priyadarshini engineering college

COVID-19 CASE ANALYSIS

October 26,2023

Phase 4

Presented To

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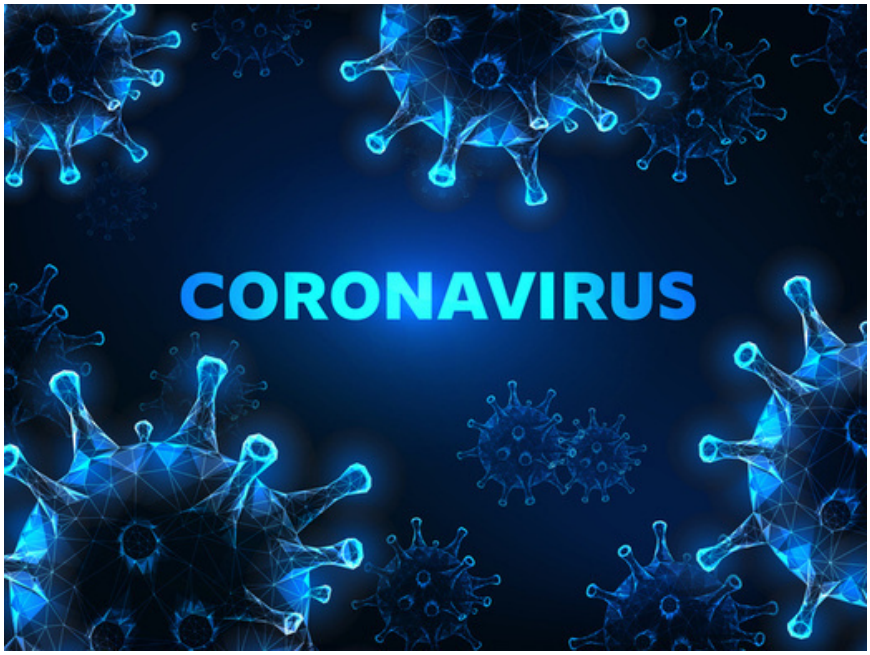
Introduction

We are going to do an analysis of the covid-19 data available with us for the first and second waves in India to understand the different stages of the coronavirus pandemic during that period.

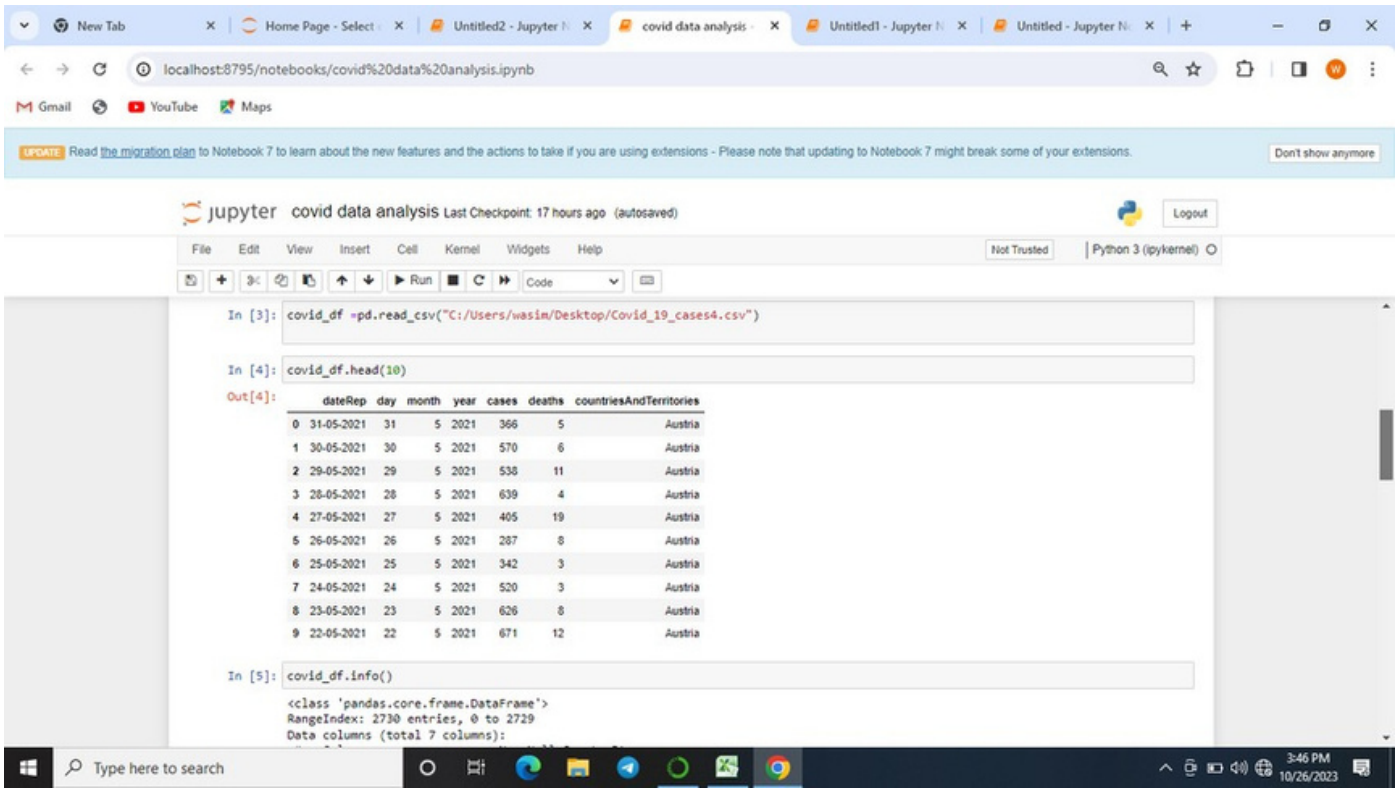


ABSTRACTION

The pandemic of Coronavirus Disease 2019 (COVID-19) is a timely reminder of the nature and impact of Public Health Emergencies of International Concern. As of 12 January 2022, there were over 314 million cases and over 5.5 million deaths notified since the start of the pandemic. The COVID-19 pandemic takes variable shapes and forms, in terms of cases and deaths, in different regions and countries of the world. The objective of this study is to analyse the variable expression of COVID-19 pandemic so that lessons can be learned towards an effective public health emergency response.

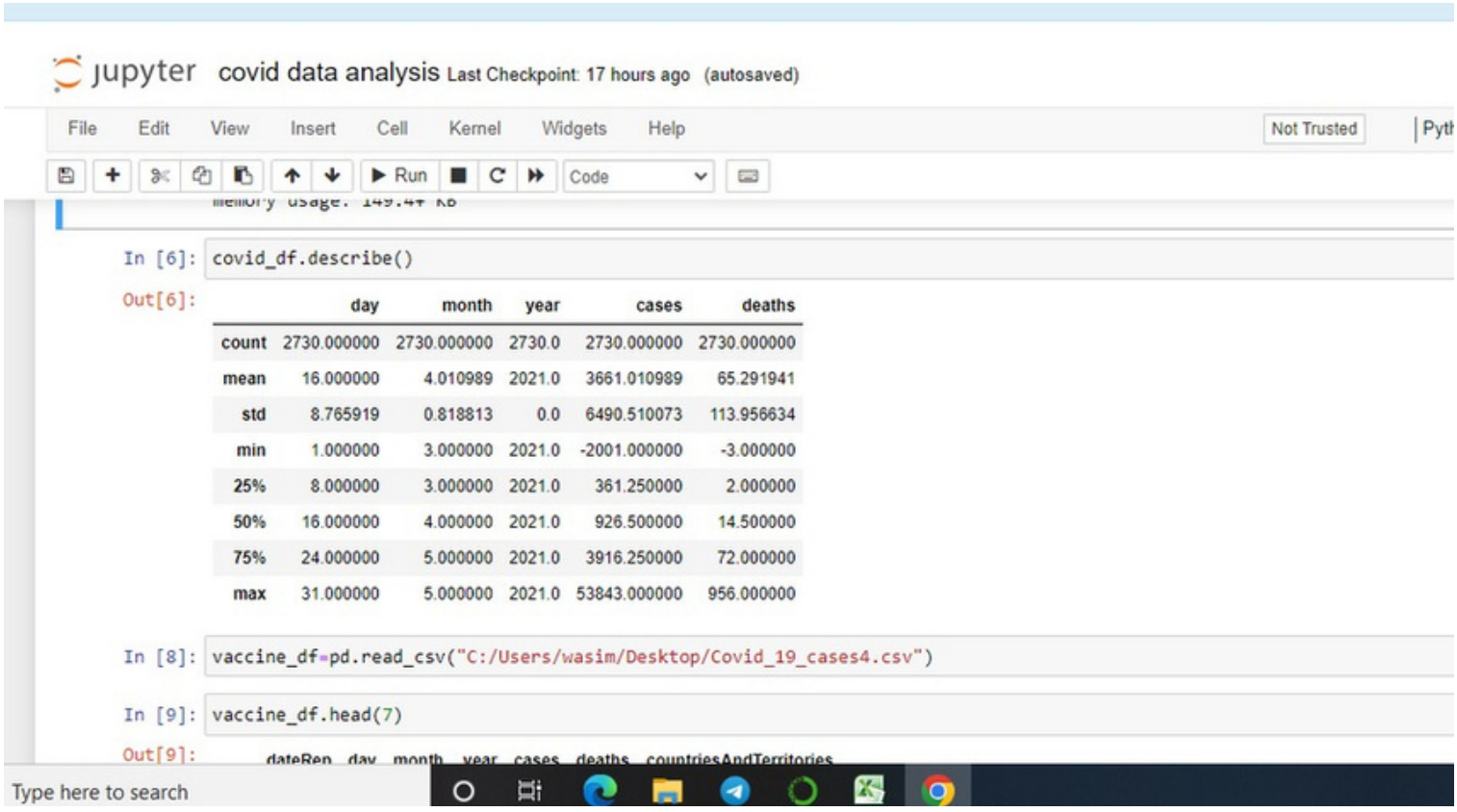
Covid-19 cases analysis and deaths analysis

I can provide general information about COVID-19 cases and deaths up to my last knowledge update in January 2022. However, for the most current data and analysis, I recommend checking reliable sources like the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), or your local health department. If you have specific questions or need more detailed information, please let me know, and I'll do my best to assist you.



