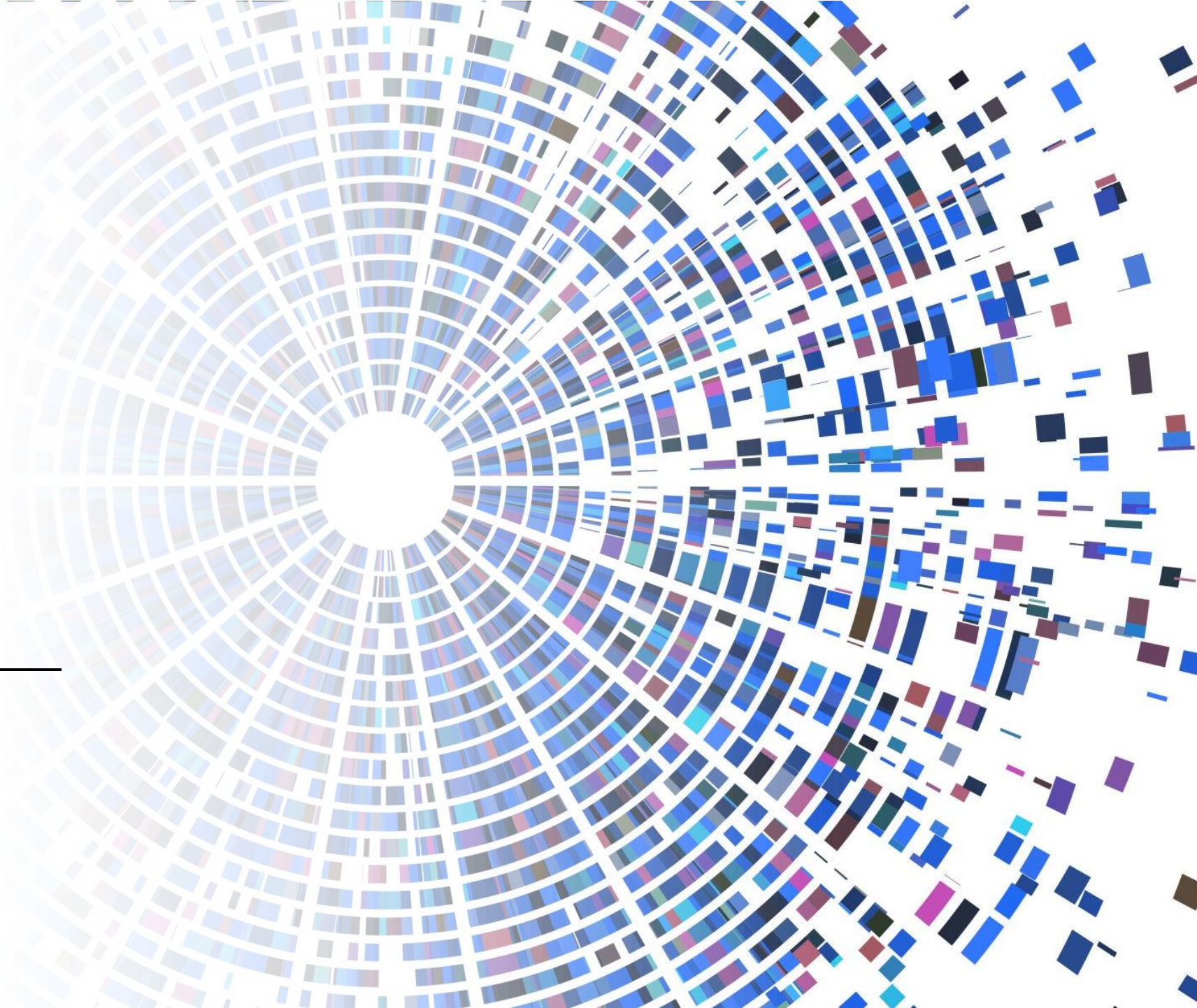


CORONA VIRUS OUTBREAK ANALYSIS

COURSERA CAPSTONE
PROJECT

By Mujeebur Rahman



Problem Description

- Suppose we travel to some country for some vacation or business purpose. In such a situation, we would not know whether that country is inflicted by this deadly virus. Even if that country or city is not affected, it might be affected soon due to the nearby countries or cities. As a summary, this problem can be asked in the form of questions as follows:
- How many countries are affected by the virus?
- Does the country where I want to go affected?
- Do the nearby countries are affected?
- Are the unaffected countries being followed with healthy and safety measures?

This model will give an analysis on the countries which are affected by this coronavirus.

Data Information

To understand and explore, we will need the source data for coronavirus and the latitude and longitude data for the countries. These data can be obtained from the following mentioned links.

- **Coronavirus Source**

Data <https://ourworldindata.org/coronavirus-source-data>

- **Latitude and Longitude**

