Pharmacy / Chemistry System Specification

A comprehensive specification document for developers building a fully functioning **Pharmacy / Chemist Management System**, with the **full KEMSA drug list integrated**.

> **Note:** Replace the placeholder section `KEMSA PRODUCT LIST` with your actual drug list content.

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1. System Overview

A modern pharmacy management system to support dispensing, stock management, sales, prescriptions, reporting, and integration with the official KEMSA drug list.

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2. Key Features

2.1 Product & Inventory Management

- Full import of **KEMSA drug list**
- Auto-generated unique product IDs
- Product categories (e.g. Tablets, Injectables, Consumables)
- Strengths, dosage forms, pack sizes
- Stock levels (current, reorder level, reorder quantity)
- Batch numbers
- Expiry dates & expiry alerts
- Supplier management
- GRN (Goods Received Notes)

2.2 Sales & Dispensing

- Counter sales
- Prescription-based sales
- Customer profiles
- Price overrides (permission controlled)
- Discounts
- Receipts & invoices (printable + PDF)
- NHIF / Insurance billing (optional extension)

2.3 Prescriptions Module

- Prescription entry
- Dosage instructions (SIG)
- Drug interaction alerts (optional)
- Controlled drugs log

2.4 Reporting

- Daily sales report
- Monthly sales summary
- Stock movement report
- Expiry report
- Profit & loss
- Low stock & out-of-stock report
- Supplier performance report

2.5 User Management

- Admin, Pharmacist, Assistant, Cashier roles
- Role-based access control
- Activity logs

2.6 Integrations

- **KEMSA Drug List Integration** (CSV/Excel/SQL)
- Optional API for e-prescriptions
- Optional SMS notifications

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3. Technical Requirements

3.1 Backend

- PHP / Laravel **or** Node.js / Express
- MySQL or PostgreSQL
- REST API architecture

3.2 Frontend

- HTML5 / Tailwind CSS / Vue.js or React
- Fully responsive

3.3 Hosting

- Apache or Nginx
- SSL enabled
- Daily automated backups

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4. Database Schema (Summary)

Core Tables

- `products`
- `categories`
- `batches`
- `stock_movements`
- `sales`
- `sale_items`
- `prescriptions`
- `prescription_items`
- `suppliers`
- `users`
- `roles`
- `permissions`

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5. KEMSA Drug List Integration

Expected Fields

- Product Name
- Strength
- Dosage Form
- Pack Size
- KEMSA Code / SKU
- Unit Cost
- Category
- Description

Import Methods

- CSV upload
- Excel upload
- API (optional future)

Validation

- Duplicate detection
- Missing fields logic
- Mapping to internal categories

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6. API Endpoints (Example)

```
GET /api/products
POST /api/products
GET /api/products/{id}
PUT /api/products/{id}
DELETE /api/products/{id}

POST /api/stock/receive
POST /api/stock/adjust
POST /api/sales
GET /api/reports/expiry
```

7. UI Modules

• Dashboard (KPIs, low stock alerts)
• Product list & search
• Add/Edit product
• Receive stock (GRN)
• Dispense/Point of Sale
• Prescriptions
• Reports
• Settings (users, suppliers, etc.)

8. Security & Compliance

• Encrypted passwords
• Privileged actions require OTP or admin approval
• System logs
• Data backup/restore

9. KEMSA Product List (Paste Here)

```
[PASTE THE FULL KEMSA LIST HERE]
```

10. Developer Notes

• Keep code modular and extensible

- Follow naming conventions
- Ensure seeders for categories & roles
- Optimize for speed (indexing & caching)

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11. Future Enhancements

- Mobile App
- QR/Barcode scanning
- Integration with hospital EMRs
- AI-driven reorder suggestions

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12. License

Internal development documentation — shareable within the dev team.

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