Power BI Inflation Analysis: Journeying Through Global Economic Terrain

Introduction:

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.

Our approach involves data collection, preparation, and modeling to build a robust analysis framework. Through insightful visualizations and strategic recommendations, we aim to equip stakeholders with actionable insights for informed decision-making. Our deliverables include an interactive Power BI dashboard showcasing inflation trends and a comprehensive report summarizing analysis findings and recommendations.

Scenario 1: Lack of Data Integration and Standardization

In the context of "Power BI Inflation Analysis: Journeying Through Global Economic Terrain," a key problem might be the lack of standardized data sources and integration methods. Different regions and organizations may report inflation data differently, leading to inconsistencies and challenges in aggregating and analyzing global inflation trends effectively within Power BI. This lack of standardization hampers the ability to provide accurate and comprehensive insights into inflation dynamics worldwide.

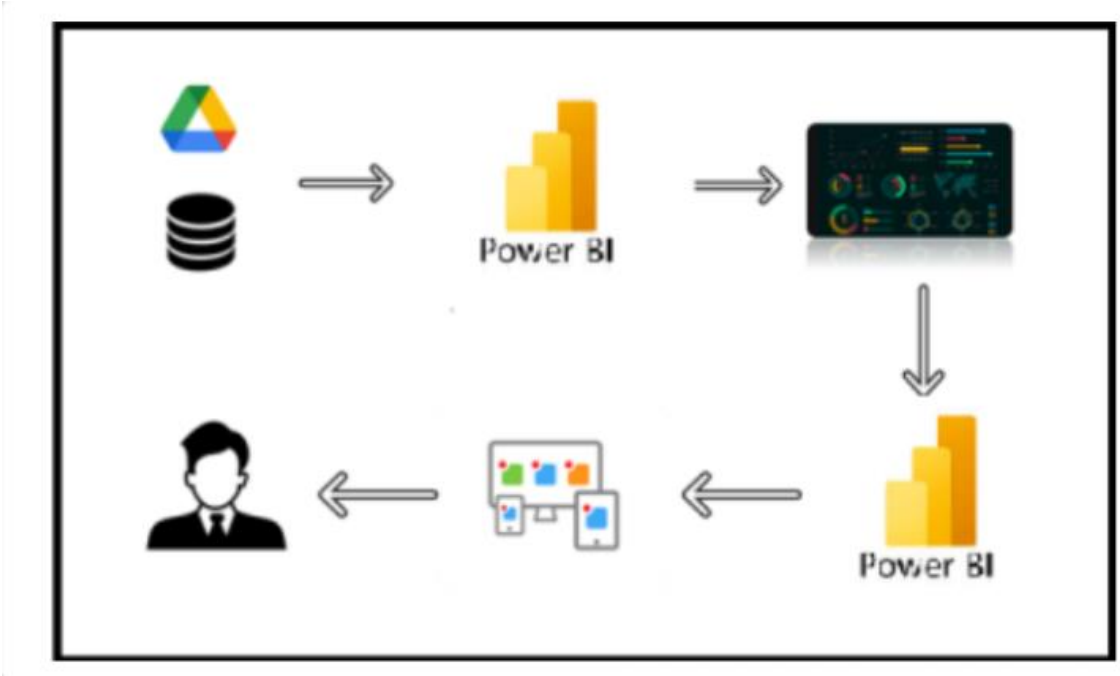
Scenario 2: Limited Historical Data Accessibility

Another challenge could be the limited accessibility to historical inflation data across various countries and regions. This scarcity of historical data poses a significant obstacle in building robust predictive models within Power BI for forecasting inflation trends accurately. Without a comprehensive historical dataset, analysts may struggle to identify long-term patterns and correlations necessary for making informed decisions and projections.

Scenario 3: Complex Economic Interdependencies

The intricate interdependencies among global economies pose a complex challenge in "Power BI Inflation Analysis: Journeying Through Global Economic Terrain." Fluctuations in one country's inflation rate can have ripple effects across other regions, making it difficult to isolate and analyze the drivers of inflation within individual economies. Effectively capturing and analyzing these interdependencies within Power BI requires sophisticated modeling techniques and access to diverse datasets, which may not be readily available or easily integrated into the analysis platform.

