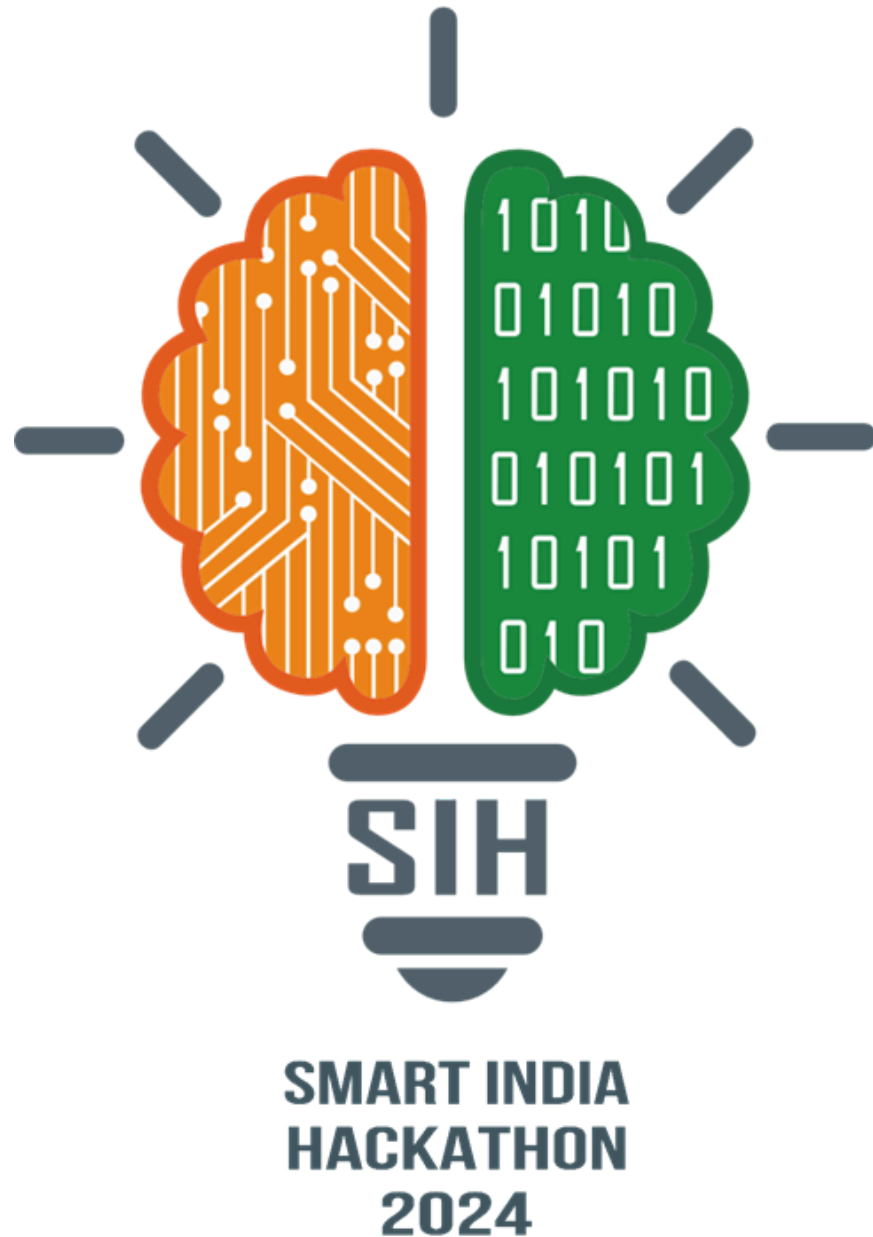


PROBLEM STATEMENT & TEAM DETAILS



Problem Statement -	1620
Problem Statement Title -	Queuing models in OPDs/ availability of beds/ admission of patients. A hospital based solution is ideal which can be integrated with city wide module
Theme -	MedTech / HealthTech / Biotech
PS Category -	Software
Team ID -	
Team Name -	Team Nirvachita's

