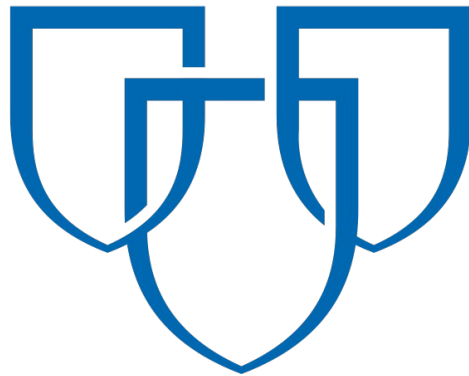


MAYO CLINIC



Hospital Management System for the Mayo clinic

CBAP Project 2

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Project Overview and Project Task

Project Overview

The Mayo Clinic is a prestigious non-profit academic medical centre in the United States, known for its commitment to integrated patient care, education, and research. It operates in three main locations: Rochester, Minnesota; Jacksonville, Florida; and Scottsdale, Arizona. While I do not have access to current rankings, the Mayo Clinic has consistently been recognized as one of the leading hospitals in the country.

The Mayo Clinic was established on September 30, 1889. As it expanded over time, both its physical space and the number of doctors employed increased. With a significant volume of patients seeking treatment, managing such a large hospital became a challenging endeavour. The administrative burden of paperwork and storing patients' records became increasingly difficult to handle. To address this issue, the hospital's management made the decision to invest in a hospital management software, allocating funds for this purpose.

Project Task

Task No.	Project Task
1.	Identifying stakeholders- List of stakeholders
2.	Explain the system workflow
3.	Write the in-scope and out-scope items for the software
4.	Find out the scope of the Hospital management system
5.	Write down the main feature that need to be developed
6.	Draw an ER diagram of the system
7.	Draw an activity diagram
8.	Write out the business requirements, both functional and non-functional requirements
9.	Draw a flowchart for the patient admission process
10.	Draw wireframe or mock screen for any two of the features

Business Analysis Core Concept Model (BACCM)

Need	To need is to implementing an online hospital management system can effectively reduce operational expenses, saving patient time with online record management
Change	To change is to transform the existing hospital management system into an automated online system.
Solution	The solution is create a Java-based online hospital management system that enables patient registration, patient appointment, billing info and lab test
Context	The context to company's change is to increase size of the hospital and facilities. Current system is not capable to handle such large data.
Value	The value to the new system are: <ul style="list-style-type: none">• Reduce operating cost• save patient time• easy access to patient data• keep track of empty beds• keep patient files
Stakeholder	External Stakeholders: <ul style="list-style-type: none">• Supplier• Project Manager• Implementation SME• Operational time• Testers Internal Stakeholders <ul style="list-style-type: none">• Staff and management• Doctors and nurses• medical team• Business analyst• lab attendees

Requirement Classification Scheme (RCS)

Business requirement: To develop an online Hospital management system to automate the succeed in hospital activity, which can help the user to book online appointment and track their files. Other take are:

- Aim to cut down in operating cost
- Reduce patient waiting time
- Able to keep large data of patients records
- Easy access to data
- Keep record of empty beds and filled beds in hospital

- provide reports

Stakeholder requirement: The main stakeholders are Patient, registration staff, doctors and nurses and laboratories and radiation department.

- Patients: Patients can sign up for the hospital system themselves, and the system will keep track of all their personal information and medical history. This way, the system maintains a complete record of each patient's details and medical background.
- Registration Staff: The registration staff will assign a unique patient ID to each registered patient. This ID will serve as an identifier for the patient throughout their entire hospital stay. The patient will need to use this ID for various purposes and interactions within the hospital.
- Doctors and nurses: Healthcare professionals will utilize the hospital system to access patient medical records and history when providing medical diagnoses and care. By using the system, they can conveniently review the patient's relevant information and medical background. Additionally, doctors have the ability to prescribe necessary tests directly through the system, streamlining the process and ensuring accurate documentation.
- Laboratories and radiation department: After the tests are prescribed, the laboratory receives the request. Once the test is conducted, the reports containing the results are uploaded into the system by the lab attendant. This digital integration allows for seamless transfer and storage of test reports within the system, making it easily accessible to healthcare providers and contributing to efficient patient care.

