Problem Chosen: Smart Health Solutions for Solapur Municipal Corporation

Problem Definition – Solapur Smart Healthcare, Emergency Analysis & Appointment Booking System

Design a **smart, centralized healthcare platform** for **Solapur city** that enables **fast, reliable, and efficient access to medical services** to handle increasing patient demand while **ensuring timely emergency response and quality healthcare delivery**. The system must address the **absence of a unified citywide healthcare platform**, where hospitals currently operate **independently without real-time visibility of crowd levels, bed availability, or emergency capacity**, leading to **delays, overcrowding, and ineffective emergency management**.

The platform should **analyze patient symptoms to determine urgency**, **display real-time hospital crowd status and resource availability**, and **recommend the most suitable hospital during emergencies** to reduce response time and improve patient outcomes. It should also **enable fast and seamless appointment booking across multiple hospitals** through a **single digital interface**.

The system must be **cost-effective, scalable, and secure**, capable of operating under **limited internet connectivity**, and designed for **easy operation by nontechnical users**. Additionally, it should **improve coordination between hospitals**, **optimize patient flow**, and **enhance overall healthcare accessibility and service quality across Solapur city**, while requiring **minimal operational complexity and maintenance**.

Objectives **Functions** **Constraints**

Problem context

In Solapur, patients struggle to access timely medical care due to the lack of a centralized healthcare system. Hospitals work in isolation without real-time updates on crowding, availability, or emergency capacity, causing delays, overcrowding, and inefficient treatment during critical situations.

Objectives

1. Provide a centralized city-wide healthcare platform for Solapur. 2. Analyse patient urgency to support emergency decision-making. 3. Display hospital availability and crowd status in real time. 4. Enable fast and efficient appointment booking across hospitals. 5. Improve emergency response time and overall healthcare accessibility.

Constraints

1. System must operate within limited internet connectivity scenarios. 2. Should support multiple hospitals with varying capacities. 3. Must be cost-effective and scalable for city-level deployment. 4. Data security and privacy must be maintained for patient information. 5. Interface should be simple for non-technical users.

Functions

1. Collect patient symptoms and determine urgency level. 2. Display real-time hospital crowd/traffic status. 3. Recommend the best suitable hospital based on urgency and availability. 4. Allow users to book doctor appointments across hospitals. 5. Update appointment slots dynamically to prevent overcrowding.