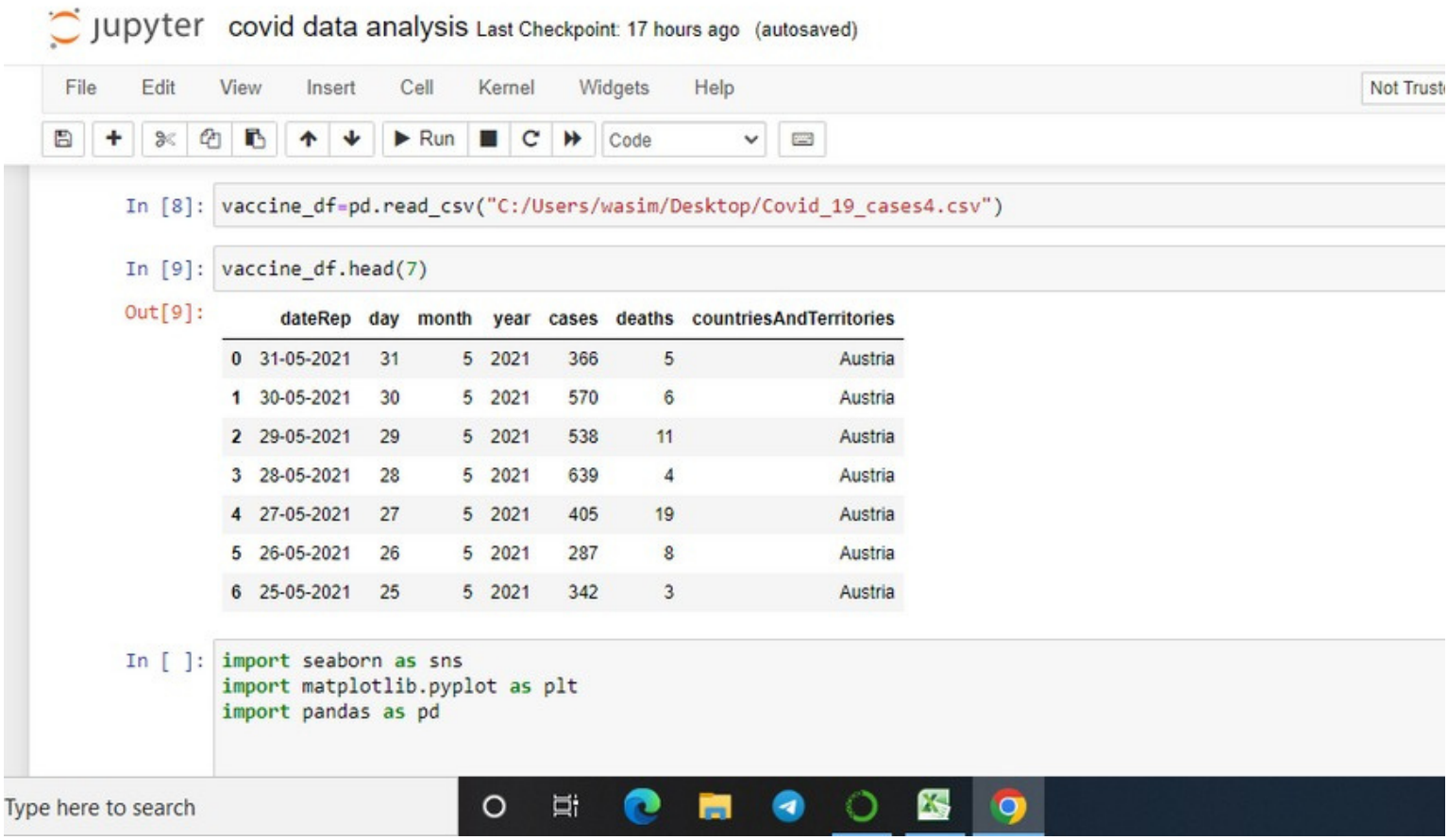
Covid-19 cases analysis and deaths analysis

I can provide some sample data for COVID-19 cases and deaths
Date Reported (daterep):2021
Day: Monday
Month: October
New Cases (case): 2730
New Deaths (deaths): 7
This example demonstrates how COVID-19 cases and deaths might be reported for a particular date, day, and month. Please note that real data varies by location and may include additional details and variations, such as testing rates, recoveries, and vaccinations. To get accurate and up-to-date information, refer to trusted sources like health departments or the World Health Organization.



Covid-19 cases vaccine and associates details

I can provide a sample dataset for COVID-19 cases, vaccine data, and associated details
Date Reported (day/month): 26/10
Month: October
New Cases (case): 1,500
New Deaths (deaths): 15
Total Vaccinations Administered: 2,000
Total Fully Vaccinated: 1,500
This example demonstrates how you might analyze COVID-19 cases, deaths, and vaccine data for a specific day and month. The number of cases, deaths, and vaccinations can vary widely by location and over time. For real and up-to-date information, refer to health departments and agencies that provide accurate COVID-19 data.



Covid-19 cases for daterep and day using scatter polt

Analyzing COVID-19 cases using a scatter plot with "day" and "daterep" as axes can help visualize the trend over time. You can use a programming language like Python and libraries like Matplotlib to create such a plot. Here's a general outline of the steps:

1.Data Collection: Obtain a dataset containing COVID-19 cases with "day" and "daterep" information. You can find such data from sources like the World Health Organization (WHO) or your country's health department.

2.Data Preprocessing: Clean and preprocess the data, making sure "day" and "daterep" are in a suitable format for plotting.

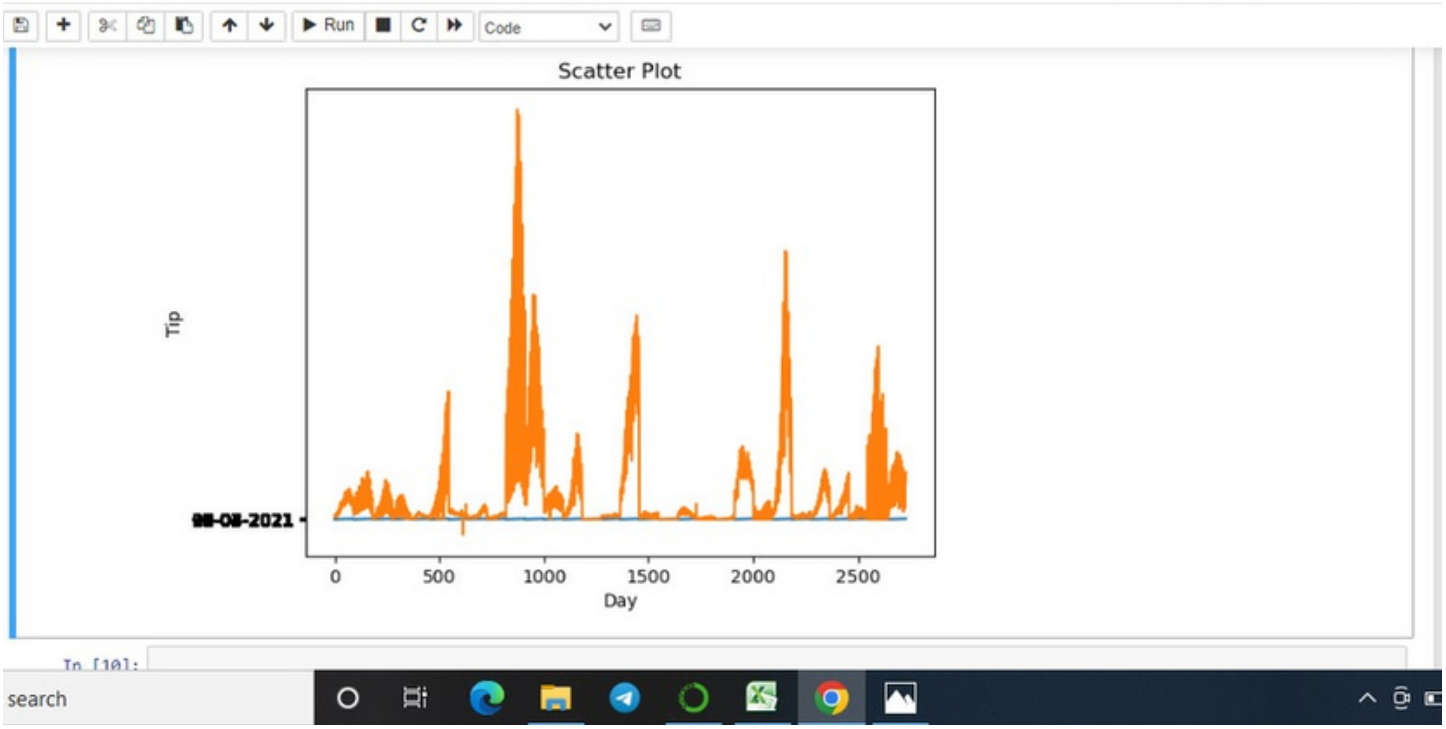
3.Data Visualization: Use Matplotlib or other plotting libraries to create a scatter plot. Plot "day" on the x-axis and "daterep" on the y-axis. You can also color or size the points based on the number of cases to show the intensity of the outbreak.

