



MED-SYNC

**DEVELOPING A UNIFIED PATIENT
TREATMENT PLATFORM FOR
HEALTHCARE ADVANCEMENT**

IEEE IC HACK 2.0
TRACK: HEALTHCARE

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Problem Statement

The challenge before you is to imagine and create an innovative UPTP that takes patient data management and healthcare collaboration to unprecedented levels. This UPTP should not merely integrate data but should introduce groundbreaking features and capabilities, setting new standards in healthcare delivery and patient empowerment.



Project Overview

Our user-centric healthcare platform streamlines patient care and data management. For doctors, it provides efficient management of patient data, prescriptions, and lab reports. Patients benefit from appointment scheduling, real-time health monitoring, and an interactive healthcare chatbot. Robust user authentication ensures data security, while static pages offer essential information and quick assistance. Our tech stack includes Flask for web development, Firebase for data storage, and IoT devices for real-time health data. A cross-platform Flutter app makes the system easily accessible. Our objective is to elevate patient care, empower individuals, and redefine healthcare standards.



Our Solution



Interactive web page for login usages



Flask library for simple yet seamless flow of webpage



Firebase real-time database

Healthcare Ecosystem

Frontend Features:

Dashboard:

For Doctors:

- Manage patient data, prescriptions, and lab reports.
- View patient profiles and medical history.
- Create and send new prescriptions.

User Authentication:

- Secure login for patients and doctors.
- Registration for new users.
- Log-out option.



For Patients:

- Schedule and reschedule appointments.
- Monitor live health data and predictive trends.
- Interact with a healthcare chatbot.



Static Pages:

- Homepage for general information.
- "About Us" to learn about the organization.
- "Contact Us" for support.
- Small chatbot for quick assistance.

Healthcare Ecosystem

Backend Features:

Flask Web Development:

- Utilizes Flask for web development.
- Integrated chatbot for patient interaction.



Firebase Database:

- Secure storage for patient and healthcare data.

IoT Integration:

- Captures and transmits real-time patient health data.



Flutter App:

- Cross-platform interface for easy access to healthcare features.

THE END USERS?

Benefits for Doctors:

- Efficient patient data management.
- Real-time data for informed decision-making.
- Streamlined appointment processes.
- Enhanced patient communication.

Benefits for Patients:

- Active participation in healthcare.
- Convenient access to healthcare services.
- Insights into live health data.
- Quick chatbot assistance.

User-Friendly Interface:

- Accessible through a cross-platform Flutter app.



Key Features

Features of MedSync under Current Scope of Development

- **Patient Portfolio:** Efficiently manage comprehensive patient information in one unified platform.
- **Medical Record History:** Safely store and access patient medical records, diagnoses, and prescriptions.
- **Unified Patient Treatment Platform:** Enable seamless patient data exchange among healthcare professionals, enhancing collaboration.
- **Health Data Integration:** Integrate data from multiple sources for personalized care and a holistic view of patient health.
- **Health Appointment Booking:** Simplify online appointment scheduling, improving the patient experience.



Business Model

Revenue Streams:

- Subscription Model:** Offer subscription plans for healthcare providers with varying features and capabilities.
- IoT Device Sales:** Generate revenue through the sale of our proprietary IoT devices.
- Data Analytics Services:** Provide data analytics services to healthcare institutions for trend analysis and insights.
- Enhanced Features:** Offer enhanced features for patients and doctors, such as telemedicine consultations.

Value Proposition:

Comprehensive Healthcare Ecosystem:

Our platform offers doctors and patients an all-in-one solution for healthcare management and patient empowerment.

- IoT Integration:** The IoT device enhances patient monitoring, providing real-time data to healthcare providers for more informed decisions.
- Data Security:** Data security and privacy measures instill confidence in users.

Business Model

Customer Segments:

- Healthcare Providers:** Hospitals, clinics, and individual doctors seeking a streamlined patient management solution.
- Patients:** Individuals looking for active participation in their healthcare and real-time monitoring.
- IoT Device Manufacturers:** Companies interested in integrating their devices into our platform.

Key Partnerships:

- Healthcare Providers:** Collaborate with hospitals, clinics, and individual healthcare practitioners to expand our user base.
- IoT Device Manufacturers:** Partner with IoT device manufacturers to integrate more sensors and devices into our ecosystem.

Channels:

- Online Platforms:** Utilize web and mobile apps as the primary channels for users.
- Sales and Marketing Teams:** Engage with healthcare providers and IoT manufacturers through direct sales and marketing efforts.

Impact

Improved Patient Care:

- Faster access to patient data for immediate healthcare responses.
- Personalized treatment plans based on patient history and real-time data.