Solution requirement:

- Functional: A hospital management system is an integrated software solution that streamlines hospital operations and reduces the reliance on paperwork. It encompasses various functionalities, such as patient registration, appointment booking, data storage and retrieval, and doctor prescription management. By digitizing these processes, the system helps in improving efficiency, accuracy, and organization within the hospital setting. It minimizes manual paperwork, enhances data management, and facilitates seamless communication among different departments, ultimately contributing to better patient care and overall hospital management.
- Non-functional: The Hospital management system needs to be capable of accommodating a large volume of patient data. Therefore, it is essential that the web page is lightweight and optimized for fast rendering to ensure smooth user experience.

Transition requirement: Users of the system should receive sufficient training to efficiently utilize it. Additionally, a help desk can be established to assist users in resolving any errors or providing necessary guidance.

Task 1: Identifying Stakeholders – List of stakeholders

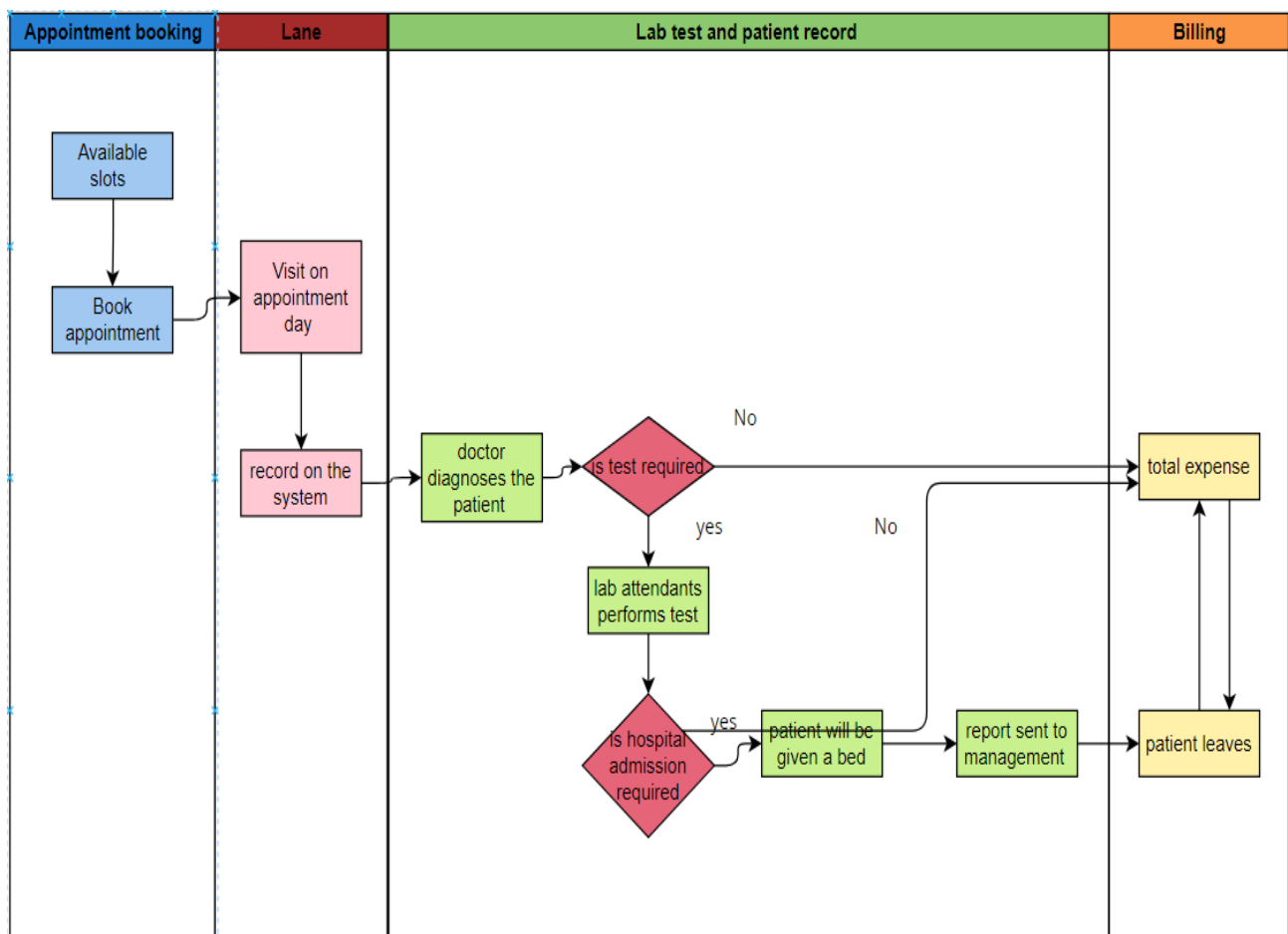
RACI matrix is established to determine the duty of each stakeholder, which are explained in the following:

