Project Planning Phase

Project Planning

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Team ID	NM2025TMID06793
Project Name	Medical Inventory Management

1. Introduction

The Solution Architecture defines the high-level design and structure of MIMS. It explains how components, modules, and data flows interact to achieve system functionality.

Objectives:

- Provide a visual representation of system modules and interactions.
- Ensure scalability, reliability, and security.
- Map solution components to user requirements and workflows.

2. Architecture Overview

MIMS follows a layered architecture, with clearly defined modules:

1. Presentation Layer (Frontend)

   Salesforce Lightning Web Components (LWC) and Visualforce pages

   Dashboards, alerts, and interactive UI for different user roles

2. Business Logic Layer (Backend)

   Apex classes and triggers

   Process Builder & Salesforce Flows for automation

   Role-based access control and business rules enforcement

3. Data Layer

Salesforce standard and custom objects

Databases for inventory, suppliers, POs, and expiry data

Data integrity, validation rules, and audit trails

4. Integration Layer

APIs for external systems (optional for future ERP integration)

Webhooks for supplier notifications

Real-time updates and external data exchange

3. Component Diagram

Components:

Module	Function	User Interaction
Inventory Management	Track stock levels, low-stock alerts	Inventory Manager, Warehouse
Supplier Management	Maintain supplier info & ratings	Procurement Staff
Purchase Order Module	Auto-generation, approval, tracking	Inventory & Procurement
Expiry Management	Alerting and reporting	Warehouse, Inventory Manager
Reporting & Analytics	Dashboards, automated reports	Admin Staff, Management
Security & Access	Role-based permissions	All Users

4. Conclusion

The Solution Architecture of MIMS provides a clear blueprint for development, integration, and deployment. By following a layered, modular, and scalable design, it ensures that the system meets functional requirements, handles high data volumes, maintains security, and delivers a seamless user experience across all medical inventory management processes.