Abstract:

Coronavirus is a family of viruses which threats the health of most people around the world. The coronavirus' crown-like spikes give the virus family its name. The first case of novel coronavirus, also known as SARS-CoV-2, was reported in Wuhan, China at the beginning of December 2019. This project aims to exploring COVID-19 deaths that happened in 2020-2021 through data analysis and projections.

Design:

This data is provided by Kaggle website which represents the covid-19 deaths in 2020-2021.

According to this data, I will answer these main questions:

- What are the highest 5 countries have COVID-19 deaths number in 2020-2021?
- What are the lowest 5 countries have COVID-19 deaths number in 2020-2021?
- In which year did covid-19 deaths rise up?
- What are the percentage of covid-19 deaths and non- covid-19 deaths in 2020-2021?
- compare between expected deaths and excess deaths of Covid-19?

Data

A dataset is a series of data files that contain country , region , covid-19 deaths , non-cvid19 deaths , start_date , population, expected deaths , excess_deaths , year . Data was collected during 2020-2021. The form includes 11715 rows and 15 columns.

Algorithms

1- Data cleaning:
   - Find missing values
   - Find duplicates
   - Convert type for some columns
   - Replace value

2- Data gathering :

   I take the dataset from the kaggle website by using python code

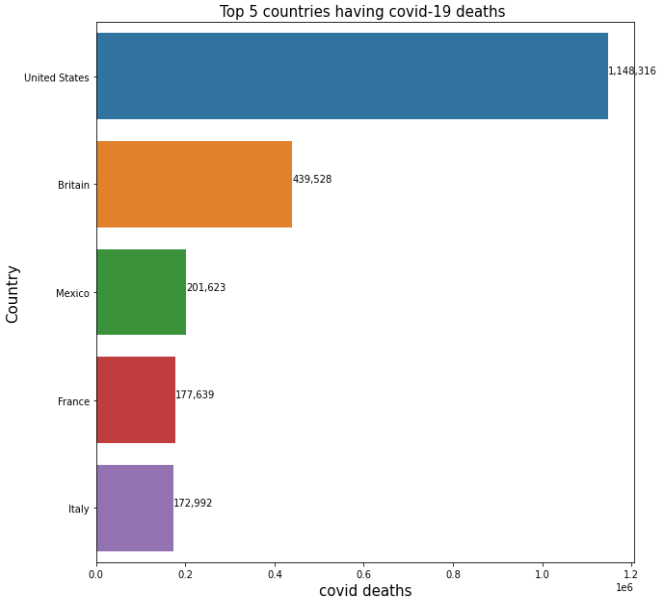
3- Methodology of exploring the data:

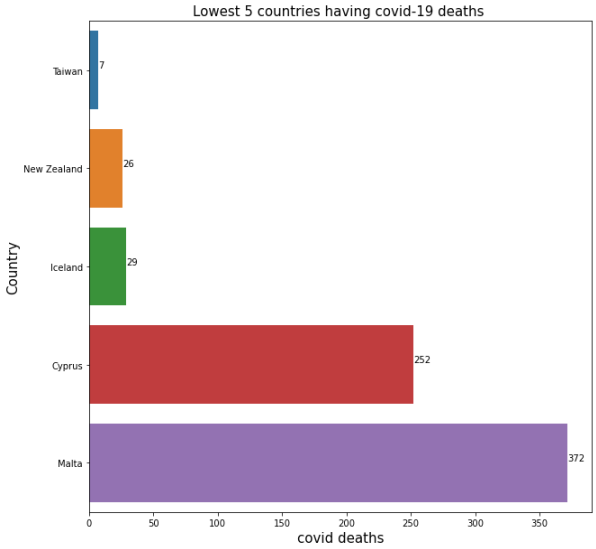
   The data was filtered based on the country , then find total number of covid deaths and non covid deaths was calculated for each.

