

INFO 3205 SEMESTER 1, 2020/2021

INFORMATION VISUALIZATION PROJECT USING TABLEAU

TITLE: COVID 19 OUTBREAK IN THE UK and EUROPE

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Part A

1. Introduction.

In 2020, we all fought a common enemy called COVID-19. It left an impact on all our lives one way or the other. Our dataset is about covid-19 cases around the World, however, we have chosen the United Kingdom as our focus of analysis.

2. Reason to select the dataset.

This dataset is set gave us the record till January 7, 2021, and give the update of all countries. We wanted to work with COVID-19 data and this was the most updated one.

3. Targeted audience and the objective.

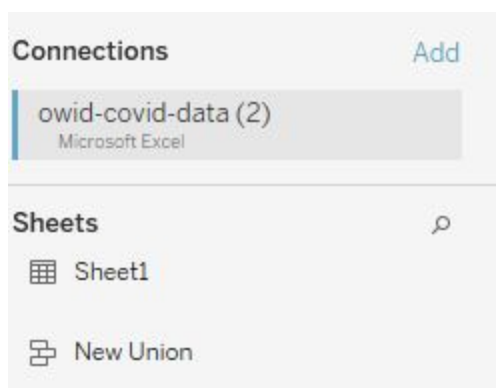
After struggling with this virus almost all countries around the World were relaxing their lockdown, movement control order or stringency index. This relaxation in stringency index could not be kept for long because another variant of Corona Virus has evolved in the United Kingdom which has a higher spreading rate. It caused the cases in the United Kingdom to rise rapidly.

In the meantime, many people have travelled to and from the UK. The objective of this project is to visualize the rapid increase in the UK, which will eventually spread in other countries as well. According to India.com, many countries around the world have been infected by this new strain of the virus. These visualizations are expected to help the people and government of the countries which have flights from the UK to be alarmed and take proper precautions to avoid another spike!

4. Reference of the dataset.

The dataset was obtained from the GitHub account of Our World in Data. Link: <https://github.com/owid/covid-19-data/blob/master/public/data/owid-covid-data.csv>

5. Table of the dataset.



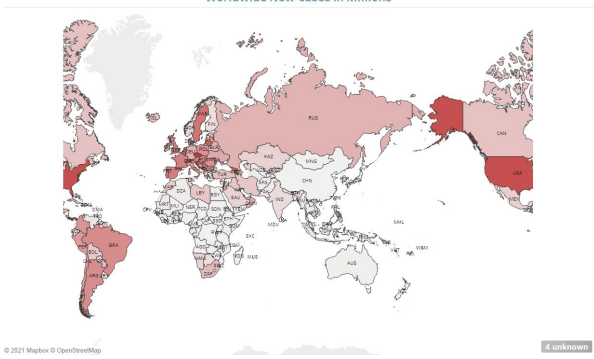
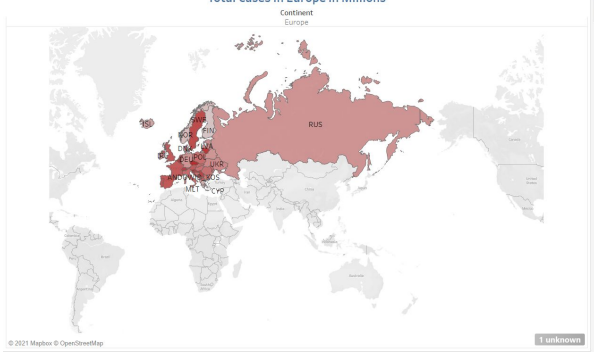
There is just one table in our dataset. But the dataset is huge in size containing lots of data with different column attributes. We choose the logical one's which will be meaningful for any visualization. The process of identifying, filtering datasets and with which attributes we should work with is not an easy task. We choose these attributes - ISO code, continent, location, date,

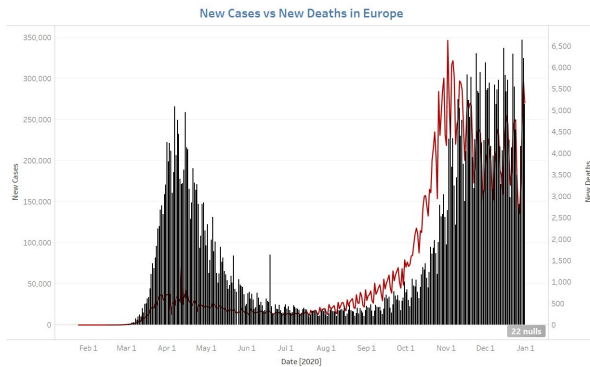
the variety of numbers like cases, deaths in sum or in millions and so on. We've used almost all of them except some vaccine data cause they don't contain any values. Rest, we tried and visualised many graphs and charts and only included the best ones in our project.

