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

Date	29 JUNE 2025
Team ID	LTVIP2025TMID50052
Project Name	Strategic product placement analysis unveiling sales impact with tableau visualization
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.)
- Indicate Data Storage components / services
- Indicate interface to machine learning models (if applicable)

Technical Architecture:

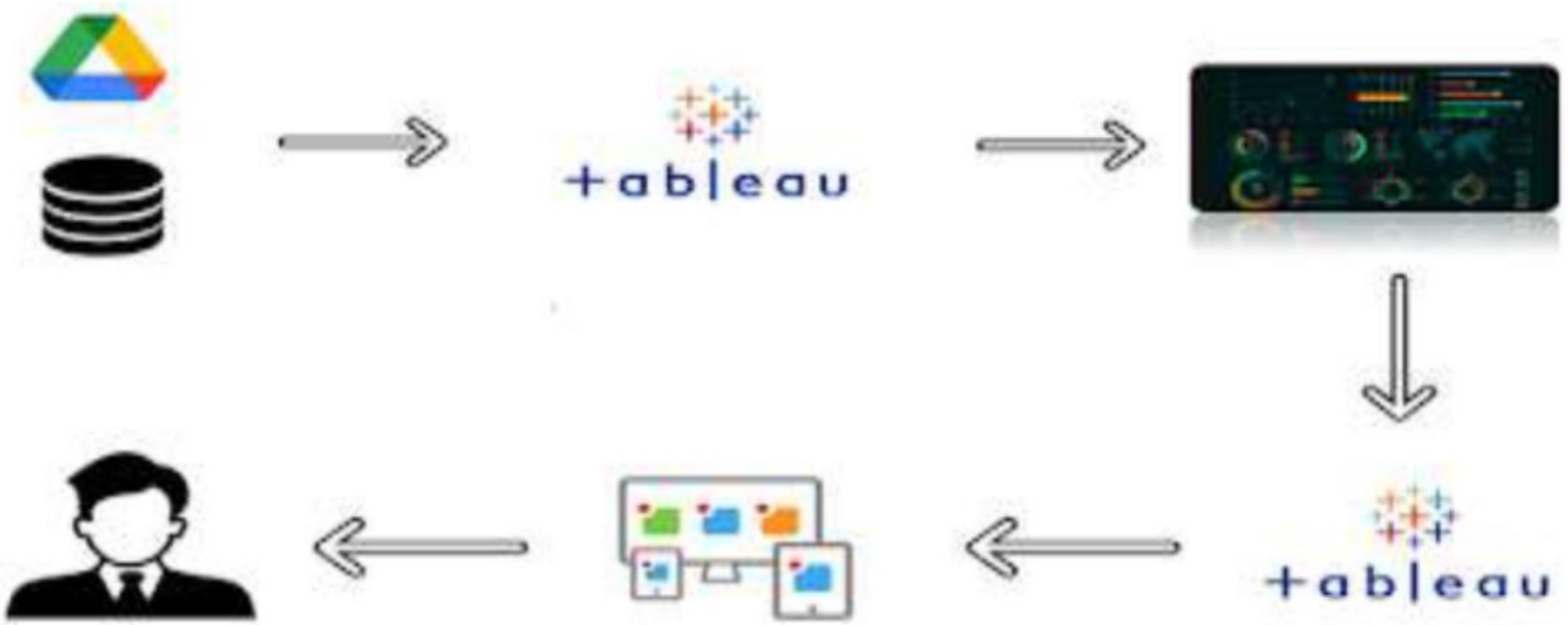

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Interactive dashboards to explore sales insights	Tableau Desktop / Tableau Public
2.	Application Logic-1	Data preprocessing and filtering logic	Python (Pandas, NumPy)
3.	Application Logic-2	Data preparation for Tableau visualizations	Tableau Data Extracts (.twbx)
4.	Application Logic-3	Visual analytics and chart generation	Tableau Visualization Engine
5.	Database	Structured sales data used for analysis	CSV File (Supermarket Sales Dataset)
6.	Cloud Database	Cloud storage if hosted externally	GitHub Repository (CSV / .twbx file)
7.	File Storage	Storage of datasets, Tableau files, and report files	Local Filesystem / GitHub
8.	Infrastructure (Server / Cloud)	Hosting dashboards and submitting project files	Local System, Tableau Public, GitHub

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Used open-source libraries for data preprocessing	Python (Pandas, NumPy, Matplotlib)
2.	Security Implementations	Access control managed through GitHub repository and Tableau Public privacy	GitHub Access Control, Tableau Link Privacy
3.	Scalable Architecture	Dashboard architecture is modular and can scale with more data or filters	Tableau's Layered Visual Architecture
4.	Availability	Dashboards are published on Tableau Public and accessible anytime via web link	Tableau Public, GitHub Hosting
5.	Performance	Lightweight preprocessing ensures fast data loading and dashboard rendering	Python Optimized Code, Tableau Caching

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