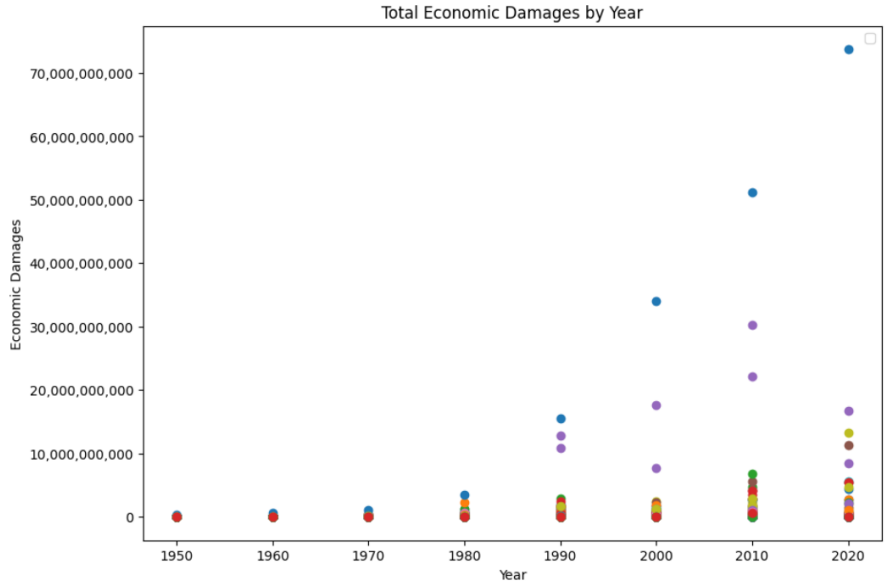
CS306 Group 17 - Project Step 4 - Natural Disasters

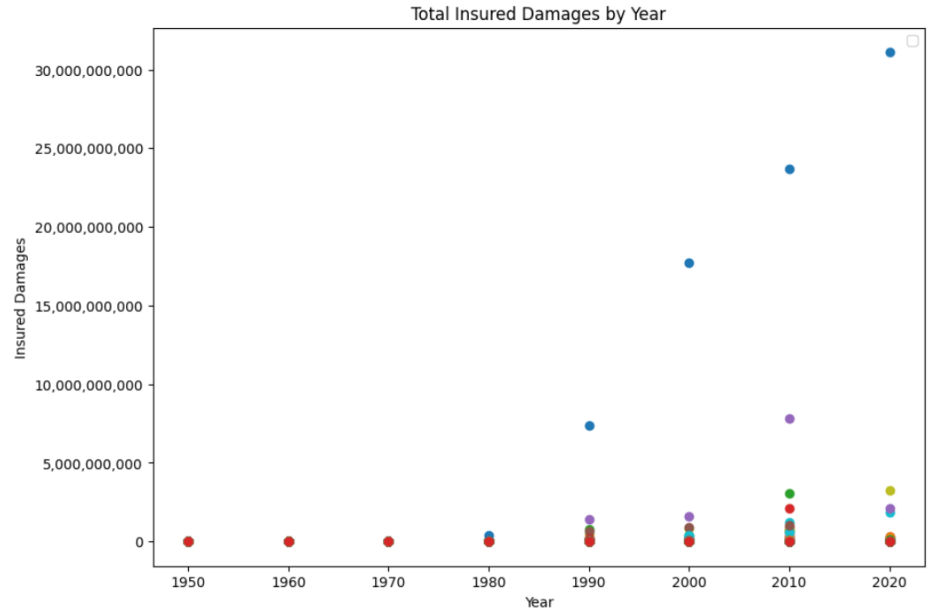
Group members: Ege Özgür (30609) / Arda Berk Çetin (31077) / Arman Gökalp (29398) / Doğaç Görgülü (28395) / Zeynep Özgür Gün (29502)