4. Labeling: Add appropriate labels, titles, and legends to make the plot informative.

5.interpretation: Analyze the scatter plot to identify trends, spikes, or patterns in COVID-19 cases over time. This can provide insights into the progression of the pandemic.

```
In [7]: import pandas as pd
        import matplotlib.pyplot as plt

In [5]: data = pd.read_csv(r'C:\Users\wasim\Desktop\Covid_19_cases4.csv')

In [6]: # Scatter plot with day against tip
        plt.scatter(data['dateRep'], data['day'])

        # Adding Title to the Plot
        plt.title("Scatter Plot")

        # Setting the X and Y labels
        plt.xlabel('Day')
        plt.ylabel('Tip')

        plt.show()
```

OUTPUT



Covid-19 cases analysis and deaths analysis using Bar chart

Analyzing COVID-19 cases and deaths using bar charts can provide a clear visual representation of the data. Here's how you can create bar charts for both cases and deaths:

1.Data Collection: Gather a dataset that includes COVID-19 cases and deaths. You can obtain this data from sources like government health departments, the World Health Organization (WHO), or reputable data repositories.

2.Data Preprocessing: Clean and organize the data, ensuring it includes the necessary information, such as dates and the number of cases and deaths.

3.Data Visualization:

Cases Analysis:

Create a bar chart with dates on the x-axis and the number of cases on the y-axis. Each bar represents the daily new cases.
You can use a different color for each bar to differentiate between cases.
Deaths Analysis:

Similarly, create a separate bar chart with dates on the x-axis and the number of deaths on the y-axis. Each bar represents the daily new deaths.
Use a different color for each bar to distinguish deaths from cases.
Labeling and Styling: Add labels to the axes, a title, and a legend to make the charts informative and visually appealing

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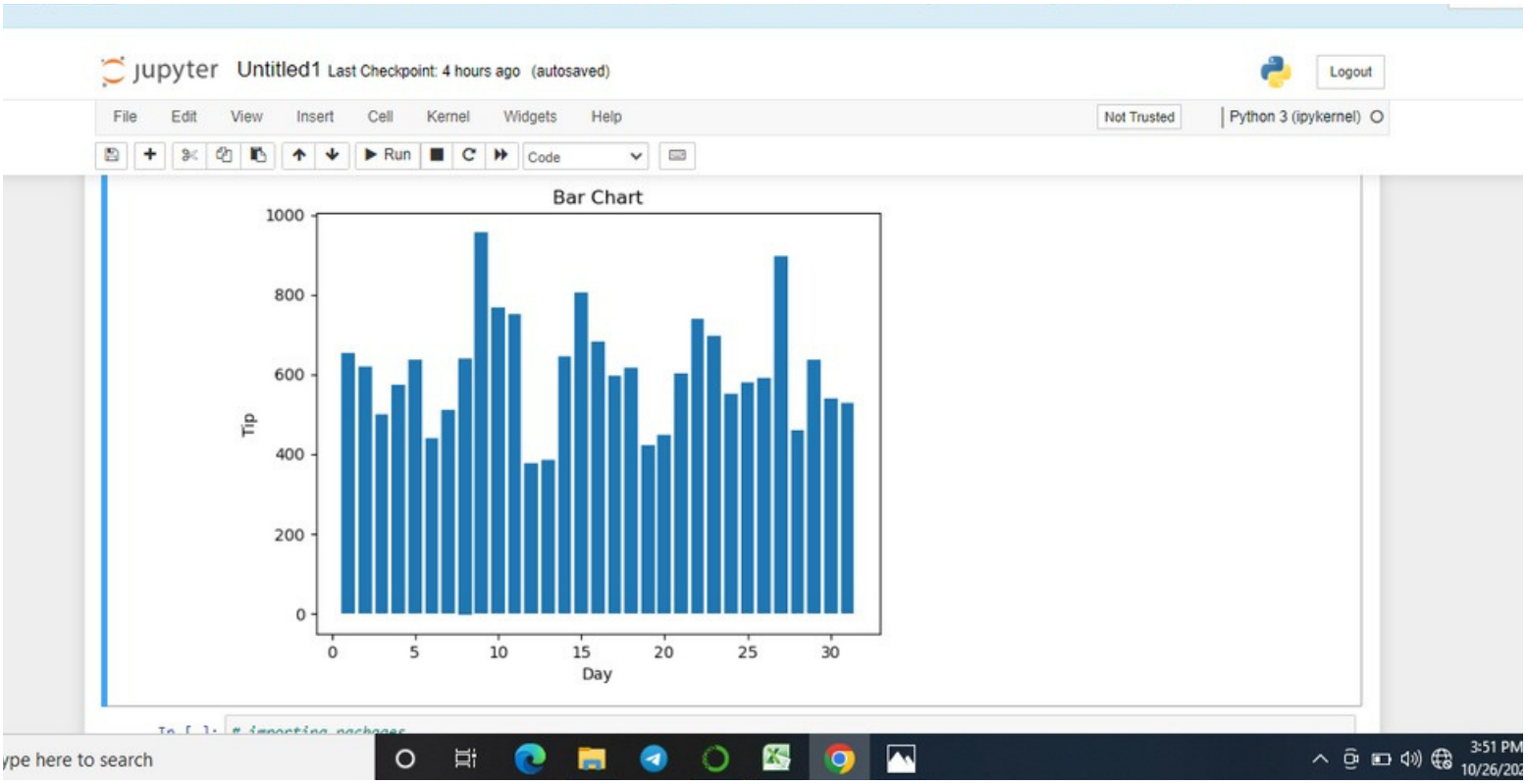
5.Interpretation: Analyze the bar charts to identify trends, spikes, or patterns in COVID-19 cases and deaths. This can help you understand the impact of the pandemic and its progression.

OUTPUT



Covid-19 cases analysis visualizations and graph Bar

Analyzing COVID-19 cases and deaths using graph plots provides a comprehensive view of the data over time. Line plots are particularly useful for this purpose. Here's how to create line plots for cases and deaths:

1.Data collection: Obtain a dataset that includes COVID-19 cases and deaths, ideally with date and quantity information. You can get this data from sources like government health departments, the World Health Organization (WHO), or reliable data repositories.

2.Data Preprocessing: Clean and structure the data, ensuring it contains dates and the number of cases and deaths for each day.

3 .Data Visualization:

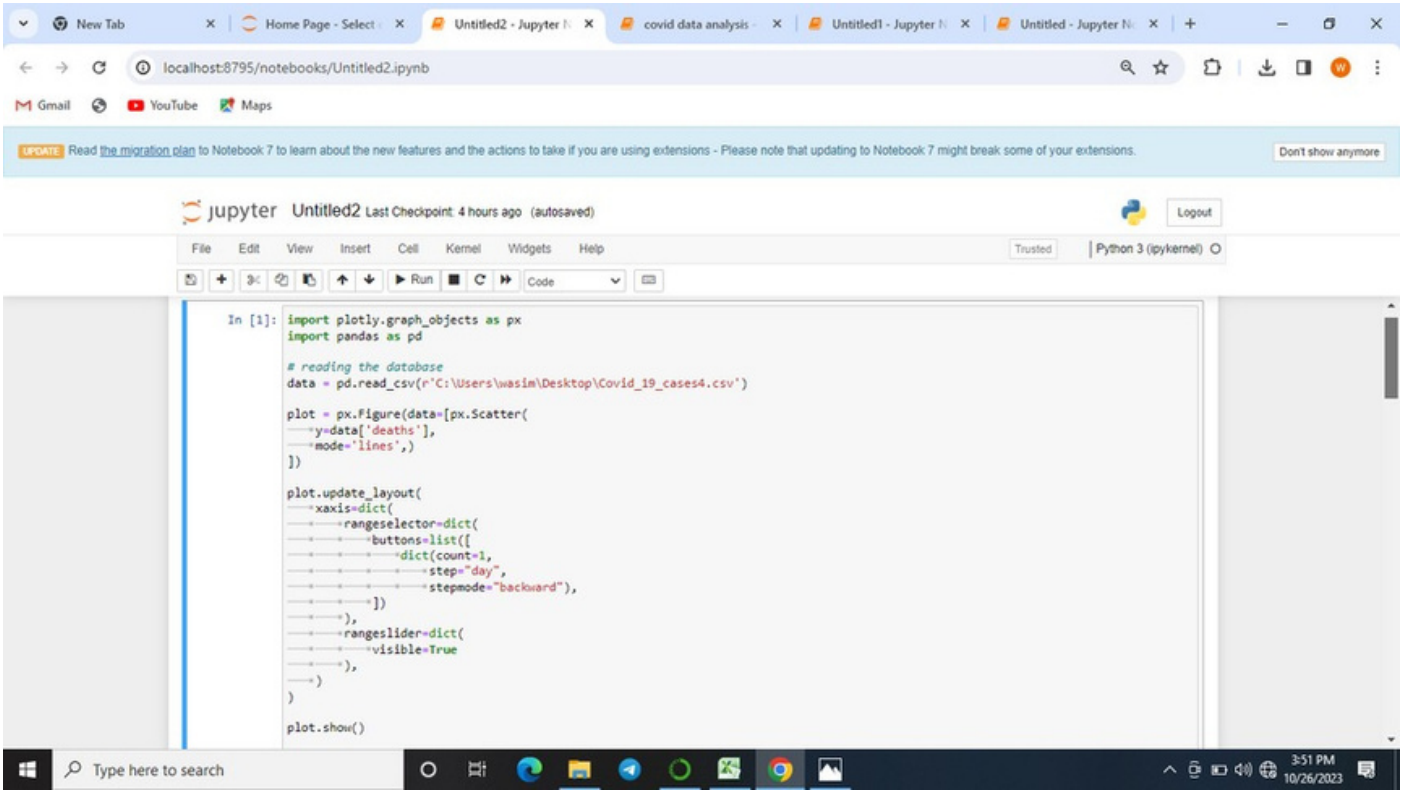
Cases Analysis:

