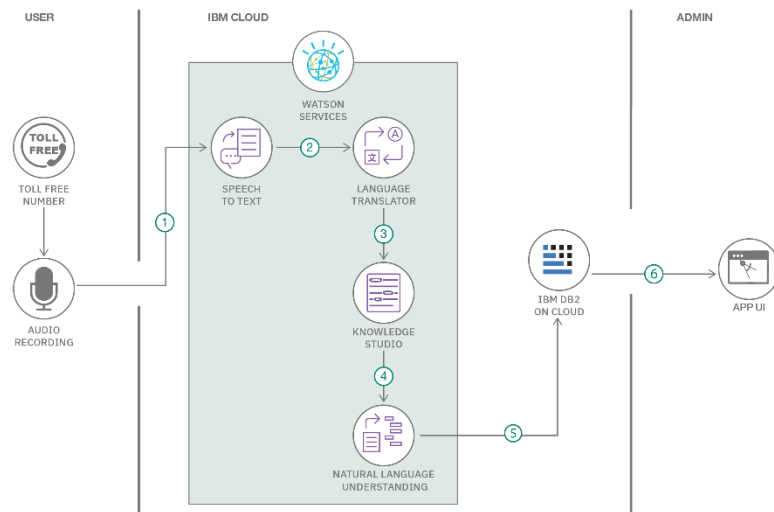


Project Design Phase-II Technology Stack (Architecture & Stack)

Date	18 February, 2026
Team ID	LTVIP2026TMIDS40169
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



Guidelines:

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

Provide infrastructural demarcation (Local / Cloud)
Indicate external interfaces (third party API's etc.)

Indicate Data Storage components / services
Indicate interface to machine learning models (if applicable)

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Table-1 : Components & Technologies:

S.No	Component	Description	Technology / Tool
1. 1	User Interface	Interface to view dashboard and interact with visuals	Tableau Public / Tableau Desktop
2. 2	Application Logic-1	Data preprocessing and transformation	Python (Pandas) , Tableau prep tools
3. 3	Application Logic-2	Creation of calculated fields (Growth %, Lockdown Impact)	Tableau Calculated Fields
4. 4	Application Logic-3	Visualization logic and chart rendering	Tableau Visualization Engine
5. 5	Database	Local storage of electricity dataset	Flat File (.CSV)
6. 6	Cloud Database	Hosting dataset for public dashboard sharing	Google Sheets / Tableau Cloud
7. 7	File Storage	Storage of raw dataset before Tableau upload	Local Filesystem / Google Drive
8. 8	External API-1	Not used in this dashboard	N/A
9. 9	External API-2	Not used	N/A
10. 10	Machine Learning Model	Not used in current project scope	N/A
11. 11	Infrastructure	System used for dashboard development and publishing	Local (Windows/MacOS) / Tableau Public

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology / Tool
1. 1	Open-Source Frameworks	Tableau Public is free to use for publishing dashboards.	Tableau Public, Pandas
2. 2	Security Implementations	Dataset stored locally; dashboard shared with controlled access.	Google Drive Permissions , Tableau's sharing controls
3. 3	Scalable Architecture	Dashboard supports addition of new years, regions, and states.	3-Tier Design (Data → Logic → UI)
4. 4	Availability	Dashboard accessible via Tableau Public link	Tableau Public, Google Drive
5. 5	Performance	Dashboard optimized using extracts, filters, and reduced unused fields.	Tableau Extract Engine, Preprocessed CSVs