A4_Common_Analysis

The Visualization is an analysis of the COVID 19 Data. I have done my analysis on DuPage County in Illinois the population of the place is 932877. This Analysis helped me to understand the trends in Covid in scenarios like where people were mandated to wear the mask and how this has helped in either increase or decrease of confirmed covid cases in the county.
To follow the Analysis, we need to consider the following datasets:

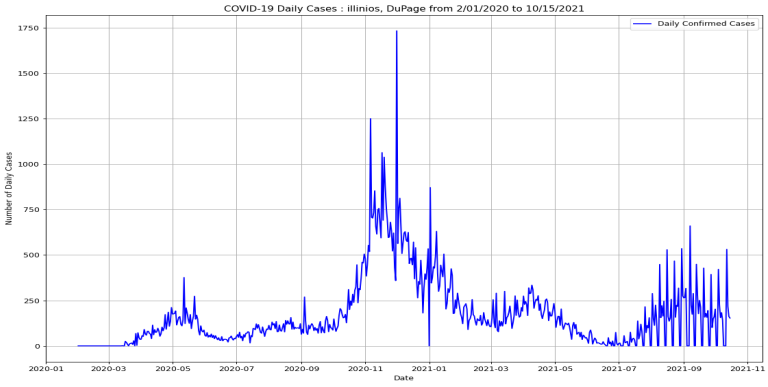
1. The RAW_us_confirmed_cases.csv file from the Kaggle repository of John Hopkins University COVID-19 data.
2. The CDC dataset of masking mandates by county.
3. The New York Times mask compliance survey data.

For such open-ended problems, it is always useful to have discussions and know how others are proceeding with the work. In this assignment slack was very useful, the comments posted by both the peers and TA helped me save time as I was planning to use
Convenient dataset for the process, but later on seeing comments from TA I found using Raw_us_confirmed cases was useful as it has all the needed data instead of merging the data from different convenient datasets and filtering out for the specific county. Also, I saw people posting multiple approaches to find the daily cases from the cumulative cases was helpful. The collaborative assignment is useful to check ourselves and also learn new ideas to approach a problem.

Steps In Visualization:

1.**Processes the Data for the Confirmed Cases:**

I have taken the “Raw_US _Confirmed_cases” dataset and then passed it to a pandas df and pivoted the date columns and change the format of the date, in the process of cleaning I have also renamed columns like state and country. Then I have filtered the data for DuPage County in the Illinois state, after cleaning the data stored in a CSV filename ”number_of_daily_cases”.

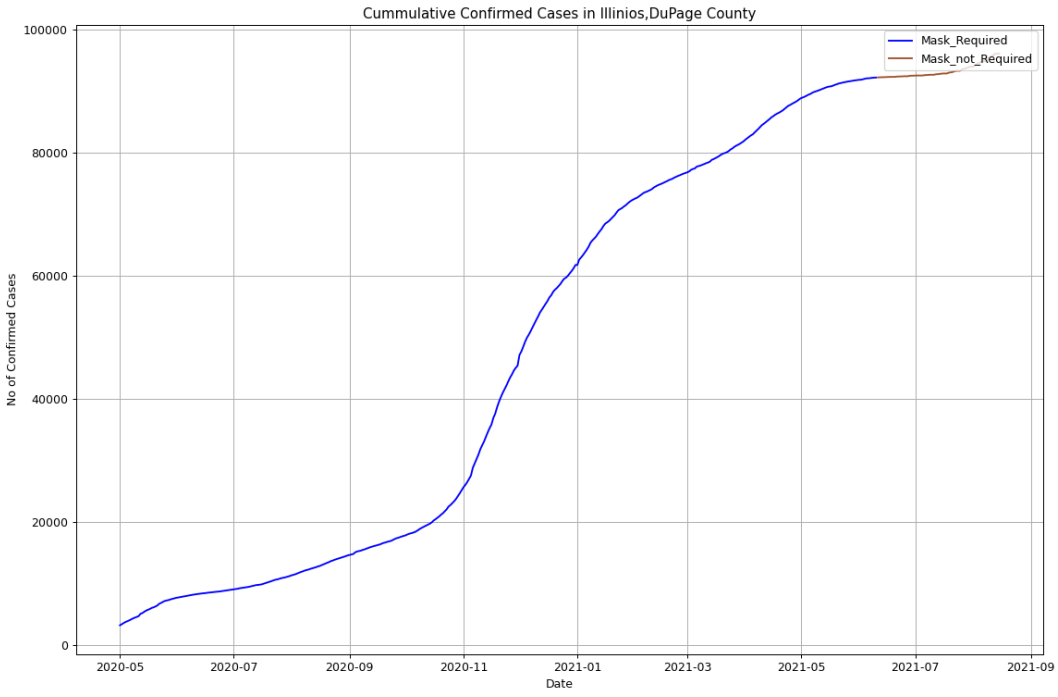


The Above graph is from the data “number_of_daily_cases.csv” file which has the data of the number of daily confirmed covid cases in the DuPage County, **X-axis** has the **Date** values from the period (2020-01 to 2021-11) and **Y-axis** has the **Number of daily cases** values from the data The image is named as (Dupage(Illinois)_daily_cases.png).

