Project Design Phase-II

Technology Stack (Architecture & Stack)
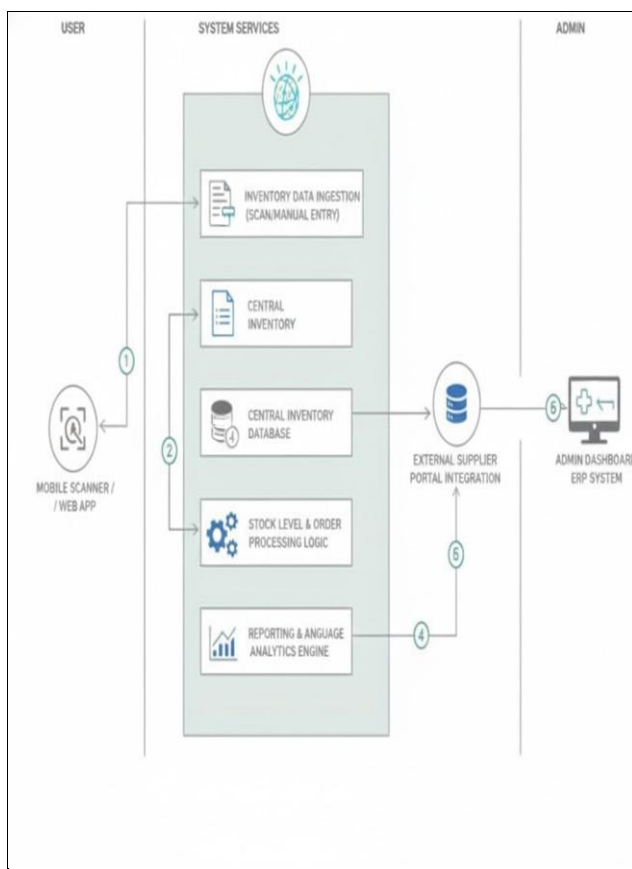
Date	2 November 2025
Team ID	NM2025TMID00728
Project Name	Medical Inventory Management System
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table 1 & table 2.

Example: Order processing during pandemics for offline mode.

Reference:https://trailhead.salesforce.com/en/content/learn/projects/set-up-lightning-experience?trail_id=learn_salesforce

Guidelines:

Use Salesforce Lightning App for user interface (Admin, Pharmacist). Create Custom Objects: Supplier, Product, Purchase Order Stock Transaction, Batch. Use Fields for batch number, manufacturing date, expiry date, quantity, MRP, supplier reference. Schedule an Expiry Monitor job (Scheduled Flow or Batch Apex) to check expiry and create alerts. Implement Validation Rules to prevent negative stock or missing mandatory fields. Use Profiles & Permission Sets for role-based access.

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	Presentation Layer	User interfaces for Admin, Inventory Manager, Pharmacist	Salesforce Lightning App (Lightning Web Components / Record Pages)
2	Business Logic	Automation, validations, triggers, scheduled jobs	Salesforce Flows, Apex Triggers, Scheduled Apex
3	Data Layer	Storage of suppliers, products, batches, POs, transactions	Salesforce Custom Objects + Fields, Standard Objects (where applicable)
4	Reporting	Reports and Dashboards for stock, expiry and supplier metrics	Salesforce Reports & Dashboards
5	Notifications	Alerts for expiry, low-stock via email/SMS	Salesforce Email Alerts, Outbound Messaging (or External SMS API integration)
6	Integration	External supplier feeds / accounting software	Salesforce REST API / Named Credentials / External Services
7	Security	Authentication and access control	Salesforce Profiles, Permission Sets, Role Hierarchy
8	Deployment & CI	Source control and deployment	Salesforce DX, Change Sets (or Git + CI tools)

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology/Approach
1	Availability	System should be available during working hours with minimal downtime	Salesforce platform SLA / Redundancy

2	Scalability	Must handle increasing number of product records and transactions	Salesforce scalable data model; indexing on key fields
3	Performance	Quick load times for product list and reports	Use selective queries, indexed fields, optimize Flows/Apex
4	Security	Role-based access to sensitive inventory functions	Profiles, Permission Sets, Field-level security
5	Reliability	Accurate stock updates and audit trail of transactions	Use transactions, error handling in Flows/Apex, audit fields
6	Maintainability	Easy to update fields, layouts, and flows during releases	Modular Flows, well-documented Apex, metadata-driven design
7	Usability	Simple forms for quick stock updates and PO creation	Lightning Record Pages, Compact Layouts, Quick Actions
8	Extensibility	Allow future integration with ERPs and e-commerce	REST APIs, Named Credentials, External Services
9	Data Integrity	Prevent invalid or inconsistent data (e.g., negative stock)	Validation Rules, Required Fields, Triggers for consistency
10	Auditability	Maintain history of critical changes (stock, POs)	Field History Tracking, Audit Objects, Reports