Project Design Phase-II
Technology Stack (Architecture & Stack)
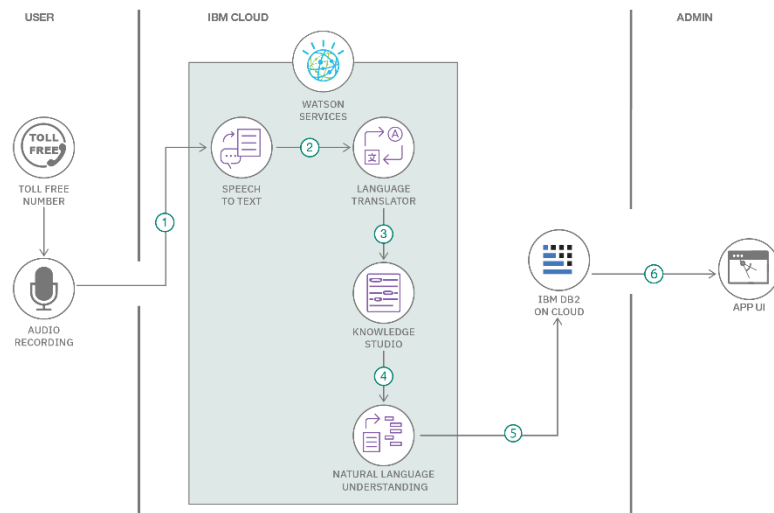
Date	6 February 2026
Team ID	LTVIP2026TMIDS24589
Project Name	Plugging into the Future: An Exploration of Electricity Consumption Patterns Using Tableau
Maximum Marks	4 Marks

Technical Architecture:

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

Example: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/

Guidelines:

Include all the processes (As an application logic / Technology Block)

Provide infrastructural demarcation (Local / Cloud)

Indicate external interfaces (third party API's etc.)

Table-1 : Components & Technologies:

Indicate Data Storage components / services

Indicate interface to machine learning models (if applicable)

Table-2: Application Characteristics:

References:

S.No	Component	Description	Technology
1	User Interface	Dashboard interface for viewing electricity consumption trends	Tableau Public
2	Application Logic-1	Script for data cleaning and formatting	Python (Pandas, NumPy)
3	Application Logic-2	Data reshaping and exporting for Tableau	Python
4	Database	Processed CSV/Excel files	Local Filesystem
5	Cloud Database	N/A – Static files used in Tableau	N/A
6	File Storage	Stores preprocessed datasets	Local Storage
7	External API-1	Open energy datasets	data.gov.in, Kaggle
8	External API-2	Weather correlation data (optional)	OpenWeather API
9	Machine Learning Model	Optional forecasting model (future scope)	Prophet / Scikit-learn
10	Infrastructure	Application setup and dashboard hosting	Local preprocessing + Tableau Cloud

S.No	Characteristics	Description / Technology

1		Open-Source Frameworks	Python (Pandas, NumPy), Tableau Public
2		Security Implementations	Tableau's built-in access control and published link privacy
3		Scalable Architecture	Scalable via Tableau's support for large datasets and filters
4		Availability	High availability via Tableau Public's cloud-hosted platform
5		Performance	Fast rendering through preprocessed and optimized data, cache-enabled dashboards

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-

pandemic/ https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d