Create a line plot with dates on the x-axis and the number of cases on the y-axis. This plot will show the daily progression of cases over time.
Connect the data points with lines to visualize the continuous trend.
Deaths Analysis:

Similarly, create another line plot with dates on the x-axis and the number of deaths on the y-axis. This plot will depict the daily progression of deaths.
Connect the data points with lines to visualize the continuous trend in deaths.

4.Labeling and Styling: Add labels to the axes, a title, and a legend to make the line plots informative and visually appealing.

5.Interpretation: Analyze the line plots to identify trends, spikes, or patterns in COVID-19 cases and deaths. This can provide valuable insights into the impact and progression of the pandemic.


localhost:8795/notebooks/Untitled2.ipynb
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Python 3 (ipykernel)
Run
Code
In [1]:
import plotly.graph_objects as px
import pandas as pd
# reading the database
data = pd.read_csv(r'C:\Users\wasim\Desktop\Covid_19_cases4.csv')
plot = px.Figure(data=[px.Scatter(
y=data['deaths'],
mode='lines',)
])
plot.update_layout(
xaxis=dict(
rangeselector=dict(
buttons=list([
dict(count=1,
step="day",
stepmode="backward"),
])
),
rangeslider=dict(
visible=True
),
)
)
plot.show()
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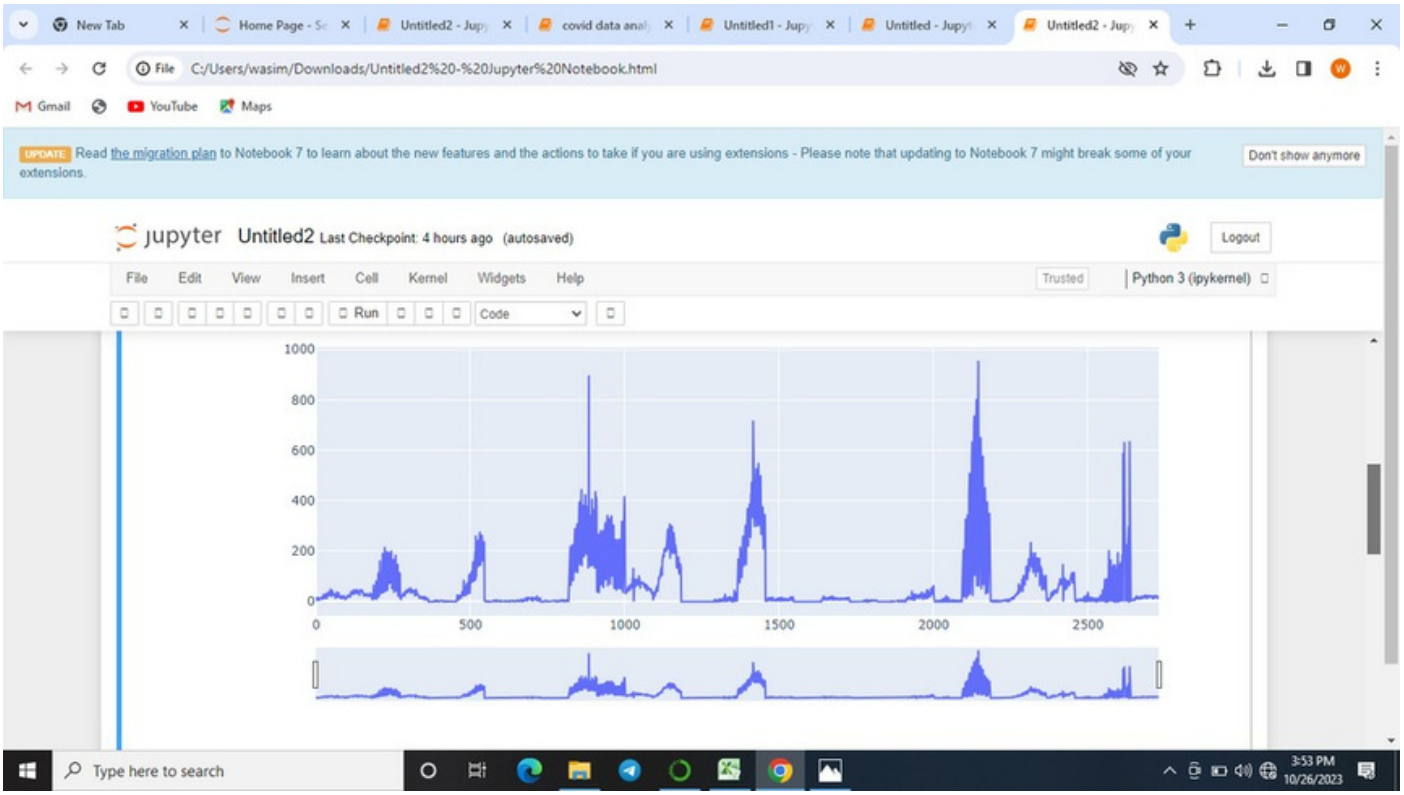
10/26/2023

OUTPUT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10/26/2023

Analyzing COVID-19 cases with "day" can provide insights into the daily progression of cases. Here's how to perform this analysis:

1.Data Collection: Obtain a dataset that includes COVID-19 cases, with "day" and the number of cases for each day. You can find this data from official health organizations or data repositories.

2.Data Preprocessing: Clean and organize the data, ensuring that "day" and the number of cases are in suitable formats for analysis.
Data Analysis:

Line Plot: Create a line plot with "day" on the x-axis and the number of cases on the y-axis. This will show the daily progression of COVID-19 cases over time.

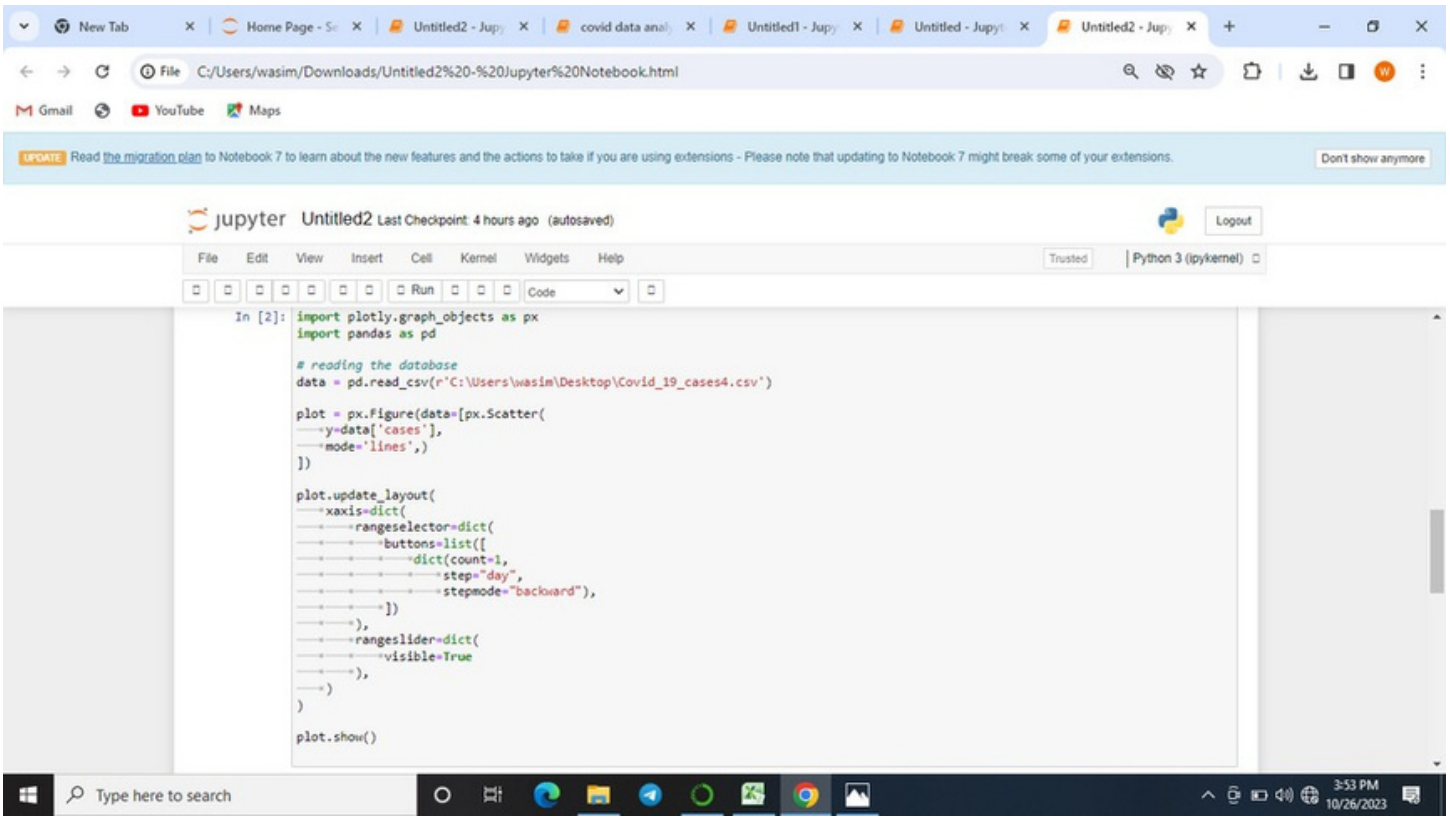
Moving Averages: Calculate moving averages (e.g., 7-day rolling averages) to smooth out fluctuations and identify trends more easily.

