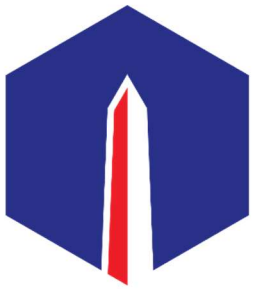

UNIVERSITÉ FRANÇAISE D'ÉGYPTE

Software Requirements Specification on Hospital Management System

Software Engineering and Database Systems

EN/FR- 2024/2025

Prepared by: Amira Ayman, Batool Maher and Mayer Raoof

Supervised by: Dr Sherin Mousa and Dr Yara Maher

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Introduction

This software requirement specification document outlines the main functionalities for Hospital management system MBA. It is designed to facilitate the booking operations and organize the whole operational tasks for doctors and receptionists. It aims to offer secure access, appointment booking, patient registration and room management functionalities.

1.1 Purpose

The purpose of the Hospital Management System (HMS) is to automate and streamline the administrative and clinical operations of a hospital. This system will enhance patient care, improve operational efficiency, and maintain accurate records.

1.2 Scope

The HMS will cover functionalities such as patient registration, appointment scheduling, and rooms management. The system will be accessible to doctors, administrative staff, and authorized personnel.

1.3 Intended Audience and Reading Suggestions

This SRS is intended for the following audiences:

- Stakeholders: Hospital administrators and management who need an overview of the system's capabilities.
- Developers: Software developers and engineers who will implement the system and require detailed functional and non-functional requirements.
- IT Staff: Technical support and IT personnel responsible for maintaining the system.
- End Users: Doctors and receptionists who will interact with the system on a daily basis.

1.4 Glossary

Doctors: Doctors diagnose disease, provide treatment, counsel patients with injuries, diseases or illnesses.

Patient: a sick individual especially when awaiting or under the care and treatment of a physician or surgeon

Department: distinct part of anything arranged in divisions; a division of a complex whole or organized system.

Appointment: It is an arrangement to meet the doctor and patient at a particular time and place.

HMS: Hospital Management System, a software solution to manage hospital operations.

Overall description

User requirements

1. Login

    1.1 The system requires a username and password to log in.

2. User access control

    2.1 The system opens an interface based on the user type of access.

        2.1.1 the system is required to allow doctors to view their schedule

        2.1.2 the system will allow the receptionist to view all the specializations and book appointments with available doctors

3. Appointment Booking

    3.1 The system will allow the receptionist to access available slots for each

    doctor.

    3.2 The system shall allow the receptionist to book appointments.

4. Patient Registration

    4.1 The system will allow the registration of patients.

5. Room registration

5.1 the system will display available room

5.2 the system will give details about the room

5.3 the system will allow the receptionist to reserve a room for the patient

Requirements:

Functional Requirements

1. Login
   1.1. The system shall require a username (varchar (20)) and password (varchar (20)) to log in.
   1.2. The system shall validate the username and password against the database.

2. User access control

   2.1 the system shall require the user to select his role (doctor or receptionist)

   2.2 The system shall open an interface based on the selected user role (doctor or receptionist).

   2.2.1 the system shall allow doctors to view their schedule for the day.

   2.2.2 the system shall allow the receptionist to view all specializations (cardiology , neurology, dentistry), view available doctors in each specialization, book appointments and enter patient data.

3. Appointment Booking
   3.1. The system shall allow the receptionist to access available slots for each Doctor (starting time and ending time).
   3.2. The system shall display the available doctor data (doctor id, doctor name, starting time, and ending time)
   3.3. The system shall allow the receptionist to book appointments for any available doctor by selecting the doctor row.
   3.4. The system shall store the appointment details in the appointment table. (appointment id, doctor name, doctor id, patient name, patient id, starting time and ending time)

3.5. The system shall display booked appointment data (appointment id, doctor name, doctor id, patient name, patient id, starting time and ending time)

3.6. The system shall allow the receptionist to view all booked appointments

3.7. The system shall allow the doctor to view his appointment schedule

4. Patient Registration

4.1 The system shall display all patient data required for booking an appointment (national ID, full name, address, gender, email, phone number and birth date) the registration of patients.

