

PROJECT REPORT

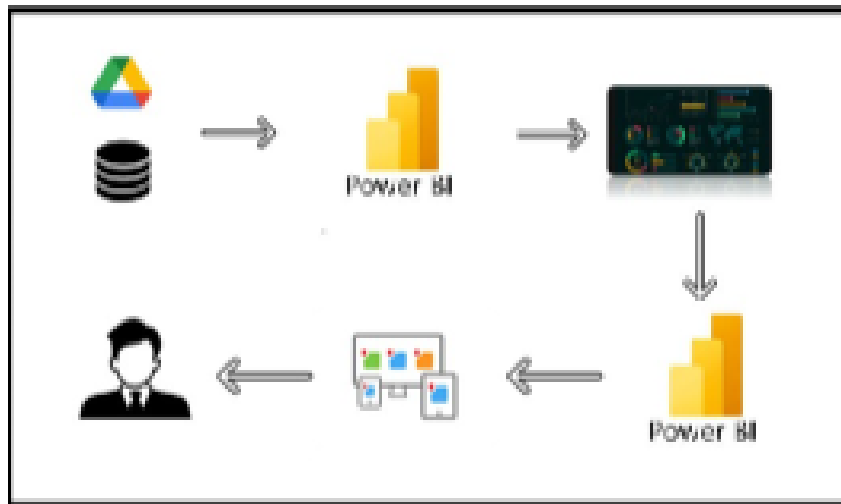
Project Description

Inflation plays a vital role in shaping economies, influencing purchasing power, market stability, and government policies. Over the years, inflation rates have fluctuated due to various factors such as policy changes, supply chain disruptions, global conflicts, and advancements in technology. This project utilizes Power BI to explore worldwide inflation patterns, offering valuable insights into economic shifts, regional disparities, and key contributing elements from a data-driven perspective.

1. **Examine Inflation Trends** – Analyze historical inflation data across different time periods and economic sectors to understand long-term patterns.
2. **Identify Key Drivers** – Investigate the major causes of inflation, including market demand, production costs, global trade, and financial policies.
3. **Compare Regional Variations** – Study how inflation differs across various nations and economic zones, identifying significant trends and commonalities.
4. **Assess Economic Impact** – Evaluate how inflation affects employment, wages, cost of living, and overall economic growth.
5. **Visualize Data with Power BI** – Use Power BI to develop interactive dashboards, simplifying the interpretation of complex inflation data for better decision-making.

Inflation, a critical economic indicator, profoundly impacts businesses, consumers, and policymakers worldwide. In this scenario, a multinational corporation operating in diverse markets seeks to optimize pricing strategies, mitigate risks, and make informed investment decisions. Leveraging Power BI's analytical prowess, we delve into inflation data to offer tailored recommendations aligned with each market's unique economic conditions.

Technical Architecture



Project Flow

- 1) Data Collection
 - o Collect the dataset,
 - o Connect Data with Power BI
- 2) Data Preparation
 - o Prepare the Data for Visualization
- 3) Data Visualizations
 - o Visualizations
- 4) Dashboard
 - o Responsive and Design of Dashboard
- 5) Report
 - o Report Creation
- 6) Performance Testing
 - o Amount of Data Rendered to DB
 - o Utilization of Data Filters
 - o No. of Calculation fields
 - o No. of Visualizations/Graphs
- 7) Project Demonstration & Documentation
 - o Record explanation Video for project end to end solution
 - o Project Documentation-Step by step project development procedure

Data Collection

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

- **Collect the dataset:** we collected the dataset from the below website link-
<https://www.kaggle.com/datasets/sazidthe1/global-inflation-data>

Data contains all the meta information regarding the columns described in the CSV files.

Column Description of the Dataset:

- 1) Country_name: Name of the Country.
- 2) Inflation Rate: Inflation rate of each country.
- 3) Region: Region of country which belongs
- 4) Year: represents the calendar year for which the corresponding inflation data is recorded.
- 5) AdjustedInflationRate: The 'Adjusted Inflation Rate' column is derived by multiplying the inflation rate by 0.01 .
- 6) InflationRateCategory: The 'Inflation Rate' column is categorized as high, medium, or low based on predefined thresholds.