Data: <https://www.kaggle.com/parulpandey/world-coordinates>

Dataframe Generated

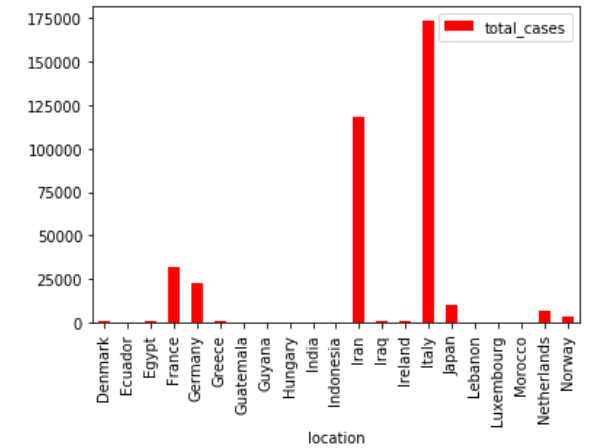
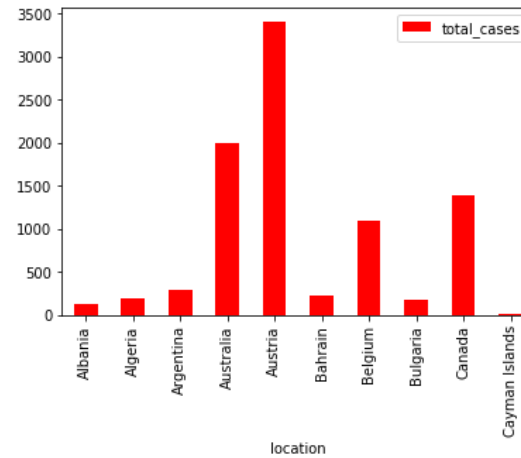
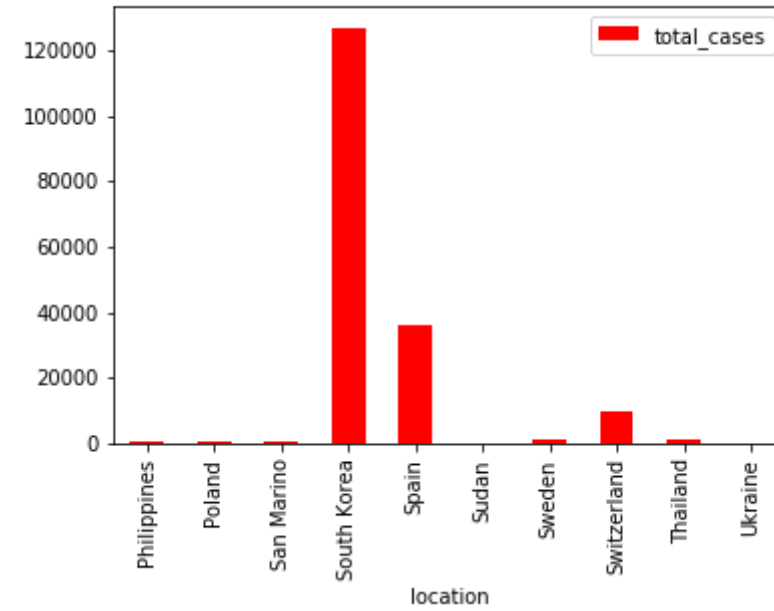
	location	total_cases	total_deaths	Latitude	Longitude
0	Albania	131.0	3.0	41.153332	20.168331
1	Algeria	197.0	13.0	28.033886	1.659626
2	Argentina	291.0	13.0	-38.416097	-63.616672
3	Australia	1988.0	41.0	-25.274398	133.775136
4	Austria	3395.0	6.0	47.516231	14.550072
5	Bahrain	229.0	1.0	25.930414	50.637772
6	Belgium	1085.0	5.0	50.503887	4.469936
7	Bulgaria	175.0	8.0	42.733883	25.485830
8	Canada	1379.0	6.0	56.130366	-106.346771
9	Cayman Islands	1.0	1.0	19.513469	-80.566956
10	China	2943347.0	98133.0	35.861660	104.195397
11	Denmark	960.0	4.0	56.263920	9.501785
12	Ecuador	58.0	2.0	-1.831239	-78.183406
13	Egypt	730.0	14.0	26.820553	30.802498
14	France	32340.0	692.0	46.227638	2.213749
15	Germany	22939.0	50.0	51.165691	10.451526
16	Greece	1086.0	12.0	39.074208	21.824312
17	Guatemala	1.0	1.0	15.783471	-90.230759
18	Guyana	10.0	4.0	4.860416	-58.930180
19	Hungary	50.0	1.0	47.162494	19.503304
20	India	440.0	9.0	20.593684	78.962880