Architecture:



Project Flow:

To accomplish this, we have to complete all the activities listed below,

1) Data Collection
    - Collect the dataset
    - Connect Data with Power BI
2) Data Preparation
    - Prepare the Data for Visualization
3) Data Visualizations
    - Visualizations
4) Dashboard

- Responsive and Design of Dashboard

5) Report
    - Report Creation
6) Performance Testing
    - Amount of Data Rendered to DB
    - Utilization of Data Filters
    - No. of Calculation fields
    - No. of Visualizations/Graphs
7) Project Demonstration & Documentation
    - Record explanation Video for project end to end solution
    - Project Documentation-Step by step project development procedure

Milestone 1: Data Collection & Extraction from Database

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.

Downloading the dataset

Activity 1.1: Understand the data

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

Column Description of the Dataset:

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

Milestone 2 : Data Preparation

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing

the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency. Since the data is already cleaned, we can move to visualization.

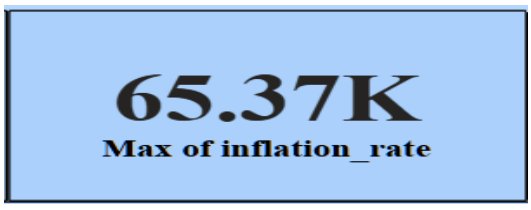
Milestone 3 : Data Visualization

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.

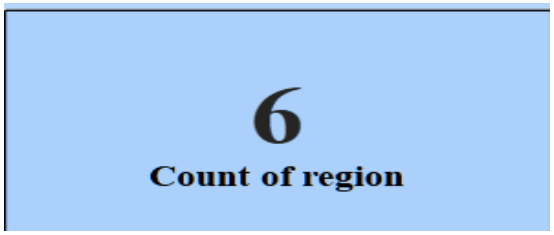
Global Economic Terrain (1980-2024)

Activity 1.1: Average Inflation Rate

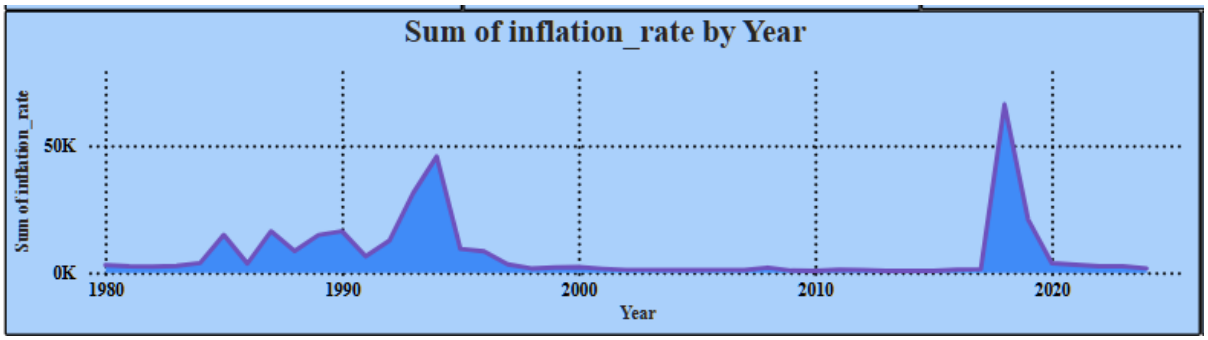
Activity 1.2: Maximum Inflation Rate



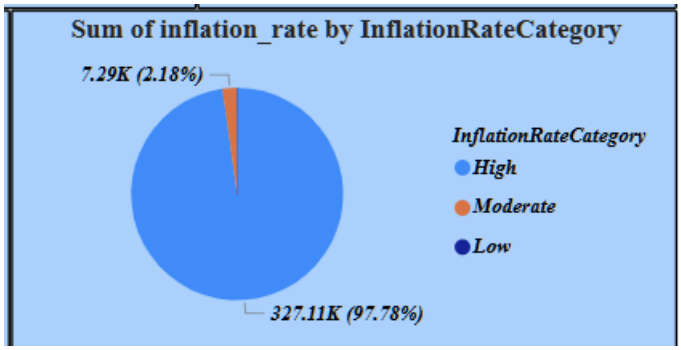
Activity 1.3: Total Number of Regions



Activity 1.4: InflationRate change over a year

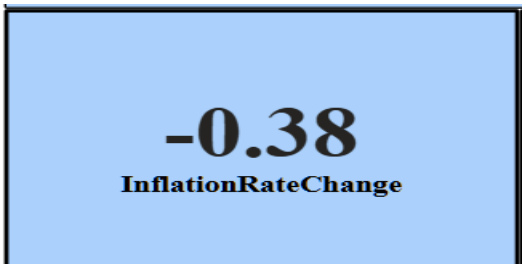


Activity 1.5: Distribution Of Inflationrate Categories.