- **Connect data with PowerBi:**

Open PowerBI----> click " Get Data" ----> Select Option either "CSV/EXCEL"----> Then choose file from your computer----> Finally click "Load".

Data Preparation

Data preparation is a critical stage in the data analysis process, encompassing activities aimed at cleaning, transforming, and organizing raw data into a structured format suitable for analysis. This process involves identifying and addressing issues such as missing values, outliers, inconsistencies, and inaccuracies in the dataset, ensuring data quality and reliability.

- **Before Data Pre-processing:**

A	B	C	D	E	F
country_n	indicator_	1980	1981	1982	1983
Afghanistan	Annual av	13.4	22.2	18.2	15.9
Albania	Annual average inflation (consumer prices) rate				
Algeria	Annual av	9.7	14.6	6.6	7.8
Andorra	Annual average inflation (consumer prices) rate				
Angola	Annual av	46.7	1.4	1.8	1.8
Antigua and Barbuda	Annual av	19	11.5	4.2	2.3

- **After Data Pre-processing:**

Index	Year	Inflationrate	AdjustedInflationrate	InflationRateCategory	InflationrateDifference	InflationRateChange
1	1980	13.4	1.34	High	12.06	-0.3822222222222222
2	1981	22.2	2.22	High	19.98	-0.3822222222222222
3	1982	18.2	1.82	High	16.38	-0.3822222222222222
4	1983	15.9	1.59	High	14.31	-0.3822222222222222
5	1984	20.4	2.04	High	18.36	-0.3822222222222222
6	1985	8.7	0.87	High	7.83	-0.3822222222222222

Data Visualization

Data visualization is the process of creating graphical representations of data to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

