

Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	12 March 2025
Team ID	PNT2025TMID06643
Project Name	Power BI Inflation Analysis: A Global Economic Overview
Maximum Marks	4 Marks

Technical Architecture:

SR NO	Component	Description	Technology
1	User Interface	Interactive dashboards for inflation trend analysis	Power BI, DAX, Power Query
2	Data Ingestion	Extracting inflation data from various sources	Python (Pandas), SQL, API Integrations
3	Data Processing	Cleaning, transforming, and structuring data for analysis	Power Query, Python, SQL
4	Machine Learning Model	Predicting inflation trends based on historical data	Python (Scikit-learn), Power BI AI Insights

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5	Database	Storage of historical and real-time inflation data	SQL Server, Azure Data Lake
6	Cloud Integration	Hosting datasets and enabling scalable analytics	Azure, Google Cloud, AWS
7	External API	Fetching live inflation data from financial sources	World Bank API, IMF API
8	Security Measures	Ensuring data integrity and access control	Data Encryption, Role-Based Access Control (RBAC)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Security Implementations	Protecting financial data from unauthorized access	Role-based authentication, Data Encryption
2.	Scalable	Handling large-scale inflation datasets across multiple economies	Cloud-based architecture (Azure, AWS)
3.	Availability	Ensuring continuous access to real-time insights	Load Balancing, Distributed Computing
4.	Performance Optimization	Optimizing queries and reports for fast processing	Caching, Indexing, Power BI Aggregations
5	Open-Source Frameworks	Use of open-source tools for analytics and visualization	Python, Pandas, Scikit-learn

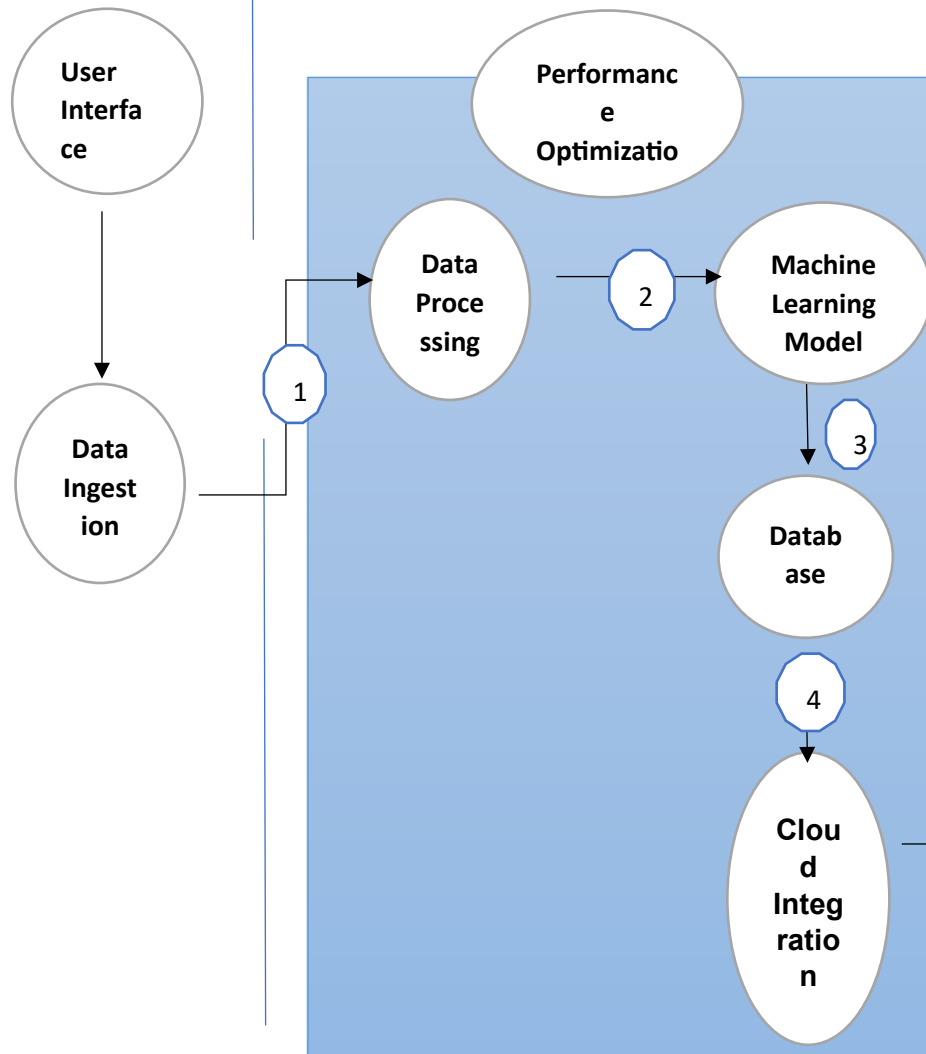
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Reference: This technology stack enables comprehensive inflation analysis through Power BI, providing policymakers, economists, and analysts with interactive and data-driven insights. With real-time data updates, predictive modeling, and a scalable cloud architecture, the project ensures reliable and impactful decision-making for understanding global economic trends.

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GUIDELINE=The project focuses on analyzing inflation trends across different economies using Power BI, providing visual insights into inflationary patterns, key influencing factors, and comparative global trends. The architecture consists of multiple components, from data ingestion to visualization, ensuring a seamless analytical experience.

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