The Graph Infers:
The Trends of the Covid Confirmed cases data in Illinois from 2/01/2020 to 10/15/2021.
The Graph tells us that during the period (2020-11 to 2021-01) the number of cases recorded daily was very high. Also, from the graph, it is seen that after a significant decrease in cases after 2021-01 we see an increase in the cases from 2021-09.

2. **CDC Mask Mandate:**

In the next step, I have considered the data from the Mask mandates by county dataset and filtered the data for DuPage County. As a part of cleaning, I have changed the date format, merged the DuPage (Illinois_cases).csv data with the mask mandate data on the date column, and stored it in the file named merged_data.csv. I have then filtered the data based on the Face Mask required in Public Column and then plotted a graph for both the cumulative confirmed cases and daily confirmed cases of covid based on the mask required data.
For the cumulative Confirmed cases graph:



The graph has Date on X-axis and No of Cumulative Confirmed cases on Y-axis (which shows the confirmed covid cases) and the red and blue Colour changes shows the label’s Mask not required

and Mask required filters respectively. The graph is stored in the image Dupage(Illinois)_Cummulative_with mask_on_date.png

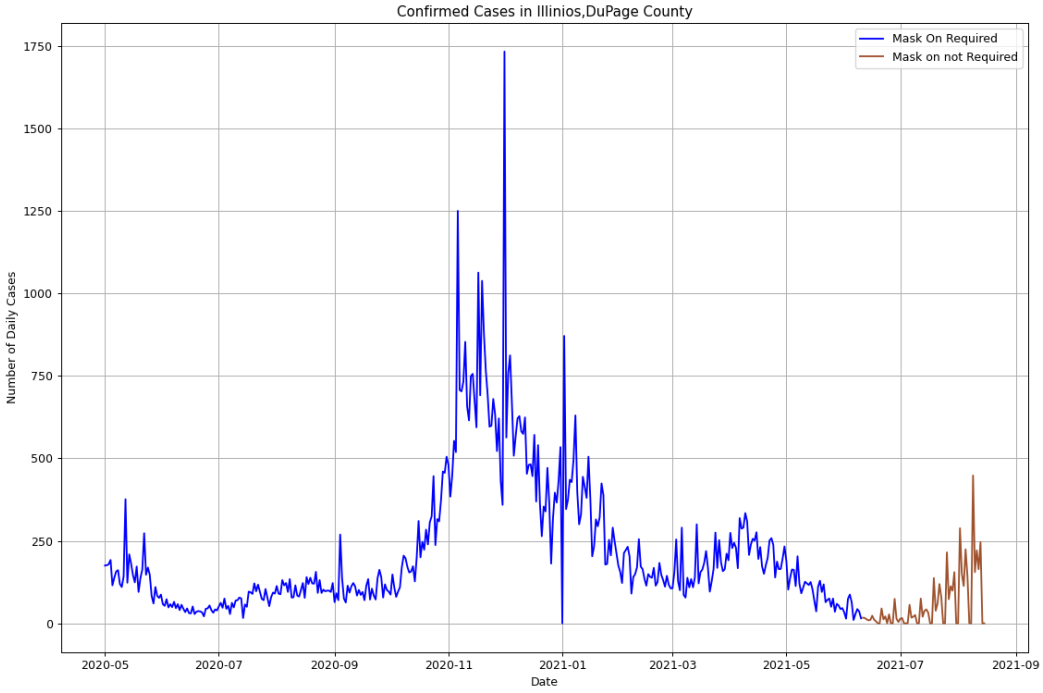
The Graphs Infers:

The graph is from the period 2020-05 to2021-09 as it was the data after merging with mask mandates by county dataset and has the period when mask mandates were in effect.

The Graph tells us the places where mask mandatory is there, the number of Confirmed cases is increasing in that period, and masks were required, after the period 2021-05 there was not much increase in the no of confirmed cases hence mask was not required.

The Number of Confirmed cases were increasing constantly from 2020-05, we see a high rise of cases from 2020-11

The graph of number of Daily confirmed cases with mask mandate:



The above graph is plotted from the number of daily confirmed cases column of merged_data.csv and Face Mask required in Public Column to see the patterns in daily data based on the mask.

The Graph Infers:

The X-axis of the graph has date values and Y-axis has no. of confirmed cases in DuPage County. From the graph, we see that there is a high increase in cases from 2020-11 to 2021-01 where we see masks were required, from 2021-07 to 2021-09 masks were not required as the cases were

fewer. From this, we can conclude that whenever the cases were high masks were made mandatory and required, and when the cases were reduced or there is no significant increase in cases in 2021-07 masks are not required. Also, we can see that even though cases are less in 2020-05 and similar to 2021 -07 masks are required, we can think maybe in 2021-07 along with a decrease in cases there may be vaccines into effect with which mask was not mandated.