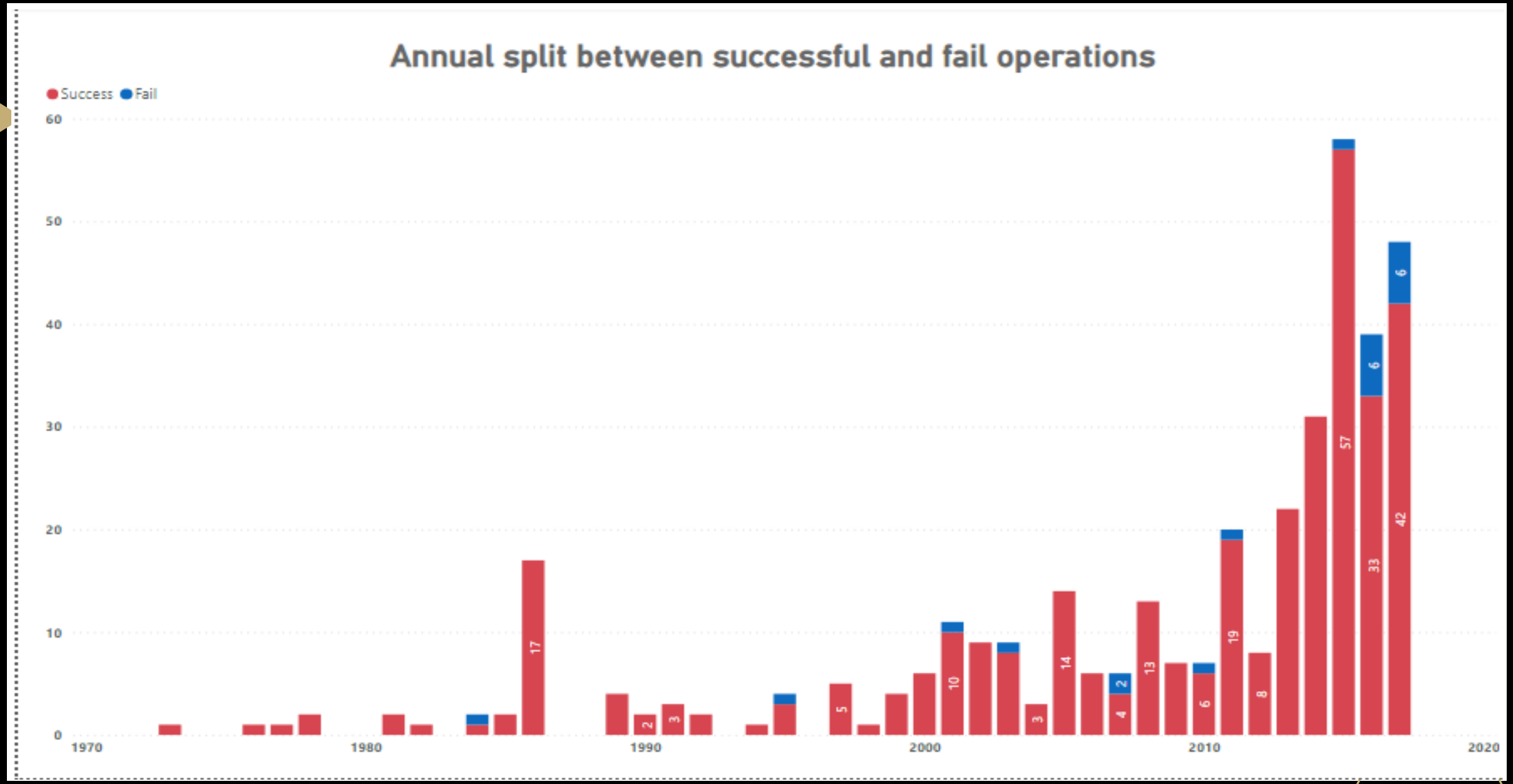
Groups that have carried out failed operations





