SMART INDIA HACKATHON 2025

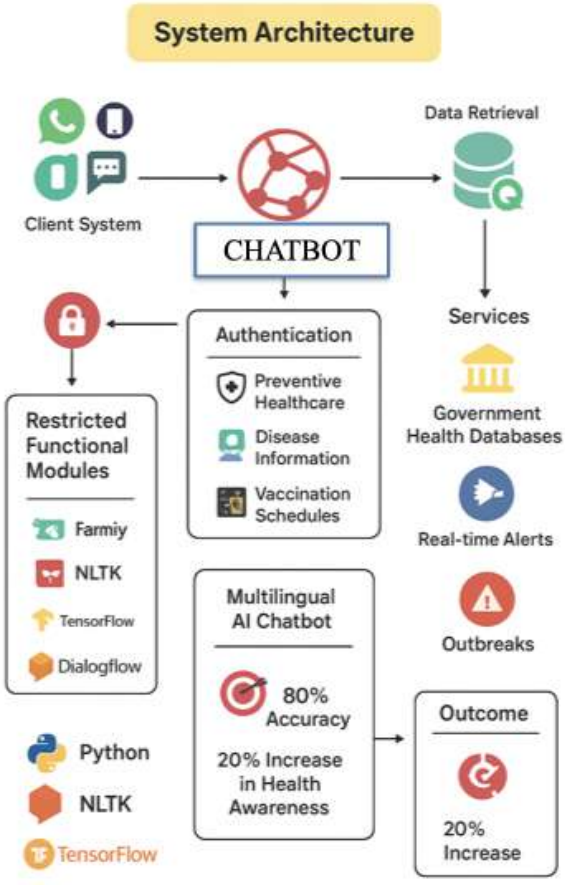
AAROGYA SARTHI

- Problem Statement ID- **SIH25049**
- Problem Statement Title-**AI-Driven Public Health Chat bot for Disease Awareness**
- Theme- **Med Tech / BioTech / Health Tech**
- PS Category- **Software**
- Team ID-
- Team Name - **(Aarogya Sarthi)**

Aarogya Sarthi

❖ Proposed Solution

- **Aarogya Sarthi** is an "AI-driven multilingual chat bot" designed to spread preventive healthcare awareness, disease information, and vaccination schedules among rural and semi-urban populations.
- 🌍 **Multilingual Access** – Breaks language barriers by supporting regional languages for rural & semi-urban populations.
- 📱 **Accessible via WhatsApp/SMS** – No need for high-end smartphones or apps; works on existing platforms people already use.
- 🩺 **Preventive Healthcare Focus** – Spreads awareness about hygiene, nutrition, vaccination schedules, and early detection of diseases.
- 🤖 **AI-Powered**– NLP models handle queries conversationally, boosting trust and engagement.
- **User-Friendly-** The chat bot uses simple language, icon-based instructions (wherever possible), and can read out information for low-literacy users.
- 🗣️ **Localized + Personalized Health Education** – Not just translation; adapts to local culture, literacy levels, and context.
- 🚑 **Real-Time Outbreak Alerts** – Pushes verified alerts in local languages directly to communities.
- 🤝 **Bridge Between Citizens & Health Services** – Guides users to visit nearest vaccination centers, PHCs, and health camps time to time.



TECHNICAL APPROACH

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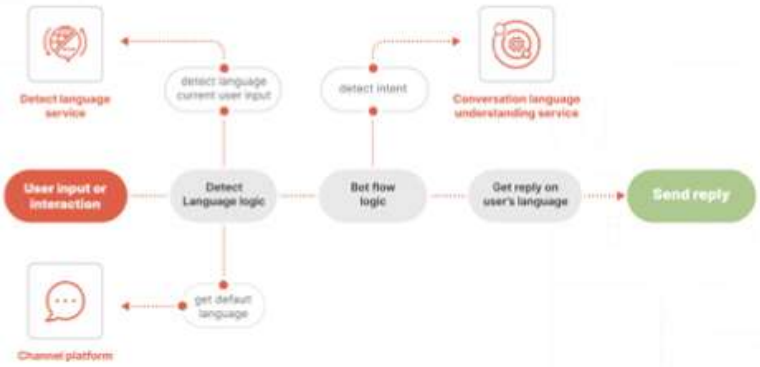
- **AI/ML Model:-**Python, TensorFlow, GPT-5 model
- **Backend API:-**Node.js, Python, Java
- **Messaging:-**Twilio, WhatsApp Cloud API
- **Frontend:-**React, HTML, CSS
- **Database:-**SQL (PostgreSQL/MySQL), MongoDB
- **Integration:-**RESTful APIs, Ngrok
- **Translation:-**Google/Microsoft/Azure APIs
- **Cloud & Infra:-**AWS, Azure, E2E Cloud
- **Security:-**HIPAA, MeitY tools