Operational Efficiency:

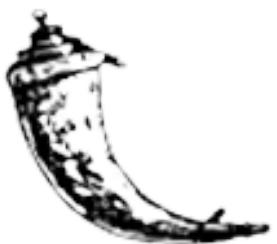
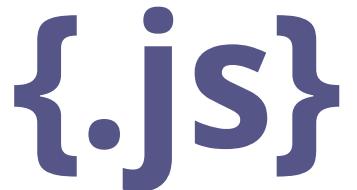
- Streamlined administrative tasks, focusing on patient care.
- Reduced paperwork and data duplication, saving time and resources.

Interoperability:

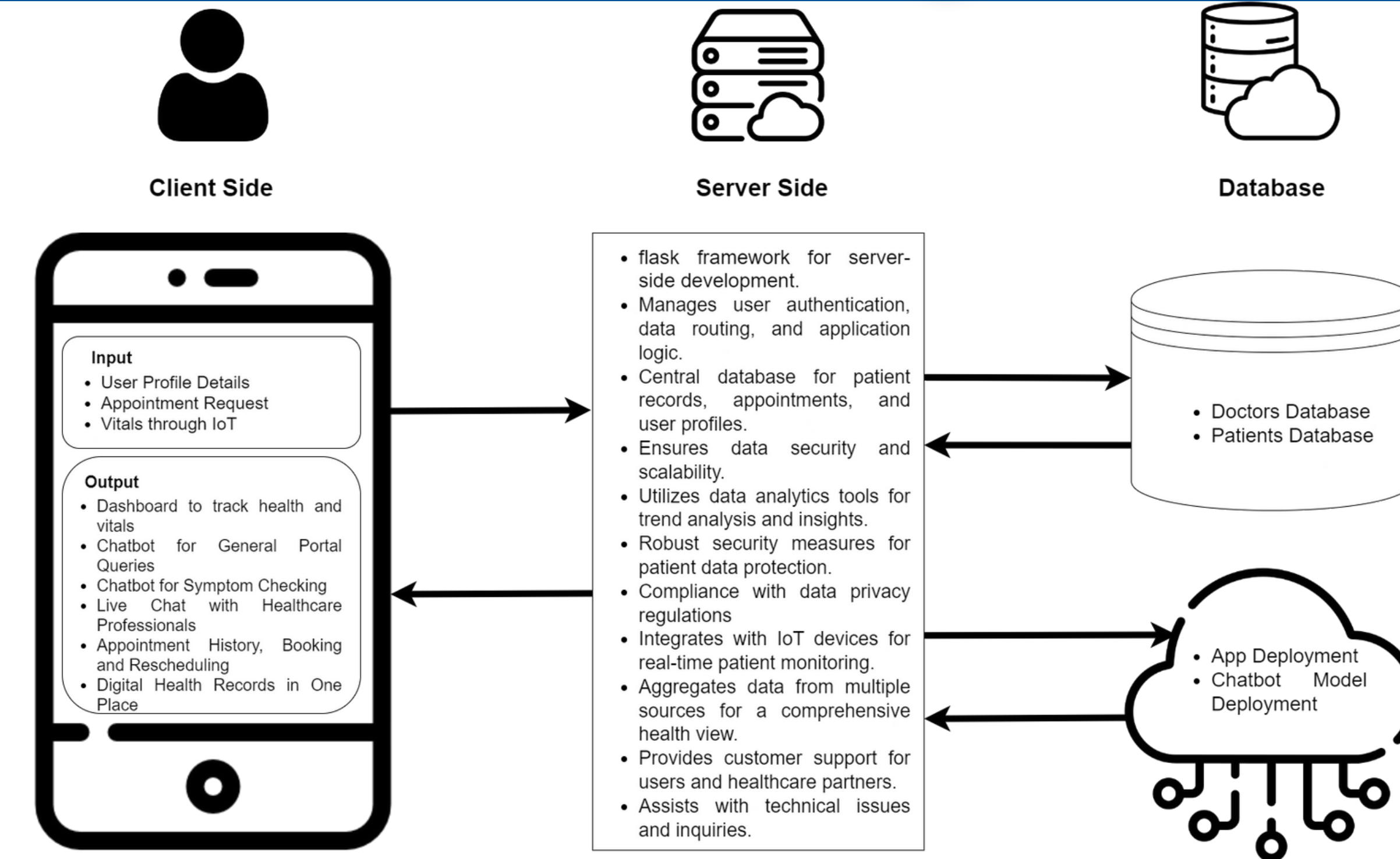
- Seamless data exchange among healthcare stakeholders.
- Better coordination of care, reducing medical errors and improving patient safety.