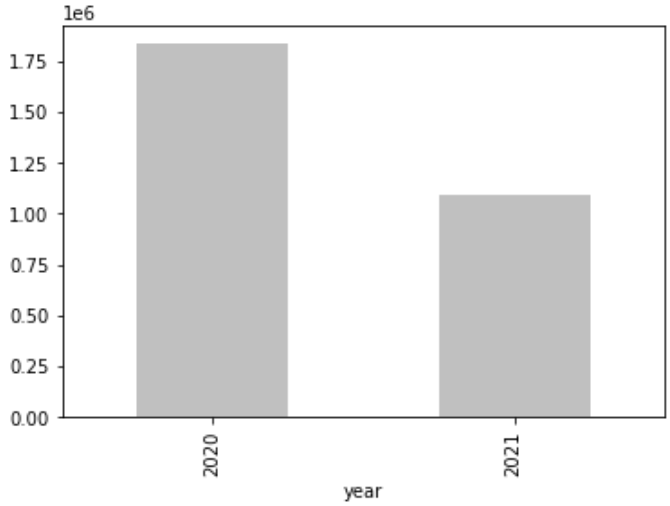
Tools

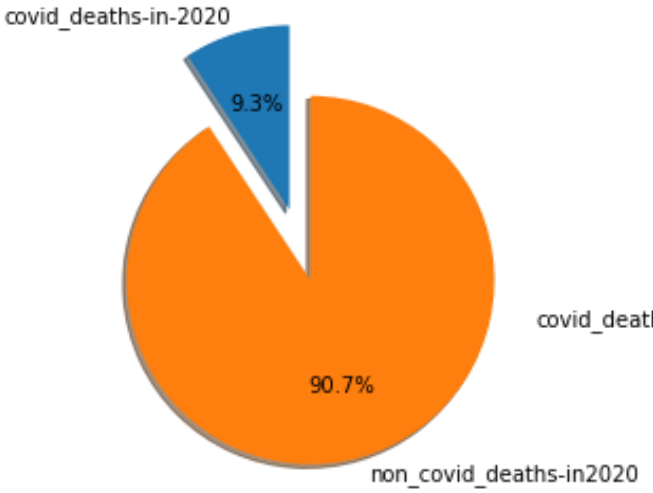
- Python and Jupyter Notebook
- Numpy and Pandas
- Matplotlib and Seaborn