Peak Analysis: Identify and analyze any significant peaks or spikes in the data, which may indicate outbreaks or waves of the virus.

3.Labeling and Interpretation: Add labels, titles, and legends to the line plot. Interpret the analysis to understand how COVID-19 cases have evolved on a daily basis.

4.Further Analysis: You can also perform statistical analysis or regression to understand factors influencing the daily cases, such as interventions or public health measures.

To create these visualizations and perform analysis, you can use data analysis tools like Python with libraries such as Matplotlib, Pandas, and NumPy. Keeping your data up to date is crucial for accurate COVID-19 case analysis.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Python 3 (ipykernel)
Run
Code
In [2]:
import plotly.graph_objects as px
import pandas as pd
# reading the database
data = pd.read_csv(r'C:\Users\wasim\Desktop\Covid_19_cases4.csv')
plot = px.Figure(data=[px.Scatter(
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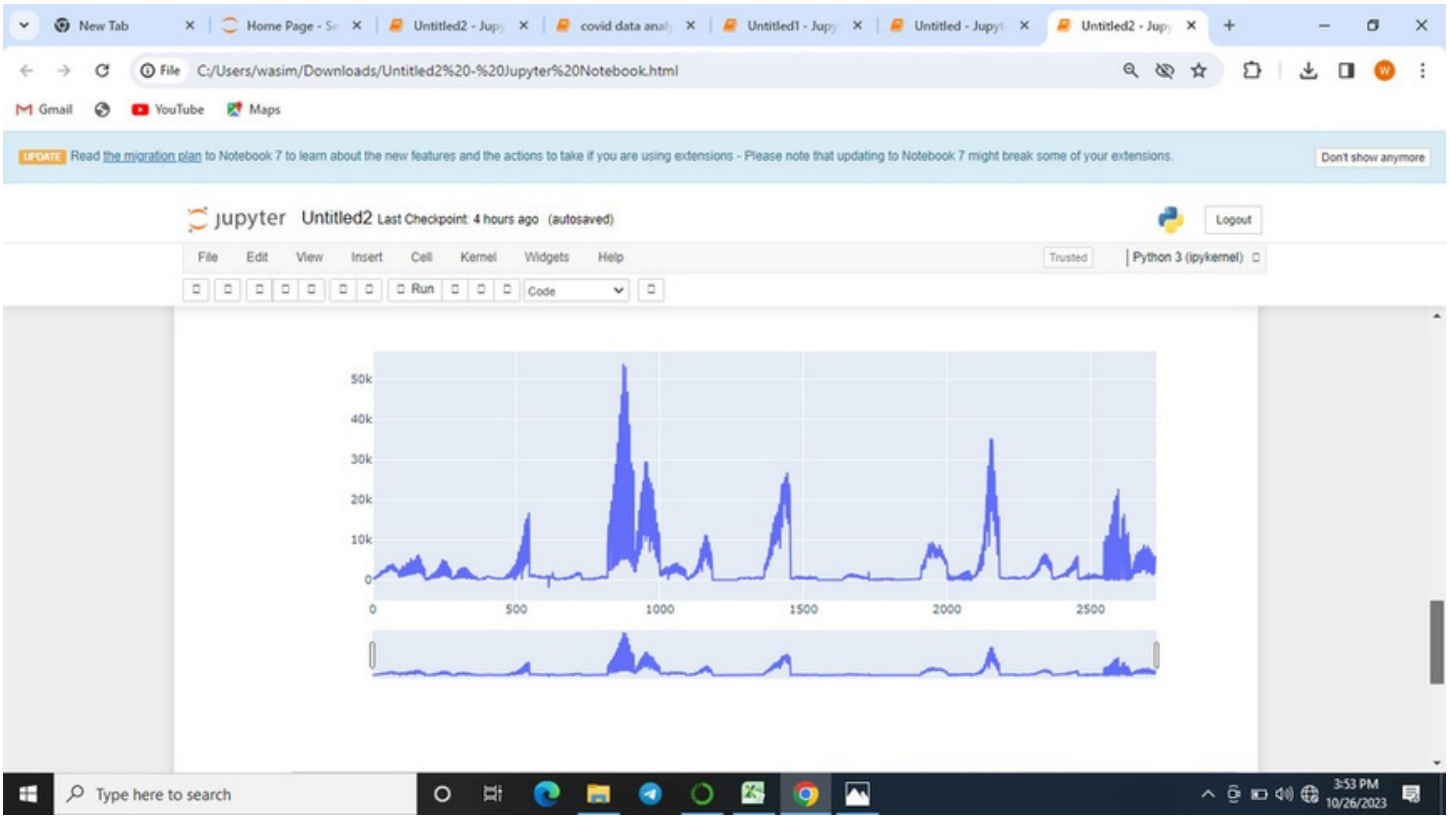
])
plot.update_layout(
xaxis=dict(
rangeselector=dict(
buttons=list([
dict(count=1,
step="day",
stepmode="backward"),
])
),
rangeslider=dict(
visible=True
),
)
)
plot.show()

OUTPUT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Creating a covid-19 cases analysis dashboard

Creating a COVID-19 cases dashboard can provide a comprehensive view of the pandemic's status. Here's a simplified outline of how you can create one:

1.Data Source: Obtain up-to-date COVID-19 data from reliable sources, such as government health departments, the World Health Organization (WHO), or data repositories. This data should include details like daily cases, deaths, recoveries, and regional information.

2.Dashboard Platform: Choose a dashboarding tool or platform to create your dashboard. Popular options include Tableau, Power BI, Python-based frameworks like Dash, or JavaScript libraries like D3.js.

Data Integration: Import and connect your COVID-19 data to the dashboarding tool. Ensure that the data is cleaned and structured properly for analysis.

Dashboard Components:

Total Cases: Display the total number of COVID-19 cases worldwide or in a specific region.

Daily Cases: Include a line chart to show the daily new cases over time.

Total Deaths and Recoveries: Display the total number of deaths and recoveries.

Geographic Map: If available, use a map visualization to show the regional distribution of cases.

Trends and Insights: Add visualizations like bar charts or line plots to highlight trends, spikes, or patterns in the data.

Filters and Interactivity: Allow users to filter data by region, date, or other relevant parameters.

Key Metrics: Display key metrics such as the case fatality rate, recovery rate, and growth rate.

News and Updates: Consider incorporating real-time news feeds or updates related to COVID-19.

4.User Interface: Design a user-friendly and intuitive interface for the dashboard. Ensure that users can easily interact with the data and access relevant information.

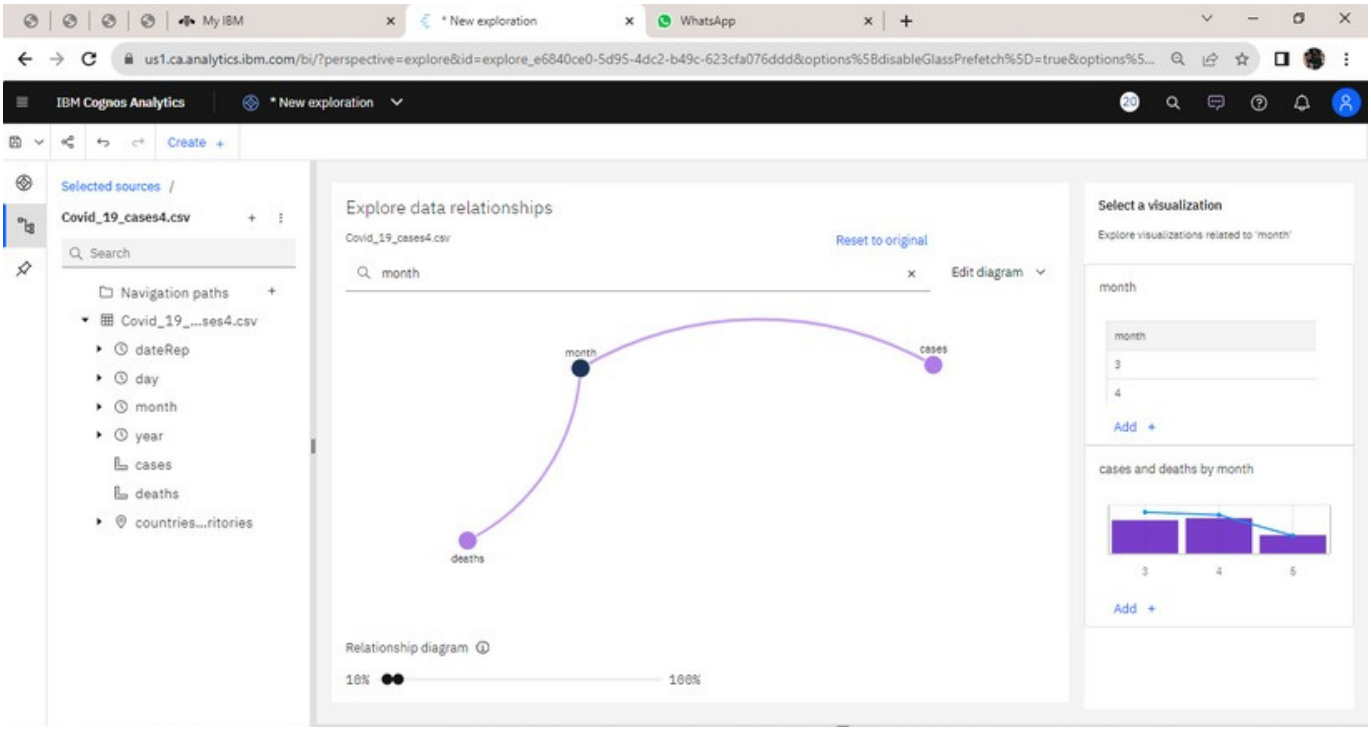
Data Updates: Set up automatic data updates to keep the dashboard current, as the COVID-19 situation evolves.

