

Project Design Phase-I Solution Architecture

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

Solution Architecture:

Solution architecture is a structured approach that bridges the gap between business challenges and technology solutions by defining how system components interact to achieve project objectives. In this project, the solution architecture outlines the overall structure and workflow of the product placement analytics system, demonstrating how data is collected, processed, analyzed, and visualized to generate actionable insights.

The primary goal of the architecture is to provide an efficient and scalable framework that enables organizations to analyze sales performance and customer behavior through interactive visualizations. The architecture identifies the most suitable technologies and processes required to transform raw datasets into meaningful insights, ensuring alignment with business requirements and analytical goals.

The proposed solution consists of multiple layers including data sources, data processing modules, visualization components, and user interaction interfaces. Sales data, product placement information, and customer demographic data are collected from databases and external sources, followed by preprocessing and transformation using analytical logic. The processed data is then visualized using dashboards and stories created with Tableau, enabling users to explore trends and patterns effectively.

The architecture also incorporates a web integration layer using Flask, which allows stakeholders to access dashboards and reports through a web interface. Data storage components ensure reliable storage and retrieval of datasets, while processing modules ensure efficient data transformation and analytics.

Additionally, the architecture defines system characteristics such as scalability, performance, and usability, ensuring the solution can handle increasing data volumes and user interactions. It also outlines development phases, functional components, and system requirements to guide implementation and deployment.

Overall, the solution architecture provides a comprehensive blueprint that describes the structure, behavior, and interactions of system components, ensuring the proposed solution effectively addresses the business problem while delivering reliable and scalable analytics capabilities.