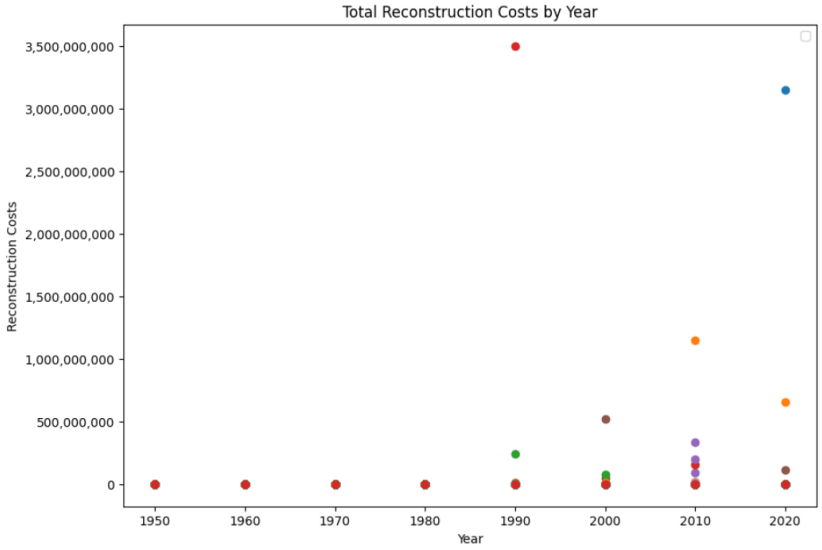
Github repository link: https://github.com/dogacgorgulu/CS306-Group17

Charts and Explanations:

Economic Damage Scatter Plots:

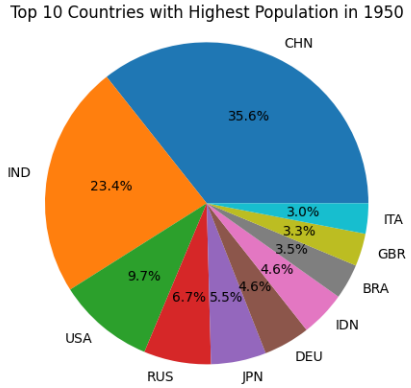


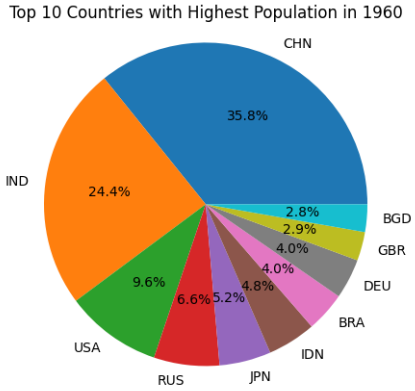


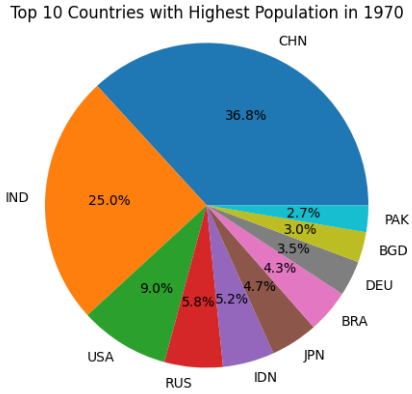


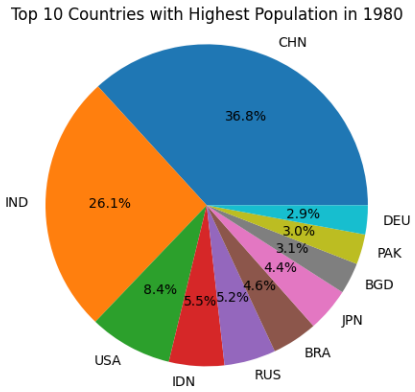
The scatter plots above show the types of total economic damages by years in scattered form. The values are aligned since the dataset includes years that are multiples of 10. Each dot represents the damage a country received in the respective year. The main aim of the charts was to make it easier to see how the economic damages are distributed throughout the years. Insured damages, reconstruction costs and total economic damages are all parallel to one another as expected, and it can be seen that the damages have increased in the last years, especially when compared to the first years.

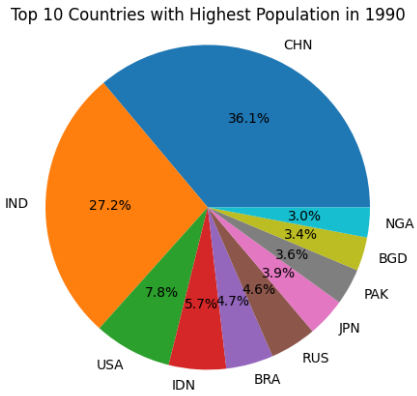
Pie Charts of Top 10 Countries with Highest Populations by Year (1950-2020)

