

Hospital Management System for The Mayo Clinic

1. **Project Task 1:** Identifying stakeholders – Create a list of stakeholders (as taught in Business Analysis Planning and Monitoring Knowledge Area)

➤ **STAKEHOLDERS**

#	Actor	What he can do on the Software Created
1	Patients	Primary users of the system, as they will use it for appointments, registration, and accessing medical records.
2	Doctors and Medical Staff	They need access to patient records, appointment schedules, and instructions for patient care.
3	Hospital Management	They require reports on revenue, expenses, bed occupancy, and other key metrics for decision-making.
4	Registration Staff	Involved in patient registration and assigning patient IDs.
5	Nurses and Ward Boys	They use the system for instructions on patient care and to view staff schedules.
6	Laboratory, Blood Bank, and Radiation Department Staff	They interact with the system for test requests, report uploads, and patient data.
7	Insurance Department	Manages insurance details for claim processing.
8	IT Department	Responsible for maintaining the system, ensuring its availability, and addressing errors.
9	Senior Management	Relies on reports generated by the system for strategic decision-making.

2. **Project Task 2:** Describe the proposed system's workflow.

➤ **WORKFLOW OF THE PROPOSED SYSTEM**

1. **Patient Registration:**

- New patients are registered, and a unique patient ID is assigned.
- Medical records and history are stored in the system.

2. **Appointment Management:**

- Doctors' schedules are displayed on the website.
- Patients select a doctor and appointment slot.
- The system books the appointment and sends reminders.

3. **Bed Occupancy:**

- Tracks occupied and unoccupied beds in the hospital.
- Bed occupancy is updated every 6 hours.

4. Billing:

- Totals patient expenses and produces a comprehensive bill.

5. Laboratory, Blood Bank, and Radiation Management:

- Doctors enter test prescriptions.
- Departments receive requests and upload reports.
- Doctors can access reports through the system.

6. Reports:

- Generates reports for senior management on revenue, expenses, and bed occupancy.

7. Staff Management:

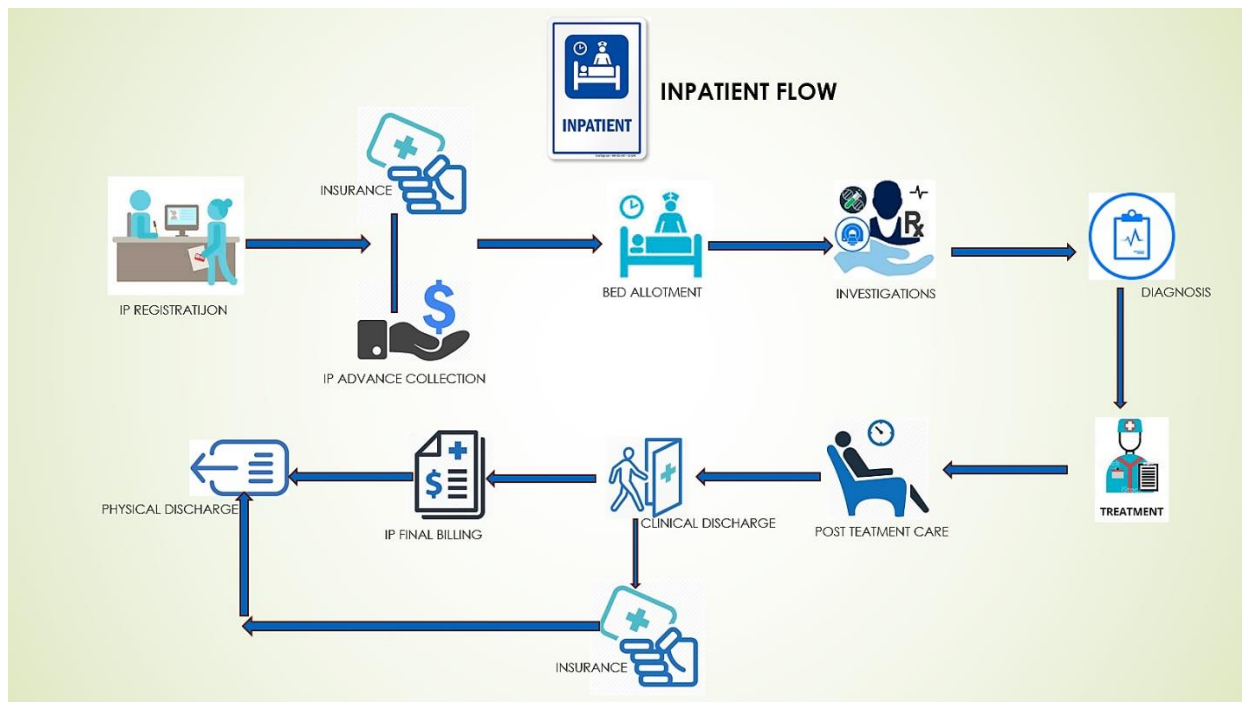
- Stores names, timings, and ward numbers of nurses and ward boys.