4.2 The system shall enable updating patient information.

5. Room registration

5.1 the system shall display room availability table.

5.2 the system shall give details about the number of beds (1 or 2 or 3), room location (room number and floor number) and number of people allowed.

5.3 the system shall allow the receptionist to reserve a room by selecting a row form the available rooms table.

5.4 The system shall store the room reservation data in the database and update room availability.

Non-Functional Requirements

1. Performance

The system shall process transactions within 3 seconds.

2. Security

The system shall require user authentication for access.

3. Usability

The system shall provide an accessible user interface.

4. Reliability

The system shall include backup and recovery options.

System models

ERD model:

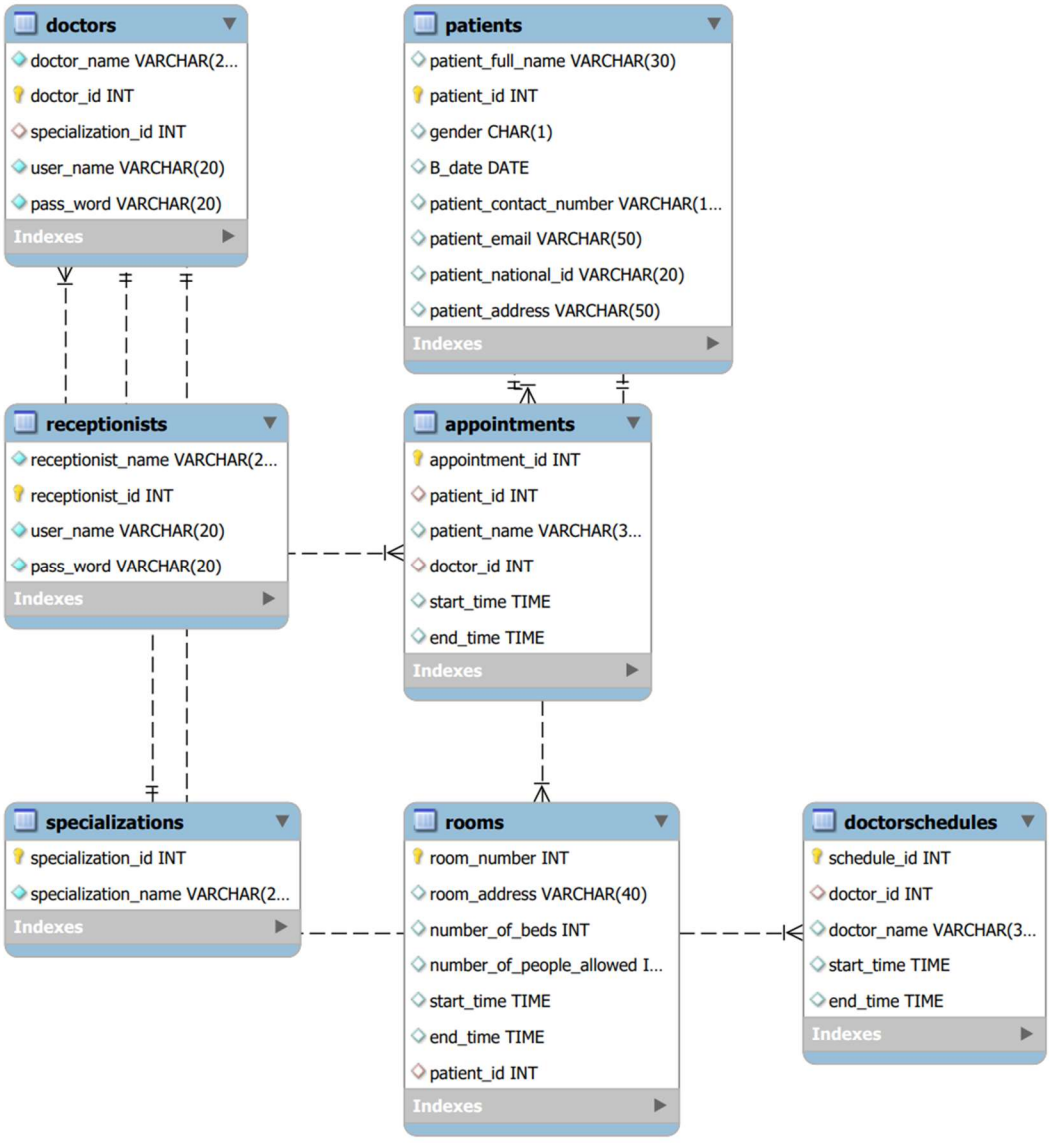

Figure 1, Entity Relationship Diagram for HMS

Activity diagram

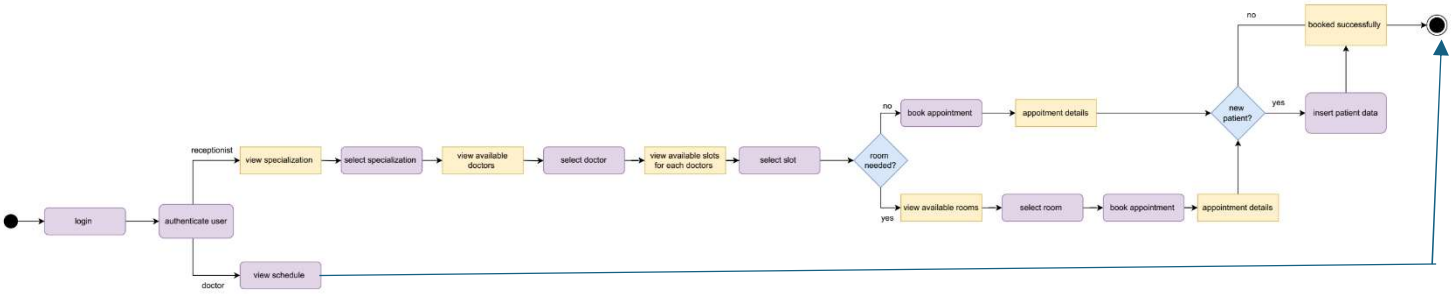

Figure 3, Activity Diagram or Appointment Booking and Room registration

Class Diagram:

