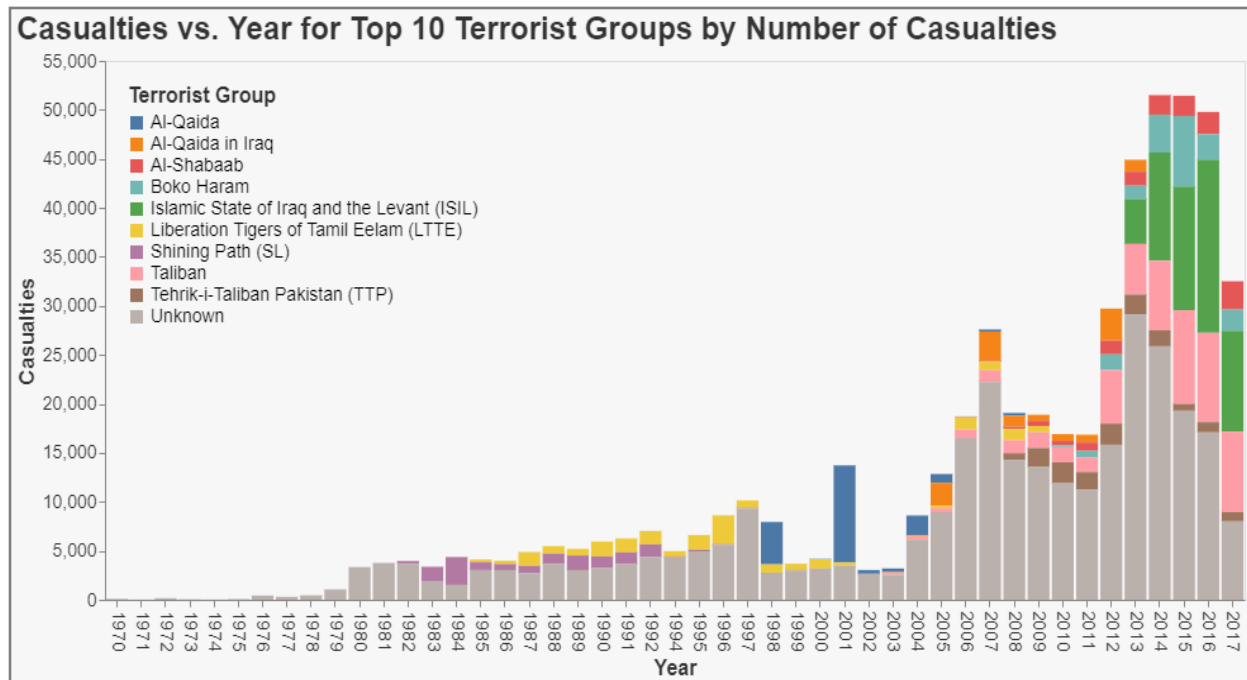


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Design #2

Goal: The goal is to plot a time series graph of the number of casualties (injured + killed) from 1970 to 2017 to determine or extract the behavior pattern of the top ten terrorist groups with the most numbers of casualties attributed to them.



Insight:

- There is a noticeable increase in casualties starting around 2012, with a peak in 2014 with over 50k casualties. This could be attributed to the rise of ISIL and Boko Haram, which are the two groups with the highest number of casualties of any year, followed by a sharp decline in 2017 corresponding to the fall ISIL.
- Al-Qaida and Al-Qaida in Iraq have a spike in 2001 and 2007 respectively corresponding to the 9/11 attacks and the Iraq War.
- Unknown is the most lethal group in the graph, which suggests that there are many terrorist attacks that are not attributed to any specific group or organization.

Data Abstraction:

- **Dataset type:** It is a flat 2D table with multiple columns and rows.
 - o Items – Each row of the table used to create the visualization represents a terrorist attack incident given by a unique Event ID key.
 - o Attributes:
 - Casualties: Quantitative attribute. It represents sum of number of killed and wounded in an incident.
 - Year: Categorical attribute. It represents the years from 1970 to 2017.
 - Group name: Categorical attribute. It contains top ten lethal terrorist groups.
 - Casualties grouped by Group name: Quantitative attribute. Number of casualties by top ten terrorist groups.

Task Abstraction:

- **Marks:**
 - o Line mark – Casualty and year.
- **Channels:**
 - o Vertical spatial channel – number of casualties.
 - o Horizontal spatial channel – year in which terrorist attacks happened.
 - o Color channel – Top ten Terrorist groups.
- **Users:** General public, researcher, and journalist.
- **Actions:**
 - o High-level – Present.
 - o Mid-level – Locate.
 - o Low-level – Identify.

To present something that is known. In this case, trend of casualties implying increasingly aggressive nature of new terrorist groups. User needs to locate and identify groups on the bar chart encoded with different colors.

- **Target:** Trend – to find how terrorist groups evolved over time in terms of casualties caused.

Data Source:

URL: [Global Terrorism Database \(kaggle.com\)](https://www.kaggle.com/datasets/globalterrorismdb/globalterrorismdb) – The data is stored in a single CSV file and available to be downloaded directly from Kaggle.

Tool used: The Bar chart visualization was created using Altair Visualization library for Python on Jupyter Notebook.