

T\$O 2025 - GenAI Hackathon

Team Name: **Volrex**

Team Captain: **Aaditya Panigrahi**

PROBLEM STATEMENT: In India healthcare system is divided and decentralized. People often move from one place to another place for work, education, travel or treatments. But the health data doesn't relocate. Patients and doctors face language barriers and doctor lack access to the medical history. This often leads to repeated tests, misdiagnosis and poor patient experience. Many hospitals in India lack DBMS or rely on outdated DBMS. This results in poor coordination among doctor nurse and patients. When the communication is inefficient, data is lost care becomes reactive. So, we introduce a centralized system to bring coordination within and among Hospitals that can solve the above-mentioned problems ensuring smooth and efficient and safe healthcare experience.

TARGET AUDIENCE: Our solution targets patients, doctors, nurses and hospital administrators. In the India's context of multilingual and mobile population, patients change their healthcare providers frequently. Doctors face documentation overload and lack access to the patient's medical history. As one ages – It becomes difficult to remember everything as well. Our solution fills the communication barrier and unifies the data management introducing a centralized healthcare system. Gen AI helps in summarizing the test results in a patient understandable way, Translation, acts as a chat bot. The solution empowers all the stakeholders by bridging patients with providers and streamlining the records – in urban semiurban and rural areas.

GenAI USECASE: GenAI enhances every bit of this ecosystem. GPT/Gemini etc APIs can be used in summarizing the complex medical reports and translations. It will give patient friendly insights. GenAI chatbot will assist in the general queries and for mental health. AI based prediction of the disease based on the symptoms helps in predictive healthcare. AI will give weather-based health alerts. GenAI not reduces the cognitive load on patients. It is the ideal choice for Indian Environment.

SOLUTION: We propose MedSync a GenAI powered web app which serves as an ecosystem serving both patients and doctors. It is a database with GenAI capabilities with amazing features. It ensures clarity and accessibility.

Features:

1. **Multi-hospital Integration** and **secure data transfer**
2. **Role Based Access** for patient, nurses, doctors and admin
2. **Healthcare record database:** has all the patient and provider data with test reports, prescriptions, diagnosis details.
3. **Doctor speaks and AI transcribes:** *Diagnosis and Prescription voice typing*
4. Using **OCR to extract text from reports**
5. Patient friendly **Report Summaries and Translation** – GenAI APIs
6. **GenAI powered Chatbot** for disease prediction based on symptoms, providing therapy suggestions, acting as a Mental Health Support
7. It will **link the family members health records:** making it easy for **Genetic Analysis**
8. **Weather Based Health Suggestions** – Using location and weather API with GenAI

Everyone has to sign up on the web. Based on their role features with dashboards will be enabled. This will improve the healthcare delivery overall.

FEASIBILITY AND EXECUTION: The system can be built using python (Flask or Django), for UI react/flutter. We'll be using Firebase authentication and database. Whisper, Gemini APIs, OCR libraries (Tesseract/EasyOCR), OpenWeatherAPI will handle the GenAI features. Translation APIs handle the translation. Data is securely stored in PostgreSQL with access control. All the stakeholders have to create an account. Role Based Dashboard for efficient work. We'll start with building outpatient workflow suitable model slowly scaling it to inpatient care, mental health and telemedicine.

SCALABILITY AND IMPACT: This platform is scalable across geographies. It'll start from urban and semi urban and slowly into the rural areas. It's multilingual capabilities and AI models will fill the communication and info barrier. The features in it make it inclusive for users irrespective of their literacy levels. By integrating it with government databases and insurance platforms will enhance its effect and amplify the impact. It reduces the documentation workload by large extent. We strongly believe, In the future it will redefine the healthcare

CONCLUSION: We are building an intelligent patient centric but staff friendly health platform powered by GenAI to centralize indian healthcare. It supports multilingual communication, voice transcription, text extraction, Report summarizer etc digitizing the workflow to the highest level. Even as a MVP it helps in connecting patient and provider better securely. It's not just a tool but a healthcare companion designed to transform Indian Healthcare.