SOLUTION ARCHITECTURE

Date	07-11-2025
Team ID	NM2025TMID06114
Project Name	Medical Inventory Management System
Maximum Marks	4 Marks

Solution Architecture:

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The architecture aims to provide a secure, scalable, and automated solution for managing medical inventory operations. It ensures smooth handling of supplier details, stock records, purchase and usage tracking, and billing processes while maintaining data integrity and accessibility. The architecture is designed for flexibility, enabling easy integration with other healthcare systems and future scalability.

KeyComponents :

The solution architecture includes core components such as custom data objects for Suppliers, Medicines, Purchases, Usage Records, and Billing. It employs workflow automation and validation rules to ensure accurate and efficient inventory handling. Analytical dashboards provide insights into stock levels, expiry trends, and financial data. Role-based access control maintains security and privacy across different user levels such as pharmacists, administrators, and procurement officers.

DevelopmentPhases :

The system development follows structured phases: requirement gathering, data modeling, environment setup, automation configuration, and testing. Custom entities and relationships are created to connect inventory items with purchase and usage records. Automation tools are used for expiry alerts, restock notifications, and billing. Testing ensures system reliability, followed by dashboard setup and user profile configuration for complete functionality.

Solution Architecture Description :

The Medical Inventory Management System integrates automation, analytics, and security within a unified platform. It uses a relational data model linking suppliers, medicines, and transactions. Automation handles reorder triggers, expiry warnings, and billing updates. Dashboards offer

realtime visibility into stock status and financial performance. With a modular and cloud-based structure, the system is scalable, reliable, and adaptable for healthcare institutions of varying sizes.

Solution Architecture Diagram :