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

Date	20 Feb 2026
Team ID	LTVIP2026TMIDS42279
Project Name	Strategic Product Placement Analysis: Unveiling Sales Impact with Tableau Visualization
Maximum Marks	4 Marks

Technical Architecture:

The proposed solution architecture represents the flow of data from data sources through processing layers to visualization and reporting components. The system consists of data collection modules, data processing logic, visualization tools, and web integration components.

The architecture includes application logic for data preparation and analytics, visualization dashboards created using Tableau, and web deployment using Flask. Data is stored in structured databases and processed locally before being presented through interactive dashboards.

The architecture clearly defines user interaction through a web interface, processing through analytics modules, storage through database systems, and visualization through dashboards. External interfaces include data import tools and visualization services.

The system is deployed on a local environment with optional cloud support for scalability and accessibility.

S.No	Component	Description	Technology
1.	User Interface	Web-based interface to interact with dashboards and reports	HTML, CSS, JavaScript
2.	Application Logic-1	Data extraction and preprocessing logic	Python
3.	Application Logic-2	Data transformation and analytics processing	Python (pandas, Numpy)
4.	Application Logic-3	Visualization logic and dashboard rendering	Tableau

5.	Database	Storage of sales, placement, and demographic datasets	MySQL / CSV Data Sources
6.	Cloud Database	Optional cloud storage for datasets	Cloud Storage Services
7.	File Storage	Storage of raw datasets and exported reports	Storage of raw datasets and exported reports
8.	External API-1	Data import integration tools	Data Connector APIs
9.	External API-2	Visualization embedding support	Tableau Public / Tableau Server
10.	Machine Learning Model	Not applicable (analytical visualization based project)	N/A
11.	Infrastructure (Server / Cloud)	Deployment environment for application	Local System / Cloud Hosting

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Libraries used for data processing and web integration	Python, Pandas, NumPy, Flask
2.	Security Implementations	Authentication and access control for dashboards and datasets	User Authentication, Secure Access Controls
3.	Scalable Architecture	Modular architecture allowing addition of datasets and dashboards	Modular Data Processing Architecture
4.	Availability	System accessible via web interface with minimal downtime	Local Server / Cloud Deployment
5.	Performance	Efficient data processing and fast dashboard rendering	Optimized Queries, Data Aggregation

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