	location	total_cases	total_deaths	Latitude	Longitude
22	Iran	118356.0	5169.0	32.427908	53.688046
23	Iraq	890.0	78.0	33.223191	43.679291
24	Ireland	681.0	8.0	53.412910	-8.243890
25	Italy	173249.0	11275.0	41.871940	12.567380
26	Japan	10375.0	228.0	36.204824	138.252924
27	Lebanon	510.0	18.0	33.854721	35.862285
28	Luxembourg	157.0	3.0	49.815273	6.129583
29	Morocco	102.0	7.0	31.791702	-7.092620
30	Netherlands	6584.0	87.0	52.132633	5.291266
31	Norway	3903.0	6.0	60.472024	8.468946
32	Panama	190.0	6.0	8.537981	-80.782127
33	Philippines	808.0	74.0	12.879721	121.774017
34	Poland	475.0	10.0	51.919438	19.145136
35	San Marino	627.0	30.0	43.942360	12.457777
36	South Korea	126747.0	951.0	35.907757	127.766922
37	Spain	36346.0	1072.0	40.463667	-3.749220
38	Sudan	2.0	1.0	12.862807	30.217636
39	Sweden	1059.0	3.0	60.128161	18.643501
40	Switzerland	10015.0	64.0	46.818188	8.227512
41	Thailand	996.0	15.0	15.870032	100.992541
42	Ukraine	13.0	3.0	48.379433	31.165580

Map Created



Bar Graphs Generated



Results

From the above map, it is obvious that European countries are the most affected.

From the above plots, it can be seen that China, Iran, Italy and South Korea have the highest infected people so far.

Therefore, migration from and to these countries should be avoided at any cost.

It can't be said that the remaining countries are safe from this virus.

So it is advisable that be in your own home and in your city and not to travel to any other place until this pandemic is completely dissolved.

Conclusion

With the above discussions, it can be concluded that the areas which are mostly affected are most likely to affect the nearby areas. So migration to such areas should be avoided until the situation comes under control. It is advisable not to travel to any other city or country until this virus gets completely nullified.