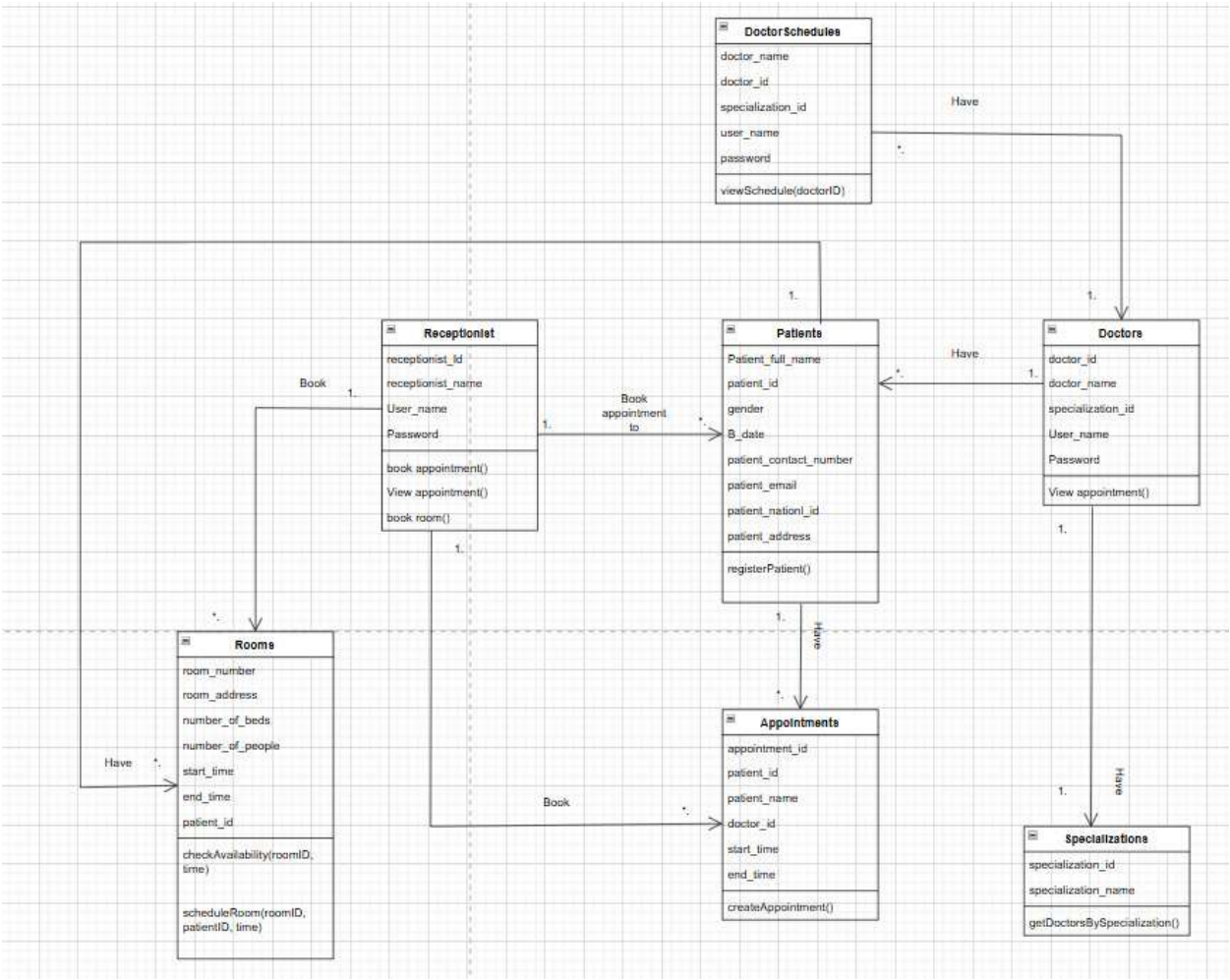

Figure 2, Class Diagram for HMS

Sequence diagram

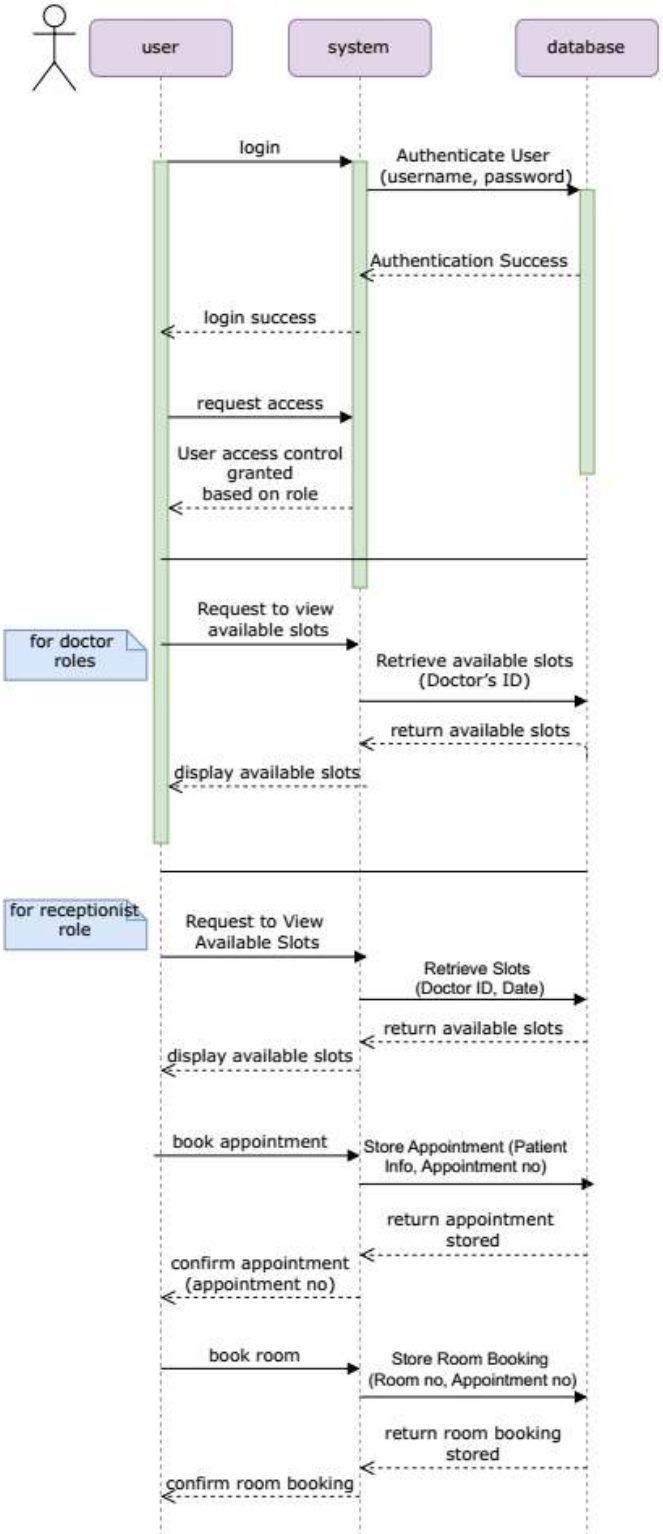

