Project Design Phase-II

Technology Stack (Architecture &Stack)

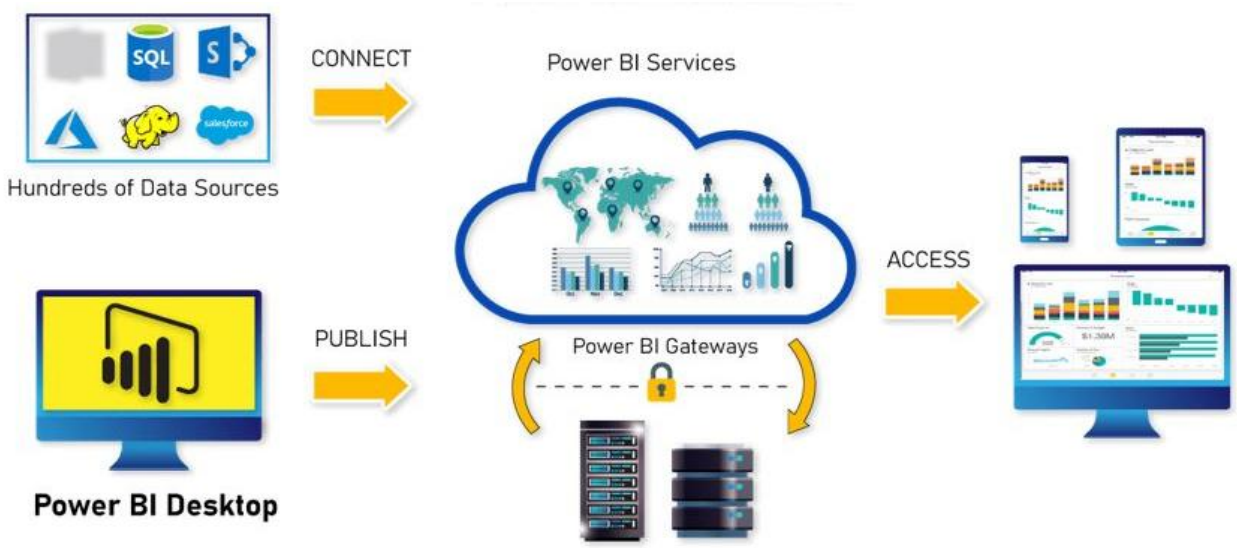
Date	21 March2025
Team ID	PNT2025TMID06737
Project Name	Power BI Inflation Analysis Journeying Through Global Economic Terrain
Maximum Marks	4 Marks

Technology Stack

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Inflation Data Analysis Workflow in Power BI



S.No	Component	Description	Technology
1.	User Interface	How users interact with the dashboards and reports.	Power BI Desktop, Power BI Service
2.	Data Sources	Data input for analysis.	Excel, SQL, CSV, JSON
3.	Data Transformation	Data cleaning, shaping, and transformation.	Power Query, DAX
4.	Data Modeling	Establishing relationships between tables.	Power BI Data Model
5.	Visualization Layer	Displaying data through charts and visuals..	Power BI Visualizations, Custom Visuals
6.	Cloud Service	Publishing and sharing reports online.	Power BI Service, OneDrive
7.	File Storage	Storing project files and datasets.	Local Filesystem, OneDrive
8.	External API-1	API used for fetching real-time inflation data.	Inflation Rate API (e.g., FRED API)
9.	External API-2	API for currency exchange rates.	Exchange Rate API
10	Machine Learning Model	Model for predictive inflation trends.	Azure AutoML, Python Integration
11	Infrastructure (Server / Cloud)	Deployment and hosting platform.	Microsoft Azure, Cloud Storage

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks used for data processing.	Python (Pandas, NumPy), R
2.	Security Implementations	Data encryption and access control.	Row-level security (RLS), IAM
3.	Scalable Architecture	Ensuring Scalability with larger data sets.	Power BI Premium, Azure Synapse
4.	Availability	Ensuring availability of reports and dashboards.	Power BI Service with Auto-refresh
5.	Performance	Optimizing performance with caching and tuning.	Power BI Aggregations, Dataflows