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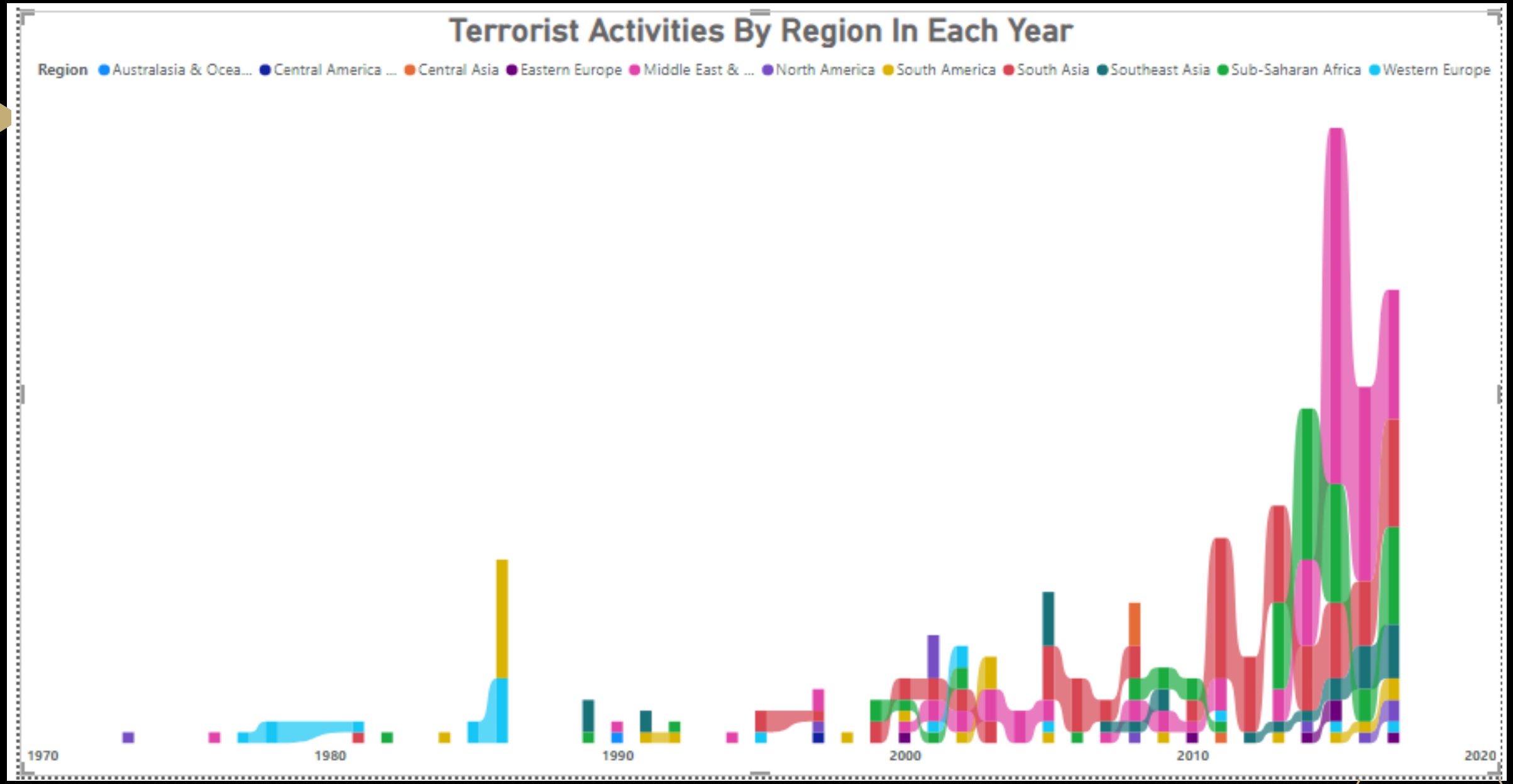

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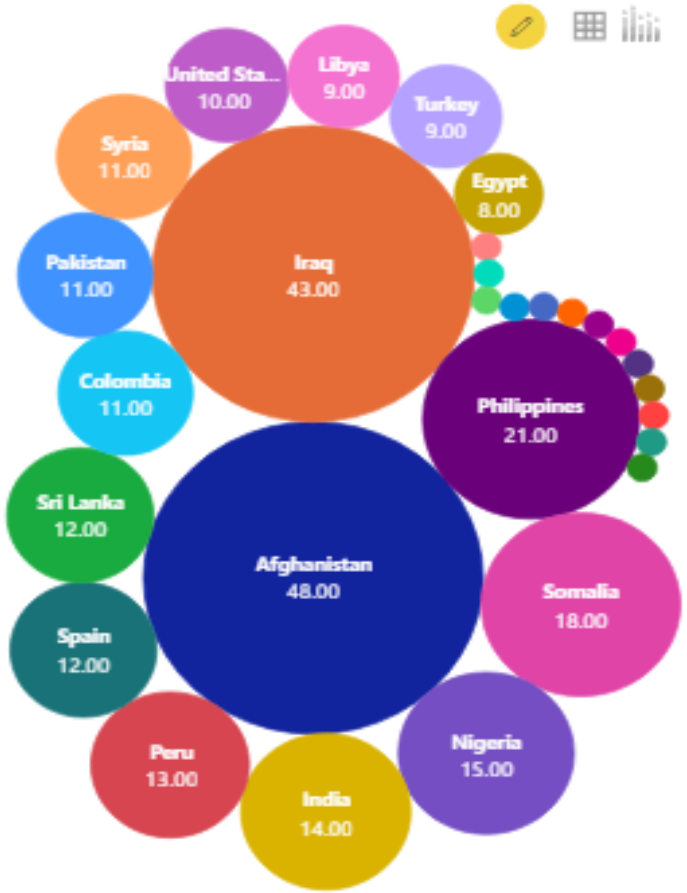
Data Visualization Of Terrorist Attacks
From 1970 To 2017