Early-Stage Solution Architecture

Problem Chosen: Smart Health Solutions for Solapur Municipal Corporation

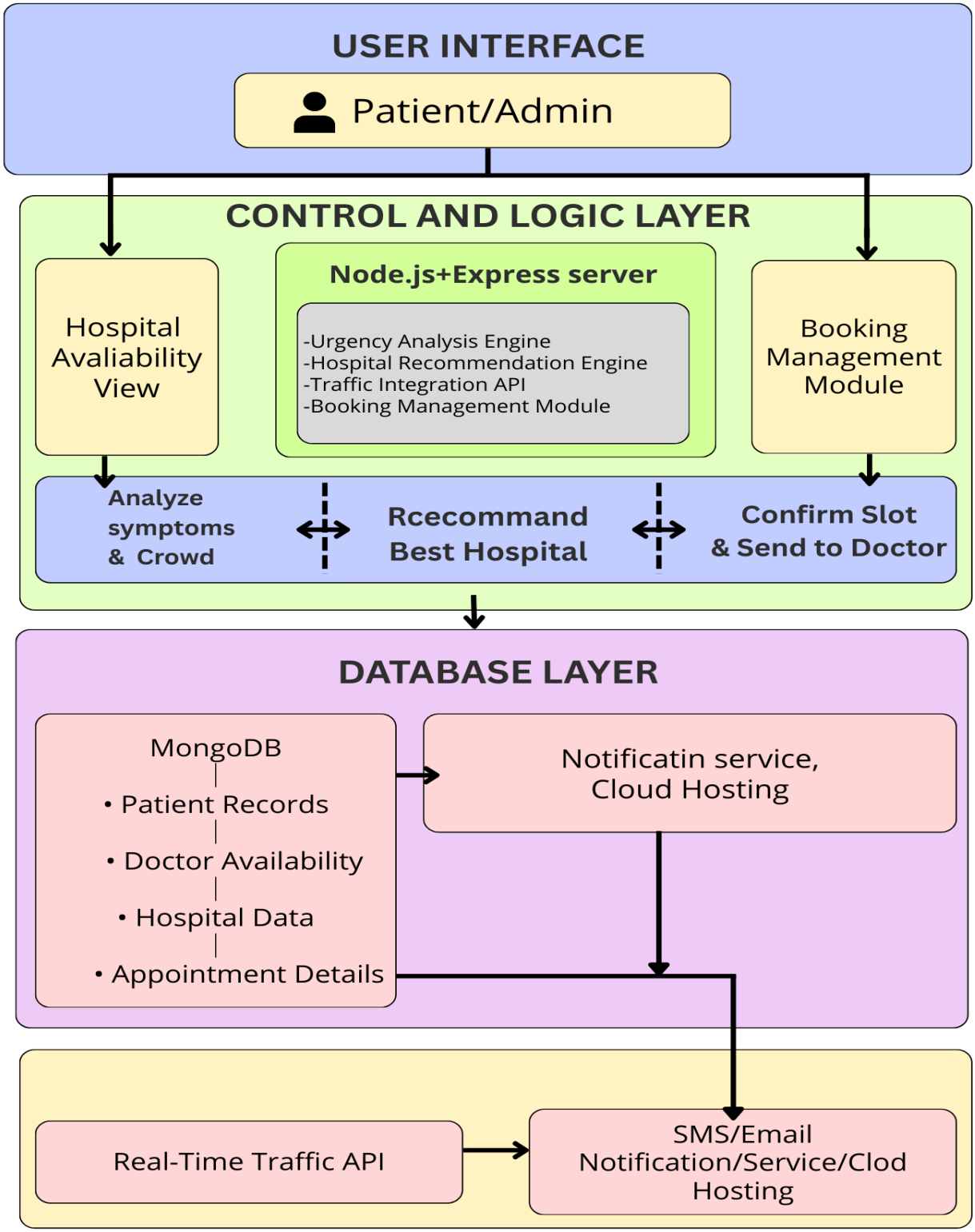
List of subsystems

Sl.No	Subsystem Name	Functionality
1.	User Interface (Frontend)	Allows users to view hospitals, enter symptoms, and book appointments
2.	Authentication System	Manages user login, registration, and secure access
3.	Emergency & Urgency Analysis	Analyzes patient symptoms and determines urgency level
4.	Hospital Management System	Manages hospital details, crowd status, and availability
5.	Appointment Booking System	Handles doctor selection, slot booking, and confirmations

Subsystems Interaction matrix

Subsystem	User Interface	Authentication	Emergency Analysis	Hospital & Booking
User Interface	-	**Sends login details**	**Sends symptoms**	**Sends booking request**
Authentication	**Returns login status**	-	**Shares user identity**	**Authorizes booking**
Emergency Analysis	**Receives symptoms**	-	-	**Sends urgency level**
Hospital Management	**Shows hospitals & crowd**	-	**Receives urgency**	**Shares availability**
Appointment Booking	**Shows confirmation**	**Verifies user**	**Receives priority**	-

Architecture Diagram



Team Information					
Team name: HackHers			**Institute code:** EN06250		
Institute name: D Y Patil College of Engineering and Technology, Kolhapur					
City: Kolhapur			**State:** Maharashtra		
Mentor Details					
Mentor name: Mrs. Dhanashree Rohan Patil					
Contact number: 7776098959			**Email:** dhanashree.cpp@gmail.com		
Participant Details					
SN	**Participant name**	**Program**	**Sem**	**Contact number**	**Email**
1	Sakshi Indrajeet Kamble	CSE	IV	8446912642	sakshikambale007@gmail.com
2	Bhumika Rakeshkumar Bumb	CSE	IV	8446044930	bhumikabumb@gmail.com
3	Apurva Navnath Kadam	CSE	IV	7083807585	apurvakadam76@gmail.com
4	Suchita Sampat Shinde	CSE	IV	8862032385	suchitashinde198@gmail.com
5	Siddhi Sunil Patil	CSE	IV	7559343114	patilsiddhi3115@gmail.com

Note: The above details will be used for certificate generation. Please ensure accuracy.

Declaration

We hereby declare that the work titled **"Smart Health Solutions for Solapur Municipal Corporation"** submitted for **SAMVED-2026** is the original outcome of our team's efforts. The work has been carried out by us under the guidance of the undersigned mentor and **is neither copied from any source nor generated using artificial intelligence (AI) tools**.

Place: Kolhapur

Date: 11/02/2026

Team Leader Name:
Ms. Sakshi Indrajeet Kamble

Mentor Name:
Mrs. Dhanashree Rohan Patil