- **Responsible:** The individual responsible for executing the task or carrying out the work.
- **Accountable:** The person who bears ultimate accountability for ensuring the successful completion of the task and acts as the decision maker.
- **Consulted:** The stakeholder who will be solicited for their opinion or information regarding the task.
- **Informed:** A stakeholder who is regularly informed and updated on the progress of the task.

Stakeholder	Responsible	Accountable	Consulted	Informed
Supplier	✓			
Project Manager		✓		
Implementation SME			✓	
Operational IT team			✓	
Testers	✓			
Hospital Staff and management	✓			
Doctors and nurses	✓			
Patients				✓
Medical Team			✓	✓
Lab attendants	✓			✓
Business Analyst	✓			

Task 2: Explain the system workflow

The swim lane diagram depicts the future system workflow, where the key components include appointment booking, registration, patient diagnoses, billing, and discharge. This diagram visually represents the sequential flow of activities and interactions between different processors involved in the hospital management system. It effectively demonstrates the streamlined process and the roles and responsibilities of each entity within the system.

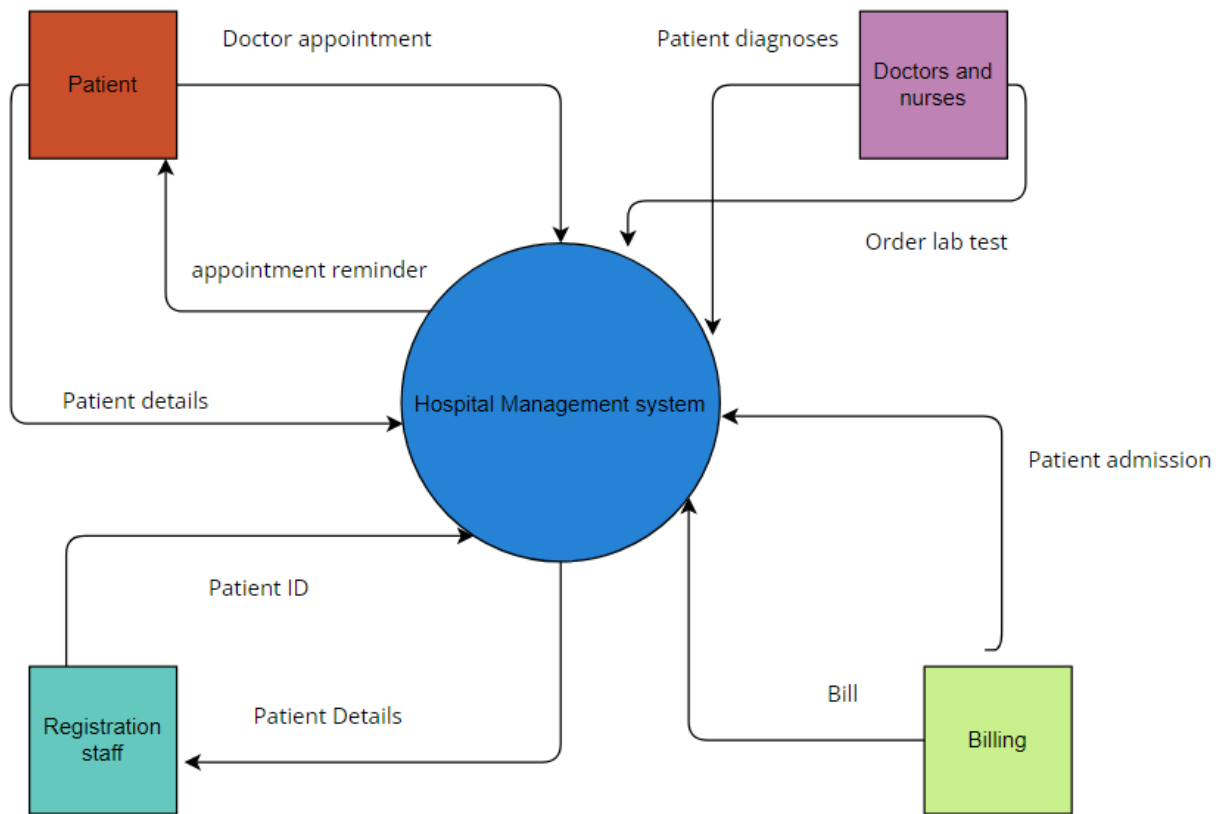


Task 3: Write the in-scope and out-scope items for the software

In-scope requirement	Out-of-scope requirement
Appointment scheduling	Staff details
Appointment reminders	Payroll management
Patient registration	Visitor log
Update patients file	ER (emergency department)
Order prescription	
Order lab test	
Patient admission	
Billing insurance	
report	
Staff management	
Bed occupancy	

