

Project Design Phase

Solution Architecture

Date	21/2/2026
Team ID	LTVIP2026TMIDS41879
Project Name	ToyCraft tales: Tableau's Vision
Maximum Marks	4 marks

Solution Architecture:

Solution architecture is a structured process that bridges the gap between realworld energy consumption challenges and advanced data analytics using Tableau. It ensures the design and delivery of a scalable and insightful solution tailored for analysing electricity usage patterns.

Its goals in the context of this project are to:

- ***Find the best tech solution*** to collect, process, and visualize electricity consumption data for better decision-making and resource optimization.
- ***Describe the structure, flow, and components*** of the Tableau-based dashboard solution to stakeholders, including how data flows from sources to insights.
- ***Define the key features*** (such as peak consumption detection, time-based usage trends, location-wise patterns), the project's development phases (data gathering, processing, visualization), and system requirements (storage, processing, access control).
- ***Provide clear technical specifications*** for how the solution should be defined, developed, and deployed—ensuring performance, scalability, and usability.

How It's Applied in This Project:

- ***Business Problem:*** Inefficient energy use and lack of data-driven visibility in consumption patterns.
- ***Technology Solution:*** A Tableau-powered dashboard connected to processed electricity data from smart meters, weather APIs, and utility records.

- **Structure & Behavior** : ETL pipelines feed cleaned and structured data into a central database, which Tableau uses to generate interactive and dynamic visualizations.

- **Development Phases:**

- 1 . Data Collection & Integration
- 2 . Data Cleaning & Transformation

- 3 . Dashboard Design in Tableau

- 4 . User Testing & Feedback

- 5 . Final Deployment & Training

- **Specifications:** Includes data schema, visualization types, update frequency, access levels, and backup strategies.

Solution Architecture Diagram:

Example - Plugging Into the Future - AnExploration of Electricity Consumption Patterns Using Tableau

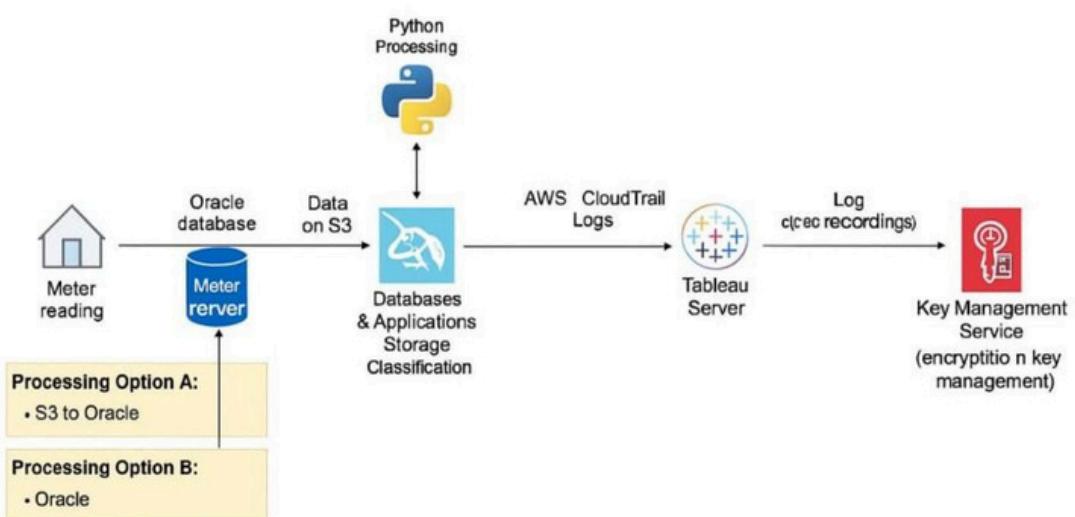


Figure 1: Architecture and data flow of the electricity consumption app using Tableau

Reference: <https://www.tableau.com/blog/plumbing-future-exploration-electricity-consumption-patterns-using-tableau>

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