8. Instructions for Patients:

- Records doctors' instructions for nurses to follow in patient care.

9. Insurance Management:

- Stores insurance details for patients with insurance.



3. **Project Task 3:** Write the in-scope and out-of-scope items for this software.

➤ **In-scope:**

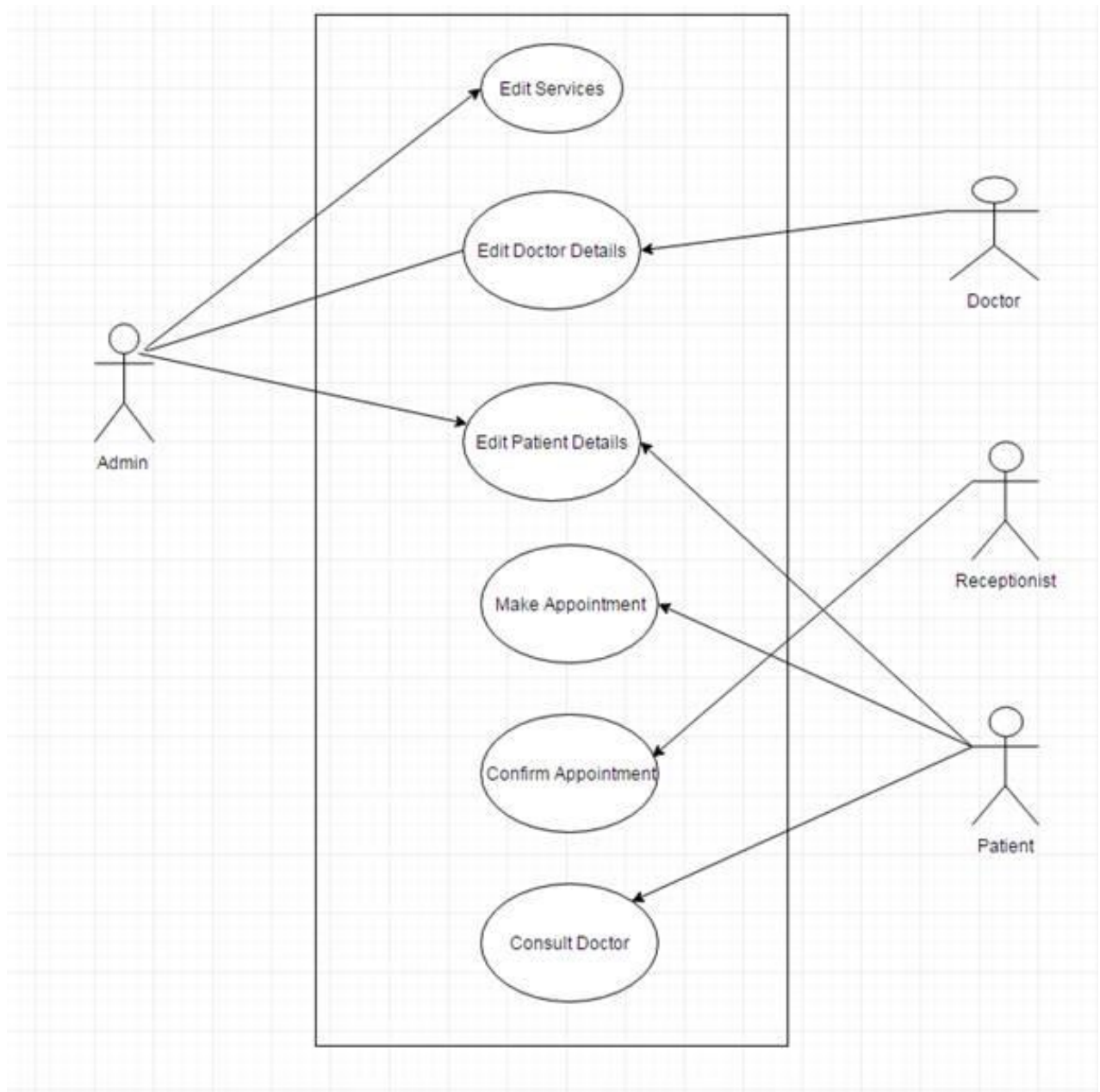
- Patients' appointment management
- Appointment reminders
- Patient registration
- Bed occupancy tracking
- Billing
- Laboratory, blood bank, and radiation department management
- Reports generation
- Staff management
- Instructions for patients
- Insurance management

➤ **Out-of-scope:**

- Hospital infrastructure management
- General facility management (e.g., maintenance, cleaning)
- Employee payroll and HR management
- Public-facing website for general hospital information.

