

GDP Analysis Report

Introduction:

Gross Domestic Product (GDP) is a crucial indicator of a country's economic performance, representing the total value of goods and services produced within a country over a specific period. It serves as a key measure to evaluate and compare economic performance across different countries. This report aims to analyse GDP data to understand growth trends and compare the economic performance of specific countries.

Dataset Overview:

The dataset used in this analysis includes GDP data for various countries, covering different years. Each entry in the dataset consists of:

- Country Name: The name of the country.
- Country Code: The code representing the country.
- Year: The year for which the GDP data is recorded.
- Value: The GDP value for the given year.

The dataset is loaded into a DataFrame and can be briefly examined using `df.head()` to view the first few rows.

```
[26]: import pandas as pd
import numpy as np
import os
import re
import plotly.express as px
import plotly.offline as pyo
df=pd.read_csv('gdp.csv')
df.head()
```

```
[26]:
```

	Country Name	Country Code	Year	Value
0	Arab World	ARB	1968	2.576068e+10
1	Arab World	ARB	1969	2.843420e+10
2	Arab World	ARB	1970	3.138550e+10
3	Arab World	ARB	1971	3.642691e+10
4	Arab World	ARB	1972	4.331606e+10

GDP Growth Analysis:

GDP growth is the percentage change in GDP from one period to another. It provides insights into how an economy is expanding or contracting over time. The growth rate is calculated using the formula:

$$\text{GDP Growth Rate} = \frac{(\text{GDP}_{\text{current}} - \text{GDP}_{\text{previous}})}{\text{GDP}_{\text{previous}}} \times 100$$

For example, if the GDP in one year is 100 and it grows to 105 the next year, the GDP growth rate would be:

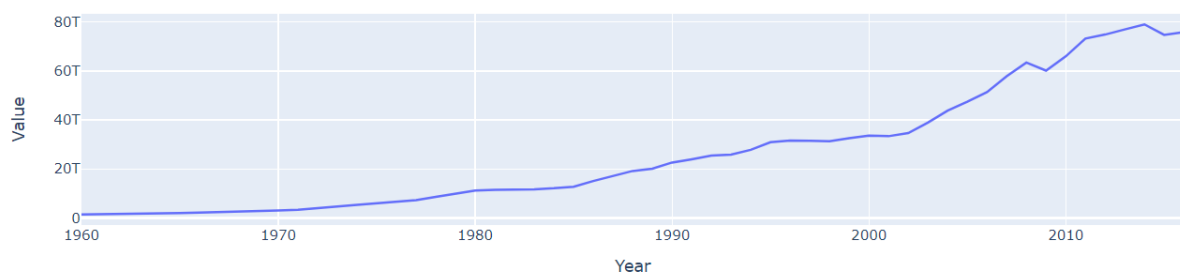
$$\text{GDP Growth Rate} = \frac{(105 - 100)}{100} \times 100 = 5\%$$

Plotting GDP Growth with Plotly:

Plotly is a versatile tool for creating interactive visualizations. Using Plotly, we can generate plots to visualize GDP trends and growth rates effectively. To create plots, you need to install Plotly and pandas, and set up a Plotly account if required.

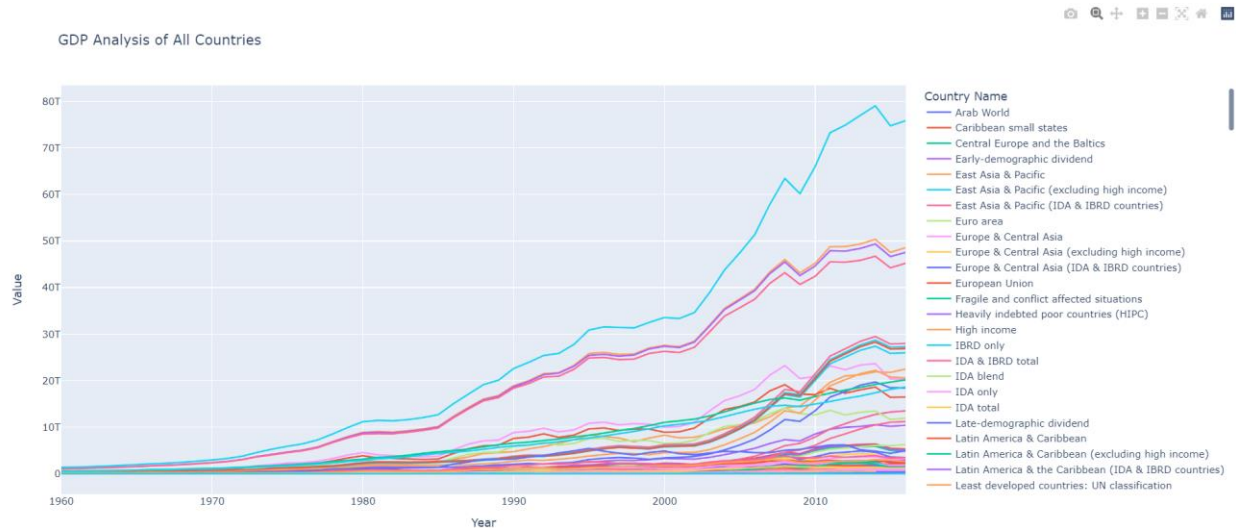
```
df_pr=df[df['Country Name']=='World']  
fig=px.line(df_pr,x='Year',y='Value',title='World GDP Analysis')  
fig
```

