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

| | |
|---|---|
| Date | 31 January 3035 |
| Team ID | LTVIP2025TMID47482 |
| 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/

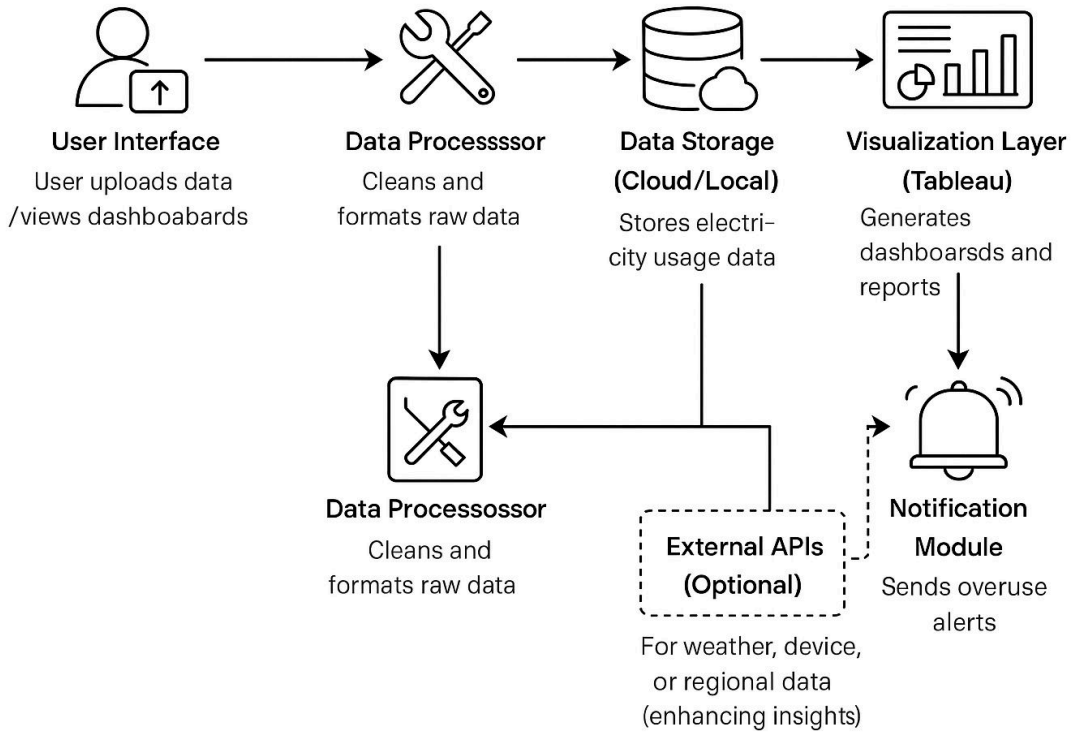

**Table-1 : Components & Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | Upload files, interact with dashboard | Tableau Public, HTML/CSS (embedded) |
| 2. | Application Logic-1 | Data Cleaning & Preprocessing | Python (Pandas, NumPy) |
| 3. | Application Logic-2 | Load data to Tableau | Tableau Extract API, CSV Connector |
| 4. | Database | Data Storage | PostgreSQL / Google Sheets / AWS RDS |
| 5. | Cloud Database | File and dashboard hosting | Google Drive / AWS S3 / Azure Storage |
| 6. | External API(optional) | Weather or smart grid data | OpenWeather API / Smart Meter APIs |
| 7. | Notification Service | Alert generation for abnormal usage | Python Script + SMTP / Twilio API |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Based on open-source platforms for flexibility | Python, Tableau Public |
| 2. | Security Implementations | Secure data access with user-level permissions | Encrypted Upload, OAuth (if any) |
| 3. | Scalable Architecture | Can handle large data uploads and dashboard scaling | Tableau Server / Cloud Infra |
| 4. | Availability | Dashboard accessible 24/7 via embedded or hosted service | Tableau Public, Cloud Hosting |

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 5. | Performance | Fast loading dashboards and real-time filters | Optimized extracts in Tableau |

**References:**


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