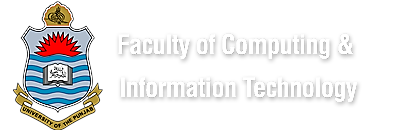
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**SOFTWARE DESIGN AND ARCHITECTURE**

**ASSIGNMENT-02**

**SUBMITTED BY**

**GROUP MEMBERS**

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Project Topic: Hospital Management System

**Description**: The Hospital Management System (HMS) is designed to assist hospitals and Patients. It helps doctors, nurses, and other staff keep everything organized and running smoothly. With the HMS, they can easily keep track of patient information, schedule appointments, talk to patients, manage supplies, handle billing and payments, and make reports to help make better decisions. It's designed to make hospitals work better, so patients get better care and everyone stays happy.

**Scope**: The Hospital Management System (HMS) aims to make running a hospital easier by providing a computer program that helps manage everything from appointments to billing. It's designed for hospitals and clinics to keep track of patients, schedule appointments, communicate with staff, manage supplies, handle billing and payments, respond to emergencies, and keep everything organized. The goal is to make hospitals run more smoothly and improve patient care, no matter where they are or what their background is.

Features :

1. User Registration
2. User login
3. User profile management
4. Search for doctor
5. Book an appointment
6. Dashboard for doctors, patients, medical staff
7. Dashboard for admin
8. Communication between doctors and patients
9. Call or request for an ambulance
10. Order Medicine and inventory
11. Payment and billing
12. Feedback and rating
13. Notification System
14. FAQs
15. Logout

**Requirement details with actors (External Entity)**

|  |  |  |
| --- | --- | --- |
| Requirement # | External Entity | Initial Requirement |
| 1 | System | The System “shall” only allow the registered user to access the website platform. |
| 1.1 | Patient | Patient “shall” Register to access the platform, by providing a username, valid email, password, address, age, gender |
| 1.2 | Doctor | Doctor “shall” Register to access the platform, by providing a username, email, password, and additional details such as  information about his degree, post, experience, and educational background. |
| 1.3 | System | The system “shall” validate the provided information to ensure accuracy and completeness. |
| 1.4 | System | The system “shall” generate a unique user ID for each registered patient |
| 2 | System | The System “shall” allow the user to render the home page of the website after successful login |
| 2.1 | Patient/Doctor | Registered user “shall” be able to Log in with their username/email and password |
| 2.2 | Admin | Admin “shall” log in to his account. |
| 3 | System | The system “shall” process different types of updating e.g. updating of his personal details, profile details, or upgrading of his status from registration, or updating of his payment details. |
| 3.1 | System | The system “shall” accept the Patient's Request to change the Password and profile details. |
| 3.1.1 | Patient | A Patient “shall” login to the system and can change his/her  password for security reasons |
| 3.1.2 | Patient | The patient “shall” create, update, and manage profiles, including their field of study, skills, goals, and business plan information |
| 3.2 | System | The system “shall” accept the Patient’s Request to change the Password and profile details. |
| 3.2.1 | Doctor | A Doctor “shall” login to the system and can change his/her  password for security reasons. |
| 3.2.2 | Doctor | Doctor ”shall” create, update, and manage profiles, and information about his degree, post, experience, and educational background. |
| 4 | Patient | The Patient “shall” a search doctors based on various criteria like names, categories, duty hours, specialization, and experience. |
| 4.1 | System | The system “shall” display relevant doctor profiles with details such as expertise, qualifications, and reviews |
| 5 | Patient | The patients “shall” book appointments with selected doctors. |
| 5.1 | Doctor | The Doctor “shall” ” see the appointments taken by patients at the platform. |
| 5.2 | System | The system “shall” confirm appointment bookings and send notifications to patients and doctors. |
| 6 | Doctor, Patient, Medical Staff | Doctor, Patient, Medical Staff “shall” present personalized dashboards for doctors, patients, and medical staff upon login. |
| 6.1 | System | The system “shall” display relevant information such as appointments, notifications, and tasks. |
| 6.2 | System | The system “shall” allow customization of dashboard layouts and preferences. |
| 7 | Admin | Admin “shall” manage system settings and resources. |
| 7.1 | System | The system “shall” provide an administrative dashboard for administrators to manage system settings and resources. |
| 7.2 | System | The system ”shall” ensure that admin dashboards are accessible only to authorized personnel. |
| 8 | Patient | Patient “shall” take advice from doctors. |
| 8.1 | System | The system “shall” support real-time chat, video calls, and file-sharing functionalities. |
| 9 | Patient | Patient “shall” request ambulance services in case of emergencies. |
| 9.1 | System | The system “shall” notify relevant authorities and dispatch ambulances promptly. |
| 10 | Admin | Admin “shall” manage inventory levels and order medicines as needed |
| 10.1 | System | The system “shall” track inventory transactions and update stock levels in real-time. |
| 11 | Patient | Patient “shall” pay bills through the platform |
| 11.1 | System | The system “shall” generate invoices and process payments securely. |
| 11.2 | System | The system “shall” provide options for online payments and insurance claims processing. |
| 12 | Patient | Patient “shall” give feedback about the website and services provided by the hospital. |
| 12.1 | Doctor | Doctor “shall” give feedback about website performance |
| 12.2 | System | The system “shall” analyze feedback data to identify areas for improvement. |
| 13 | System | The system “shall” send notifications to users regarding appointments, medication reminders, etc. |
| 14 | Patient | Patient “shall” read frequently asked questions from the website to know about the hospital and its services. |
| 14.1 | System | The system “shall” allow users to log out of their accounts securely. |
| 15 | System | System “shall” provide Logout functionality. |
| 15.1 | Patient/Doctor/Admin | Users who are logged in to the web application “shall” be able to Log out from the website when they’re done. |
| 15.2 | System | Upon logging out, the system “shall” terminate the user’s session  and return them to the login or home page as appropriate. |