Figure 4, Sequence diagram for interactive perspective

Use-case diagram

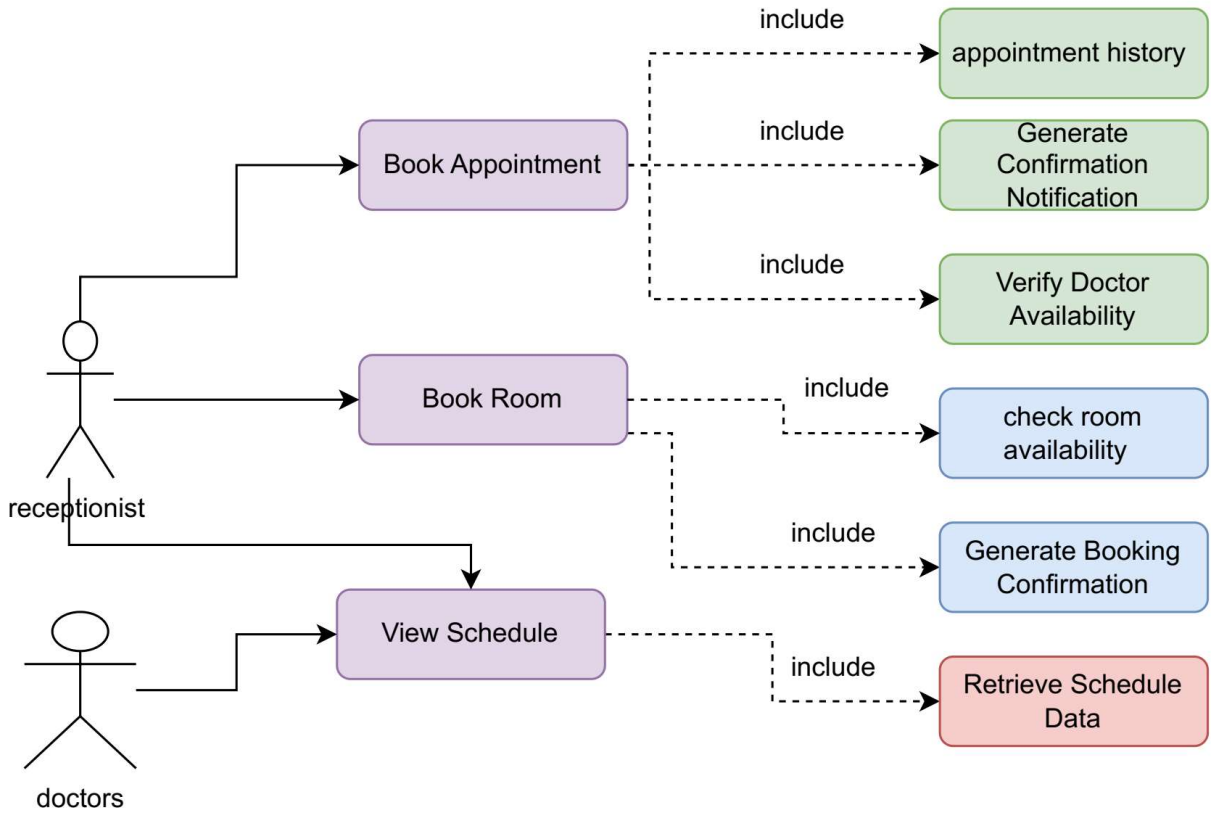

Figure 5, Use-case diagram for HMS

