Concept Note:

Project Title:

CPRMS Display+: A Modular Smart Display System

Problem Statement:

Wenlock Hospital currently faces fragmented communication across departments like Cardiology, OT, and Pharmacy. Despite having 73 display screens and a drug inventory system, there's no unified platform to manage OT schedules, display real-time updates, or broadcast emergency alerts.

Proposed Solution:

I propose a " CPRMS Display+: A Modular Smart Display System, seamlessly integrating key hospital functions through a centralized cloud-based platform. The system includes:

1. Digital Token & Queue Management
    - Patient registers at the central kiosk and selects the desired department.
    - A unique token ID (e.g., G-1) is auto-generated and sent via SMS, replacing physical slips.
    - At departments, staff digitally mark patient arrival, feeding them into a real-time FIFO queue.
    - Digital displays show live queue status, reducing physical congestion.
2. Digital Prescription & Pharmacy Integration
    - Doctors issue e-prescriptions, assigned a unique Prescription ID.
    - Patients receive the prescription via SMS or WhatsApp (PDF/image format).
    - The pharmacy system fetches prescriptions using the ID, scans QR-tagged drugs, and checks real-time inventory.
    - Patients are instantly notified of stock availability or alternatives.
    - Inventory is updated automatically upon dispensing.
3. Real-Time OT Scheduling
    - Doctors log in using biometrics or facial recognition, confirming availability.
    - The OT scheduler checks for:
        - Doctor presence
        - OT room availability
        - Existing bookings

- A conflict-free OT schedule is created dynamically.

4. Emergency Alert Broadcast
   - Authorized personnel can trigger Code Blue / Code Red alerts from the system.
   - Alerts are instantly broadcast on all hospital digital displays.
5. Backend Cloud & AI Analytics
   - All systems — tokens, prescriptions, inventory, OT — are cloud-synced.
   - AI modules analyze:
     - Drug demand forecasts
     - Queue congestion detection
     - Doctor-patient load balancing
     - Schedule optimization

Technology Stack

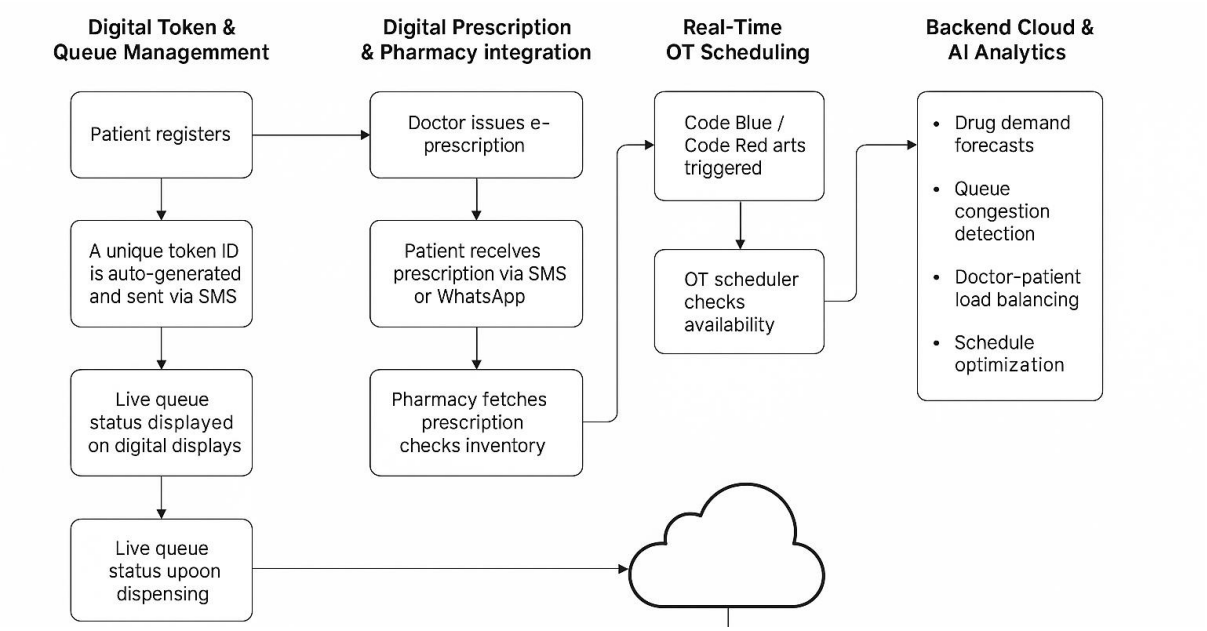
- Frontend: React.js with Tailwind CSS
- Backend: Flask/Node.js APIs
- Database: Firebase Realtime DB or MongoDB Atlas
- AI/ML: Python-based modules for queue prediction, stock forecasting
- Messaging: Twilio API / WhatsApp Cloud API
- Biometrics: Aadhaar API or Facial Recognition SDK
- Hosting: Render / AWS / Azure Cloud

Expected Impact:

- 60–80% reduction in patient wait time through dynamic token management
- 100% paperless prescription workflow, improving patient safety
- Real-time pharmacy inventory, avoiding stock-outs and manual errors
- Improved OT utilization through dynamic scheduling
- Enhanced transparency with live doctor availability and emergency alerts

Conclusion:

This smart, interconnected hospital system ensures a holistic transformation of patient experience and operational efficiency, turning a traditionally reactive hospital model into a proactive, responsive, and intelligent healthcare ecosystem.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