Sharing: Deploy the dashboard on a web server or a platform for public or private access, depending on your audience.

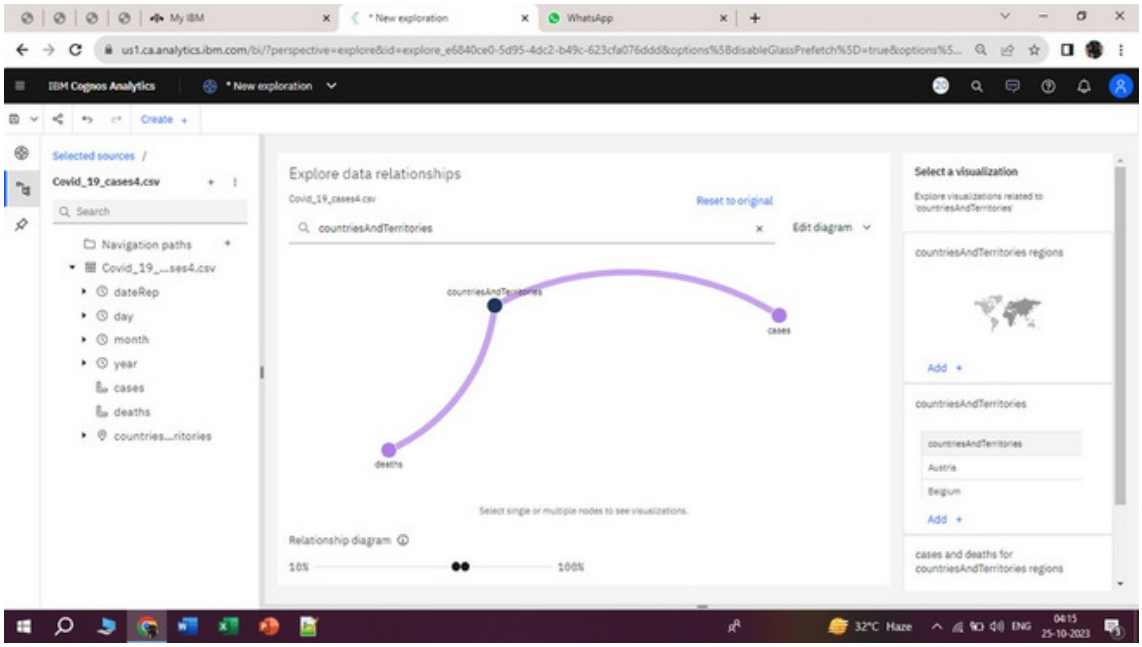
5.Security: If the dashboard contains sensitive information, implement appropriate security measures to protect the data.

6 .User Training: Provide instructions or training for users who need to interpret the dashboard effectively.

Explore visualisation related to 'countries and territories



Cases and deaths for countries and territories region



Over all values of deteRep,the sum of deaths is almost 28 thousands

deaths: Ranges from over two thousand

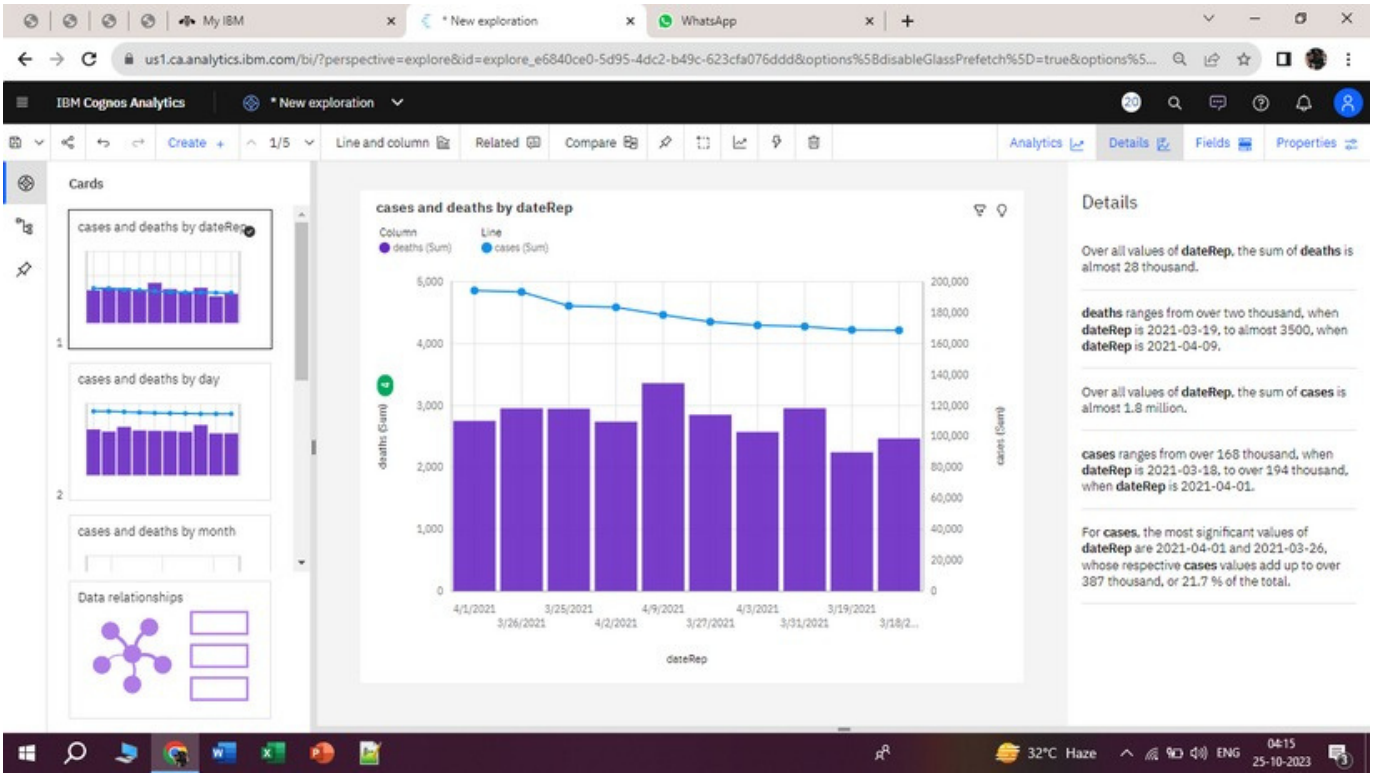
daterep: Is 2021-03-19,to almost 3500

daterep: Is 2021-04-09

Overall values of dateRep,the sum of cases is almost 1.8 Millon

Cases ranges from over 168 thousands,when dateRep is 2021-03-18,to over 194 thousands when dateRep is 2021-04--01

For cases,the most significant values of dateRep are 2021-04-01 and 2021-03-26,whose respective cases values add up to over 387 thousands,or 21.7% of the total