IDEA/APPROACH DETAILS

PROPOSED SOLUTION

Problem Definition

Hospitals are complex organizations that handle a wide range of activities, In the absence of a unified system, hospitals face several challenges:

- Inefficient Data Management
- Resource Mismanagement
- Patient Care and Satisfaction

Patients Mobile Application

- User Login and Registration
- Access Hospital Details
- Check Bed Availability
- Request Bed
- Book Appointment
- View Profile
- View Medical History

Doctors Mobile Application

- Authentic Login
- Approve Appointments
- Allocate Bed
- Read Medical History
- Update Medical Data
- Generate Report

Admin Web Application

- Register Patients
- Approve appointments after verification
- Freeze Bed at Check-In
- Free the occupied bed at Check-out
- Allocate the bed according to queue
- Maintain Queue
- Manage Inventory

USPs OF THE PROJECT SOLUTION

- Centralized Database - Patients Medical History accessible at clicks
- Real Time Bed-Availability - Digitally the number of available bed can be retrieved
- Appointment Booking - Reduced waiting time for check ups
- Bed Availability Queue - Estimates waiting time for the bed
- Inventory Manage- Manages the stock of medicine
- Prioritizing Queue - Advanced Queueing Model for Bed allocation

KEY FEATURES



- **Real Time Queue Monitoring**
Get patient queue status and estimated wait times for each OPD department.



- **Appointment Slot Scheduling**
Allow patients to easily schedule appointments at their fingertips.



- **Bed Availability Status**
Get real-time tracking of reserved beds and occupancy rates in each department



- **Medical History**
It will store and analyze patients medical history and records.



- **City Wide Integration**
For ease of access a centralized database is maintained and coordinated



- **Patient Registration**
Allow patients to easily register using an user-friendly UI (application)