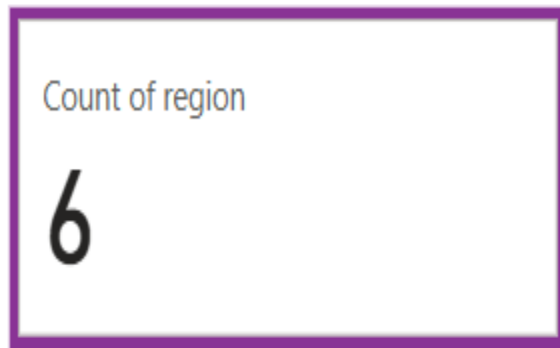
Activity 1.1: Average Inflation Rate



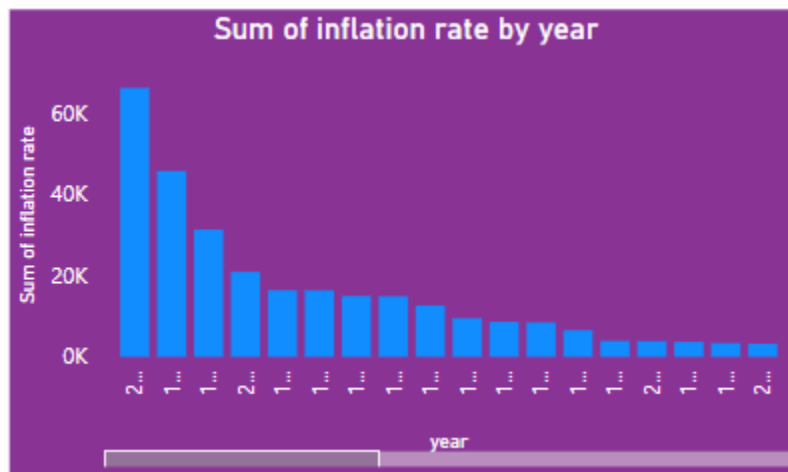
Activity 1.2: Maximum Inflation Rate



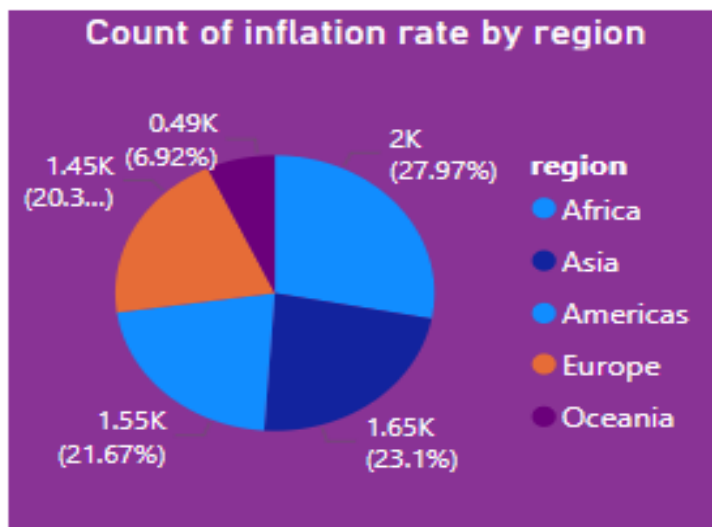
Activity 1.3: Total Number of Regions



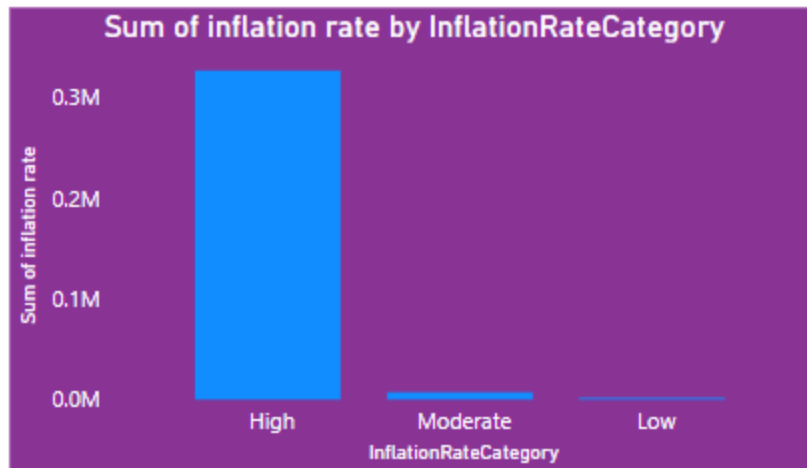
Activity 1.4: Sum of inflationRate by year



Activity 1.5: Count of inflation rate by region



Activity 1.6: Sum of inflation rate by inflationRate category



Activity 1.7: Filter applied On Country Column

A screenshot of a filter dropdown menu for the "country_name" column. The menu is open, showing a list of countries with checkboxes next to them. The countries listed are Afghanistan, Albania, Algeria, and Andorra. The "country_name" text is highlighted in the header of the dropdown.

country_name
<input type="checkbox"/> Afghanistan
<input type="checkbox"/> Albania
<input type="checkbox"/> Algeria
<input type="checkbox"/> Andorra

Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

PowerBI Inflation Analysis: Journeying Through Global Economic Terrain

Max of inflation rate

65.37K

Average of inflation rate

42.07

Count of region

6

country_name

☐ Afghanistan
☐ Albania
☐ Algeria
☐ Andorra

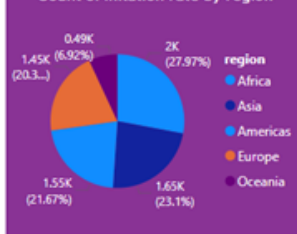
1 H... Add synonyms now X

count
country_names

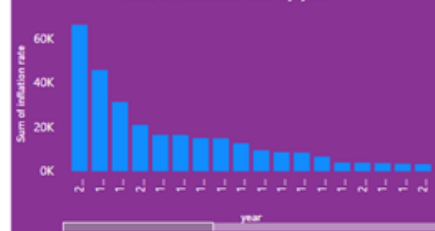
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PowerBI Inflation Analysis: Journeying Through Global Economic Terrain