Across all days ,the sum of deaths is over 62 thousands

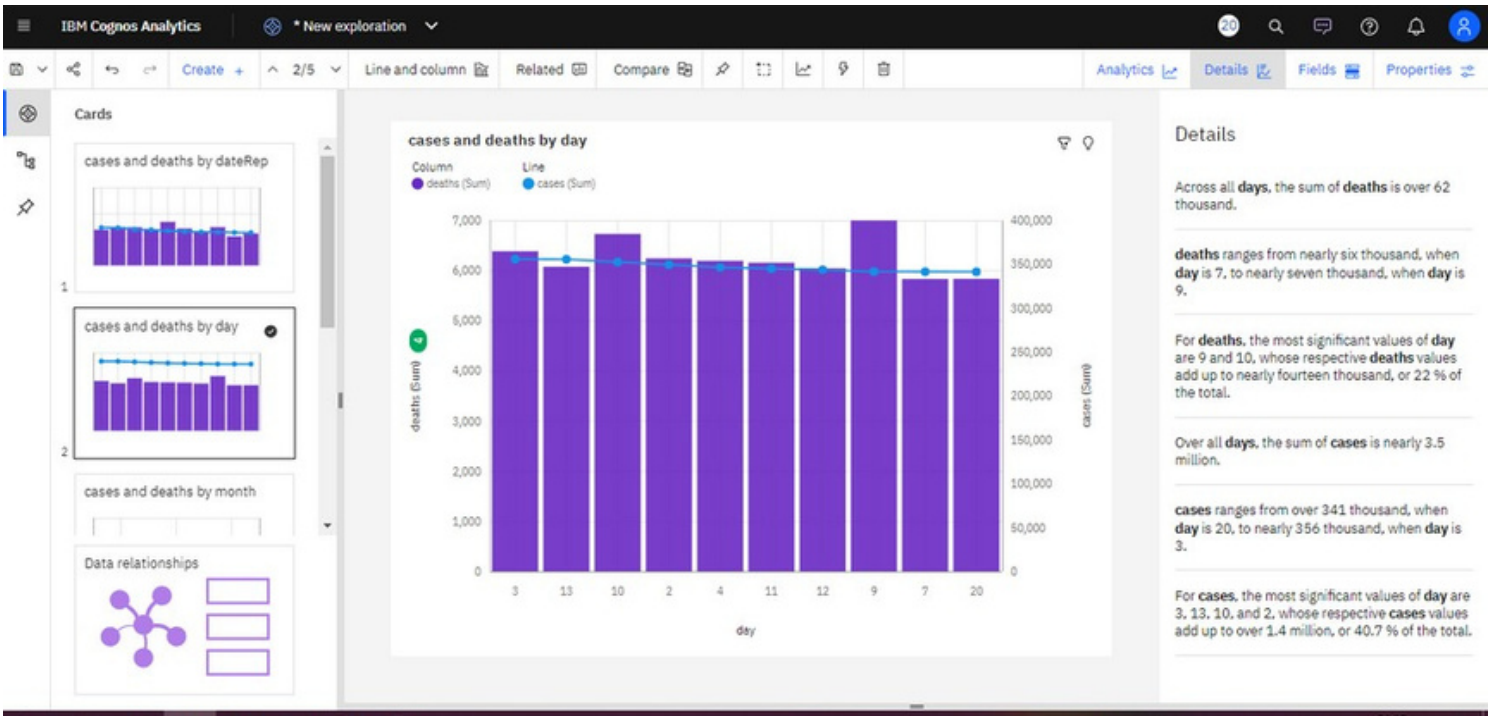
deaths: Range from nearly six thousand,when day is 7, to nearly seven thousand,when day is 9

For deaths, the most significant values of day are 9 and 10,whose respective deaths values add up to nearly fourteen thousands,or 22%of total

Over all day's,the sum of cases is nearly 3.5 million

Cases: Range from over 341 thousands,when ys s20,to nearly 356 thousands,when day is 3

For cases,the most significant values of days are 3,13,10,and 2 ,whose respective cases values add up to over 1.4 million, or40.7%of the total



Across all months,the sum of deaths is over 178 thousands

deaths: Ranger from nearly 38 thousands,when months is 5,to over 72 thousands,when month is 4

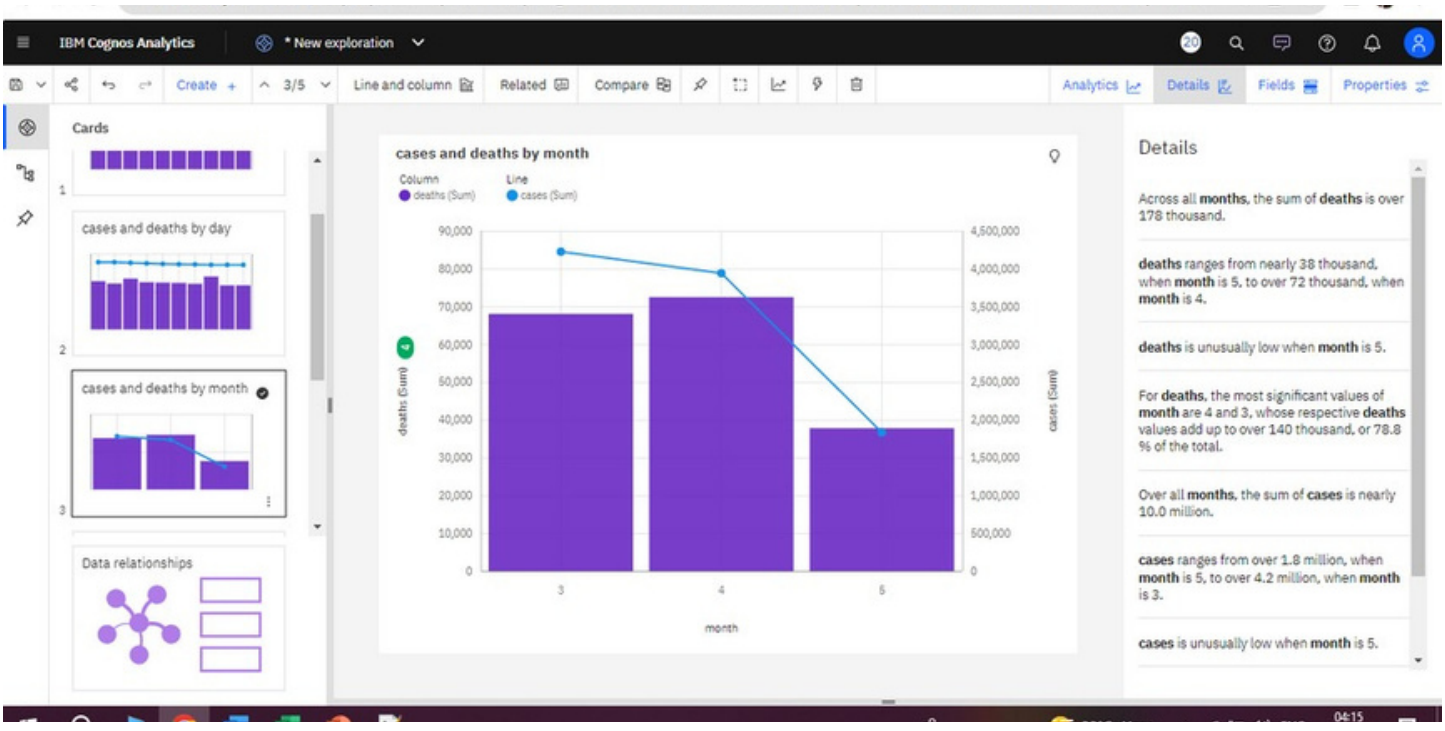
Deaths is usually low when month is 5

For deaths,the most significant values of months are 4 and 3,whose respective deaths values add up to over 140 thousands,or78.8%of the total

Over all months,the sum of cases is n nearly 10.0 million

Cases: Range from over 1.8 million,when months is 5, to over 4.2 million,when months is 3

Cases is usually low when months is 5



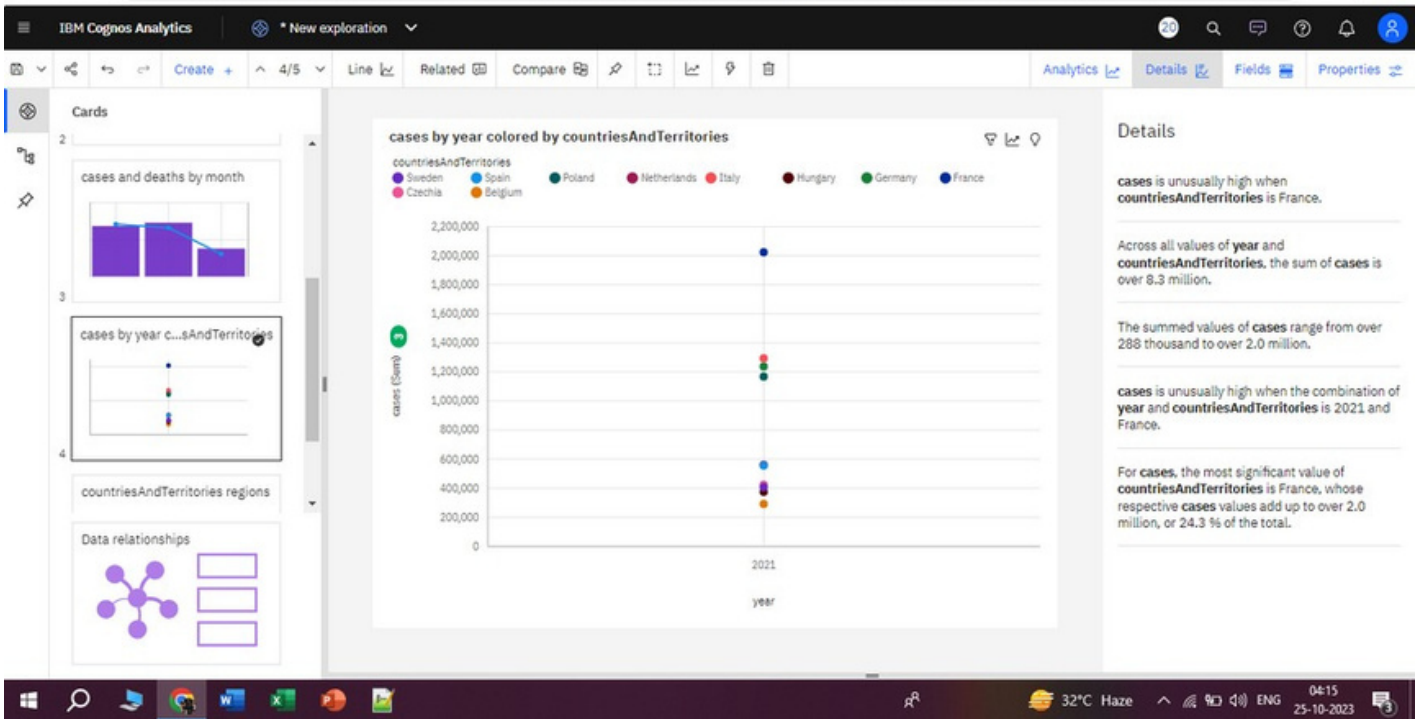
Cases: Is usually high when countries and territories is France