0.94
Success Rate

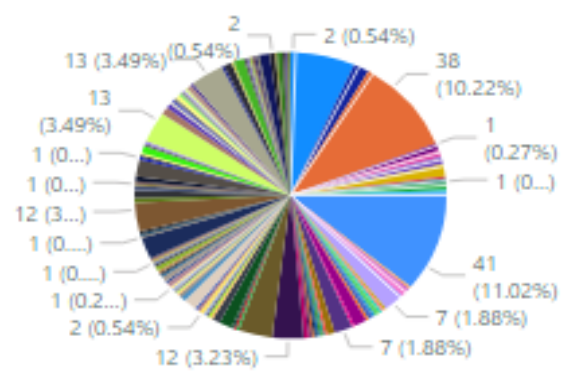
0.06
Fail Rate

Specify a country
All

Hot zone of terrorism

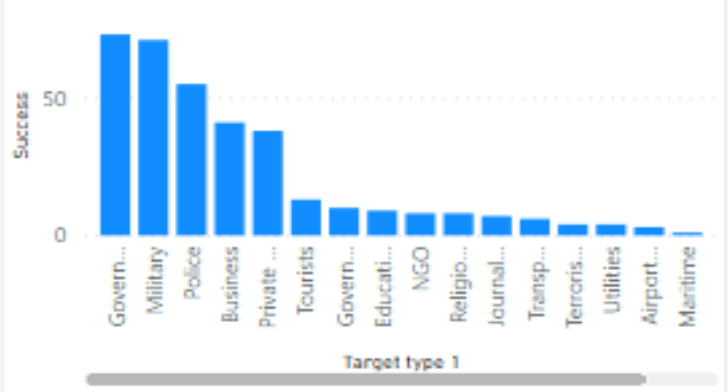


Groups that have carried out failed operations

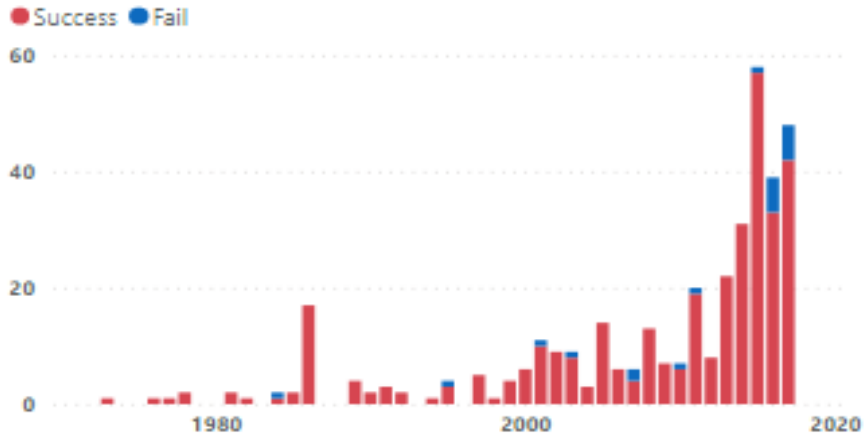


Group name
- Al-Shabaab
- Khorasan Chapter...
- Taliban
- Adan-Abyan Provi...
- Algerian Islamic E...
- Al-Qaida in the Ar...
- Al-Qaida in the Isl...

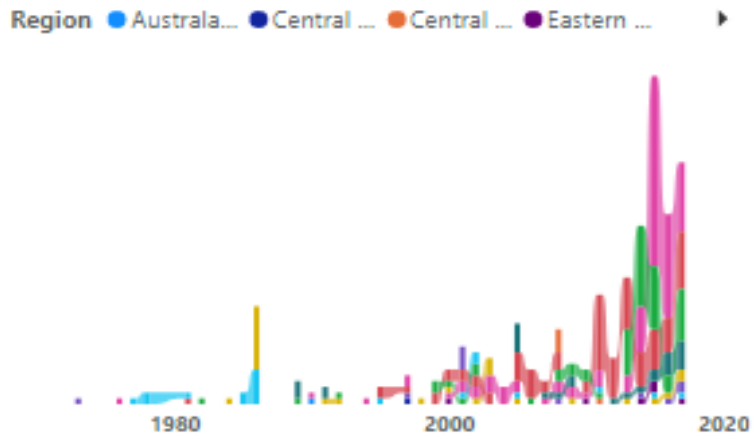
Types of successful terrorist operations



Annual split between successful and fail operations



Terrorist Activities By Region In Each Year



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Results and Discussion

- **Afghanistan** has experienced the most successful terrorist assaults (**48** successful terrorist attacks).
- **Governmental institutions** are the most places that witnessed terrorist attacks, with an average of (**73** successful terrorist attacks).
- **The Islamic State of Iraq and the Levant (ISIL)** is the terrorist group with the most effective strikes (**41** attacks).
- The highest rate of terrorist attacks was in **2015.**
- The most areas in which terrorist operations have occurred in the **Middle East and North Africa**.
- Terrorist strikes have a **94%** success rate and a **6%** failure rate.

Thank You

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