4. **Project Task 4:** As a Business Analyst working on this project, find out the scope of the hospital management system. To find the scope you can use Use Case diagram (UML) or Context diagram.

➤ **SCOPE using Use Case Diagram (UML)**



5. **Project Task 5:** Write down the main features that need to be developed.

➤ **Main Features:**

1. Appointment Management:

- Display doctors' schedules.
- Allow patients to book appointments.
- Send appointment reminders.

2. Patient Registration:

- Capture patient information.
- Assign a unique patient ID.
- Store medical records and history.

3. Bed Occupancy Tracking:

- Show occupied and unoccupied beds.
- Update bed occupancy every 6 hours.

4. Billing:

- Calculate total expenses.
- Generate comprehensive bills.

5. Laboratory, Blood Bank, and Radiation Management.

- Receive and process test requests.
- Upload and access test reports.

6. Reports Generation:

- Generate reports for senior management.

7. Staff Management:

- Store staff names, timings, and ward assignments.

8. Instructions for Patients:

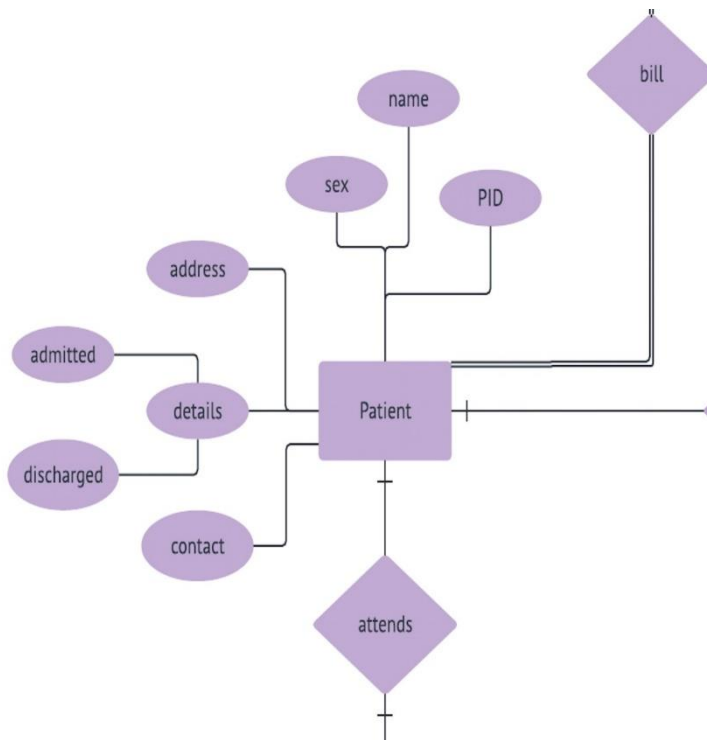
- Record doctors' instructions for patient care.

9. Insurance Management.

- Store and manage insurance details.

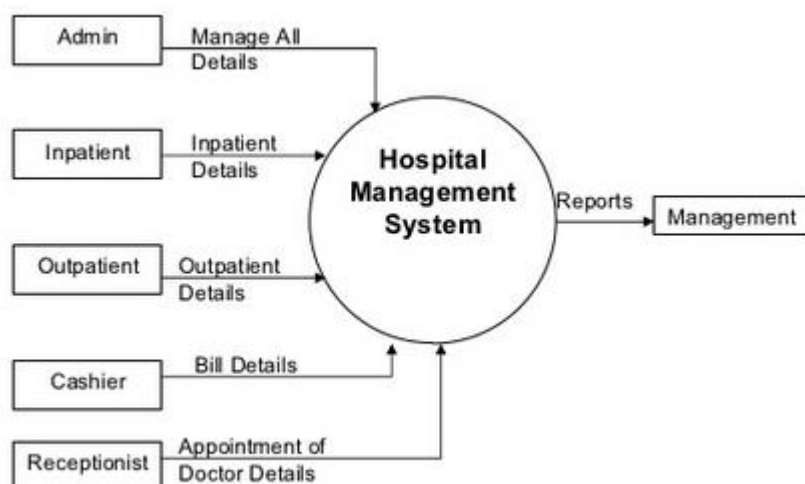
6. **Project Task 6:** Draw an ER diagram of the system.

