Unlocking Insights: A Comprehensive Analysis of COVID-19 Cases Using IBM Cognos

TEAM MEMBERS

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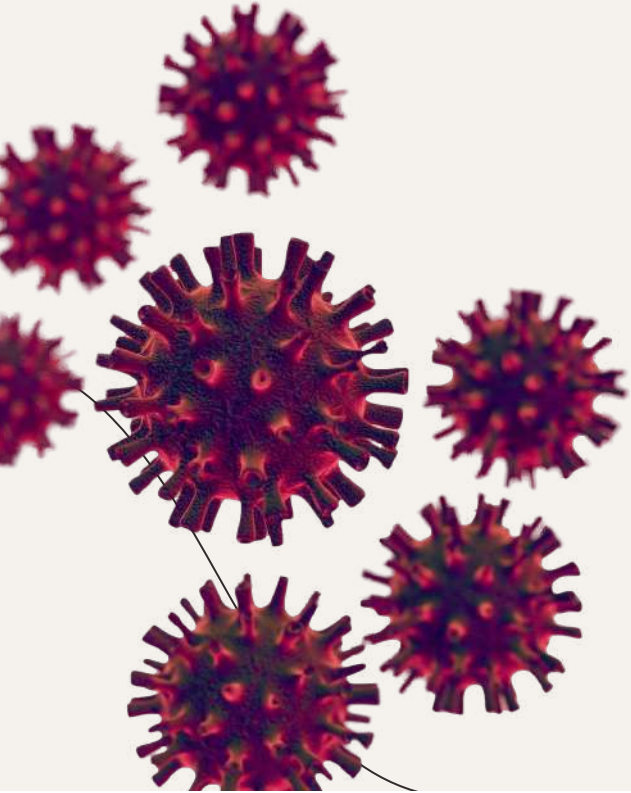
Introduction

This presentation provides a comprehensive analysis of COVID-19 cases using **IBM Cognos**. We will explore the power of data analytics in understanding the impact of the pandemic. Through visualizations and insights, we aim to uncover patterns, trends, and correlations in the data. Let's dive into the world of data-driven decision making in the fight against COVID-19.



UNDERSTAND COVID-19 CASES DATASET

Before we delve into the analysis, it's crucial to understand the **key characteristics** of COVID-19. This slide will provide an overview of the virus, including its transmission, symptoms, and global impact. By gaining a deeper understanding of the disease, we can better interpret the data and make informed decisions.

Data Collection and Preparation

To unlock insights, we need high-quality data. The **data collection** process, including sources such as government reports, healthcare databases, and research institutions. We will also explore the **data preparation** steps, including cleaning, transforming, and integrating datasets to ensure accuracy and consistency.

DATA COLLECTION

Covid 19 Cases Analysis Is Done By Using The Dataset Of "Covid 19 Cases" Provided By The Dataset Site www.Kaggle.com

DATASET LINK:
https://www.kaggle.com/datasets/chakradharmattapalli/covid-19-cases

CODE FOR DATA COLLECTION AND PREPARATION

The Following Code To Import These Datasets Into Your Jupyter Notebook And To Display The First Five Columns

```
[1]: import pandas as pd
     import matplotlib.pyplot as plt
     fcdata=pd.read_csv("E:\IBM Covid analysis\Covid_19_cases4.csv",index_col=0)
     print(fcdata.head())
```

```
            day  month  year  cases  deaths countriesAndTerritories
dateRep
31-05-2021   31      5  2021    366       5                 Austria
30-05-2021   30      5  2021    570       6                 Austria
29-05-2021   29      5  2021    538      11                 Austria
28-05-2021   28      5  2021    639       4                 Austria
27-05-2021   27      5  2021    405      19                 Austria
```

CODE FOR DATA COLLECTION AND PREPARATION

The Following Code Are Used For Data Cleaning And Data Extraction

```
[3]: fcdata.isnull()
```