World GDP Analysis



Comparing GDP Across Countries:

To compare GDP data across different countries, we can visualize GDP trends for selected countries using Plotly. For instance, comparing the GDP growth of India and China provides insights into their economic trajectories.



Here's an example of how we can compare GDP growth between India and China:

Python

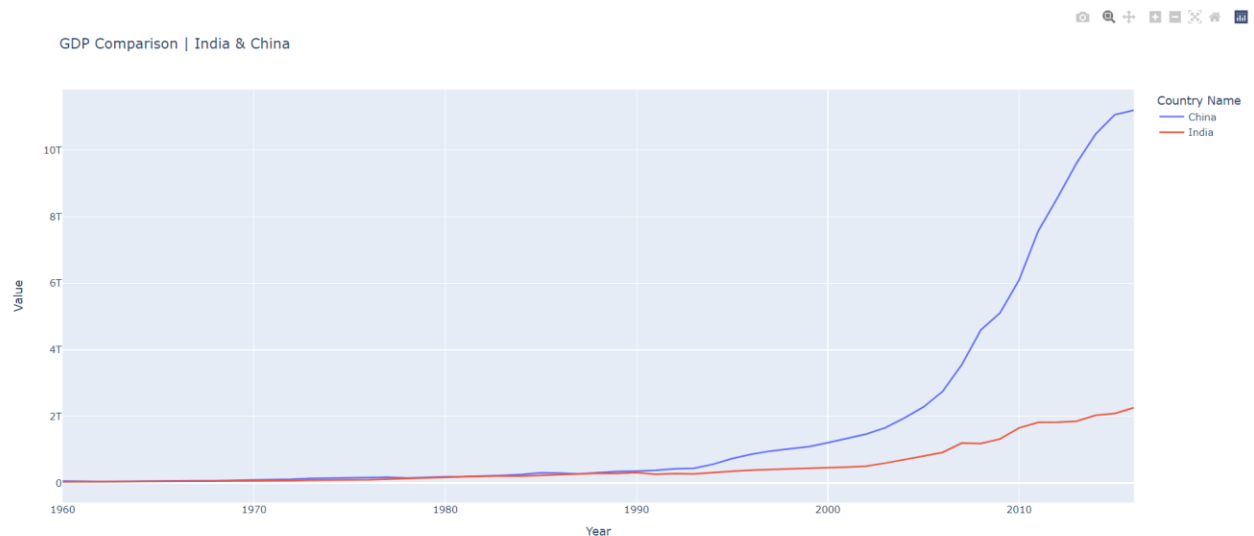
```
c1 = df[df['Country Name'] == 'China']
```

```
c2 = df[df['Country Name'] == 'India']
```

```
df_pr = pd.concat([c1,c2],axis = 0)
```

```
fig = px.line(df_pr, x = 'Year', y = 'Value', title = 'GDP Comparison | India & China',  
color = 'Country Name')
```

```
pyo.plot(fig, filename = 'IND|CHN.html')
```



Analysis of Results:

From the plot generated, it can be observed that China's GDP has grown at a faster rate compared to India. The line plot visualizes GDP trends for both countries over time, highlighting the differences in their economic growth.

Conclusion:

The GDP analysis and visualization demonstrate how different countries' economies evolve over time. By comparing GDP growth rates, one can gain valuable insights into the economic performance and development of various countries. Tools like Plotly facilitate the creation of interactive and insightful visualizations, enhancing the analysis and understanding of complex economic data.

Recommendations:

For a more comprehensive analysis, consider:

- Including additional countries for comparison.
- Analysing GDP per capita to understand the average standard of living.
- Exploring other economic indicators alongside GDP.

This report provides a foundational understanding of GDP analysis and visualization, paving the way for more in-depth economic research and insights.