IMPACT OF COVID-19 ON GLOBAL ECONOMY

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Introduction and background:

The COVID-19 pandemic has had a significant impact on the global economy. The lockdowns, travel restrictions, and other measures taken by governments around the world have affected the economic activities of individuals and businesses. The pandemic has disrupted global supply chains, caused a decline in consumer spending, and led to widespread job losses. In this project, we will be exploring the impact of COVID-19 on the world economy and how it has affected different countries.

The COVID-19 pandemic has brought the world to a standstill. It has affected everyone, from individuals to businesses, and has caused widespread economic disruption. As a result, there has been a lot of research on the impact of COVID-19 on the world economy. We are motivated to explore this topic further and gain a better understanding of how the pandemic has affected different countries and industries.

Overall, the project aims to answer various questions such as:

Which countries have been hit the hardest by the pandemic in terms of the economy, tourism, and COVID-19 cases and deaths?

We hope to learn more about the different visualization techniques that can be used to represent economic data, and how these can be used to effectively communicate insights and trends to others.

The project's findings can benefit policymakers, researchers, and the general public by providing valuable insights into the pandemic's economic impact and offering evidence-based recommendations for future policymaking.

Datasets:

COVID-19 Economic Impact - A Survival Guide:

This dataset was collected and uploaded by Amaan Vora on Kaggle.

The purpose of this dataset is to provide economic indicators and other related metrics to help understand the economic impact of COVID-19.

The timeline of the data ranges from January 2020 to September 2020.

Variables included in the dataset are GDP, GDP per capita, unemployment rate, inflation rate, etc.

The dataset has 216 entries (countries/regions) and 12 variables.

The locations included in the dataset are various countries and regions across the world.

This dataset will help answer questions related to the economic impact of COVID-19, such as which countries/regions were affected the most, which economic indicators were affected the most, etc. The limitations of this dataset are that it only covers a limited timeframe and does not include more recent economic indicators.

World Economic Data - Complete Data Analysis:

This dataset was collected and uploaded by Sai Sandeep Jallepalli on Kaggle.

The purpose of this dataset is to provide economic indicators and other related metrics for different countries across the world.

The timeline of the data ranges from 1960 to 2020.

Variables included in the dataset are GDP, GDP per capita, inflation rate, unemployment rate, etc.

The dataset has 264 entries (countries) and 61 variables.

The locations included in the dataset are various countries across the world.

This dataset will help answer questions related to the economic performance of different countries, such as which countries have the highest GDP, which countries have the highest inflation rate, etc. The limitations of this dataset are that it only covers up to 2020 and does not include more recent economic indicators.

COVID Cases and Deaths Worldwide:

This dataset was collected and uploaded by Mrityunjay Pathak on Kaggle.

The purpose of this dataset is to provide information on the number of COVID-19 cases and deaths across different countries.

The timeline of the data ranges from January 2020 to January 2021.

Variables included in the dataset are country/region, date, number of confirmed cases, number of deaths, etc.

The dataset has 2,247,228 entries and 6 variables.

The locations included in the dataset are various countries and regions across the world.

This dataset will help answer questions related to the impact of COVID-19 on different countries, such as which countries have the highest number of cases and deaths, how the number of cases and deaths have changed over time, etc. The limitations of this dataset are that it only covers up to January 2021 and does not include more recent data.

• Provide clear question(s):

What is the relationship between the COVID-19 pandemic and the world economy? How has the pandemic impacted different countries' economies? What economic factors are most strongly correlated with COVID-19 case rates and mortality rates?

• Tell us about your motivation for the topic:

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The COVID-19 pandemic has had a profound impact on the world, affecting everything from healthcare to travel to the economy. I am interested in exploring the relationship between the pandemic and the global economy, as this topic has important implications for individuals and businesses around the world.

• Define key variables including how they are measured:

The key variables in this analysis include COVID-19 cases, COVID-19 deaths, and various economic indicators such as GDP, unemployment rate, and inflation rate. COVID-19 cases and deaths are measured in absolute numbers or per capita rates, while economic indicators are typically measured as percentages or rates.

