**The Mayo Clinic**

**STAKEHOLDERS**

|  |  |
| --- | --- |
| **ACTOR** | **What can he do on the Software Created** |
| Administrative Staff | * Patient registration with unique patient ID * Uploading all medical tests records of the patient and maintain their medical history. * Updating bed occupancy in every 6 hours * Generate complete bill for patient at the end of the consultation or at discharge. * The patient ID will be deleted from the system when the patient checks out. * Stores the names and timings of the nurses and ward boys on duty with their respective ward numbers * Insurance details are to be stored in the system for claim processing. |
| Doctors | * Doctors prescribing tests directly in the HMS system. * Doctor can log in the HMS system and enter the patient ID and view medical & test reports directly. * Doctor will entre patients’ treatment instructions directly in the system, to guide nurse for further course of treatment. |
| Nurses | * While conducting patient care the nurse just looks up the system to understand which medicine or what line of treatment, they need to give the patients. |
| Senior Management | * Will gather business reports from HMS system |

**Scope**

**Advantages of HMS:**

* Reduce operating costs of the hospital
* Provide reports to senior management for better decision-making
* Saves patients’ time
* Keeps patients’ medical records secure and stored in cloud
* Keeps track of empty and filled beds in the hospital
* Easy access to patient data
* Reduces documentation in the hospital

**WORKFLOW OF THE PROPOSED SYSTEM**

**Patient Appointment Workflow**

**A diagram of a company

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

**A diagram of a user manual

Description automatically generated**

**IN SCOPE**

* Patient Appointment Management
* Appointment Reminders
* Patient Registration
* Bed Occupancy Management
* Billing Management
* Laboratory, Blood Bank, and Radiology Management
* Reports for Senior Management
* Staff Management
* Instructions for Patients
* Insurance Management
* Error Logging

**OUT OF SCOPE**

* Mobile application
* Biometric Staff check in check out record
* Real-time insurance claim processing

**ER Diagram for HMS**

**A diagram of a company

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**Data Flow Diagram for HMS**

**A diagram of a hospital management system

Description automatically generated**

**Flow chart for patient admission**

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Description automatically generated**

**FUNCTIONAL REQUIREMENTS**

 The system shall allow patients to book appointments online and display available time slots for each doctor.

 The system shall send automated email and SMS reminders to patients 24 hours before their appointments.

 The system shall register new patients and assign them a unique patient ID.

 The system shall track bed occupancy status and allow updates every 6 hours.

 The system shall generate a single bill for all patient services at the time of discharge or consultation.

 The system shall allow doctors to prescribe tests, and the respective departments shall upload reports to the system.

 The system shall generate reports on:

* Bed occupancy.
* Doctors’ appointments and revenue generated through OPD.
* Total number of OPD and admitted patient statistics.
* Total earnings from OPD and admitted patients.
* Department-specific earnings (laboratory and radiology).
* Doctor wise revenue generation report

 The system shall store and retrieve staff schedules and assignments.

 The system shall store insurance details and process claim-related information.

**NON-FUNCTIONAL REQUIREMENTS**

* Performance: The system must respond within 1 second for all queries and actions.
* Scalability: The system must support up to 500 concurrent users without performance degradation.
* Usability: The interface must be intuitive, with clearly labeled fields and instructions for ease of use.
* Availability: The system must be operational 24/7 with a downtime of no more than 1% annually.
* Reliability: The system shall ensure the secure storage of patient records in the cloud and maintain 99.9% uptime.
* Security: Patient data must be secured, and Role base access control to authorized staff.
* Patient data must be encrypted in transit and at rest.
* The system shall run on Windows Server 2016 and support all major web browsers.
* The system should be modular to allow easy updates and fixes.

**System Requirement:**

* Database: MySQL Database to be used since it is open source and free.
* Operating System: Shall be Windows 2016
* Web-Based: The system shall be a web-based application
* Response Time: The system shall give responses in 1 second
* Capacity: The System must support 500 people using it at a time
* Errors: The system shall keep a log of all the errors
* Availability: The system shall be available all the time
* Usability: The screens should be self-explanatory and very user friendly. Management would not want employees not ordering from the system as they cannot understand the screens and data fields on screen. The users should not find the system cumbersome.

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**Screen Wireframes**

**HomepageA screenshot of a computer

Description automatically generated**

**Patient Registration**

**A screenshot of a computer screen

Description automatically generated**