[3]:

dateRep	day	month	year	cases	deaths	countriesAndTerritories
31-05-2021	False	False	False	False	False	False
30-05-2021	False	False	False	False	False	False
29-05-2021	False	False	False	False	False	False
28-05-2021	False	False	False	False	False	False
27-05-2021	False	False	False	False	False	False
...	...	...	...	...	...	...
06-03-2021	False	False	False	False	False	False
05-03-2021	False	False	False	False	False	False
04-03-2021	False	False	False	False	False	False
03-03-2021	False	False	False	False	False	False
02-03-2021	False	False	False	False	False	False

2730 rows × 6 columns

[4]:
```
fcdata.isna()
```

[4]:

dateRep	day	month	year	cases	deaths	countriesAndTerritories
31-05-2021	False	False	False	False	False	False
30-05-2021	False	False	False	False	False	False
29-05-2021	False	False	False	False	False	False
28-05-2021	False	False	False	False	False	False
27-05-2021	False	False	False	False	False	False
...	...	...	...	...	...	...
06-03-2021	False	False	False	False	False	False
05-03-2021	False	False	False	False	False	False
04-03-2021	False	False	False	False	False	False
03-03-2021	False	False	False	False	False	False
02-03-2021	False	False	False	False	False	False

[5]:
```
fcdata.isnull().sum()
```

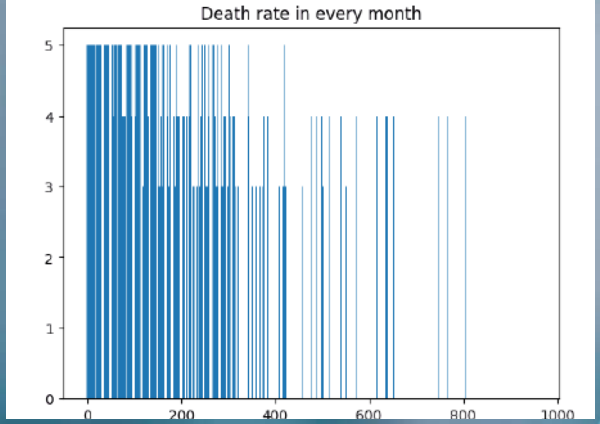
[5]:
```
day                       0
month                     0
year                      0
cases                     0
deaths                    0
countriesAndTerritories   0
dtype: int64
```

Exploratory Data Analysis

With the data ready, we can now perform **exploratory data analysis (EDA)**. This will showcase the power of IBM Cognos in visualizing COVID-19 data through charts, graphs, and maps. By exploring the data visually, we can identify patterns, outliers, and correlations that provide valuable insights into the spread and impact of the virus.

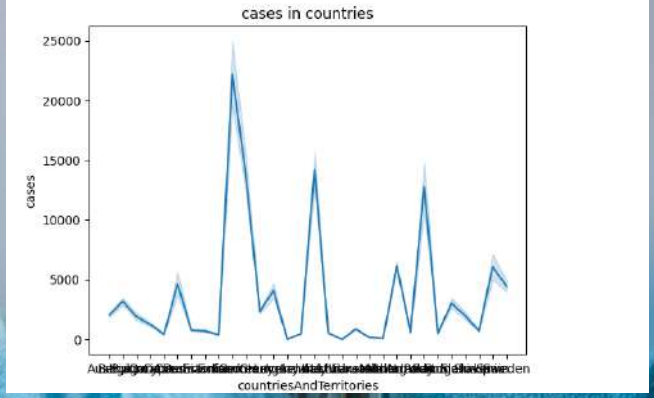
LINEPLOT AND SCATTER PLOT

```
plt.bar(org,org2)
plt.title("Death rate in every month")
plt.show()
```