• Tell a clear story:

The COVID-19 pandemic has caused a significant economic shock around the world. The severity of the economic impact has varied by country, with some countries experiencing relatively minor disruptions while others have suffered severe recessions. The pandemic has affected economic indicators such as GDP, unemployment, and inflation in complex ways, with some countries experiencing unexpected increases in certain indicators despite the overall economic downturn. In addition, there appears to be a strong correlation between COVID-19 case rates and mortality rates and certain economic indicators, suggesting that the pandemic has had a more severe impact on countries with weaker economies.

• Have visuals and data that support the story:

I have created several visualizations to support my analysis, including line graphs, scatterplots, and choropleth maps. These visuals help to illustrate the relationship between different variables and make it easier to understand patterns and trends in the data.

• Provide documentation about the source of the data set(s):

The data sets used in this analysis were obtained from various sources, including Kaggle and the World Bank. I have provided documentation about the source of each data set and included links to the original sources where possible.

• Discuss limitations of data set(s):

The data sets used in this analysis have some limitations, including missing data, inconsistent reporting standards across different countries, and potential errors or biases in the data collection process. I have discussed these limitations and attempted to account for them in my analysis where possible.

• Demonstrate understanding of concepts covered in this course:

I have utilized several concepts covered in this course, including data cleaning and manipulation, exploratory data analysis, and data visualization. I have also discussed various statistical methods and techniques used in this analysis.

• Make effective comparisons:

Throughout the analysis, I have made effective comparisons between different countries and different economic indicators, highlighting key similarities and differences in the data. This has helped to provide a more nuanced understanding of the complex relationship between the pandemic and the global economy.

• Demonstrate that time was spent exploring your data, designing your visual displays, and crafting your story:

I have spent a significant amount of time exploring the data, cleaning, and manipulating it to make it suitable for analysis, and designing visual displays to effectively communicate my findings. I have also crafted a coherent and compelling story that ties together different aspects of the analysis and provides insights into the impact of the pandemic on the global economy.

Data Story:

Bubble Chart

Here we have used the variables Percentage of GDP from World Economic Data and Total Cases from Covid Cases and Deaths Worldwide based on Country (Covid Worldwide) to get the visualization. Country was dropped in the Size to get Bubble chart. Our Goal is to find how economic of the world has been impacted by Covid and here we want to see various form of economic and so we want to investigate about the Tourism percentage of every country based on their number of cases.

