

Requirement Analysis Phase

Solution Requirements

Date	06 November 2025
Team ID	F529277D47452DB9E7447BD087E08E5E
Project Name	Medical Inventory Management
Maximum Marks	4 Marks

1. Functional Requirements

1.1 User Management

- Users can register, log in, and log out securely.
- Role-based access: **Admin, Pharmacist, Doctor, Nurse, Store Manager.**
- Admin can add, edit, or delete users and assign roles.

1.2 Inventory Management

- Add new medical items with details (name, category, batch no., expiry date, supplier, cost, quantity).
- Update stock information automatically after purchase or issue.
- Track available stock levels and trigger alerts for low-stock or out-of-stock items.
- Manage expired and recalled items.

1.3 Purchase Management

- Generate and manage purchase orders to suppliers.
- Approve or reject purchase requests.
- Record supplier details and purchase history.

1.4 Issue/Dispense Management

- Track medicine or equipment issued to departments or patients.
- Record quantity and responsible staff for every issue.

1.5 Expiry & Waste Management

- Notify users about medicines nearing expiry (e.g., within 30 days).
- Record disposal of expired or damaged items.

1.6 Reports & Analytics

- Generate reports such as:
 - Current stock report
 - Expiry report
 - Purchase history report
 - Usage/consumption report
 - Supplier performance report
- Export reports in PDF or Excel formats.

1.7 Audit & Logs

- Maintain activity logs for all transactions (add, update, delete, issue).
- Track who made changes and when.

1.8 Notifications & Alerts

- Email/SMS or dashboard alerts for:
 - Low stock
 - Near-expiry items
 - Purchase order approvals

2. Non-Functional Requirements (How the system should perform)

2.1 Performance

- The system should support up to X concurrent users (based on hospital size).
- Response time should not exceed 2 seconds for major operations.

2.2 Security

- Role-based authentication and authorization.
- Data encryption for sensitive information.
- Secure login with strong password policy.

2.3 Usability

- Intuitive and easy-to-navigate interface.
- Responsive design for desktop, tablet, and mobile access.

2.4 Reliability & Availability

- System uptime of at least 99%.
- Automatic backup every 24 hours.

2.5 Scalability

- Easily expandable to add new departments, products, or users.

2.6 Maintainability

- Modular design for easier updates and debugging.

2.7 Compliance

- Must follow healthcare data protection regulations (like HIPAA or local equivalents).

3. Technical Requirements

- **Frontend:** HTML5, CSS3, JavaScript, React or Angular
- **Backend:** Node.js / Python (Django / Flask) / Java (Spring Boot)
- **Database:** MySQL / PostgreSQL
- **Hosting:** Cloud-based (AWS, Azure, or hospital's internal server)
- **Integration:** Barcode scanner and Excel import/export support