Use Case Diagram

A use case diagram is a vital blueprint for visualizing interactions among system entities.

In the case of HMS, this platform connects patients across the country with doctors.They can get medical assistance at any time through the platform. Below is the use case diagram of the Hospital Management System.

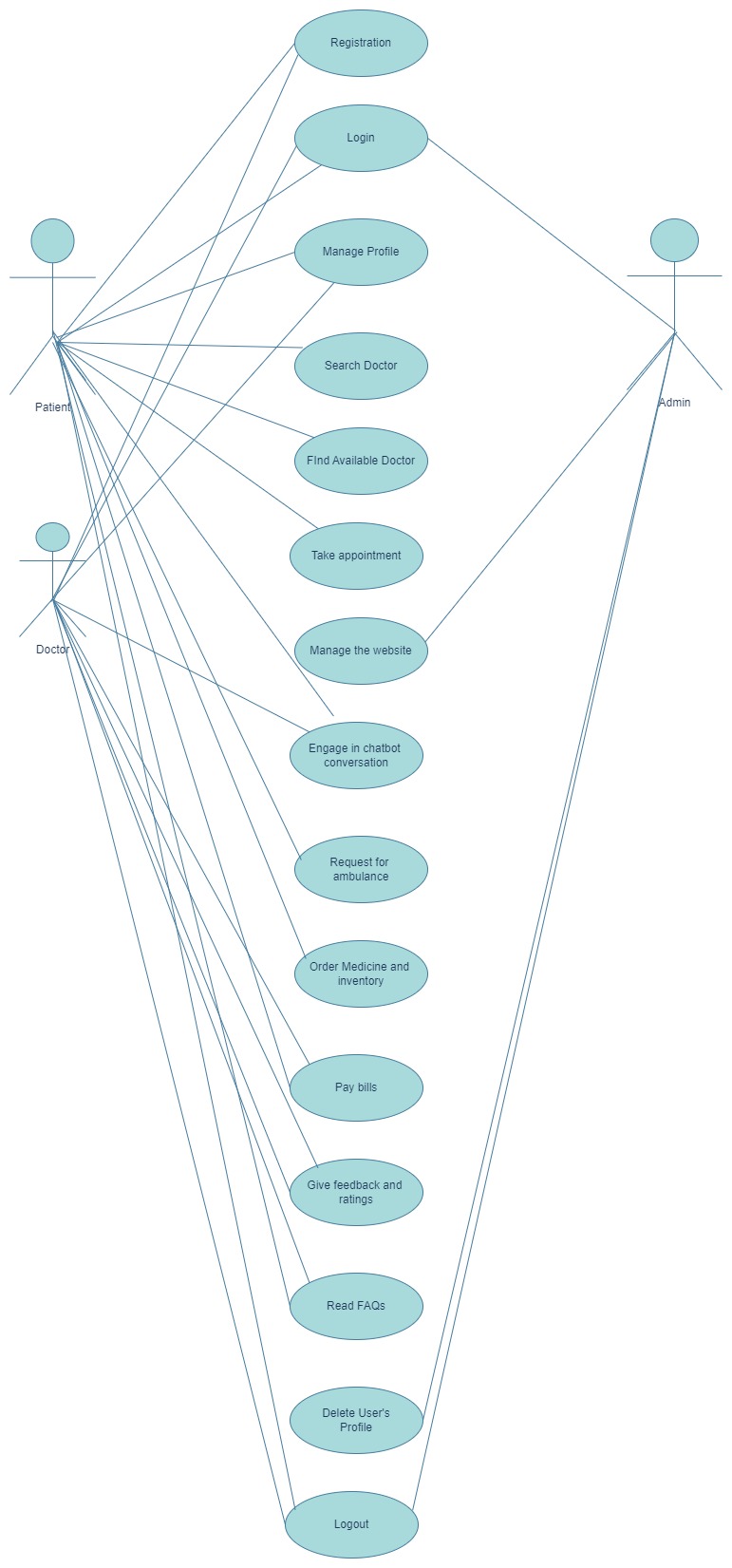
* Primary Actors:

1. Patient

2. Doctor

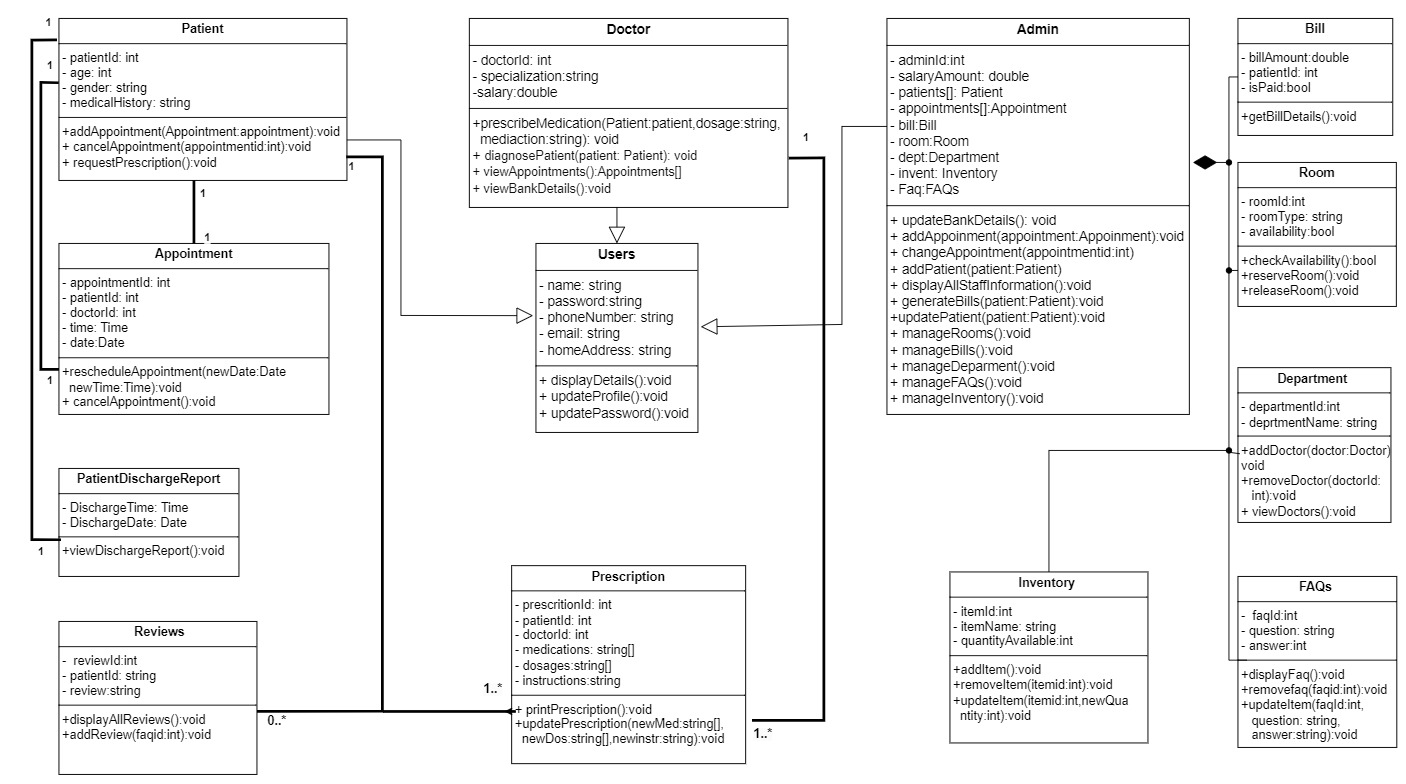
* Secondary Actor

1. Admin.

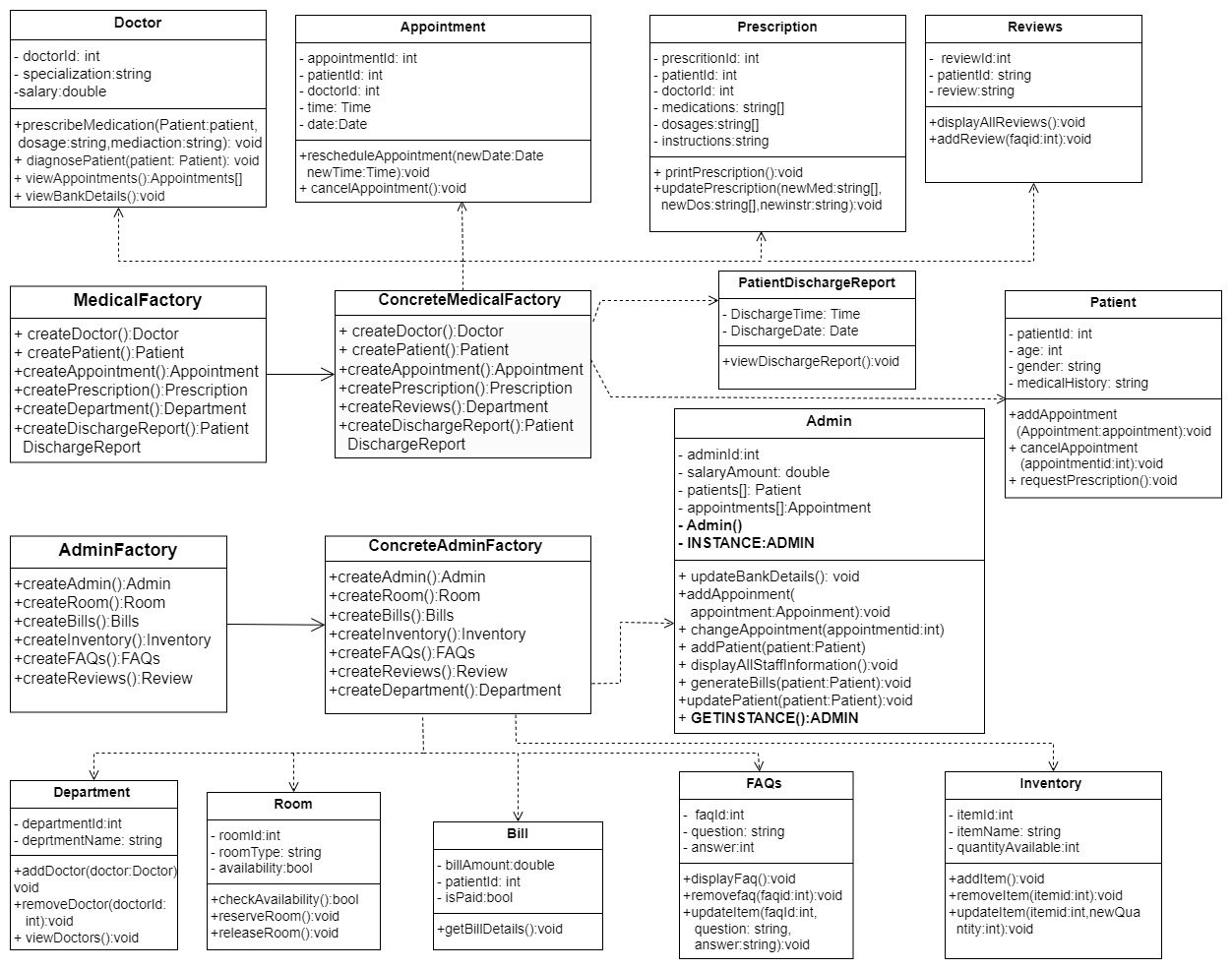


**Part # 2**

**Class Diagram**



**Refined Class Diagram**

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