Visualization Of Complex Data

Countries Tourism GDP Percentage Based on Cases

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Bar Chart

Here we have used the variables Unemployment rate from World Economic Data based on Country (Covid Worldwide) to get the visualization in the form of a bar chart by using the total number of cases as the label for these bar charts. Our Goal is to find how economic of the world has been impacted by Covid and here we want to see various form of economic and so we want to investigate about the unemployment rate of every country based on their number of cases.
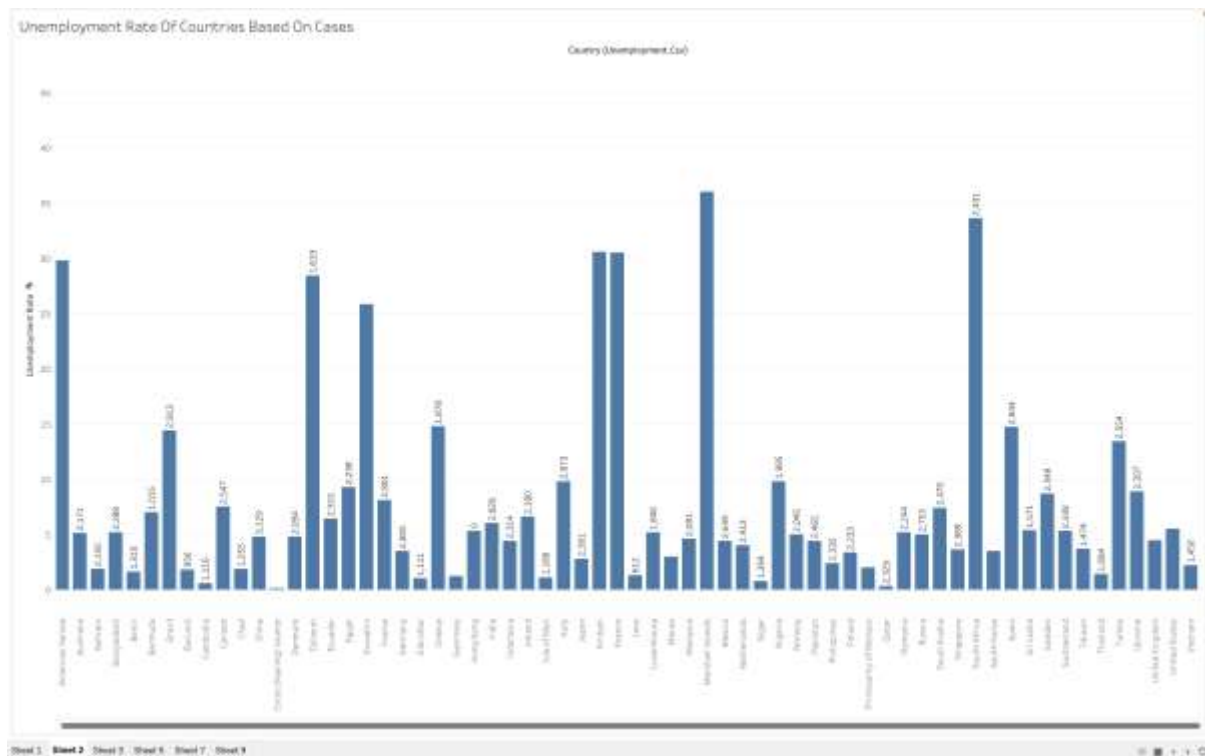
Map

Here we have used the variables Total cases from (Covid Worldwide), GDP from Covid-19 economic impacts (COVID-19 Economic Impact – A survival Guide) and country from Covid Worldwide to get the visualization in the form of a Map by using the country as the label for this map. Our Goal is to find how economic of the world has been impacted by Covid and here we want to see various form of economic and so we want to investigate about the GDPCAP rate of every country based on their number of cases.
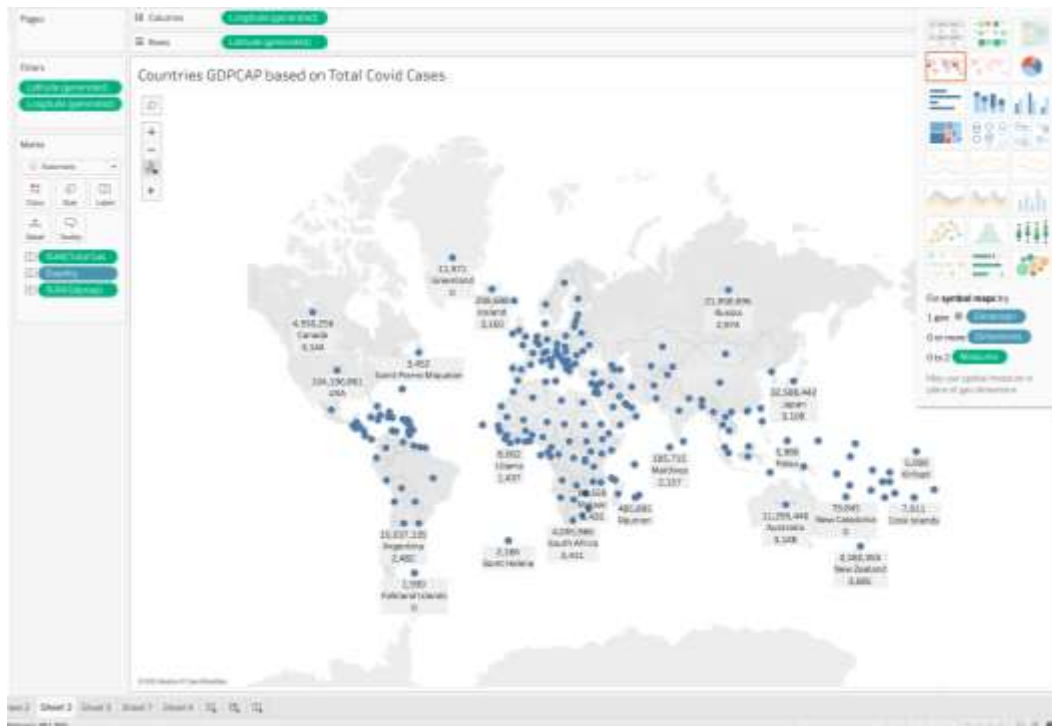
Line Graph