Task 4: Find out the scope of the Hospital management system

The four components encompassed within the scope of hospital management are patients, registration staff, doctors and nurses, and billing.



Task 5: Write down the main feature that need to be developed

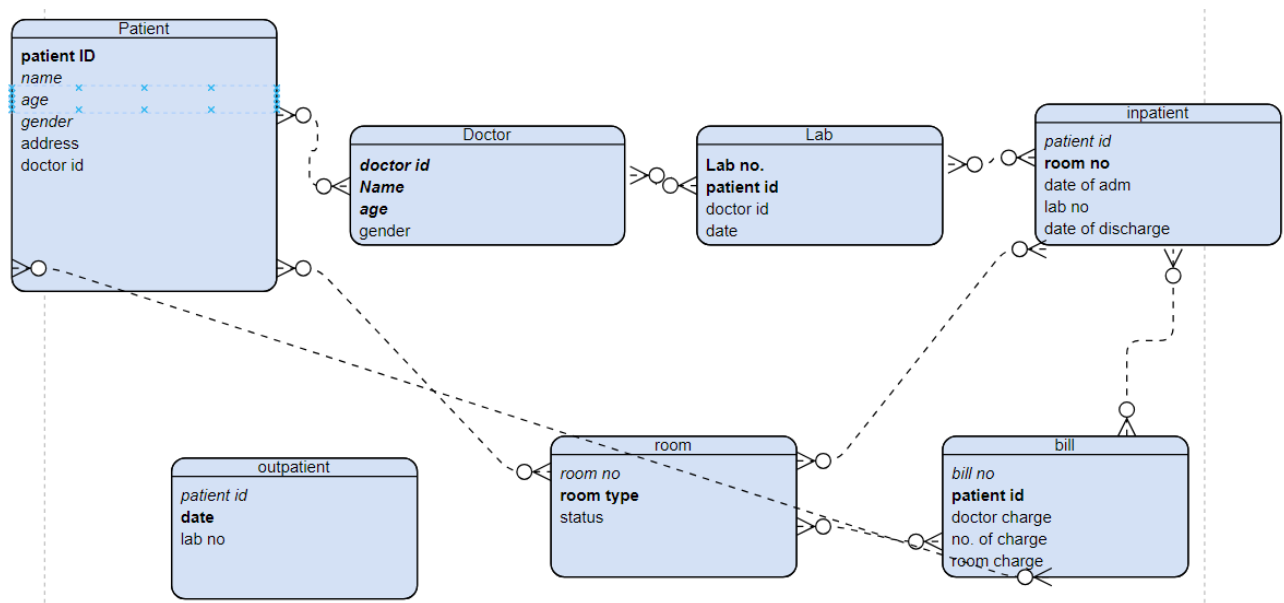
The main features of a hospital management system include:

1. Patient Registration and Login: Allows patients to register their details and create a login for accessing the system.
2. Slots Availability and Doctor Booking: Enables patients to check the availability of time slots and book appointments with specific doctors.
3. Appointment Reminders via SMS: Sends automated reminders to patients through SMS notifications to remind them of their upcoming appointments.
4. Schedule or Cancel Appointments: Allows patients to schedule or cancel appointments as needed, providing flexibility and convenience.