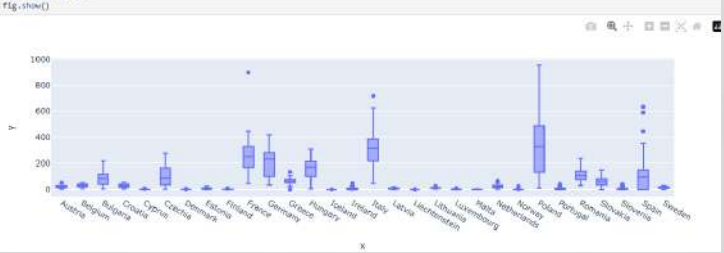

```
import seaborn as sns
plt.title("cases in countries")
sns.lineplot(x=y,y=x,data=fcdata)
```

```
<Axes: title={'center': 'cases in countries'}, xlabel='countriesAndTerritories', ylabel='cases'>
```



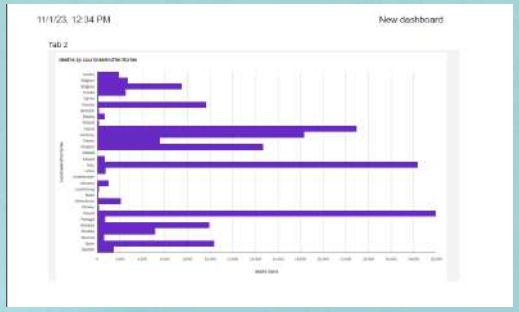
BOX PLOT AND HISTOGRAM

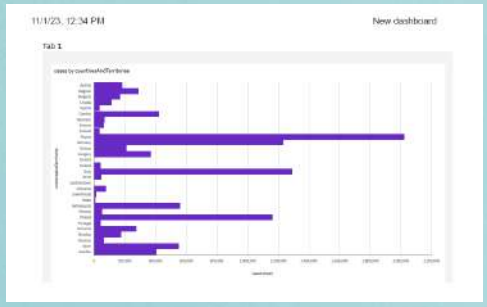
```
import plotly.express as px
fig=px.box(x=y,y=z)
fig.show()
```

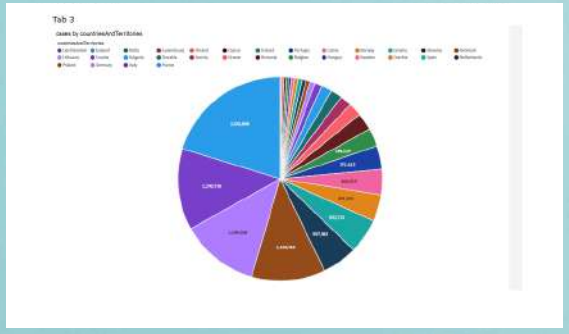



```
fig=px.histogram(fcdata.cases)
fig.show()
```

BAR CHART AND PIE CHART





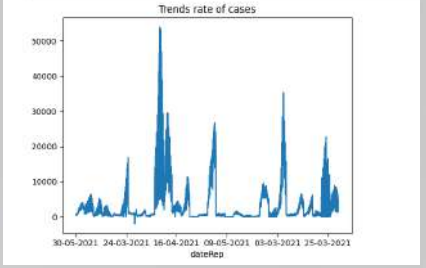


Advanced Analytics with IBM Cognos

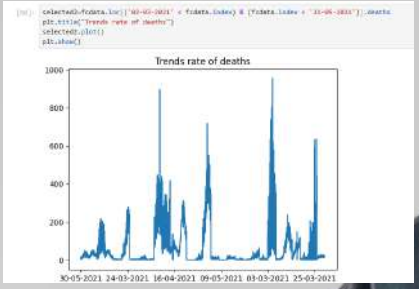
IBM Cognos offers advanced analytics capabilities that go beyond visualization. This will highlight how we can leverage **predictive modeling**, **machine learning**, and **forecasting** techniques to gain deeper insights into COVID-19. By uncovering hidden patterns and predicting future trends, we can make data-driven decisions to mitigate the impact of the pandemic.

