

# Medical Inventory Management System

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Project Name	Medical Inventory Management System
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## PROJECT DESIGN PHASE

### 1. Problem-Solution Fit

**Problem:** Inefficient manual tracking and delayed stock updates.

**Solution:** Automated, centralized system with real-time inventory visibility and AI-assisted forecasting.

**Key Fit Indicators:**

- Reduces manual labor.
- Enhances supply accuracy.
- Prevents stockouts and wastage.

### 2. Proposed Solution

The **Medical Inventory Management System** will automate stock monitoring, provide analytics, and facilitate communication between pharmacy, procurement, and administration departments.

**Core Functionalities:**

- Barcode scanning for each medicine batch.
- Intelligent reorder point detection.
- Automatic purchase order creation.
- Expiry management dashboard.
- Role-based permissions.

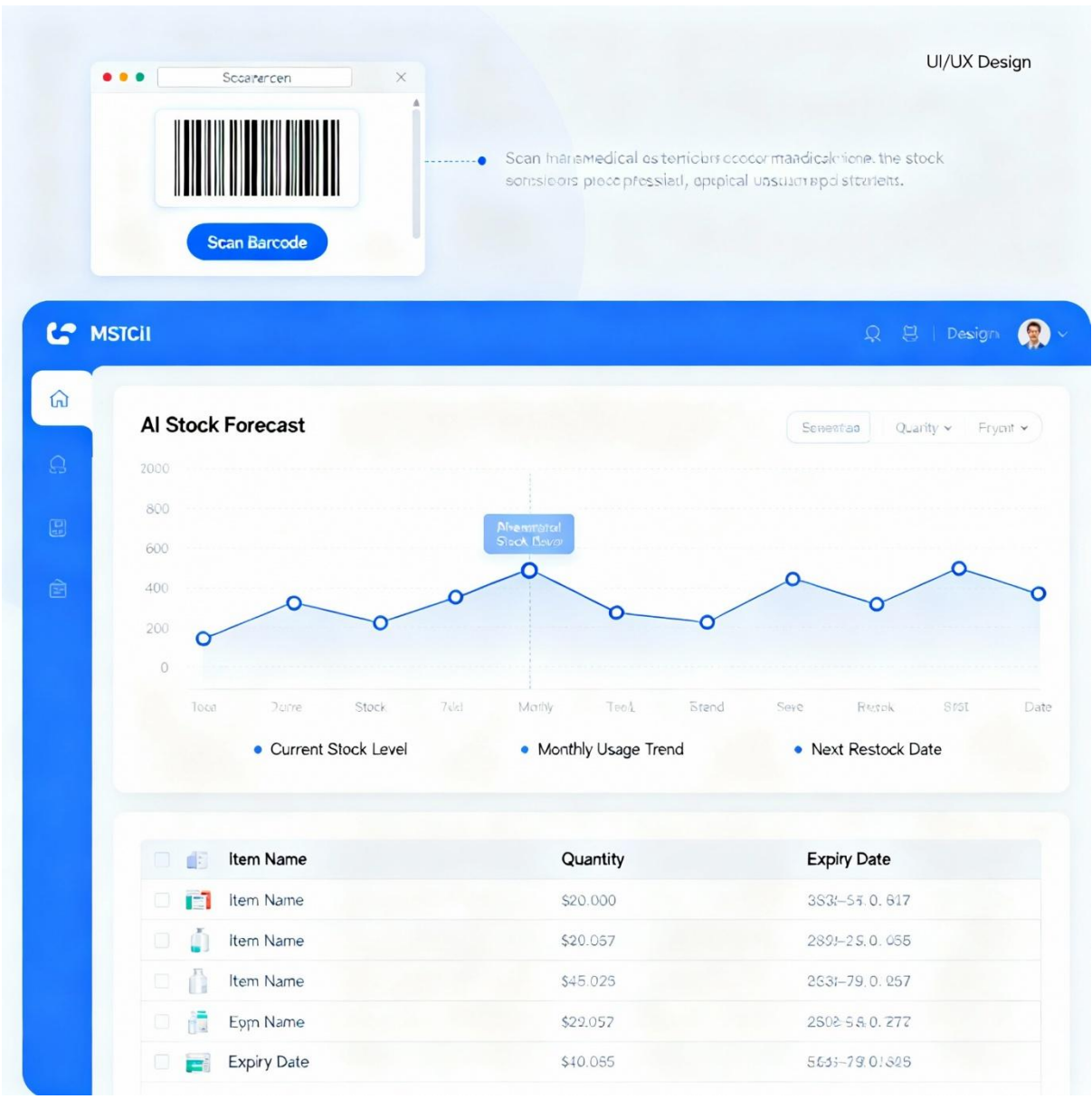
3. Solution Architecture (Conceptual)

Layers:

- 1. **Frontend (Client Layer):** ReactJS UI for user interaction.
- 2. **Backend (Application Layer):** Express.js handles routes, logic, and security.
- 3. **Database Layer:** MongoDB stores stock, supplier, and transaction data.
- 4. **Integration Layer:** APIs connect barcode scanners and alert systems.

Architecture Flow:

User → UI → API → Database → Response → Dashboard.



#### **4. Database Design (Overview)**

##### **Collections:**

- users – user details, roles, authentication.
- inventory – item name, batch no., expiry date, stock count.
- suppliers – supplier info, purchase records.
- transactions – issue and return logs.

#### **5. Advantages**

- Real-time synchronization across departments.
- Modular, scalable, and secure.
- Easy-to-use UI for all staff roles.