State machine diagram:

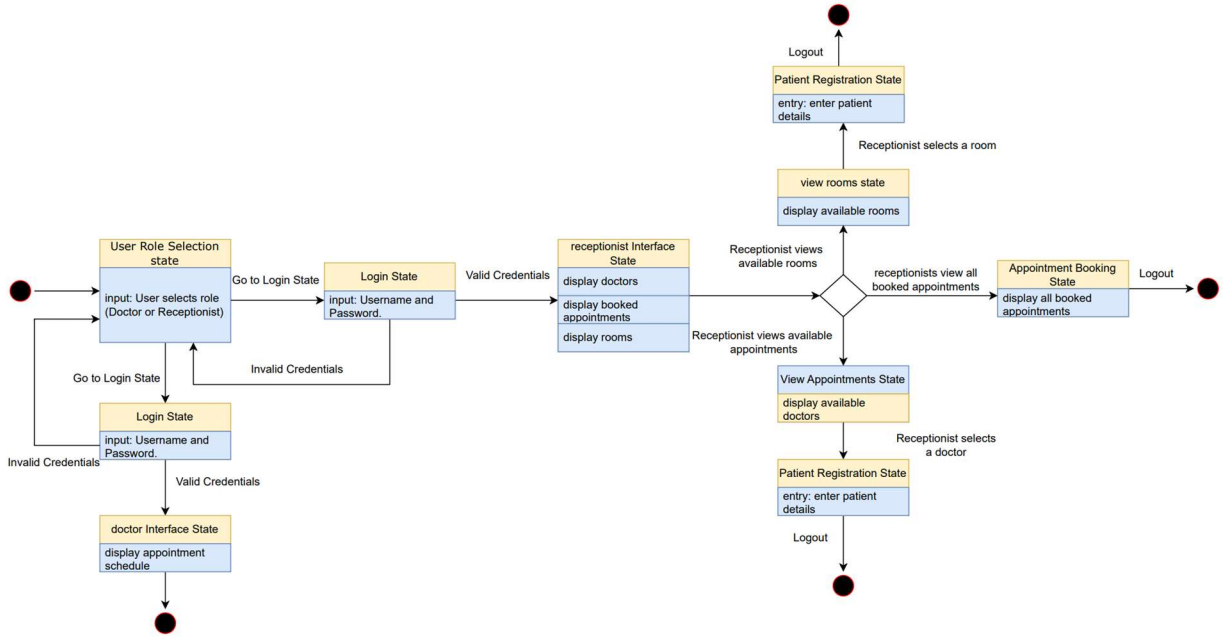

Figure 6, State machine diagram

Relational Schema: