Practicle 3

DATA & QUESTIONS

Website of terrorist attack:

This report aims to introduce and discuss the website our group developed and the insights it could provide. The main focus of our website is the terrorist that happened around the world from 1970 - 2017. From a map view, bar char, area chart and other graphs were used. The data set we chose is acquired from Kaggle website [1]. It contains the information of each attack such as location, tactics, perpetrators, targets and outcomes on these recorded terrorist attacks. The definition given by the researchers of terrorism is: "The threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation." [2] So, after introduce the background knowledge, we generate these initial questions as the purpose of the website to answer, which is the start our visualisation: (1) Which country experienced the most times attack? (2) Which group of people often launch an attack? (3) Is there any connection between each terrorism that we could find out? (4) Why terrorist launch an attack and what is the outcome? Injured people, Murdered? Next sections will introduce the process from cleaning the date to the description of the finished website based on the questions.

0.1 Data Attributes

With this massive data set, we need to be careful when dealing with the data from the first beginning. In the original dataset, there were 135 attributes with over 180,000 records. After the cleaning process there are 36 attributes remaining in the data set with 7836 records. There are a lot to explore, and so as the data cleaning part.

Attribute	Attribute Type	Visual encoding	Expressiveness	Effectiveness
Location/Country	Geographical	Position	Yes	Yes
Injured/Murdered/	Numerical	Position/Size	Yes	Yes
Numbers of records	Numerical	Size	Yes	Yes
Success/Falier Attacks	Numerical	Position	Yes	Yes
Connections	Geographical	Position	Yes	Yes
Date	Ordinal	Position	Yes	Yes

0.2 Description of Visualisation

After the preparation of data set, we began to develop the website step by step. Generally, there will be a homepage to combine the graphs and show them in a given layout. When opened the homepage, there will be a title, the topic we focus on and a brief introduction of our website. Then, as a user, you could choose to click the button on the left or slide mouse

to roll down the page. There will be descriptions for each graph on the right of the buttons. Regard to the graphs, the first four sections of our web page are all based on a worldwide map. The first map visualization is showing people the countries that experienced the most attacks. Colour(hue) and position had been used to represent the attributes. Each country is shown on the map according to their location, and different colours can well represent the number of terrorist attacks in each country. Second map graph was been added some point indicators based on the first map. The indicators give more detail about the countries' location. third map here The forth map used curves combined to illustrate the relation of some of the terrorism. The attacks that have connections had been linked together. Shape and position visual variables were adopted to present the connection in our webpage, which could provide more direct effect of how each attack related to the others. Next is a vertical bar chart using size and position visual variables to demonstrate the rank of attack times stared by each group of people. By ranking them, user could easily find the most dangerous group of people. The following is a stacked area chart to represent the number of people participated and the number of people who had been captured. Colours(hue) is showing the two attributes and the size of each area means the difference in number. Different sizes of the area and the overlap will have a strong impact to user, which could allow them easily distinguish how these two attributes differ from each.

0.3 Insights

From our web page, user could not only find the answer that Iraq had experienced the most attacks; The group called "Islamic state of Iraq and Levant" started the most times of terrorism. The answer of connection and the number of participates is included. But also, we provide additional insights for people in our web page. There is a section provide the country's information. The countries are those experienced the most attacks. Moreover, User could find the comparison of the number of people participated and been captured during the terrorists. After viewing all this information, people may interest in find more detail of how are these countries now, and a deeper impression is how fortunate they are now live in a peaceful country. Besides the insights, we have our limitation that not introduce very detail. User could not have much interaction with the page. Also, the numbers are not provided, there is only sizes to represent comparison. The design of our webpage could be more logic as it will be more attractive.

Vist Our Website: https://yh49.host.cs.st-andrews.ac.uk/D3/ or xz45.host.cs.st-andrews.ac.uk/D3/

0.4 Reference

- Kaggle Inc (2019). https://www.kaggle.com/.

- The website we acquired the data set.

- National Consortium for the Study of Terrorism and Responses to Terrorism, University Maryland (2018). https://www.kaggle.com/START-UMD/gtd.

- The original website that collect the data.https://d3js.org/.

- D3.js official website

- https://bl.ocks.org/.

- https://observablehq.com/.

- Packages used alongside: CrossFilter,Jquery,Scroller.js