Part B

1. The explanation of the identification and comparison of this data set.

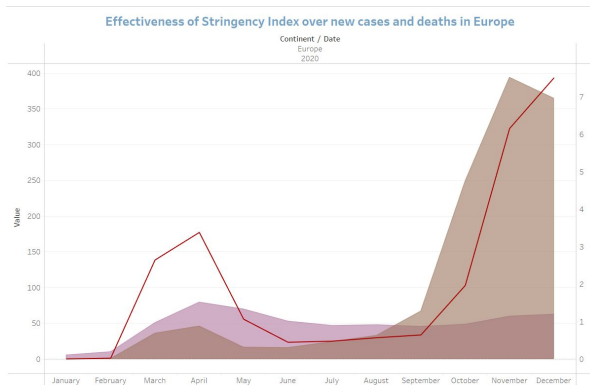
A sequence of information was tried to maintain, the sheet started with the total number of cases Worldwide, then in Europe and the United Kingdom. The patients in ICU per day were shown.

Sheet used	The column of the dataset used and explanation
 <p>A world map titled 'Worldwide New Cases in Millions'. The map uses a red color scale to represent the number of new COVID-19 cases in millions across different countries. Darker red indicates higher case counts, while lighter red indicates lower counts. The map shows high concentrations of cases in North America, Europe, and parts of Asia. A legend at the bottom right indicates '4 unknown'.</p>	<p>New Cases, Iso Code, Location (All), Longitude, Latitude.</p> <p>Here, it shows the total cases in million in the whole world. Darker red indicates more danger with many cases while light red indicates fewer cases. We can clearly see that in this world, european countries and the USA are affected by the covid the most while Asian, African and Oceanian countries are affected the less. The Asian picture may look different but there is no data available for China.</p>
 <p>A map titled 'Total Cases in Europe in Millions'. It shows the total number of COVID-19 cases in millions across Europe. The map uses a red color scale, with darker red indicating higher case counts. The map shows high concentrations of cases in Central, Western, and Southern Europe. A legend at the bottom right indicates '1 unknown'.</p>	<p>Iso Code, Location, Total Cases (colour) Continent (Europe), Longitude, Latitude.</p> <p>here, it shows the total cases compared to per million in Europe. From this visualization, we can see which european countries are affected the most by the covid-19 compared to their population. Central, western and southern European countries are affected the most by the covid-19. Among the northern European countries, only Sweden has alarming cases per million ratios where the other countries are affected less.</p>



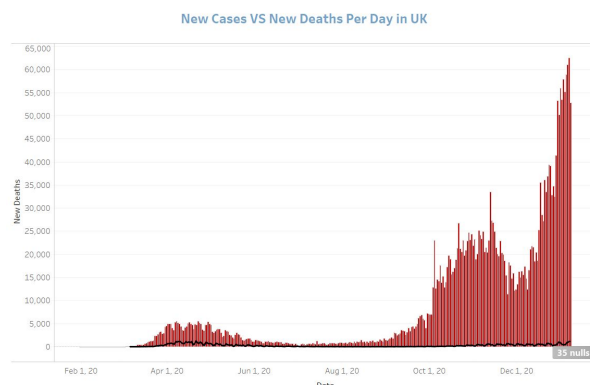
Date, New Cases, New Deaths, Location - filtered Europe.

In this visualization, it shows the daily new cases versus new death in Europe. It is clearly shown as the winter approaches the covid cases started to increase.



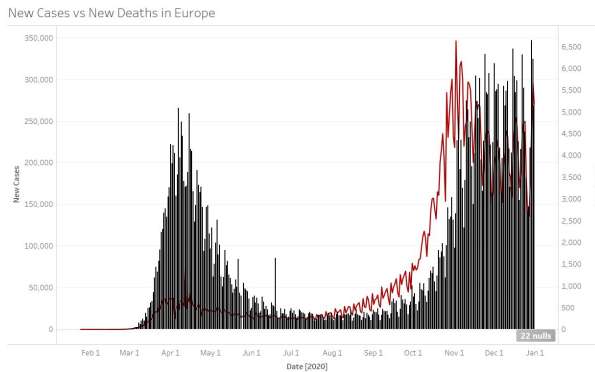
Continent (Europe), Date (Year, Month), Measure Values, Average (New Deaths Per Million)

Here, it shows the relation between the strictness of lockdown from the government and new cases and death per million. We can clearly see that the strictness of the lockdown was very low in February 2020 when the cases and death were low. When the cases and death started to rise in March, in Europe they enhanced the strictness till April. Then the cases of death lowered in June and the strictness was lowered by the government of the European countries. The number of death and new cases per million was quite static till August but suddenly it started to rise. The governments of the countries tried the maximize the strictness which worked before but after August there is no sign of lowering the cases of death and new cases. It keeps rising even though the governments are increasing the stringency index.