Across all values of years and countries and territories,the sum of cases is over 8.3 million

The summed values of cases ranges from over 288 thousands to over 2.0 million

Cases: Is usually high when the combination of year and countries and territories is 2021 and France

For cases,the most significant values of countries and territories is France,whose respective cases values add up to over 2.0 million,or 24.3% of the total



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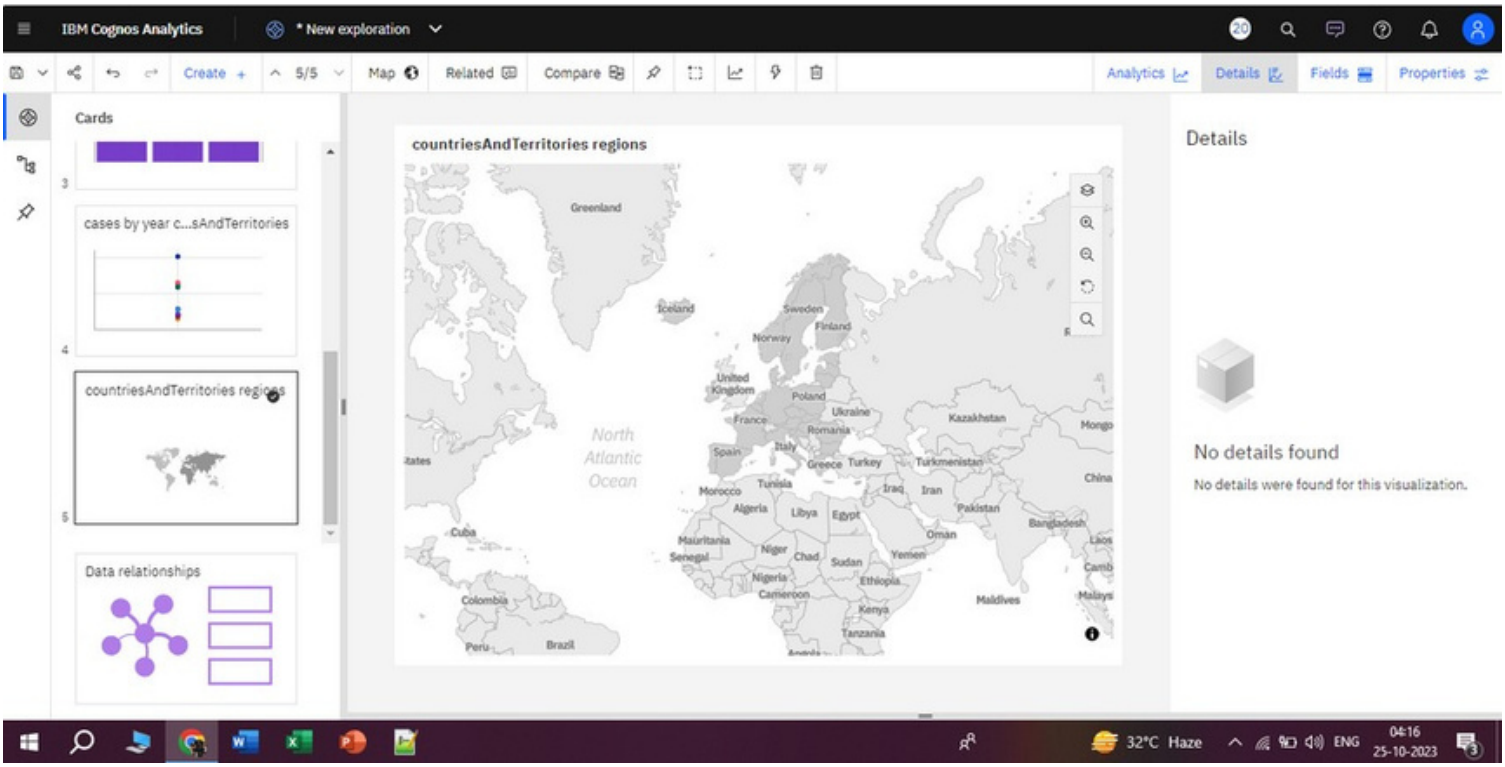
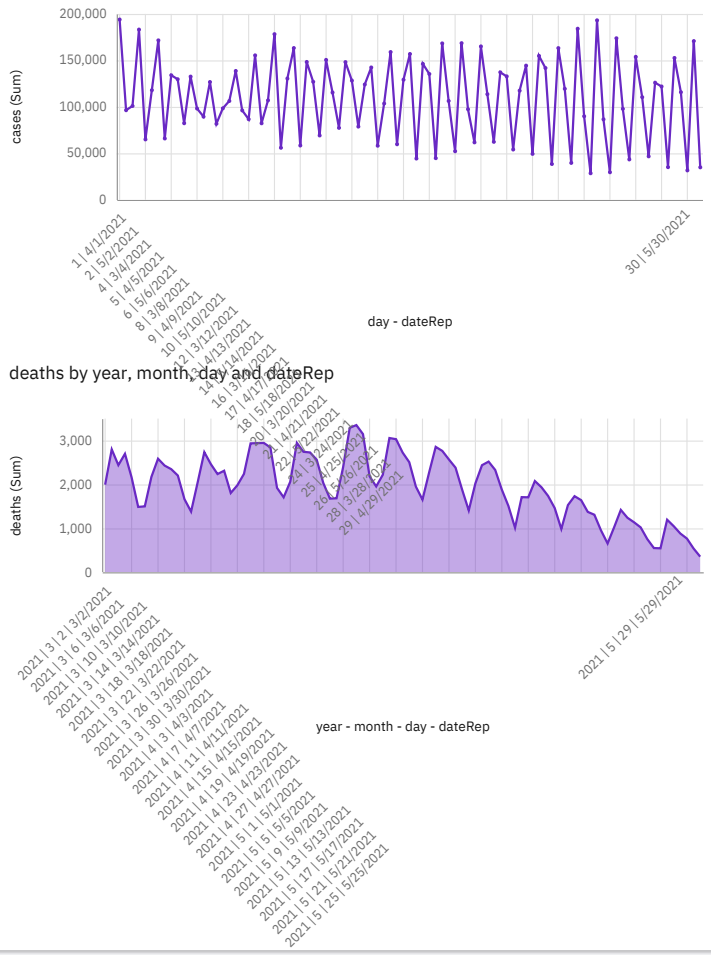


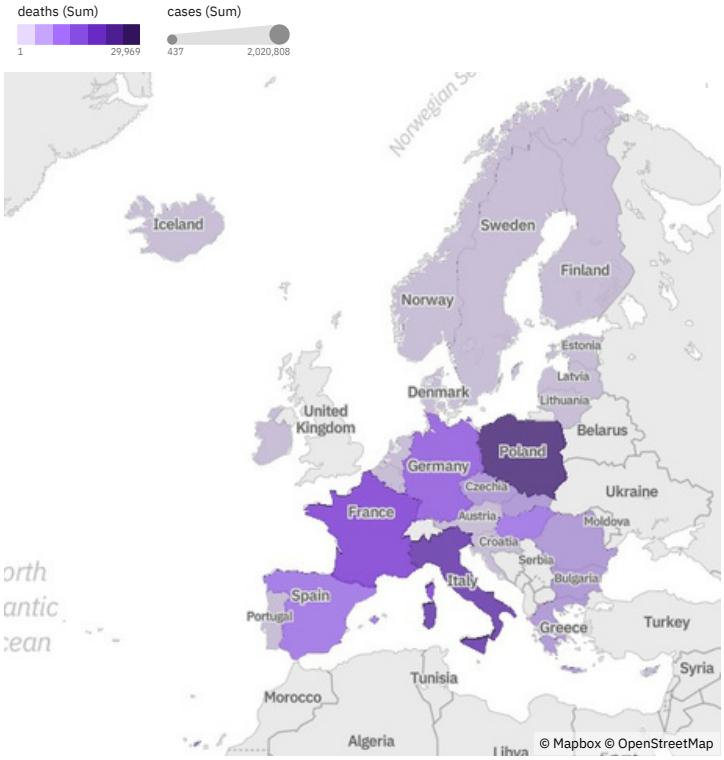
Tab 1

cases by day and dateRep



deaths by year, month, day and dateRep

deaths and cases for countriesAndTerritories regions



Conclusion

The COVID-19 pandemic demonstrates that every country remains vulnerable to public health
emergencies. The aspiration towards a healthier and safer society requires that countries develop and
implement a coherent and context-specific national strategy, improve governance of public health
emergencies, build the capacity of their (public) health systems, minimize fragmentation, and tackle
upstream structural issues, including socio-economic inequities. This is possible through a primary health
care approach, which ensures provision of universal and equitable promotive, preventive and cu