IDEA/ APPROACH DETAILS

TECHNOLOGY STACK

FRONT-END



BACK-END



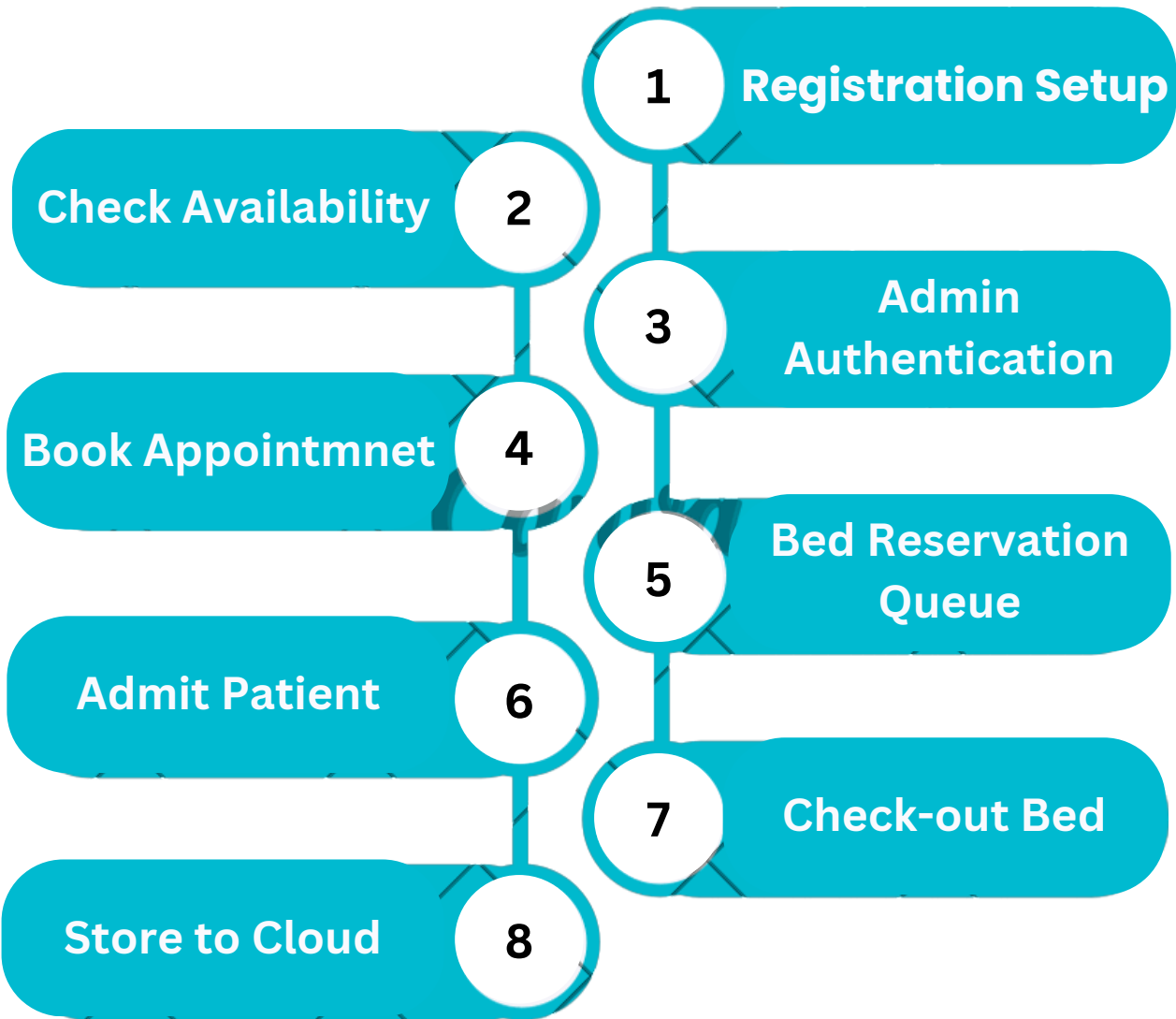
DATABASE



CLOUD

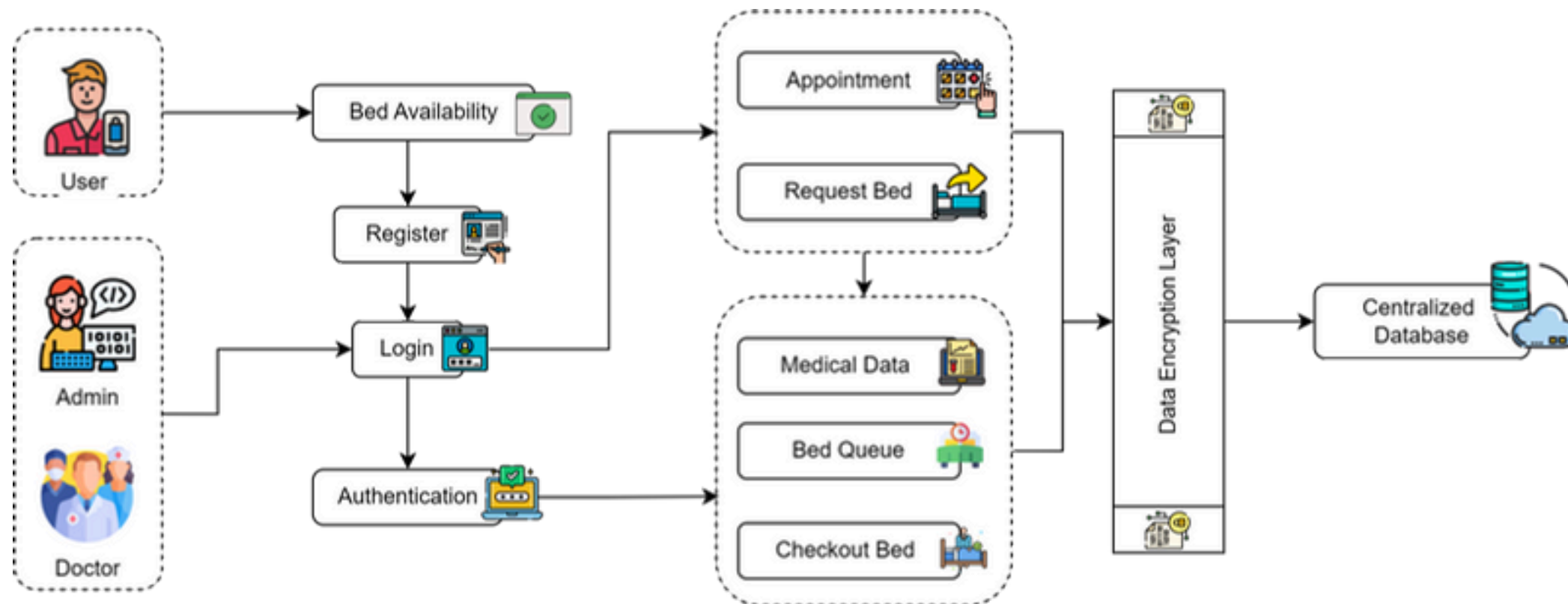


SYSTEM FLOW

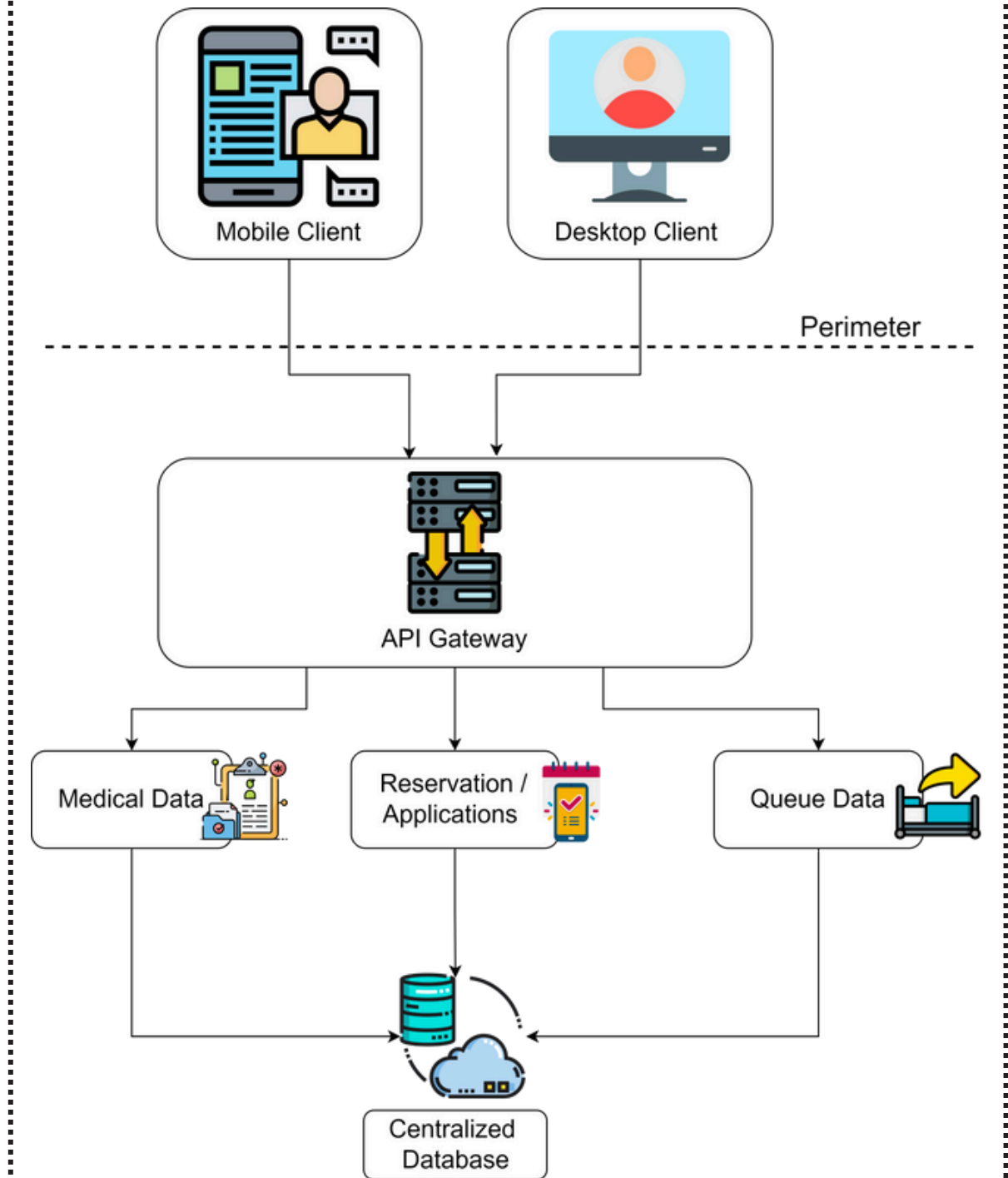


WORKING OF SYSTEM

USE-CASE DIAGRAM



SYSTEM ARCHITECTURE



FEASIBILITY/VIABILITY

FEASIBILITY

- This system can be **initially implemented for a individual hospital** and further can be scaled to network of hospitals throughout the city.

VIABILITY

- The modular design **allows refactoring** the system **to expand and adapt** according to hospital respectively.

AI GENERATED UI

Dashboard

Patient Queue

+ Add Patient

Patient	Appointment Time	Triage	Priority	Actions
<div>John Doe</div> <div>ID: 12345</div>	10:30 AM	Urgent	High	<div></div> <div></div>

