



Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: Government of Kerala

PS Code: SIH1325

Problem Statement Title: AI Assisted Tele-medicine KIOSK for Rural India

Team Name: CodeCrafters

Team Leader Name: SAYAN BISWAS

Institute Code (AISHE): C-6175

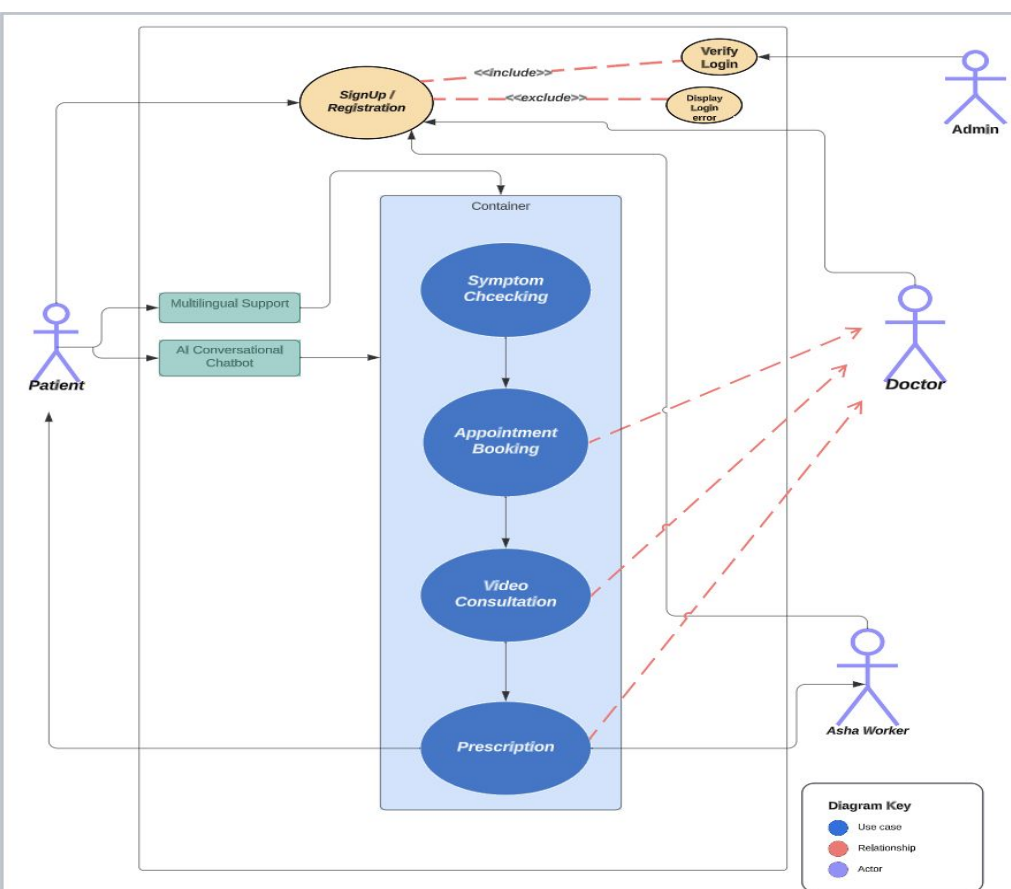
Institute Name: Dr Sudhir Chandra Sur Institute of Technology & Sports Complex

Theme Name: Agriculture, FoodTech & Rural Development

Idea/Approach Details

We're proposing a solution to this problem by creating a cross-platform **Tele-medicine** application which runs on **KIOSKS** in places devoid of smartphones and on any platform (**android/ios/web**). It will make healthcare accessible to people in **remote** and **rural areas**, which are often missed out by our **healthcare** system. The prototype will function as follows:

- It allows patients to reach out to a **KIOSK** nearby and effortlessly login using **biometrics** and explain their condition to a conversational **Artificial Intelligence (AI)** chatbot.
- People with low-literacy rate can use the **text-to-speech** or **IVR (Interactive Voice Response) Systems** to provide information regarding their condition to the chatbot
- The chatbot is made using **Large Language Models (LLMs)** which parses the patient's input and matches with the known symptoms
- Our **Machine Learning (ML)** model uses the provided symptoms to determine possible **diseases/illnesses** and display to the current patient
- The application will suggest possible doctors based on their specialties and the determined condition of the user using our doctor **recommendation algorithm** made using **Machine Learning (ML)**
- The application **protects user data** as the data is **end-to-end encrypted**
- Our application can be accessed even **offline** as our tele-medicine chatbots would be accessible via **SMS**



Technology Stack:



Idea/Approach Details

Describe your Use Cases here

- **Patient Registration:** A new Patient visits the Tele-medicine **KIOSK** and registers for the service by providing their mobile number, **fingerprint, Retina scan, Aadhar ID** (optional), username, email (optional), and **password** is provided by the system.
- **Patient Authentication:** A registered Patient visits the telemedicine **KIOSK** and authenticates themselves by providing their **fingerprint**.
- **Symptom Checking:** A registered Patient uses the **tele-medicine KIOSK** to check their symptoms by answering questions from a chatbot. The chatbot uses **Large Language Models (LLMs)** to parse the Patient's symptoms into bits which match the **disease dataset** and determine some of the possible illnesses or issues the Patient might have.
- **Appointment Booking:** A registered Patient books an **appointment** with a Doctor based on the suggested Doctors in speciality in those disease/illness.
- **Video Consultation:** A registered Patient has a video consultation with a Doctor. The Doctor can examine the Patient and ask them questions.
- **Prescription Generation:** The Doctor generates a **prescription** for the Patient. The prescription is sent to the Patient's phone via **SMS** and to the **Asha Workers** phone via **SMS**.
- **Medicine Delivery:** The **Asha Worker** delivers the Patient's medicines to them.

Describe your Dependencies / Show stopper here

- The application will have **real-time audio/video conferencing** to allow patients to consult with their appointed doctor effortlessly and provide them more context about their condition.
- The application will support **32 different languages**, including all regional indian languages for seamless interaction irrespective of the patients background.
- The application would make use of **multi-language speech transcription** to help patients with issues in textual communication.
- The application would allow users to request **emergency** medical assistance. This could trigger **alerts** to nearby **healthcare** providers or emergency services.
- The application uses **blockchain technology** to secure doctors and patients data across the system
- The application makes use of **Large Language Models (LLMs)** like **LLaMA** from **Meta** and **GPT 3.5/GPT-4** from **OpenAI** for analysis of the patient symptoms and diseases
- The patients can be redirected to **e-Sanjeevani** app for further consultation of doctors
- The application will provide **educational content** on common health issues, hygiene, and preventive care through the KIOSK. It will use **interactive visuals** and videos to engage users.
- Our app not only offers **digital literacy** but also boasts a **user-friendly interface**, all while actively promoting **health education**.
- The software will have a **feedback system** to gather input from users and **healthcare providers**, allowing for **continuous improvement** and gives **empowerment** the users with **governmental services**.

Team Member Details

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Team Mentor 1 Name: MADHUSMITA MISHRA

Category : Academic Expertise : ML Domain Experience : 15