TRENDS RATE

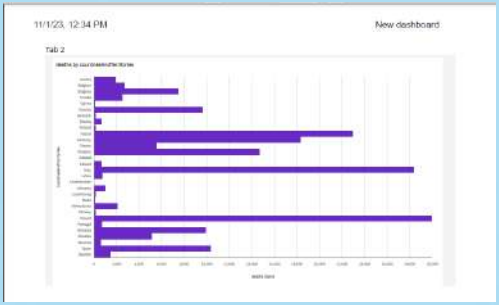
```
selected=fcdata.loc['02-03-2021' < fcdata.index) & (fcdata.index < '31-05-2021')].cases
plt.title("Trends rate of cases")
selected.plot()
plt.show()
```

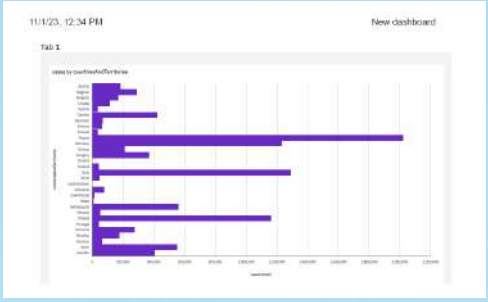



```
selected1=fcdata.loc['02-03-2021' < fcdata.index) & (fcdata.index < '31-05-2021')].deaths
plt.title("Trends rate of deaths")
selected1.plot()
plt.show()
```

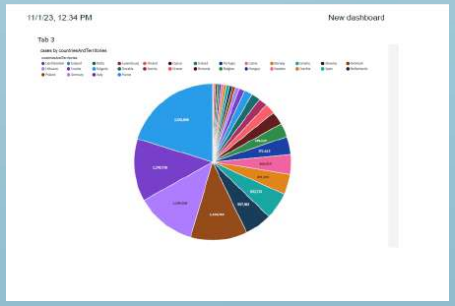


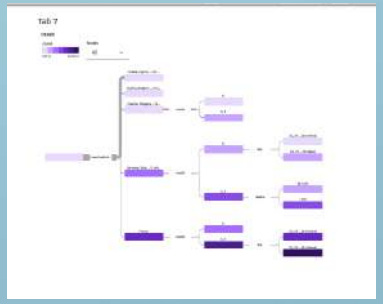
VARIATION IN DATASET

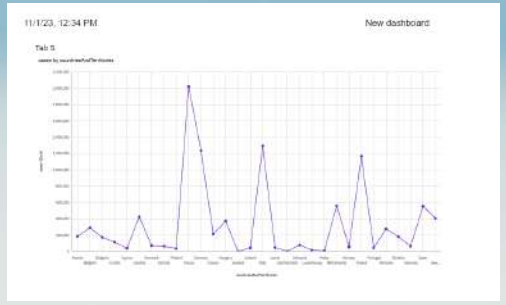




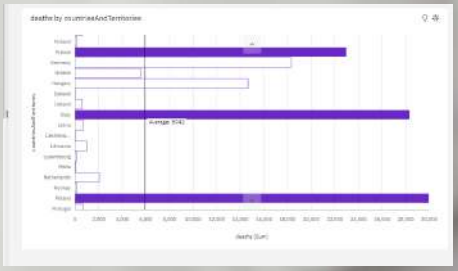
POTENTIAL CORRELATION

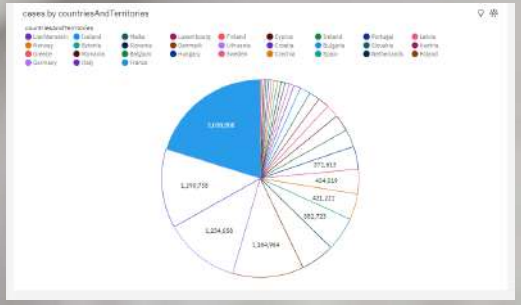






INSIGHTS OF DATA





Conclusion

In this presentation, we explored the power of **IBM Cognos** in unlocking insights from COVID-19 data. By combining data analytics with domain expertise, we can better understand the virus's impact, identify effective strategies, and make informed decisions. As we continue to fight the pandemic, let's harness the power of data to drive positive change and create a safer future.