Here we have used the variables like Total cases from Covid worldwide, monthly income from world economic dataset to get the visualization in the form of line chart. This is to show the impact of monthly income based on Total cases income

# Visualization Of Complex Data
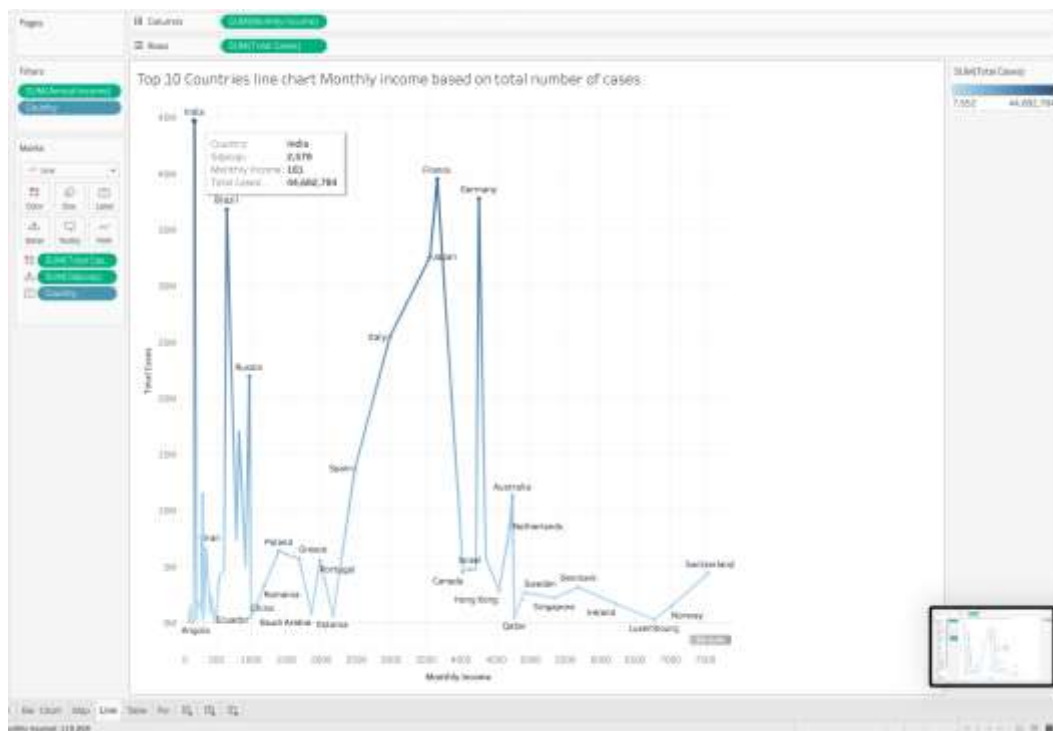
Table

The United States, India, Brazil, Iran, France, the United Kingdom, Italy, China, Spain, and Germany have the highest number of COVID-19 cases and deaths. In Q1, the number of Covid cases and deaths in 2020 is very low. Cases increased significantly in Q2 and Q3, and the curve shrank in Q4