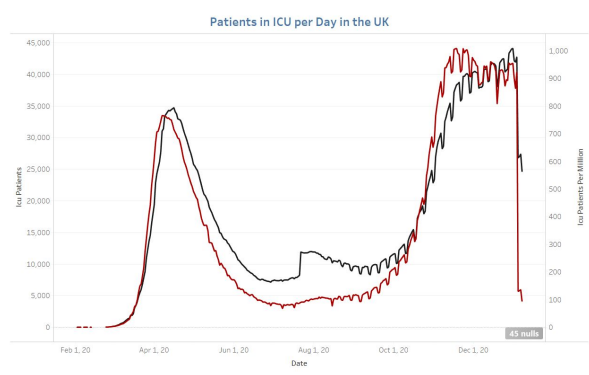
Date, New Cases, New Deaths, Location - filtered United Kingdom.

In this visualization, it shows the daily new cases versus new death in the United Kingdom. It is clearly shown as the winter approaches the covid cases started to increase. However, there was a huge spike in the cases after the new strain was found.



Date, New Cases, New Deaths, Continent(Europe).

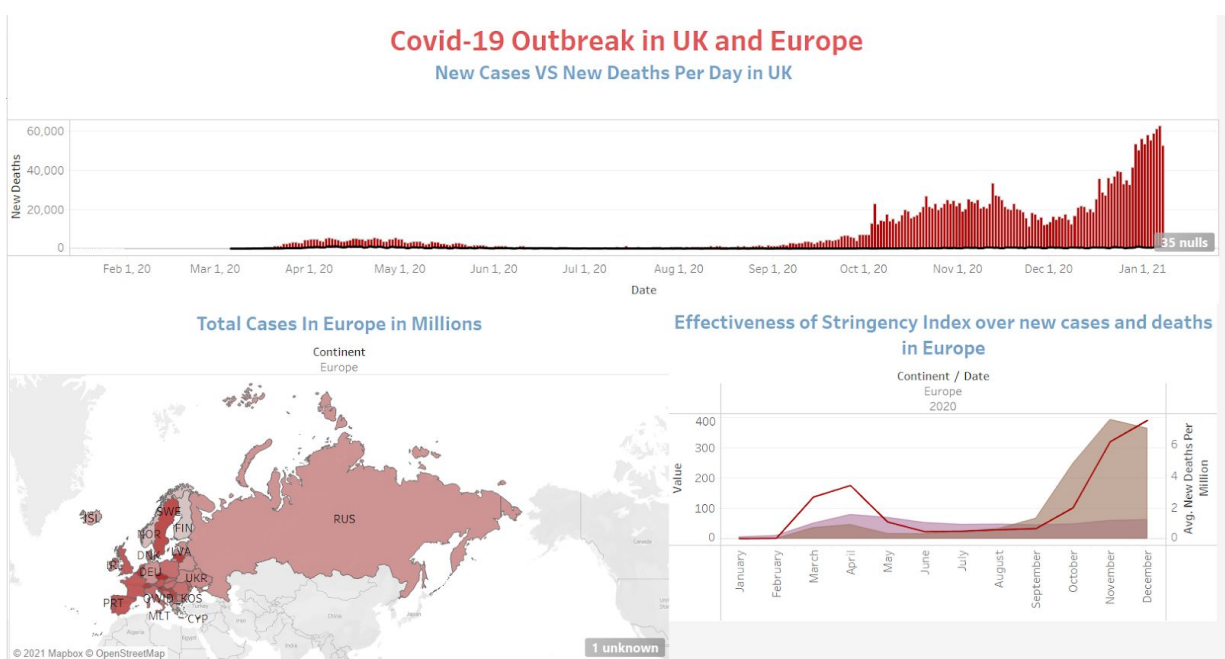
This visualization shows the daily new cases on the right side of the legend and the left legend shows the new deaths.



Date, ICU patients, ICU patients per Million.

Here, it shows as the winter approached and the lockdown was relaxed the covid cases started to increase from the end of October and by the time the stringency index was increased and strict SOPs have imposed the spike in COVID cases were already initiated.