➤ **ER Diagram for HMS**



7. **Project Task 7:** Draw a Data Flow diagram of the system.

➤ **Data flow Diagram for HMS**



8. **Project Task 8:** Write out the Functional and Nonfunctional Requirements for this software.

➤ **Functional Requirements:**

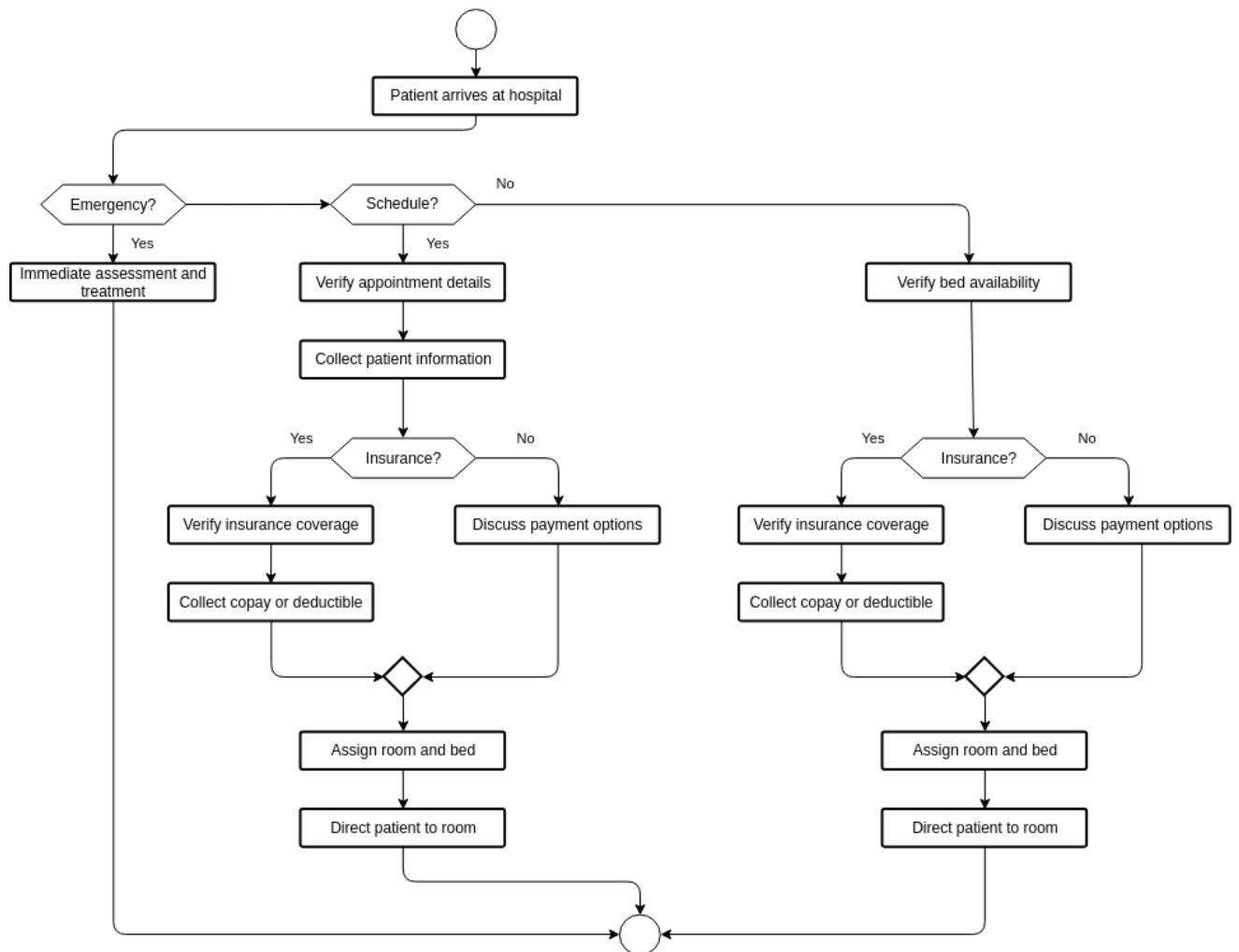
1. The system must allow patients to book appointments based on doctors' schedules.
2. The system should store and manage patient registration information, including medical records.
3. The system must track bed occupancy and update it every 6 hours.
4. The system must calculate and generate comprehensive bills for patients.
5. The system should manage laboratory, blood bank, and radiation department processes, including test requests and report uploads.
6. The system must generate reports for senior management on hospital metrics.
7. The system should store and manage staff information, including names, timings, and ward assignments.
8. The system must record and display doctors' instructions for patient care.
9. The system should store and manage insurance details for patients.