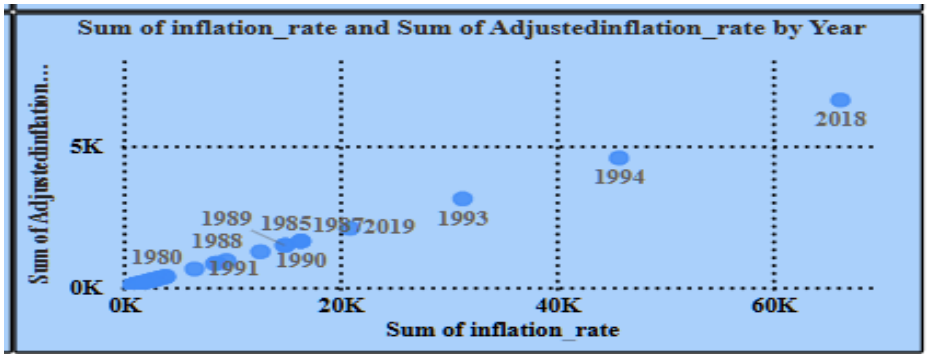


Activity 1.6: Filter applied On Country Column

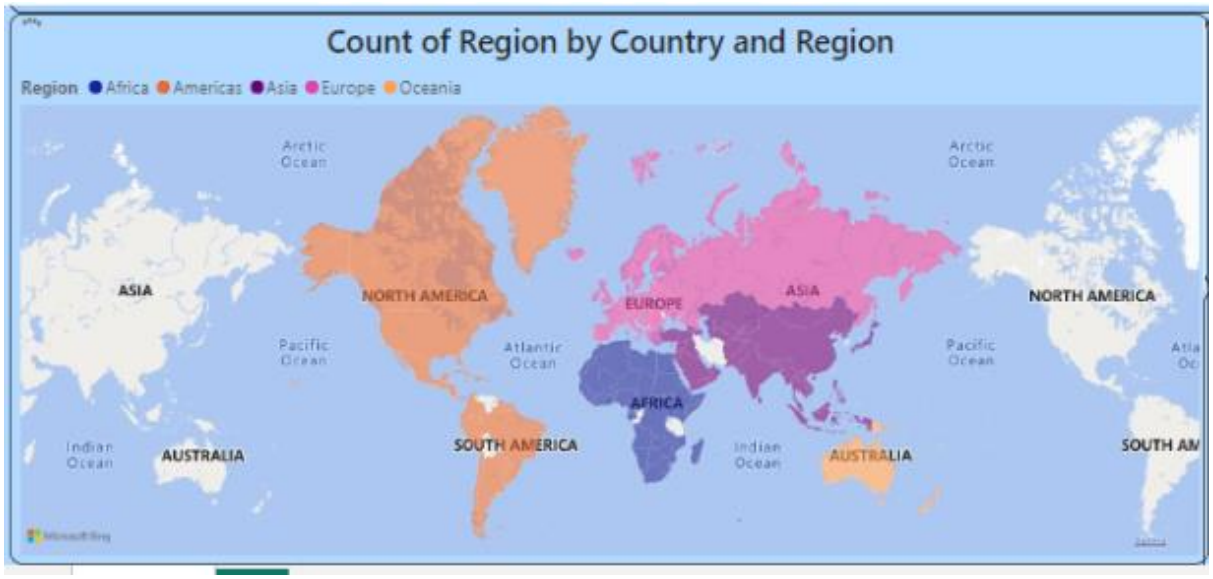
Activity 1.7: Average Inflation Rate Change by Country