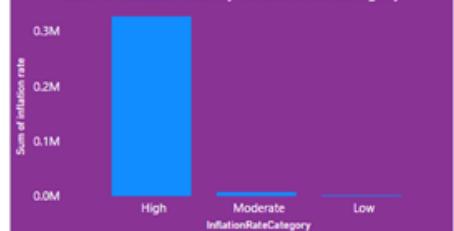
Count of inflation rate by region



Sum of inflation rate by year



Sum of inflation rate by InflationRateCategory



Report

A report is a comprehensive document that provides a detailed and structured account of data analysis, findings, and insights. It is typically used for in-depth analysis, documentation, and communication of results. Reports are suitable for a diverse audience, including decision-makers, analysts, and stakeholders who need a comprehensive understanding of the data.

Power BI Inflation Analysis: Journeying Through Global Economic Terrain

Venezuela had the highest Sum of InflationRate at 91,877,80, followed by Congo, Dem. Rep. of the at 35,624,30 and Nicaragua at 30,426,90

.Venezuela accounted for 58.18% of Sum of InflationRate.

.At 3,64,127.87, High had the highest Sum of InflationRate and was 2,64,412.47% higher than Low, which had the lowest

Sum of InflationRate at 137.66.

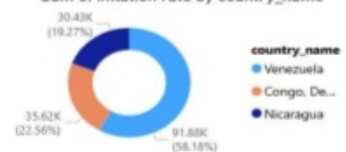
Count of region by region and country_name



Sum of InflationRateChange by InflationRateCategory



Sum of inflation rate by country_name

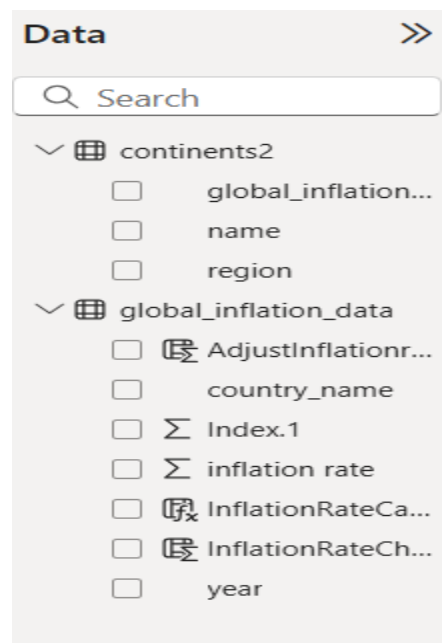


Performance Testing

Performance testing is a critical component of software development aimed at evaluating the speed, responsiveness, and stability of an application under varying load conditions. By simulating real-world scenarios, such as heavy user traffic or high data volumes, performance testing helps identify potential bottlenecks, weaknesses, and areas for optimization within the system.

Amount of Data Loaded

"Amount of Data Loaded" refers to the quantity or volume of data that has been imported, retrieved, or loaded into a system, software application, database, or any other data storage or processing environment. It's a measure of how much data has been successfully processed and made available for analysis, manipulation, or use within the system.



Utilization of Filters

"Utilization of Filters" refers to the application or use of filters within a system, software application, or data processing pipeline to selectively extract, manipulate, or analyze data based on specified criteria or conditions. Filters are used to narrow down the scope of data, focusing only on the relevant information that meets certain predefined criteria.

Activity 2.1: Selected country Albania



Activity 2.2: Selected country India



No of Visualizations/ Graphs

1. Average InflationRate of All Countries.
2. Maximum Inflation Rate.
3. Count of regions.
4. Sum of inflation rate by year.
5. Count of inflation rate by region.
6. Sum of inflation rate by inflationrate category.
7. Filter applied On Country Column.
8. Average Inflation Rate Change by Country.
9. InflationRate of Albania.
10. Inflation rate of India.