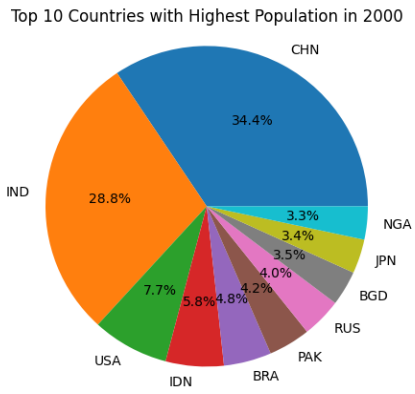


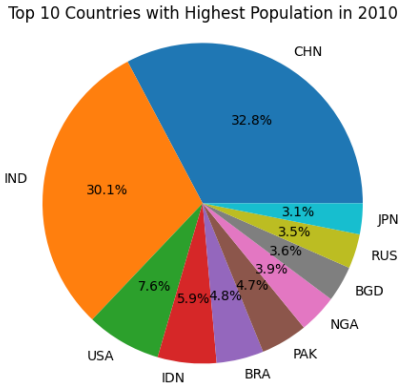


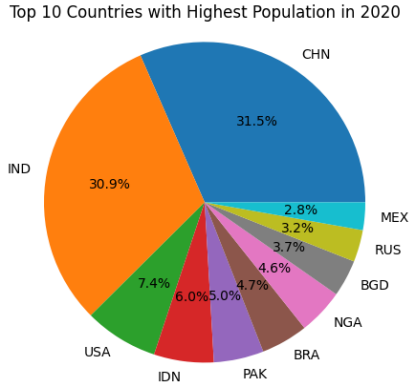






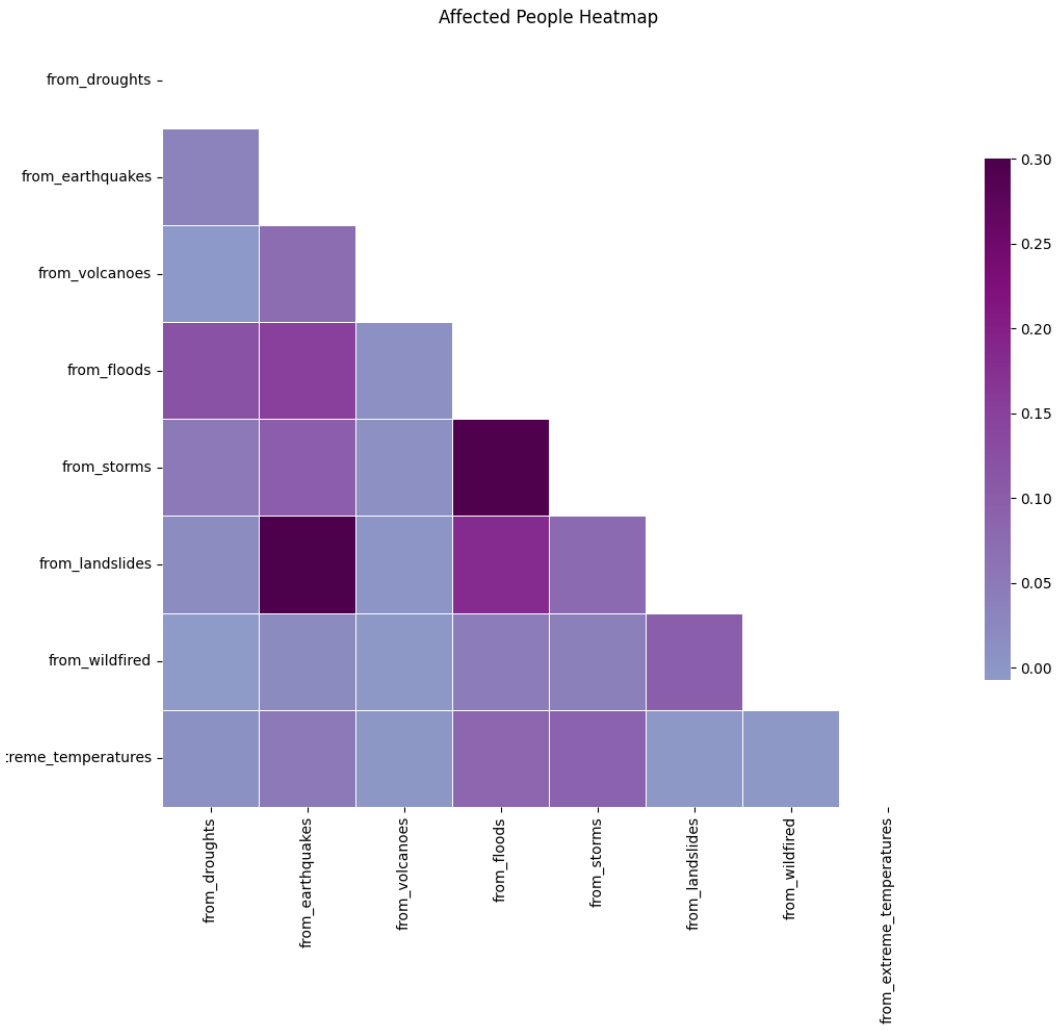






We had the opportunity to see the percentage distributions of the countries better and more clearly by pie charting the populations of the countries.By using these charts, it may be possible to observe the relations of the populations of the countries with natural disasters. There is an ongoing perception that the loss of life and property is high in a country with a large population. If there is a connection between these charts and data on loss of life, it can be clearly concluded that this is true or false using this correlation.

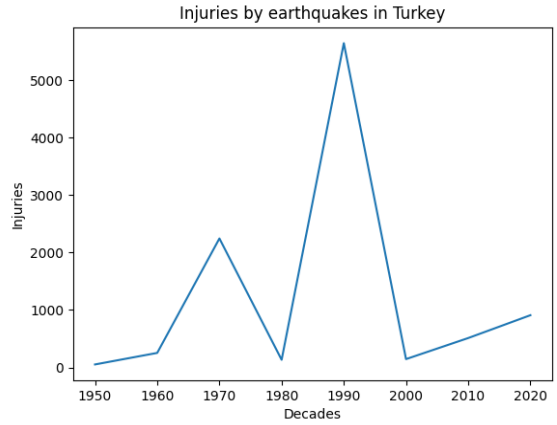
Heatmap of correlation between disasters

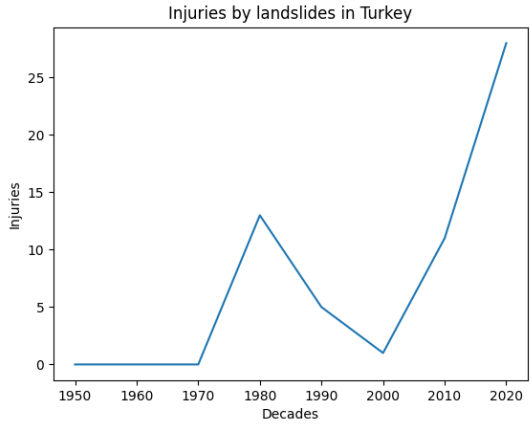


From this graph, we can see that injuries from earthquakes correlate highly with landslides. A similar relation can be observed between floods and storms. Surprisingly, wildfires and extreme temperatures do not have a high correlation.

