

ADS1 Assignment 1 Report

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Data Table Summary :



Properties	Details
Name	ALL NATURAL DISASTERS 1900-2021 / EOSDIS
Source	Kaggle
Author	BARIS DINCER
Type	Climate Change Project
Data Type	CSV Files (9.44 Mb)
Tags	Earth and Nature , Science and Technology , Atmospheric Science , Weather and Climate
Files	2 CSV Files
Github Repo Link	Github Repo

Data Overview :

- This data is an open source data taken from Kaggle , it has one directory which contains 2 Files :

1. 1900 - 2021 Disasters csv file
2. 1970 - 2021 Disasters csv file

I've chosen the second file , just to work with less data and minimise the workload on the CPU

- In general , this data comprises all of the natural disasters recorded in all of the different continents from 1970 until 2021 , providing multiple informations about the casualties , disasters types , geo-localisations , and many more ...
- The chosen data has about 14K rows and 47 columns , which can be represented as follows :

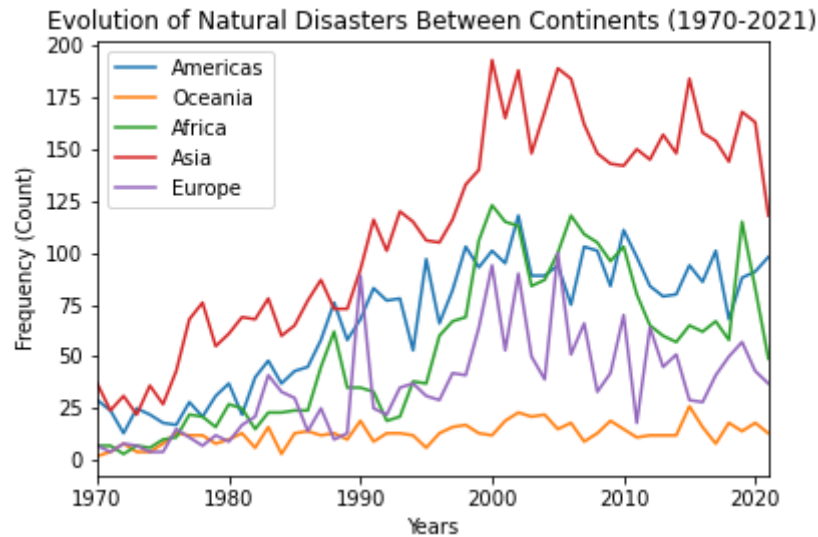


Visualizations :

Visualisation 1 : Evolution of Natural Disasters Between Continents (1970 - 2021)

Why i chose this plot ? :

- Since my data involves a continuous time-based data (which is the column `Year`) , which we can use to show the evolution of other columns during the time-based column



Explanation :

- As the title states , the picture shows a multi-line plot of the evolution of natural disasters of continents between 1970 and 2021
- The horizontal axis represents the timespan of these natural disasters while the vertical axis shows the development of the count of natural disasters in each continent during that time range
- Overall , we can see that the continent of Oceania (colored orange) exhibits a stable trend with very low frequency throughout the recorded period . In contrast , the continent of Asia we can perceive an increasing shift surmounting all of the other continents , peaking in the 2000's and then steady decline at the end of the period . The continent of Africa (showed in green) , had significant uprising trend before the 90's , and then a dramatical climb peaking in the 2000's , and experiencing a considerable fall at start of 2020 onwards . Europe and the Americas (Purple and Blue respectfully) showed less dramatical change compared to other continents with the americas swift predictable rise that kept going on even after 2020's , whereas Europe was much less stable with the trend rising and falling continually until 2020.

Conclusion :

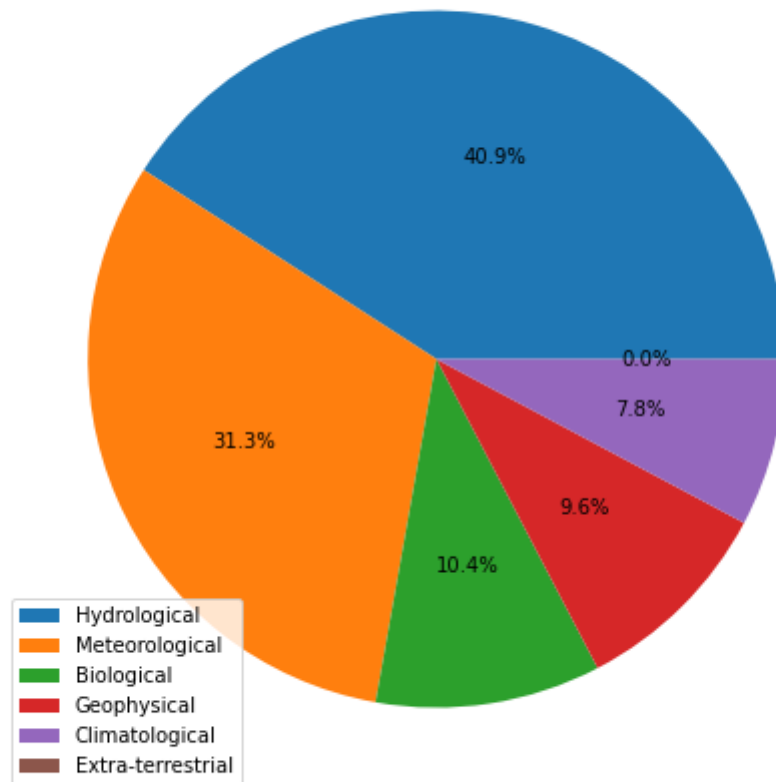
- Based on the graph, we can conclude that Asia is more prone to natural disasters and the reason it being in the ring of fire (high tectonic activity area) , overpopulation , climate change and many more
- On The other hand , Oceania has a more stable predictable weather , also isolation and its location help it be the least continent prone to natural disasters
- Finally , The other continents have comparable natural disaster frequencies depending on the place , tectonic activity and weather

