Project Design Phase
Solution Architecture

Date	1 NOV 2025
Team ID	NM2025TMID02866
Project Name	Medical Inventory Management
Maximum Marks	4 Marks

Solution Architecture:

Goals of the Architecture

- Streamline the entire medical inventory workflow using Salesforce automation.

- Maintain real-time accuracy in product stock, supplier, and purchase order data.

- Prevent expired or duplicate product entries through validation rules.

- Ensure transparency and accountability across procurement and inventory operations.

- Reduce manual intervention through flows, triggers, and automated reporting.

Key Components

- **Supplier Object:** Stores supplier name, contact details, and address.

- **Product Object:** Manages product details, stock levels, unit price, and expiry dates.

- **Purchase Order Object:** Tracks supplier purchases, order status, and costs.

- **Order Item Object:** Links products to purchase orders and calculates total cost.

- **Inventory Transaction Object:** Monitors incoming and outgoing stock movements.

- **Flows & Triggers:** Automate delivery updates and total cost calculations.

- **Validation Rules:** Maintain logical and accurate data entry (e.g., expected delivery ≤ 7 days).

- **Reports & Dashboards:** Provide analytics on supplier performance and stock levels.

Development Phases

1. Create custom objects: Supplier, Product, Purchase Order, Order Item, and Inventory Transaction.

2. Configure fields, relationships, and page layouts for each object.

3. Implement **Validation Rules** for purchase and delivery dates.

4. Create **Flows** to automate delivery date updates.

5. Develop **Apex Triggers** to auto-calculate total purchase cost.

6. Assign **Profiles, Roles, and Permission Sets** to control data access.

7. Build **Reports and Dashboards** for management analytics.

8. Test and validate each function for performance and data accuracy.

Solution Architecture Description

The **Medical Inventory Management System Architecture** is designed to provide a unified, automated platform for hospitals and clinics to manage their inventory effectively. Built entirely on the Salesforce platform, it integrates supplier management, purchase tracking, and product monitoring into a single solution.
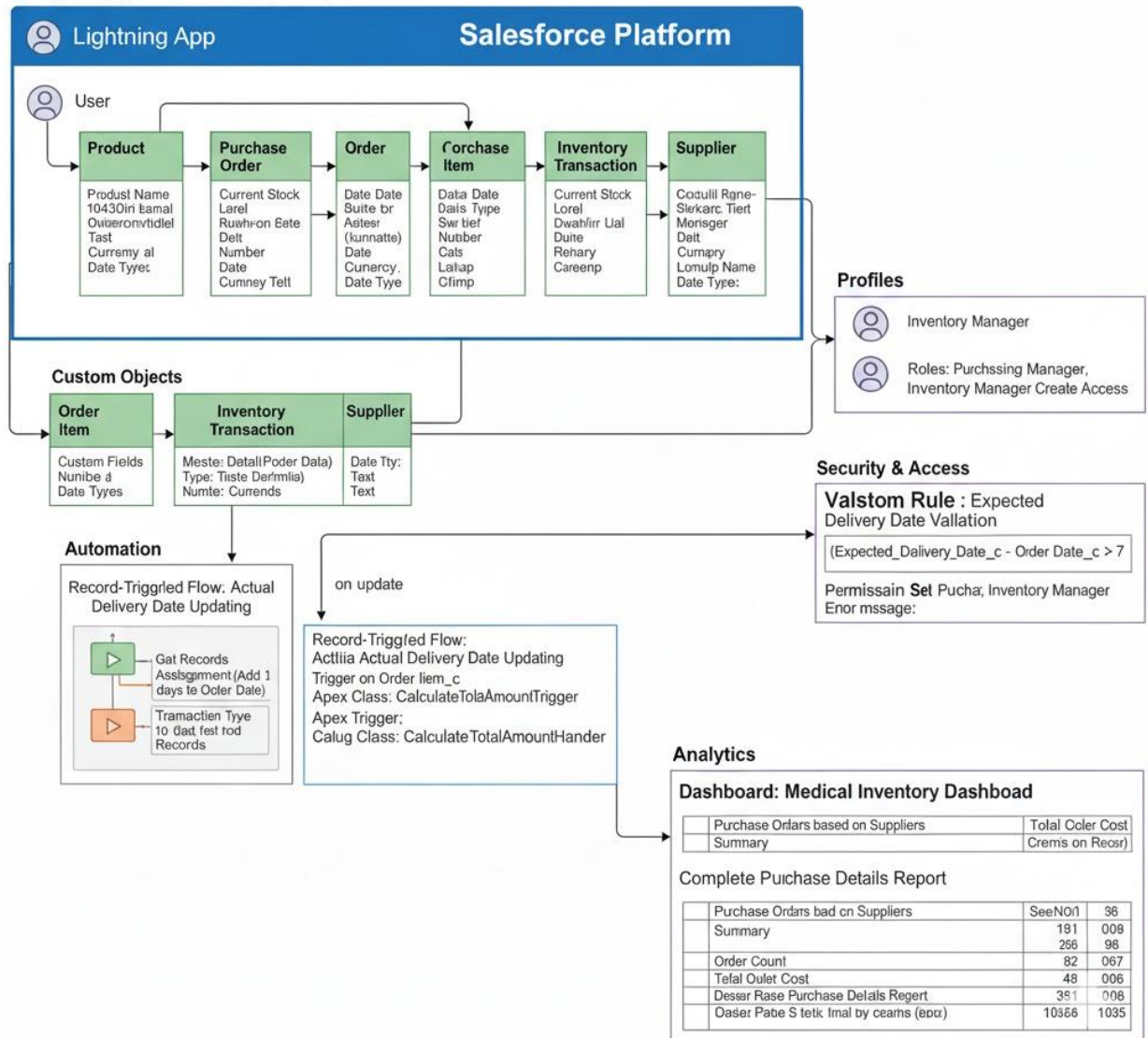
The architecture centers around five main objects — Supplier, Product, Purchase Order, Order Item, and Inventory Transaction — connected through master-detail and lookup relationships.
Salesforce **Flows** automatically update expected delivery dates, while **Apex Triggers** handle real-time cost calculations. **Validation Rules** prevent incorrect data entry and ensure accurate record maintenance.

This architecture enables healthcare administrators to monitor stock levels, supplier performance, and expiry status effortlessly, improving decision-making and minimizing human errors. It promotes operational efficiency, accountability, and compliance in healthcare supply chain management.

Medical Inventory Management - Salsforse System Architecture

Reference:

- https://developer.salesforce.com/docs
- https://trailhead.salesforce.com