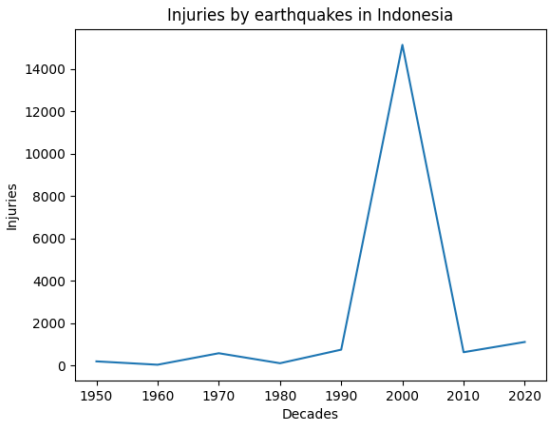
Injuries by Earthquakes vs Landslides

If we delve deeper into the relationship between earthquakes and landslides, we see that for Turkey, it holds, but not in the way we would expect. Technically, a high number of injuries from earthquakes predicts a high number of injuries from landslides. Nevertheless, this does not mean the injuries will occur at the same time frame.





However, for a country like Indonesia, this relation holds strong. As can be seen from the plots, there is a high correlation between earthquakes and landslides in the same time period.



Notice that the number of injuries from earthquakes is a couple orders of magnitude bigger than those of landslides.

Column Chart Of Number Of Deaths

The charts show number of total deaths in the world from landslides and earthquakes by years. Number of deaths from earthquakes seem more stable. Both number of deaths are peaked in 2000's. However, there is no direct correlation.