Bed Availability

+ Add Bed

ICU Beds

12

Available

General Wards

45

Available

Emergency Beds

8

Available

Patient Admission

+ Admit Patient

Patient Name

Enter patient name

Patient ID

Enter patient ID

Bed Details

Patient Queue

John Doe

Estimated Wait: 45 min

Check In

Jane Smith

Estimated Wait: 1 hr

Check In

Michael Johnson

Estimated Wait: 30 min

Check In

Bed Availability

Inpatient Beds

45

Available

ICU Beds

12

Available

Emergency Beds

8

Available

Admissions

Sarah Lee

Admitted to Ward 3

Transfer

Discharge

Patient Details

Patient Queuing

Current Queue

Estimated wait time: 45 minutes

Check In

Your Position

You are 12th in line

Update

Bed Management

Available Beds

There are 25 available beds

Admit Patient

Bed Occupancy

75% of beds are currently occupied

Discharge Patient

City-wide Integration

Coordinated Patient Flow

Patients can be redirected to nearby hospitals with available beds

View City-wide Status

Shared Bed Availability

Real-time updates on bed availability across the city

Manage City-wide Beds

IMPACTS/BENEFITS

IMPACTS/BENEFITS

- Centralized Database – Patients Medical History accessible at clicks

TEAM DETAILS

- TEAM LEADER – KSHATRIYA SWAMI NARAYAN
- TEAM MEMBER 1 – KIKALE SHRAVANI NITIN
- TEAM MEMBER 2 – UKHALKAR SANMATI SUDHAKAR
- TEAM MEMBER 3 – DEORE VIJAY CHINTAMAN
- TEAM MEMBER 4 – DHAGE SANKET DNYANEHWAR
- TEAM MEMBER 5 – KADAM PRADNYA DNYANEHWAR

- MENTOR 1 – PROF. Y.S.PATIL
- MENTOR 2 –