Implementation of chat bot



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FEASIBILITY

- **Technical Feasibility:** AI-powered chat bot works on WhatsApp, SMS, and Web platforms; easy to deploy with existing APIs.
- **Operational Feasibility:** Multilingual support ensures accessibility in rural and semi-urban areas.
- **Financial Viability:** Low-cost setup with cloud services; scalable through partnerships with government and NGOs.
- **User Adoption:** Simple interface designed for low digital literacy users; offline support via SMS/USSD.
- **Impact Potential:** Can improve awareness, early disease detection, and preventive care at the community level

USE CASES

- Symptom checker & Virtual Consultation
- Automated Vaccination reminders
- Real-time Outbreak alerts
- Preventive health education

BUSINESS POTENTIAL

- Partnerships with Govt. health programs & NGOs
- Subscription model for private clinics & hospitals
- CSR adoption by corporates for rural health outreach
- Scalable across India & developing countries

CHALLENGES

- Digital literacy gap
- Data privacy & security
- Low network access
- Building trust in AI

KEY OUTCOMES

Aarogya Sarthi - empowers communities with verified health information, early disease detection, and timely vaccination reminders. It reduces misinformation while providing accessible healthcare guidance in local languages.

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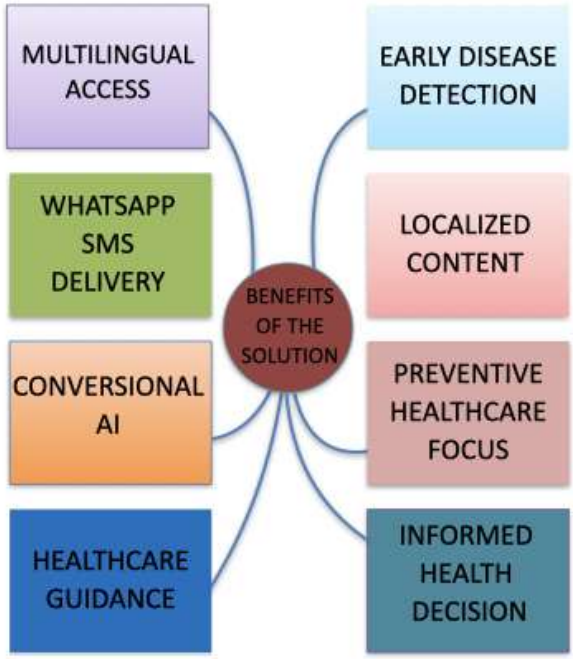
Potential Impact on the Target Audience

1. **Increased Health Awareness**
   - Rural & semi-urban populations gain reliable knowledge on hygiene, nutrition, vaccination, and preventive practices.
2. **Bridging the Digital Divide**
   - Even people without smartphones or apps can access health guidance through SMS and WhatsApp.
3. **Reduced Language Barriers**
   - Communities understand health information in their **own language/dialect**, leading to better comprehension and adoption.
4. **Early Detection of Illness**
   - Awareness of disease symptoms helps people seek medical care earlier, preventing complications.
5. **Improved Vaccination Coverage**
   - Timely reminders and schedules increase immunization rates, protecting children and adults from preventable diseases.
6. **Community-Level Protection**
   - Real-time outbreak alerts in local languages help communities take immediate precautions, reducing spread.
7. **Stronger Connection to Health Services**
   - Guidance to the nearest PHC, health camp, or vaccination center ensures better access to care.



RESEARCH AND REFERENCES

LINKS OF RESEARCH WORK

- **AI-powered chat bots can promote health awareness and deliver preventive healthcare, as shown in systematic reviews** https://pmc.ncbi.nlm.nih.gov/articles/PMC10007007/
- **Chat bots ensure accessible medical consultation and health awareness for rural communities** https://ijrpr.com/uploads/V6ISSUE5/IJRPR44962.pdf
- **WhatsApp is an effective channel for spreading health information, including vaccination schedules, in low-tech settings** https://pmc.ncbi.nlm.nih.gov/articles/PMC8173666/
- **Multilingual healthcare chat bots bridge language barriers for preventive medicine** https://www.moin.ai/en/chatbot-wiki/multilingual-chatbots
- **WhatsApp and SMS-based interactive health messaging boost vaccination and disease awareness** https://pubmed.ncbi.nlm.nih.gov/39412842/
- **Designing for local language and culture increases chat bot engagement and health education impact** https://masterofcode.com/blog/engaging-your-customer-with-a-multilingual-chatbot

Key References for Slide

- AI Chat bot for Medical Consultation and Health Awareness (IJRPR)
- PMC Systematic Review: AI Chat bots for Promoting Health Behavior
- WhatsApp Messenger for Health Systems Research (PMC)
- Multilingual Chat bots in Healthcare – moinAI Case Study
- WhatsApp vs SMS for Health Follow-Ups (PubMed)
- MasterOfCode: Engaging With Multilingual Chat bot
- HelloTars Case Studies: Multilingual Healthcare Chatbot Deployments