

Project Design Phase-II

Solution Requirements

Date	7 Nov 2025
Team ID	NM2025TMID06700
Project Name	Medical inventory management
Marks	4 Marks

Solution Requirements – Medical Inventory Management System

1. Functional Requirements

Functional requirements describe what the system **must do**.

ID	Requirement	Description
FR1	User Authentication	System must provide role-based login for Admin, Pharmacist, Medical Staff.
FR2	Inventory Management	Add, update, delete, and view stock items (medicines, equipment, consumables).
FR3	Stock Tracking	Real-time monitoring of stock levels across multiple locations.
FR4	Expiry & Batch Management	Track batch numbers, expiry dates, and alert staff for nearing expiry items.

F R 5	Request & Issue Handling	Medical staff can request items; pharmacist can approve and issue inventory.
F R 6	Low Stock & Auto-Reorder Alerts	System sends alerts when stock falls below thresholds and can auto-generate purchase orders.
F R 7	Barcode / RFID Integration	Quick scanning of items for accurate inventory updates.
F R 8	Vendor Management	Store vendor details, manage purchase orders, and track deliveries.
F R 9	Reporting & Analytics	Generate reports on usage trends, stock levels, wastage, and expiry.
F R 10	Audit Trail	Maintain logs of all inventory transactions for accountability and compliance.

2. Non-Functional Requirements

Non-functional requirements define **how the system should perform**.

Category	Requirement	Description
Performance	Fast Processing	Inventory updates, queries, and alerts must occur in < 2 seconds.
Reliability	High Availability	System uptime ≥ 99.5% to ensure continuous access to inventory.
Security	Data Protection	Role-based access, encrypted database, secure login/authentication.
Usability	Intuitive Interface	Easy-to-use UI for medical staff with minimal training required.
Scalability	System Growth	Should support increased inventory items, users, and multiple hospital locations.
Maintainability	Easy Updates	Modular design for easy bug fixing and feature upgrades.
Compatibility	Device & Browser Support	Works on modern browsers, tablets, and mobile devices.

Backup & Recovery	Data Safety	Daily automated backups and disaster recovery plan.
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3. Constraints / Assumptions

- System assumes stable internet for real-time updates (if cloud-hosted).
- Barcode/RFID hardware should be compatible with software.
- Users will have basic digital literacy for system use.
- Regulatory compliance for medical data storage must be followed.

4. Success Metrics

Metric	Target
Stock Accuracy	≥ 90% real-time inventory accuracy
Expired Item Reduction	≥ 50% decrease in wastage
Request Processing Time	≤ 5 minutes for approval & issue
User Satisfaction	≥ 85% positive feedback from staff