➤ **Nonfunctional Requirements:**

1. Database: MySQL Database.
2. Operating System: Windows 2016.
3. Web-Based: The system shall be a web-based application.
4. Response Time: The system shall respond within 1 second.
5. Capacity: The system must support 500 concurrent users.
6. Errors: The system shall keep a log of all errors.
7. Availability: The system shall be available 24/7.
8. Usability: Screens should be self-explanatory and user-friendly.

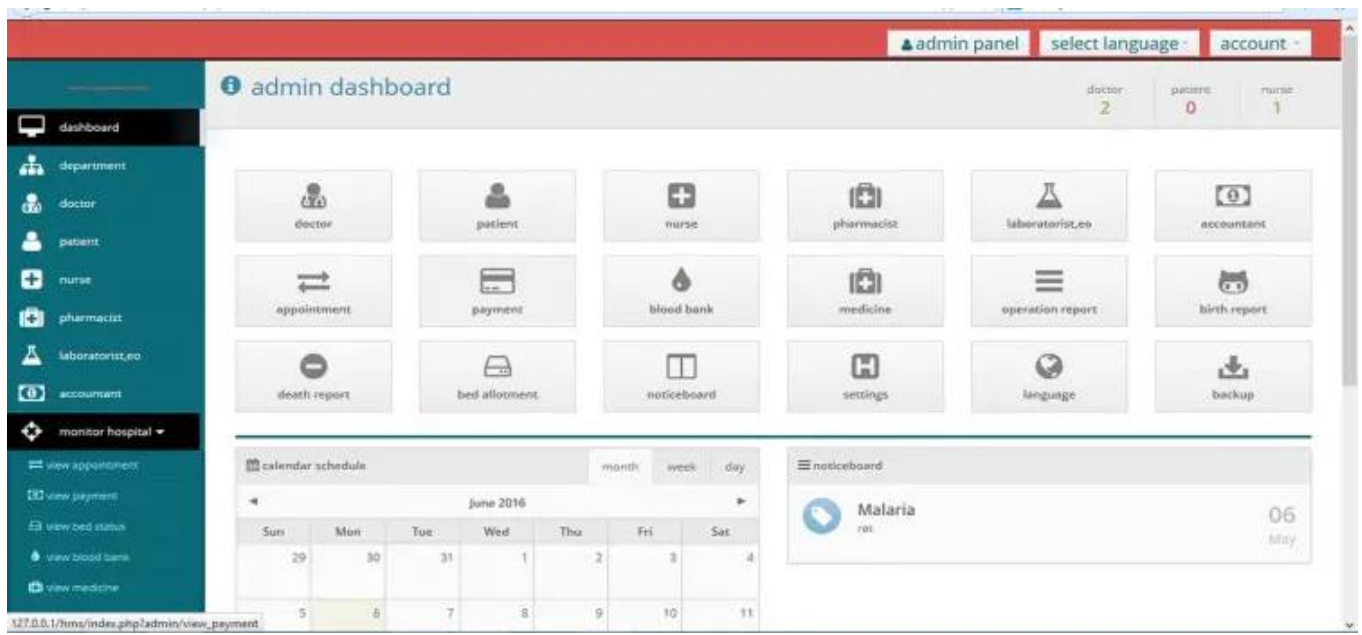
9. Project Task 9: Draw a flowchart for the patients' admission process.

➤ Flow chart for patient admission



10.Project Task 10: Draw wireframes or mock screens for any 2 of the features namely home page and patient registration screen.

➤ Screen Wireframes-Homepage



➤ Screen Wireframes-Patient Registration

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PERSONAL INFORMATION

▼

Patient ID

Type text

Nationality

Type text

Allergies

Type text

Patient name

John

Too short

Religion

Type text

Employment status

Select

Gender

☒ Male ☐ Female ☐ Other

Blood group

Select

Employer

Type text

Date of birth

Select date

Chronic conditions

Type text

Occupation

Type text

Marital status

Select