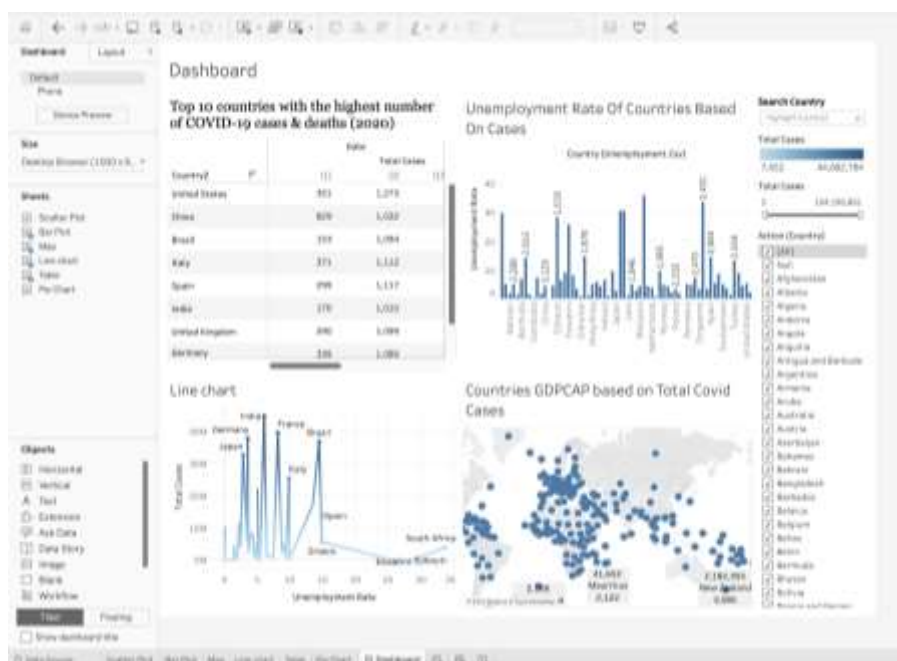
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Pie Chart

Here we have used the variables country from world bank dataset, year from world bank dataset and Indicator name from world bank dataset to get the visualization in the form of pie chart. This is to show the inflation impact for different countries Based on annual income.
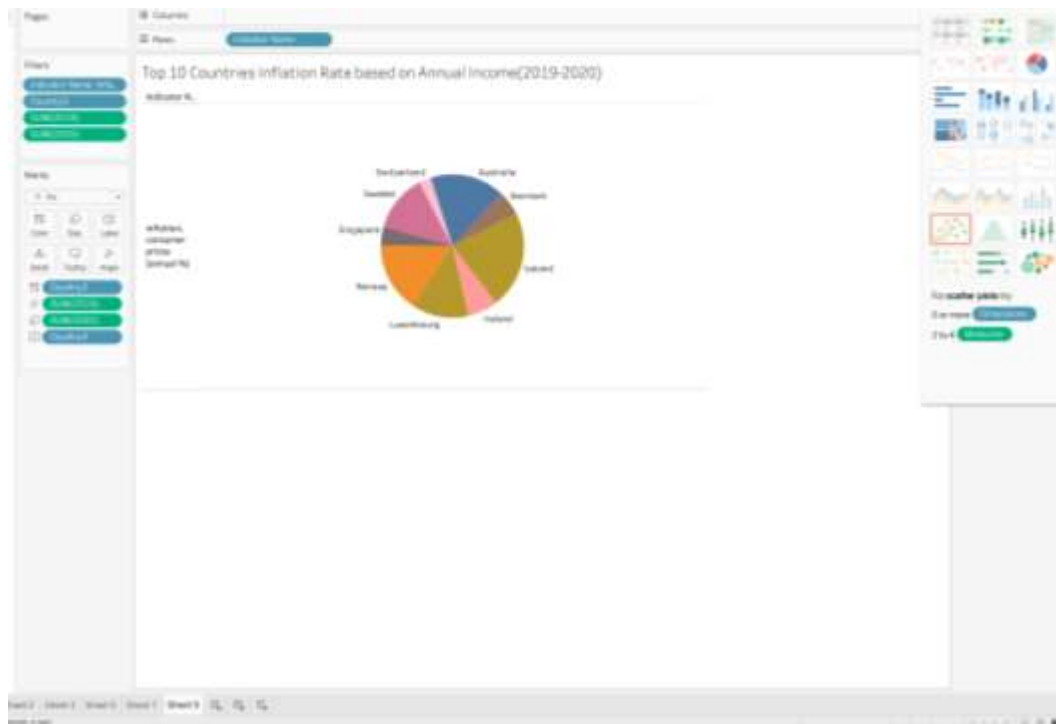
Dashboard:

Overview of Dashboard:

We have tried creating our interactive features for more than two worksheets, which we have included in the dashboard.