Technologies Used

**HTML****Python****CSS****Firebase****Flask****{.js}****BootStrap****Flutter**

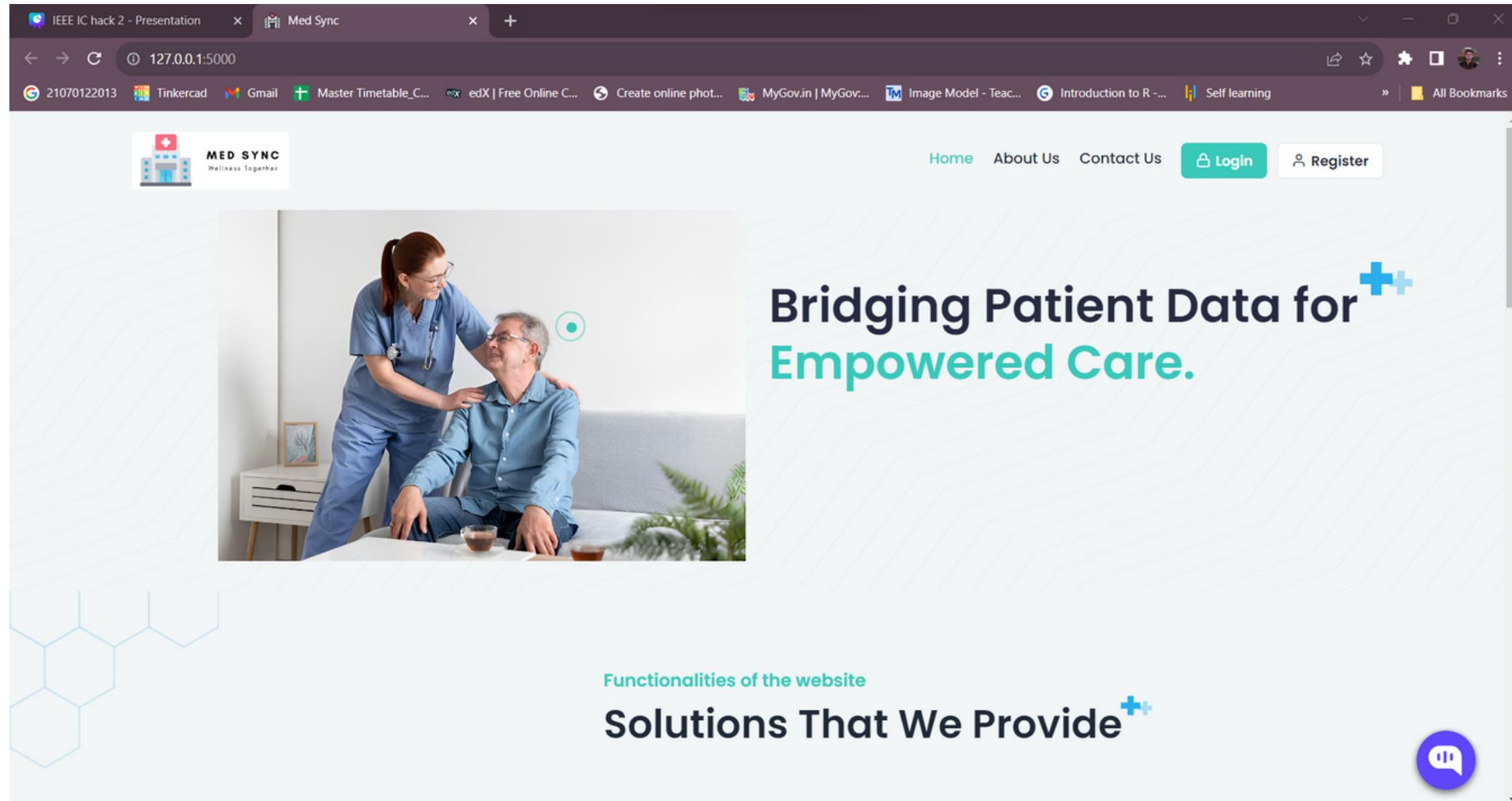
Block Diagram



Results

Currently, we have a website where we can perform all the functions.

The website :



Results

Currently, we have a website where we can perform all the functions.