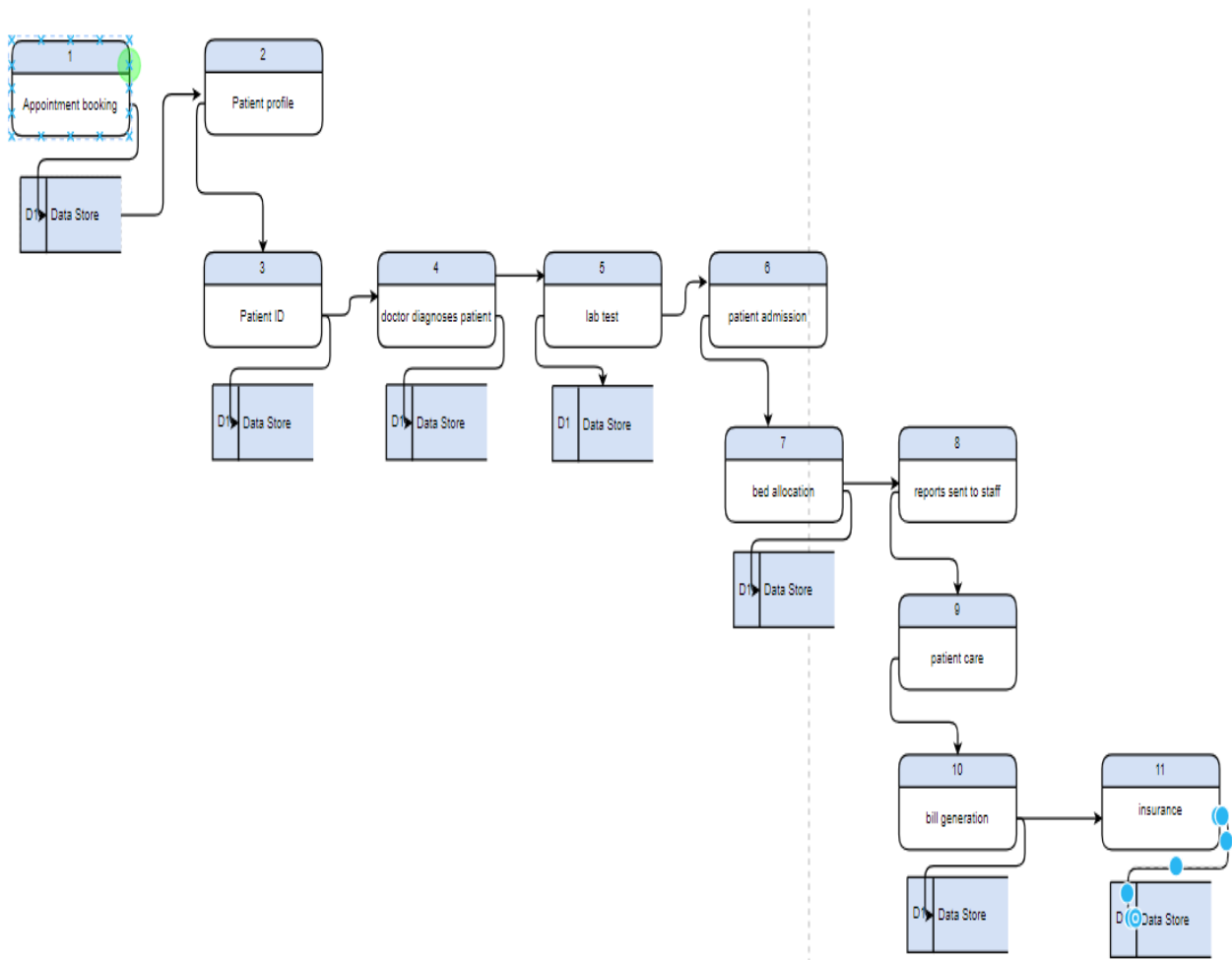
5. Patient ID Registration: Assigns a unique patient identification number to each registered patient for easy identification and tracking.
6. Store Patient Medical Records: Provides a secure and centralized repository for storing and managing patient medical records, including personal information, medical history, test results, and diagnoses.
7. Lab Prescription and Reports: Allows doctors to prescribe laboratory tests and view the corresponding lab reports once available.
8. Staff Allocation: Facilitates the allocation and scheduling of doctors, nurses, and other healthcare staff for efficient resource management.
9. Billing Generation: Generates accurate bills and invoices based on the services rendered to patients, including consultations, tests, medications, and other procedures.

These features contribute to the effective management of hospital operations, enhance patient care, streamline administrative tasks, and improve overall efficiency within the healthcare facility.