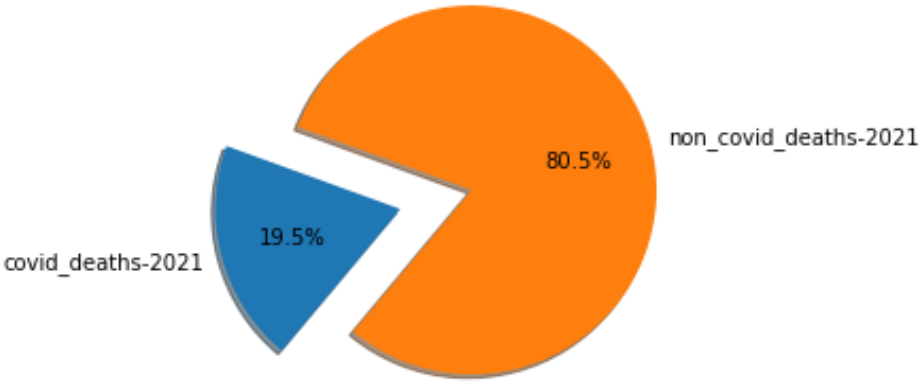
Communication

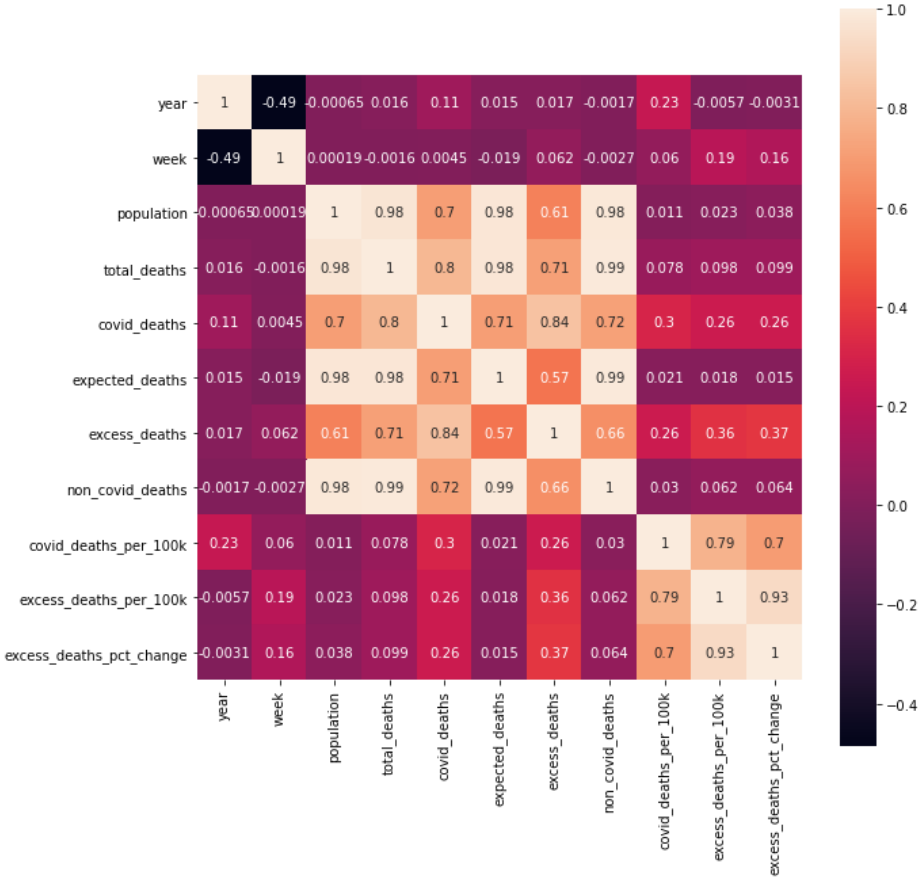


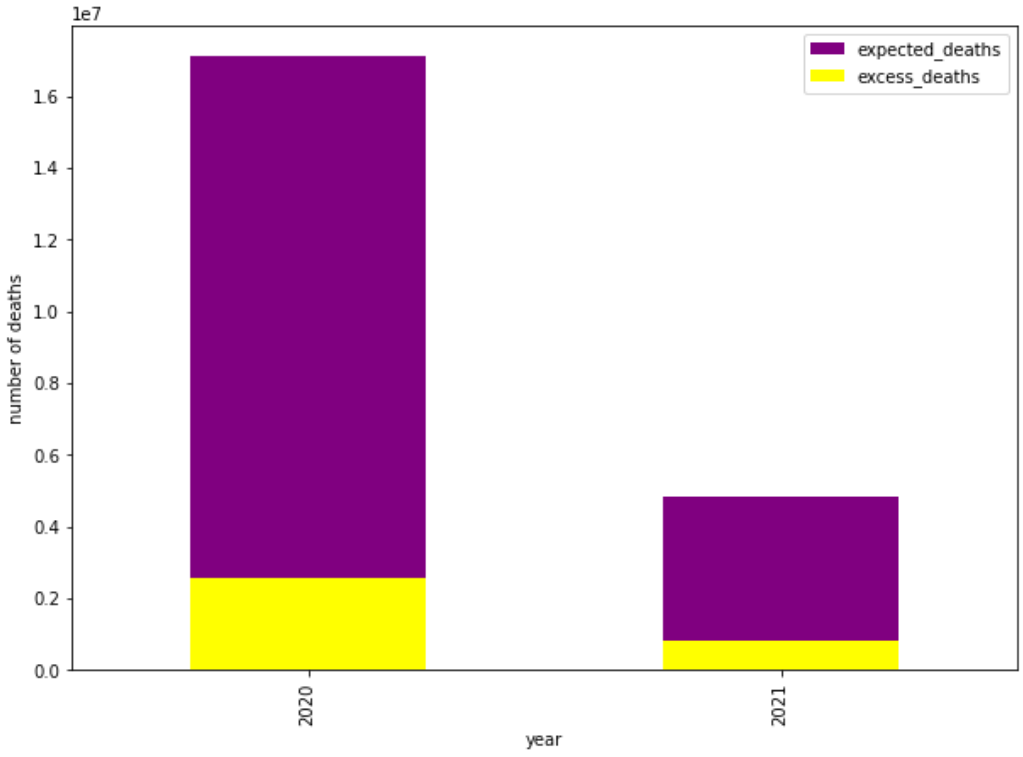

Lowest 5 countries having covid-19 deaths
Taiwan
New Zealand
Iceland
Cyprus
Malta
7
26
29
252
372
Country
0
50
100
150
200
250
300
350
covid deaths


1e6
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
2020
2021
year


covid_deaths-in-2020
9.3%
90.7%
non_covid_deaths-in2020


non_covid_deaths-2021
80.5%
19.5%
covid_deaths-2021


year 1 -0.49 -0.00065 0.016 0.11 0.015 0.017 -0.0017 0.23 -0.0057 -0.0031
week -0.49 1 0.00019 -0.0016 0.0045 -0.019 0.062 -0.0027 0.06 0.19 0.16
population -0.00065 0.00019 1 0.98 0.7 0.98 0.61 0.98 0.011 0.023 0.038
total_deaths 0.016 -0.0016 0.98 1 0.8 0.98 0.71 0.99 0.078 0.098 0.099
covid_deaths 0.11 0.0045 0.7 0.8 1 0.71 0.84 0.72 0.3 0.26 0.26
expected_deaths 0.015 -0.019 0.98 0.98 0.71 1 0.57 0.99 0.021 0.018 0.015
excess_deaths 0.017 0.062 0.61 0.71 0.84 0.57 1 0.66 0.26 0.36 0.37
non_covid_deaths -0.0017 -0.0027 0.98 0.99 0.72 0.99 0.66 1 0.03 0.062 0.064
covid_deaths_per_100k 0.23 0.06 0.011 0.078 0.3 0.021 0.26 0.03 1 0.79 0.7
excess_deaths_per_100k -0.0057 0.19 0.023 0.098 0.26 0.018 0.36 0.062 0.79 1 0.93
excess_deaths_pct_change -0.0031 0.16 0.038 0.099 0.26 0.015 0.37 0.064 0.7 0.93 1
year week population total_deaths covid_deaths expected_deaths excess_deaths non_covid_deaths covid_deaths_per_100k excess_deaths_per_100k excess_deaths_pct_change
1.0 0.8 0.6 0.4 0.2 0.0 −0.2 −0.4


1e7
expected_deaths
excess_deaths
number of deaths
0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6
2020
2021
year