# Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: Ministry of Law and Justice
Government of NCT of Delhi IT Department, GNCTD

PS Code: SIH 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

Team Name: MediWave

Team Leader Name: Afzal Ahmed Siddiquie

Institute Code (AISHE): C-33880

Institute Name: Don Bosco Institute of Technology, Mumbai

Theme Name: MedTech / BioTech / HealthTech

# Idea/Approach Details

## Solution:

➢ **We propose a centralized web-based Hospital Management System (HMS) that optimizes patient flow, bed availability, admissions, and inventory management in healthcare facilities.**

➢ **Authorized personnel can enter, track, and manage OPD queues, bed assignments, and admissions in real-time.**

➢ **It features data analytics for generating reports on patient flow, bed usage, and resource allocation for better decision-making.**

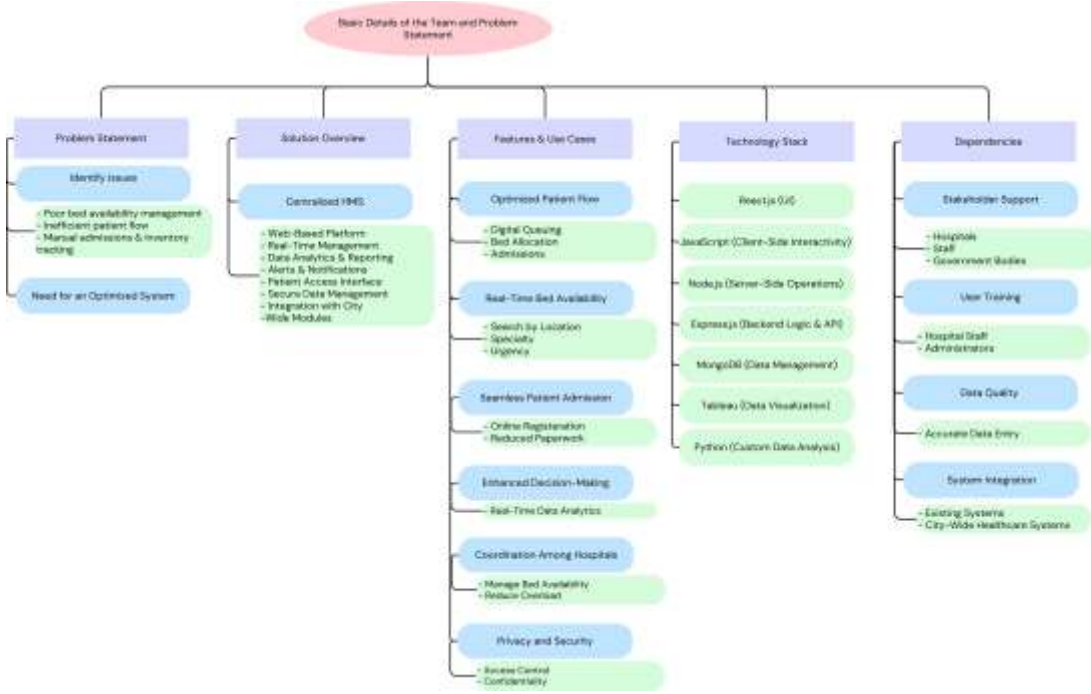
➢ **Alerts notify staff of upcoming appointments, admissions, discharges, and bed availability.**

➢ **Real-time data on bed availability ensures efficient resource utilization and coordination between hospitals.**

➢ **Patients can access an interface to check wait times, bed availability, and book appointments online.**

➢ **Patient data is securely managed, accessible only to authorized users, ensuring privacy.**

➢ **The system integrates with city-wide modules for a comprehensive view of resource availability and patient management.**



**Technology Stack:**

➢ **React.js**: For building a responsive and dynamic user interface (UI).

➢ **JavaScript**: Ensures client-side interactivity and enhances user experience.

➢ **Node.js**: Provides a powerful runtime environment for server-side operations.

➢ **Express.js**: A robust web framework for Node.js to handle the backend logic and API management.

➢ **MongoDB**: A NoSQL database used for storing and managing healthcare data efficiently.

➢ **Tableau**: Generates insightful data visualizations to enhance decision-making and reporting.

➢ **Python**: Used for custom data analysis, implementing advanced algorithms for healthcare insights.

# Idea/Approach Details

Describe your Use Cases here

**Technology Stack:**

- **Optimized Patient Flow:** Digitizes queuing, bed allocation, and admissions, saving time for patients and staff.
- **Real-Time Bed Availability:** Allows searching for available beds by location, specialty, and urgency to reduce wait times.
- **Seamless Patient Admission:** Facilitates online registration and admission, reducing paperwork for hospitals.
- **Enhanced Decision-Making:** Provides real-time data analytics for better resource allocation and facility management.
- **Coordination Among Hospitals:** Enhances communication between hospitals to manage bed availability and reduce overload.
- **Automated Notifications:** Sends alerts for appointments, admissions, and bed status to keep staff informed.
- **Privacy and Security:** Ensures sensitive patient records are accessible only to authorized users, maintaining confidentiality.

## Dependencies

- **Stakeholder Support:** Engagement from hospitals, staff, and government bodies is vital for implementation.
- **User Training:** Ensuring hospital staff and administrators are properly trained for effective system adoption.
- **Data Quality:** Accurate, high-quality data entry is critical for decision-making and analytics.
- **System Integration:** Seamless integration with existing hospital and city-wide healthcare systems for interoperability.

# Team Member Details

**Team Leader Name: Afzal Ahmed Siddiquie**
**Branch: BE Stream: IT Year: IV**

**Team Member 1 Name: Abhay Singh**

**Branch: BE Stream: IT Year: IV**

**Team Member 2 Name: Shriya Thakur**

Branch: BE Stream: IT Year: IV

**Team Member 3 Name: Shravani Shinde**

Branch: BE Stream: IT Year: IV

**Team Member 4 Name: Kainaat Zaidi**

Branch: BE Stream: IT Year: IV

**Team Member 5 Name: Nigel Silveira**

Branch: BE Stream: IT Year: IV

**Team Mentor 1 Name: Type Your Name Here**

Category (Academic/Industry): Expertise (AI/ML/Blockchain etc): Domain Experience (in years):

**Team Mentor 2 Name: Type Your Name Here**

Category (Academic/Industry): Expertise (AI/ML/Blockchain etc): Domain Experience (in years):