Project Outline:

The Department of Disaster Management, plans on identifying hotspots that could be affected by volcanic eruptions. They consulted with our data consultancy “Group 6 Incorporated”, to conduct detailed analysis of their health & economic impact.

We are proposing to study volcanic eruptions around the world to understand the behavioural characteristics of volcanoes over time to determine the trend of volcanic activities, and to determine if there are any indicators to forecast volcanic eruptions in the future.

We aim to identify financial costs and the disruptive impacts of volcanoes over time and their frequency by looking at the figures from data sources. Specifically:

- Identify safe distances which provide the least impact to local residents
- Provide the likelihood of the next volcanic eruption, so as to recommend relocation of “at risk” populations.
- Identify more significant volcanoes which may cause higher levels of damage in the future.

Data Sources that would help solve the problem

•data.world: Volcano Eruptions https://data.world/jessymorgan25/volcanoeruptions
•Smithsonian Institution: https://volcano.si.edu/
•https://public.opendatasoft.com/explore/dataset/significant-volcanic-eruption-database/table/
•opendatesoft : https://public.opendatasoft.com/explore/dataset/significant-volcanic-

We have employed postgreSQL to perform the relational database modelling. pgAdmin is the desktop version of the software we have used. By having the data in an SQL database will allow us to explore further relationships between the different data sets, for further analysis.

Conclusion:

The data has detailed information of volcanic eruptions from a number of sources, which has allowed us to identify the health and economic impact of eruptions over time at a summary level. Time permitting, we recommend doing further analysis to delve into the severity and frequency of eruptions to make recommendations for various residents who reside near volcanoes.

With our Data model, we will be able to assess information about the regions of activity, demography around the region, potential damages in terms of mortality and infrastructural damage. Also, the magnitude of population displacement and identifying safe zones for relocation. Since we have comprehensive data we will try to determine models to predict future occurrences of eruptions and their likely impact.