1. We have added a search bar where we can search the country which we have the information about, and when we do so, the country will get highlighted in the table.

2. We have added the filter to make the dashboard much more interactive when we select a country in the map. There will be a hyperlink to view more details about that country, when user clicks that link it will redirect to that country Wikipedia page.

3. We also tried to make one more interactive feature when we select a country in our line chart, and then we can see that the country gets highlighted in the entire dashboard.

4. We have added a country select feature in the dashboard where user can be able to select particular country from the list which will reflect in the map.

Story:

The world was significantly impacted by the outbreak of Covid-19, a highly infectious disease caused by the novel coronavirus that emerged in Wuhan, China in late 2019. As the virus quickly spread throughout the world, it had far-reaching effects on every aspect of society.

The Covid-19 pandemic has had significant impacts on the global economy, leading to disruptions in supply chains, reduced consumer spending, and high levels of unemployment. Some of the key impacts of the pandemic on the economy include:

1. GDP: The global economy experienced a sharp decline in GDP in 2020 as a result of the pandemic. According to the International Monetary Fund (IMF), the global economy contracted by 3.3% in 2020, marking the worst recession since the Great Depression of the 1930s. Many countries are still struggling to recover from the economic impacts of the pandemic.

2. Unemployment: The pandemic led to a significant increase in unemployment rates globally, as many businesses were forced to shut down or reduce their operations. According to the International Labor Organization (ILO), the pandemic led to the loss of 255 million jobs worldwide in 2020, with a global unemployment rate of 6.5%.

3. Inflation: Inflation rates have also been impacted by the pandemic. In some countries, the disruption of supply chains led to shortages of goods, leading to higher prices. However, in other countries, reduced demand due to lockdowns and reduced consumer spending has led to deflationary pressures.

4. Government Debt: Governments around the world have implemented economic stimulus packages to try and mitigate the impacts of the pandemic. This has led to a significant increase in government debt, which could have long-term impacts on the global economy.

Overall, the Covid-19 pandemic has had significant impacts on the global economy, leading to high levels of unemployment, a decline in GDP, and disruptions to supply chains and inflation rates. The long-term impacts of the pandemic on the global economy are still uncertain and will depend on a range of factors including the effectiveness of vaccination programs, the duration of the pandemic, and government policies to support economic recovery.

Here we tried to analyze the Covid 19 data which impacted global economy in terms of GDP, Government Debts, Inflation rate and Unemployment.

References:

"The Economic Impact of the COVID-19 Pandemic on Developing Countries" by Anil Markandya et al.: https://www.mdpi.com/2071-1050/13/4/1783/pdf

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"COVID-19 and the Economy: A Review of the Literature" by Nuno Palma et al.: https://www.sciencedirect.com/science/article/pii/S221256712030278X?via%3Dihub

"Consumer Spending during the COVID-19 Pandemic: Evidence from Bank Transactions" by Scott R. Baker et al.: https://www.journals.uchicago.edu/doi/pdf/10.1086/711821

"The Impact of COVID-19 on Stock Markets" by Andrea Roncoroni: https://www.mdpi.com/2078-1547/11/2/49/pdf

Contributors:

datasets > all participated, everyone had their own opinions and contribution towards the dataset

Purvi: Table, Pie chart, Interactive feature (Country select filter for the map)

Sasank: Scatter plot, Interactive feature (Select on the line graph)

Sravya: Line chart, Interactive feature (Hyperlink for the map)

Sai Dontukurti: Map, Interactive feature (Search bar for the table)

Rajeev: Bar chart (Story Report)

Report: all contributed

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