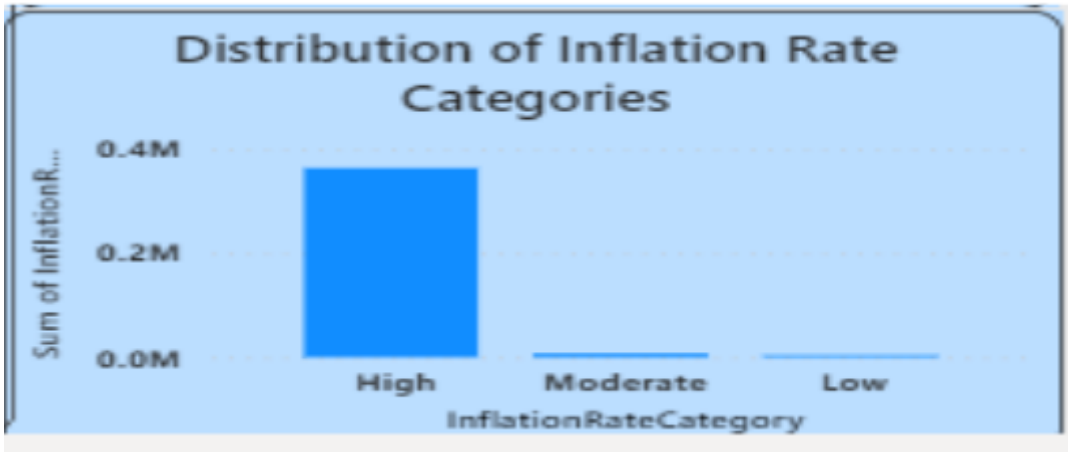
Activity 1.8: inflation rate and adjusted inflation rate change over years



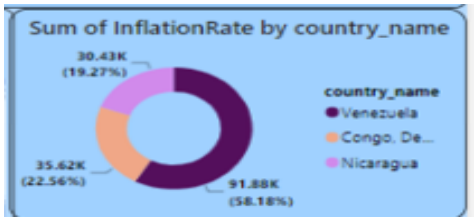
Activity 1.9: Count of Region By country



Activity 1.10: inflation rate Distribution



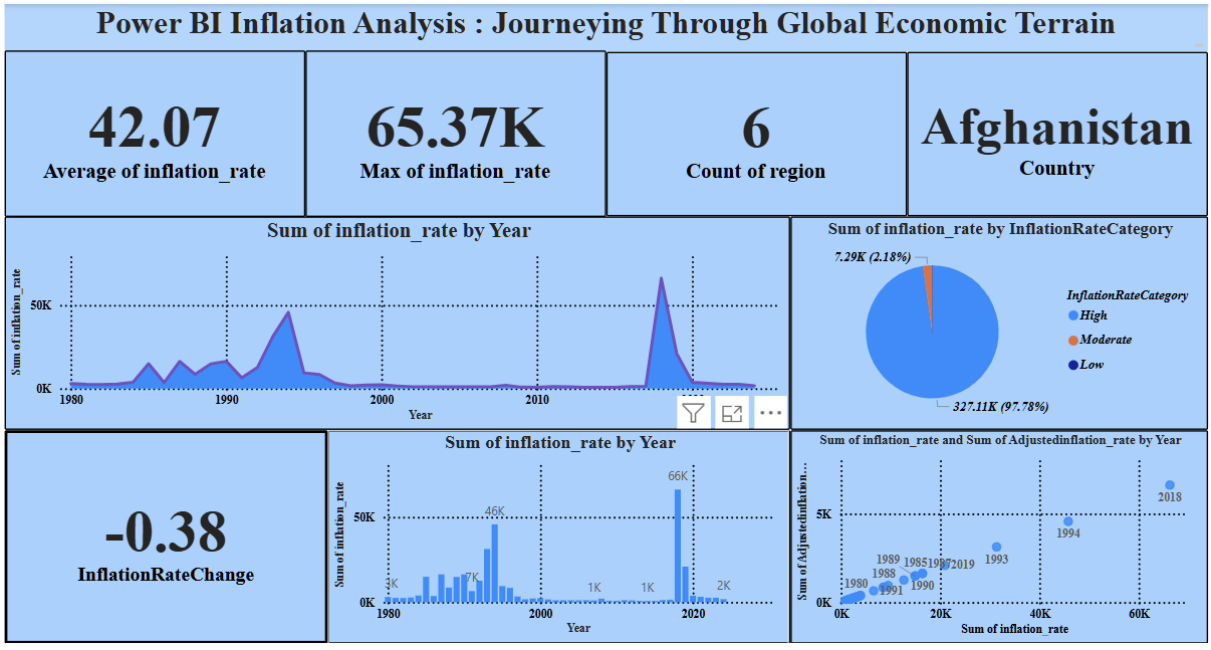
Activity 1.11: Top 3 inflation rate Countries



Milestone 4 : 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.