The website :

Patient Dashboard

Appointment

Book Reschedule History

Patient Records

Prescriptions Lab Reports Inpatient Records

Symptoms Chatbot

Understand your Symptoms

Live Vitals

Realtime Vitals

Heart Rate

74 bpm

Ideal [60 to 100 bpm]

Manually Record Value See Trendline

SpO2

0.08%

Ideal [95% or higher]

Manually Record Value See Trendline

Temperature

0.82 °C

Ideal [36.1°C to 37.2°C]

Manually Record Value See Trendline

BP

130/80 mmHg

Ideal [90/60mmHg to 120/80mmHg]

Manually Record Value

Respiration Rate

Normal

Check Realtime Value

Height

180 cm

Manually Record Value See Trendline

Weight

75 kg

Manually Record Value See Trendline

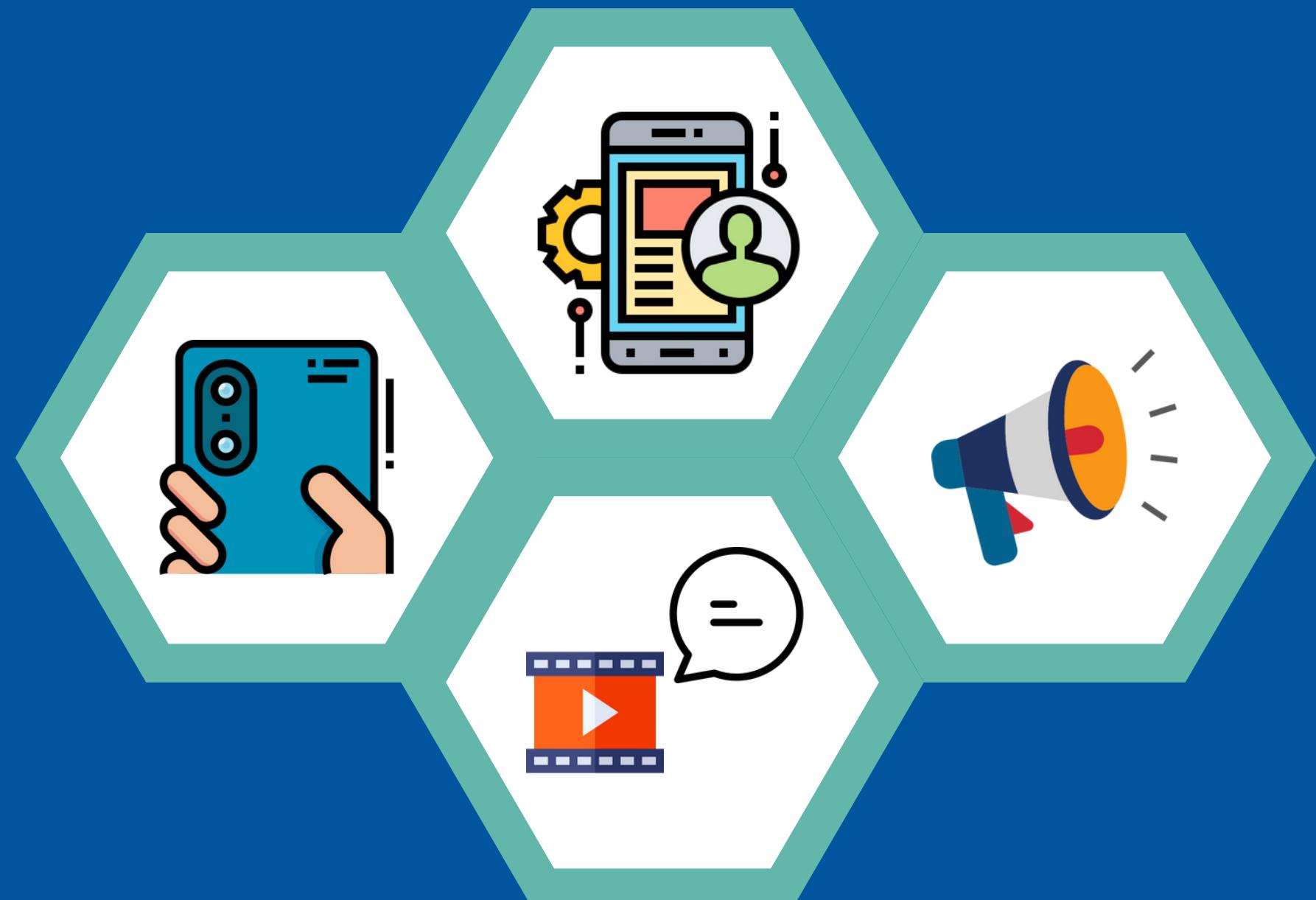
BMI

23.1

Ideal [18.5 to 24.9]

See Trendline

Future Scope



- **Mobile App Enhancements:** Improve the Flutter app with features like medication reminders and health tracking.
- **Population Health Management:** Introduce tools for health trend analysis and public health initiatives.
- **Specialized Care:** Expand capabilities for fields like mental health and chronic disease management.

Our Team

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**THANK
YOU**