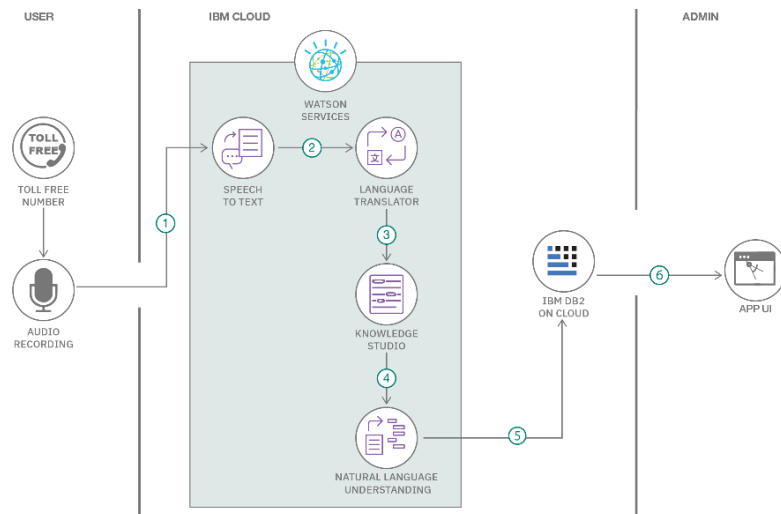


## Project Design Phase-II Technology Stack (Architecture & Stack)

Date	18 February, 2026
Team ID	LTVIP2026TMIDS53972
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	<b>User Interface</b>	Interface to view dashboard and interact with visuals	<b>Tableau Public / Tableau Desktop</b>
2. 2	<b>Application Logic-1</b>	Data preprocessing and transformation	<b>Python (Pandas), Tableau prep tools</b>
3. 3	<b>Application Logic-2</b>	Creation of calculated fields (Growth %, Lockdown Impact)	<b>Tableau Calculated Fields</b>
4. 4	<b>Application Logic-3</b>	Visualization logic and chart rendering	<b>Tableau Visualization Engine</b>
5. 5	<b>Database</b>	Local storage of electricity dataset	<b>Flat File (.CSV)</b>
6. 6	<b>Cloud Database</b>	Hosting dataset for public dashboard sharing	<b>Google Sheets / Tableau Cloud</b>
7. 7	<b>File Storage</b>	Storage of raw dataset before Tableau upload	<b>Local Filesystem / Google Drive</b>
8. 8	<b>External API-1</b>	Not used in this dashboard	N/A
9. 9	<b>External API-2</b>	Not used	N/A
10. 10	<b>Machine Learning Model</b>	Not used in current project scope	N/A
11. 11	<b>Infrastructure</b>	System used for dashboard development and publishing	<b>Local (Windows/MacOS) / Tableau Public</b>

**Table-2: Application Characteristics:**

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