MumbaiHacks 2025 - Healthtech Project Ideas

Problem Statement 1 – Predictive Hospital Management (Festivals, Pollution, Epidemics)

Problem Being Solved:
Indian hospitals face sudden surges in patients during major festivals (Diwali, Holi, Ganesh Chaturthi), pollution spikes (winter smog, crop burning), or epidemics. This causes overcrowding, shortage of staff, medical supplies, and longer wait times.

Solution Overview:
An AI-powered web platform that integrates festival calendars, pollution/weather data, epidemic alerts, and hospital records to forecast patient surges. It recommends optimal staffing schedules, supply orders (e.g., oxygen, medicines), and patient advisories. The agentic AI updates plans in real time, making hospitals proactive rather than reactive.

Technology Stack:
- Backend: Python (Flask/Django)
- Frontend: React.js/Vue.js
- Database: PostgreSQL
- AI/ML: scikit-learn, TensorFlow, or PyTorch

Data Sources:
- Festival calendar
- Weather and Air Quality APIs
- Historical hospital admission records
- Epidemic/disease outbreak alerts

Impact:
Helps hospitals prepare in advance, reduces overcrowding and wait times, ensures supplies and staff availability, and improves patient care quality. Fills the gap of reactive planning with proactive, AI-driven forecasting.

Problem Statement 2 – SmartQueueAI (Virtual Queue & Predictive Scheduling)

Problem Being Solved:
Hospitals in India, especially OPDs, suffer from long patient wait times and overcrowding. Current queue management is mostly manual, leading to inefficiency and patient dissatisfaction.

Solution Overview:
A web-based AI system that enables patients to book appointments and join a virtual queue. AI predicts wait times, manages real-time scheduling, and sends updates to patients (e.g., “Your turn in 20 minutes”). If overcrowding occurs, the system suggests rescheduling, tele-consultation, or nearby clinics. The agentic AI acts autonomously to reduce delays and balance load.

Technology Stack:
- Backend: Node.js/Django
- Frontend: React/Angular
- Database: MongoDB/PostgreSQL

- AI/ML: Python (Random Forests, Regression models)

Data Sources:
- Hospital appointment & patient flow data
- Historical no-show and wait-time patterns

Impact:
Reduces wait times and patient anxiety, optimizes doctor utilization, cuts down no-shows (20–30%), and improves hospital efficiency. Fills the gap of real-time, AI-driven patient flow management in India’s healthcare system.