Dashboard



2. The analysis, relationship and the interesting patterns found.

The objective of the study was to figure out the trend of the COVID cases in Europe and the UK, the increase of the cases per day and the new deaths were found. At the beginning of the pandemic, the cases increased and the deaths were high too because it took some time for the doctors to understand the trait of the virus. There were lockdowns around the world and the Standard Operational Procedures were imposed in every country, such as social distancing, closing borders, restricting interstate and intercity travelling, compulsory usage of face mask.

All these SOPs helped to tackle the spreading of the COVID-19. But as the winter arrived, the cases started to increase all around the world. The cases in the UK started to increase drastically due to the new strain of COVID-19 and it was announced to more spreadable than the existing COVID-19 strain.

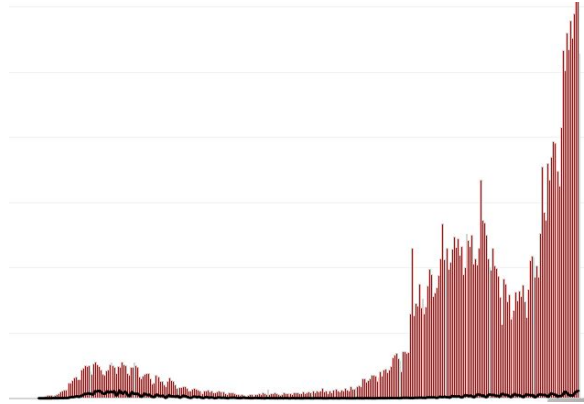
The study showed that the cases, the death and the people affected by the virus were relatively under control during the summer. The weather is a factor in the spike along with the low stringency index. The analysis of the study focused in the UK shows that the new strain of the virus in the UK is more destructive, therefore, all the other countries should take the new measurements to tackle the virus as long as possible from getting into their countries.

3. Explanation of the visualization for each graph/chart/graphical representation in visualizing your findings.

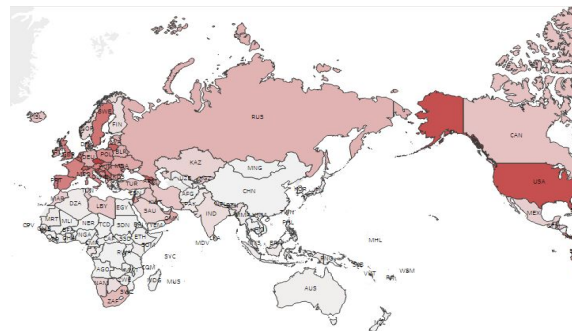
We've implemented our knowledge from our Information Visualization class during designing our graphs and charts as well as dashboard. We followed the Gestalt Principles to make our content more eye-catching and easy for the audience to understand properly.

Gestalt Principle: We've shown two Geographical maps to visualize and properly understand the outbreak of the world as well as in Europe. Here we followed the principle of similarity. While creating the sheet of visualizing the "Effectiveness of Stringency Index over new cases and deaths in Europe" we used an area chart where Figure-Ground principle is followed. We've done sketching our idea's first. Then, we implement them in the visualization. For the Dashboard, we choose the simplest layout for visualization and use floating to adjust the sheets properly. It follows the Figure Ground principle, as the background is white and its easily readable and visually eye-catching from the first glance.

Colour Theory: We've used black and red as our main colour for visualizing our charts, graphs and maps. In our geographical maps, we used only red and the colour is not so bright nor so light and changes with the condition.



Graphs and charts made of red and black



Maps are shown just using red colour

As font color, we choose light blue for the individual sheet heading and red for the dashboard heading. We used red for the dashboard heading to spread awareness and alarm the audience. But the individual sheet heading remains light blue in the dashboard for better understanding and separation.

Covid-19 Outbreak in UK and Europe

New Cases VS New Deaths Per Day in UK

Colour for headings

Typography: We just used one font for the whole visualization and just changed the colour according to the visualization. From our point of view, Tableau Bold is the perfect font for us

which is not too fancy but visually perfect and standard. We changed the size of the font in the dashboard as well as the colour to show the difference between the Dashboard heading and the sheet's heading.

TASK DISTRIBUTION

Name and matric number	Task distribution	Percentage completed
Mohammad Tahmid Lodi - 1725491	Dataset selection, Part B - 2, Sheet - New Cases vs New Deaths Per Day in the UK, Patients in ICU per Day in the UK.	100%
MD Hasan Tanvir - 1716763	Part B - 3, Dashboard	100%
Siddique Yahia - 1639835	Part A, Part C Sheet - Worldwide New Cases in Millions, Total Cases In Europe in Millions	100%
Mujib Mehran - 1632625	Part B - 1, Sheet - New Cases vs New Deaths in Europe, Effectiveness of Stringency Index over new cases and deaths in Europe	100%