Task 6: Draw an ER diagram of the system



Task 7: Draw a gane sarson diagram of the system



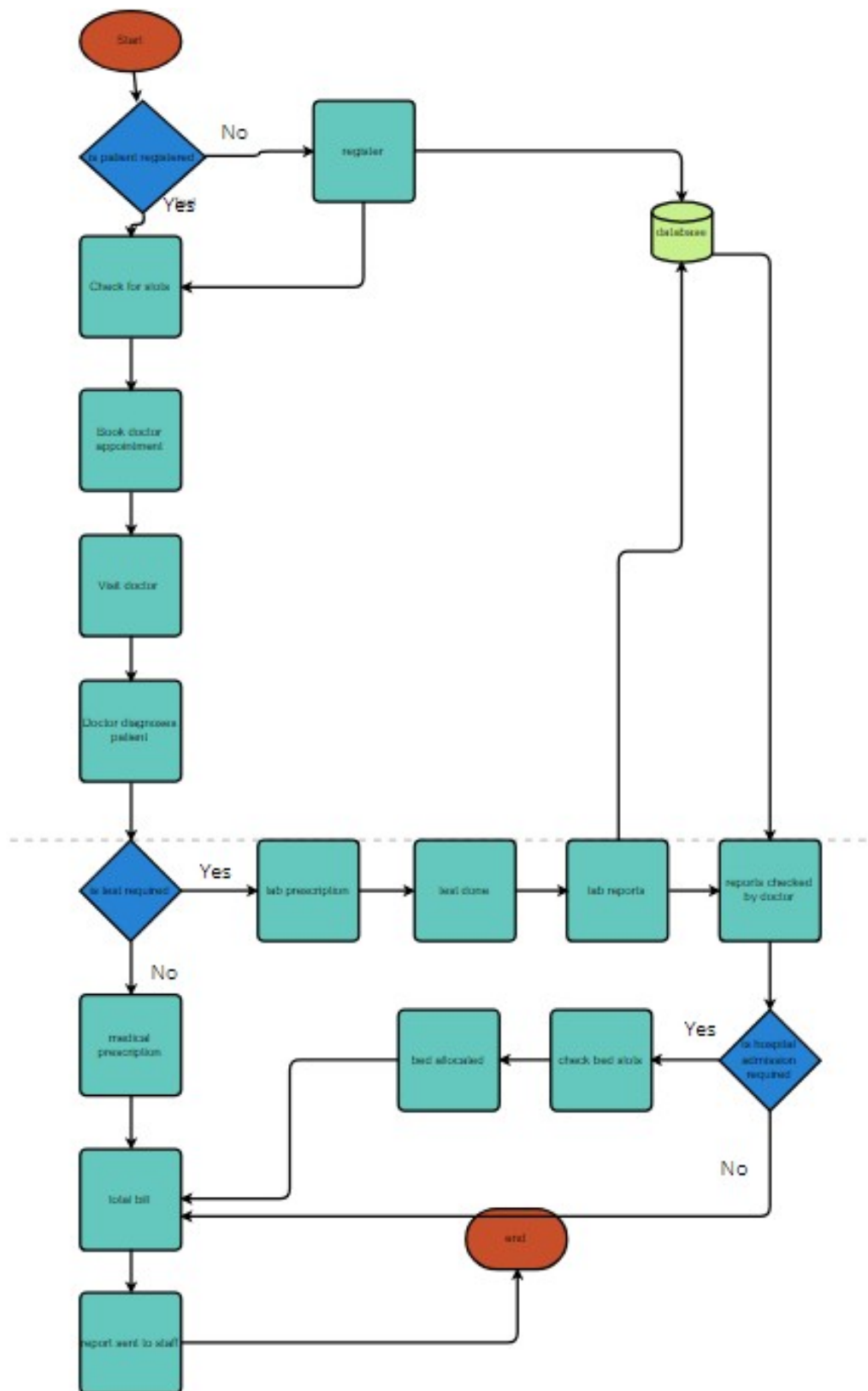
Task 8: Write out the business requirements, both functional and non-functional requirements

Functional:

- Patient Registration and Login: Allows patients to register their details and create a login for accessing the system.
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- Store Patient Medical Records: Provides a secure and centralized repository for storing and managing patient medical records, including personal information, medical history, test results, and diagnoses.

Non-Functional: The Hospital management system needs to be capable of accommodating a large volume of patient data. Therefore, it is essential that the web page is lightweight and optimized for fast rendering to ensure smooth user experience.

Task 9: Draw a flowchart for the patient admission process



Task 10: Draw wireframe or mock screen for any two of the features

A Web Page

https://mayo.hms.com/login

MAYO CLINIC

Login

Patient ID

Password

Sign in

Not registered? [Click here](#)