Activity 1 : Responsive and Design of Dashboard



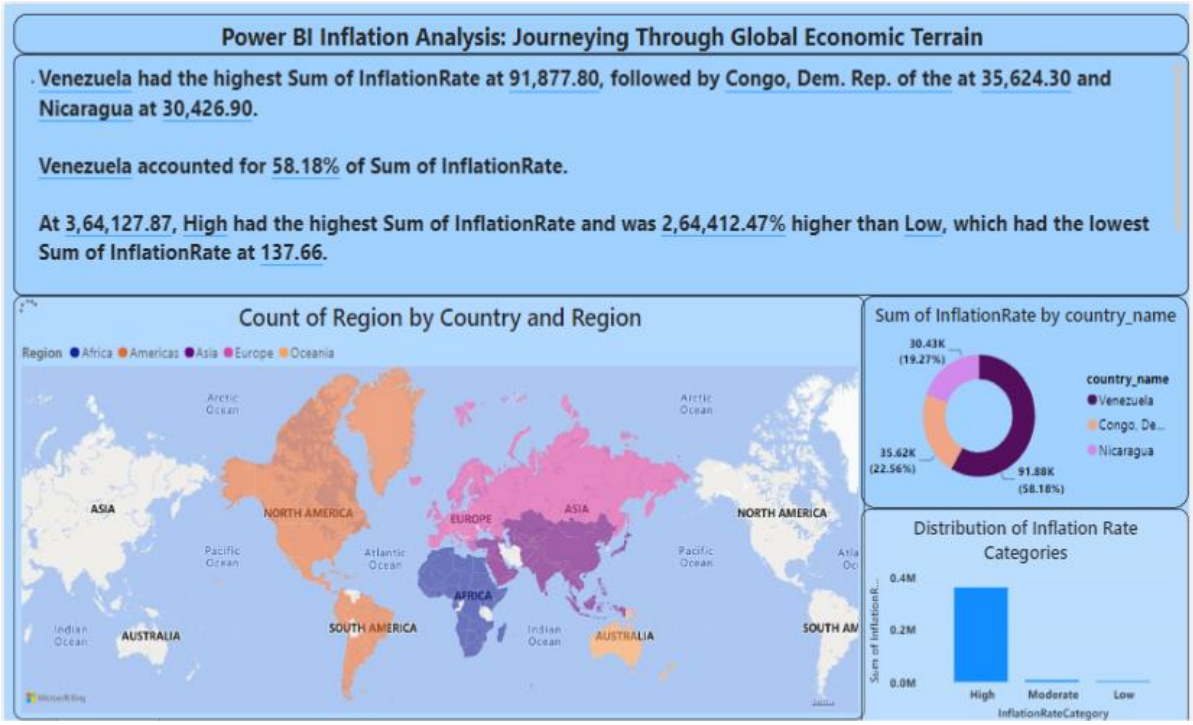
Milestone 5 : Report

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.

Design of Report

Designing a report in Power BI involves connecting to data sources, creating visualizations like charts and graphs, customizing their appearance and interactivity, organizing them logically on the canvas, formatting elements for consistency and clarity, and optionally creating dashboards for a summarized view. Throughout the process, it's essential to consider the audience's needs and ensure the report effectively communicates insights from the data. Finally, iterate based on feedback to continually improve the report's design and usefulness.

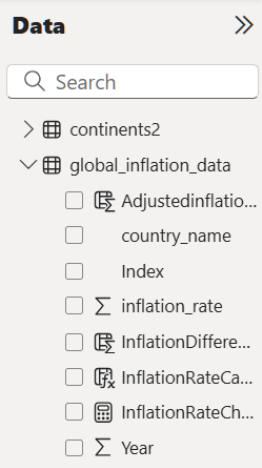


Milestone 6 : Performance of Testing

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.

No of Visualizations/ Graphs

1. Average Inflation Rate
2. Maximum Inflation Rate
3. Total Number of Regions
4. InflationRate change over a year
5. Distribution Of Inflationrate Categories
6. Filter applied On Country Column
7. Average Inflation Rate Change by Country
8. inflation rate and adjusted inflation rate change over years
9. Count of Region By country
10. inflation rate Distribution
11. Top 3 inflation rate Countries