Visualisation 2 : Pie Plot of the disaster subgroups proportions

Why i chose this plot ? :

- Since the chosen column is a categorical column which is absolute (count or proportions) and also because the goal here is comparability , which makes this plot the perfect fit

Pie Plot of the disaster subgroups proportions



Explanation :

- This graph displays a pie plot for the disaster subgroups proportions in the world
- As we can see , the Hydrological and Meteorological disasters are the most common with about 72% out of all disasters . The rest is split between Biological , Geophysical and Climatological disasters contributing close to 28% of the accumulation . This leaves the extremely rare and least common natural disaster subtype which is Extra-terrestrial with less than 1%

Conclusion :

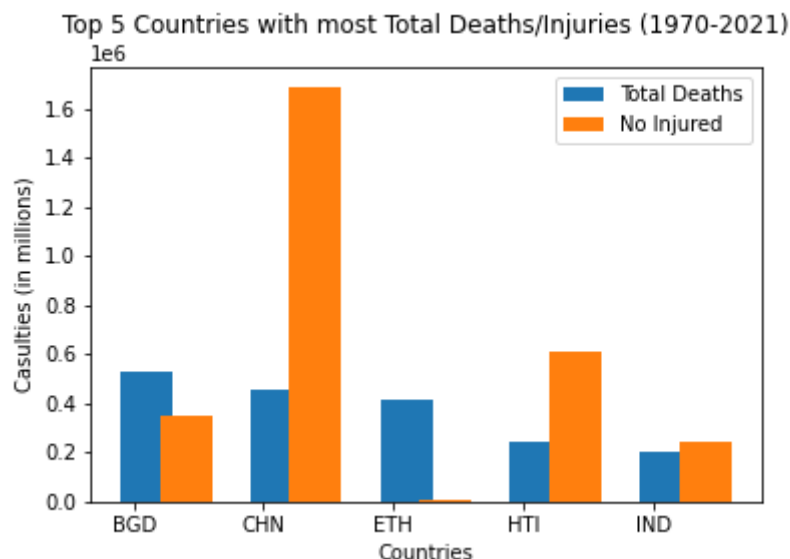
- We can resolve from the figure that Hydrological and Meteorological are more common because they represent weather related disasters like floods, hurricanes, and droughts ..etc , and also population overgrowth pushed people to live in isolated areas with high tendency of natural disasters and less stable weather

- The others as Biological , Geophysical and Climatological are less common overall because they represent mostly disease and tectonic activity related disasters which even though they are fatal but they are comparably rare
- The Extraterrestrial (meteorites , asteroids), it's self-evident why it is very unusual at least in this era , where the cosmos is very vast which makes the probability even lower but never zero which is why space agencies are constantly monitoring the space due to these type of disasters can even end our existence as human species

Visualisation 3 : Top 5 Countries with most Total Deaths/Injuries (1970-2021)

Why i chose this plot ? :

- Since the chosen column is a non-numerical column (categorical) which is absolute (count) and also because the goal here is comparability , which makes this plot the perfect fit



Explanation :

- This graph exhibits a bar chart of the top 5 countries with most total death/injuries in the recorded time period of 1970-2021
- Overall , The total death ratio is proportionate not exceeding 600K per country , where Bangladesh , China and Ethiopia has the topmost frequency followed by Haiti and India with slightly less not breaking the 200K barrier
- Alternately , China is very distinguishable surpassing the million barrier in injuries as opposed. to the other countries where it's on 400K average . Ethiopia had the least injuries ratio with it been less than 10K

Conclusion :

- We can dictate from this plot that most of the countries here are asian countries counting China , Bangladesh , India which explainable having the continent with most

tectonic activity and many more causes

- While in Ethiopia and Haiti , these countries suffer from poorness and lack of perparedness which makes the disasters rather fatal