THE UNIVERSITY OF LAHORE

Assignment No. 1

Submitted By:

NAME: TAHA TANVIR

M. AHSAN JAVED

M. MUZAMMIL

SUBJECT: SOFTWARE DESIGN AND ARCHITECTURE

PROGRAM: BS SOFTWARE ENGINEERING

Submitted To:

MR. ABDUL WAHAB

Date: 1-12-2023

SOFTWARE DESIGN AND ARCHITECTURE

ASSIGNMENT NO.1

Title: Healthcare Application

Introduction:

Healthcare is a crucial aspect of our lives, and with the advancements in technology, the healthcare industry has also seen significant improvements in the way services are delivered. Healthcare applications have emerged as an efficient tool for patients and healthcare professionals alike, providing convenient access to health information, medical records, and healthcare services. This application will transform the way people manage their health, enabling them to take control of their wellbeing and make informed decisions about their healthcare. The healthcare application industry has witnessed exponential growth in recent years, and with the ongoing pandemic, the demand for healthcare applications has surged.

Features of Project:

Healthcare application is designed to provide patients manage their health and wellness goal. The targeted users are doctors and patients. It will ensure patient safety, data privacy, and compliance with healthcare regulations. Secure login, Doctor profile look-up, Electronic health records (EHRs), Prescription management, Appointment scheduling and reminders, Telemedicine capabilities, Health Education, Integration with medical devices, Billing and payment processing and Analytics and reporting are some highlighting features of Healthcare application.

Functional Requirements:

- **Patient Management:** The system should be able to manage patient information, including personal details, medical history, diagnosis and treatment plans.
- **Appointment Scheduling:** The system should allow patients to schedule appointments with healthcare professionals and staff to manage and view schedules for multiple healthcare providers.
- **Medical Records Management:** The system should enable healthcare professionals to access patient medical records including lab results, medication history and treatment plans, from anywhere and at any time.

- **Inventory Management:** The system should allow staff to track inventory levels for medical supplies and equipment, ensuring that necessary items are always available.

- **Billing and Payment Processing**: The system should automate billing processes and provide patients with multiple payment options including online payment and payment through insurance.

- **Reporting and Analytics:** The system should generate various reports and analytics to help healthcare professionals make informed decisions about patient care, resource allocation and financial management.

- **Integration with other systems:** The system should be designed to integrate with other healthcare systems, such as Electronic Health Records (EHRs), laboratory information systems and insurance providers.

- **Telemedicine capability:** Telemedicine allows healthcare providers to connect with patients from remote locations, reducing the need for in-person visits and improving access to care especially for patients who live in rural or underserved areas.

Non-functional Requirements:

- **Security:** The system should implement robust security measures, including access control, data encryption, and regular backups, to protect patient data from unauthorized access or disclosure.

- **Performance:** The system should be able to handle a large volume of data and requests, ensuring that the system is always responsive and performs well.

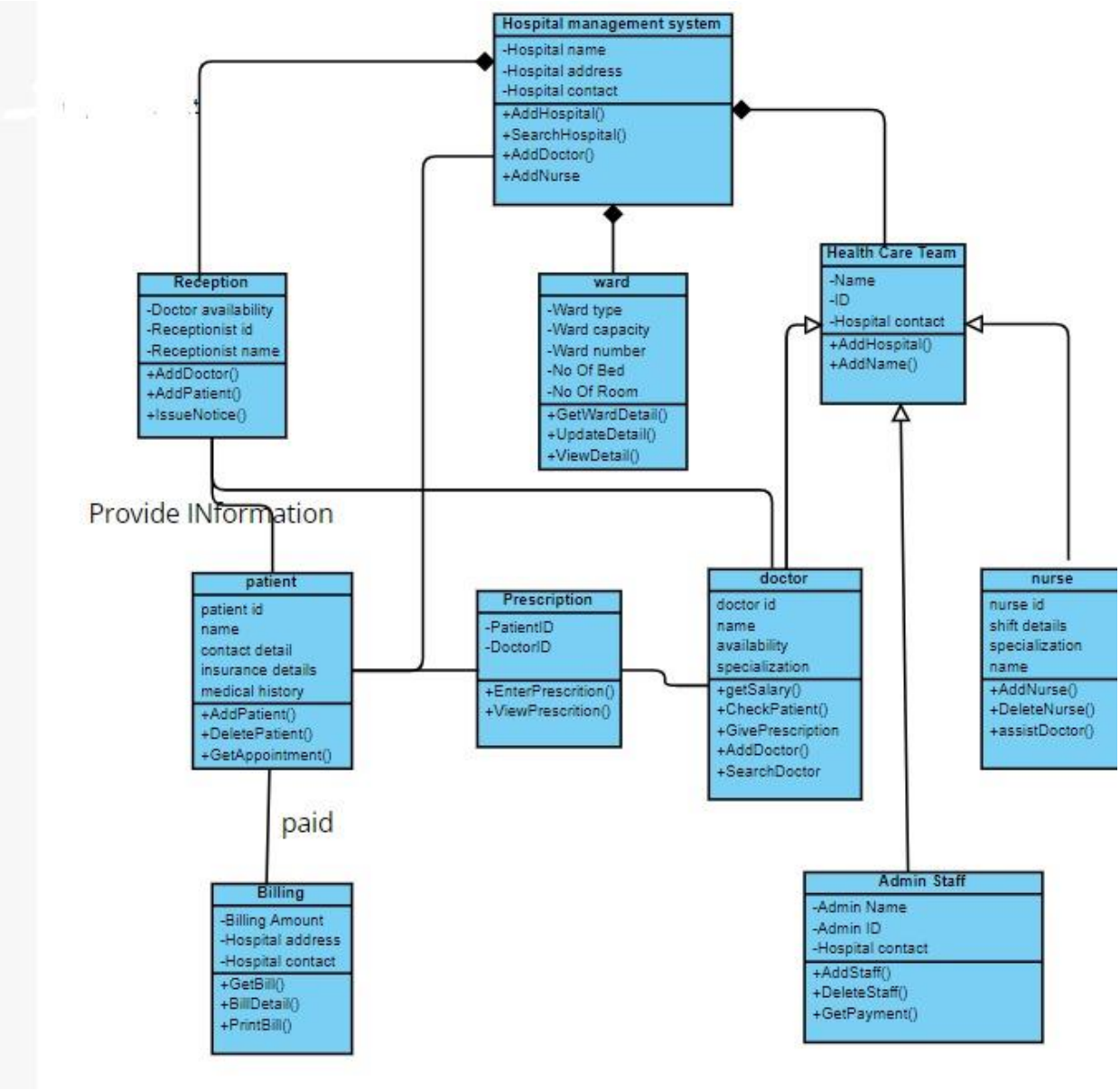
- **Usability:** The system should have a user-friendly and intuitive interface, making it easy for healthcare professionals and patients to use the system.

- **Reliability:** The system should be reliable and available at all times, with minimal downtime for maintenance or upgrades.

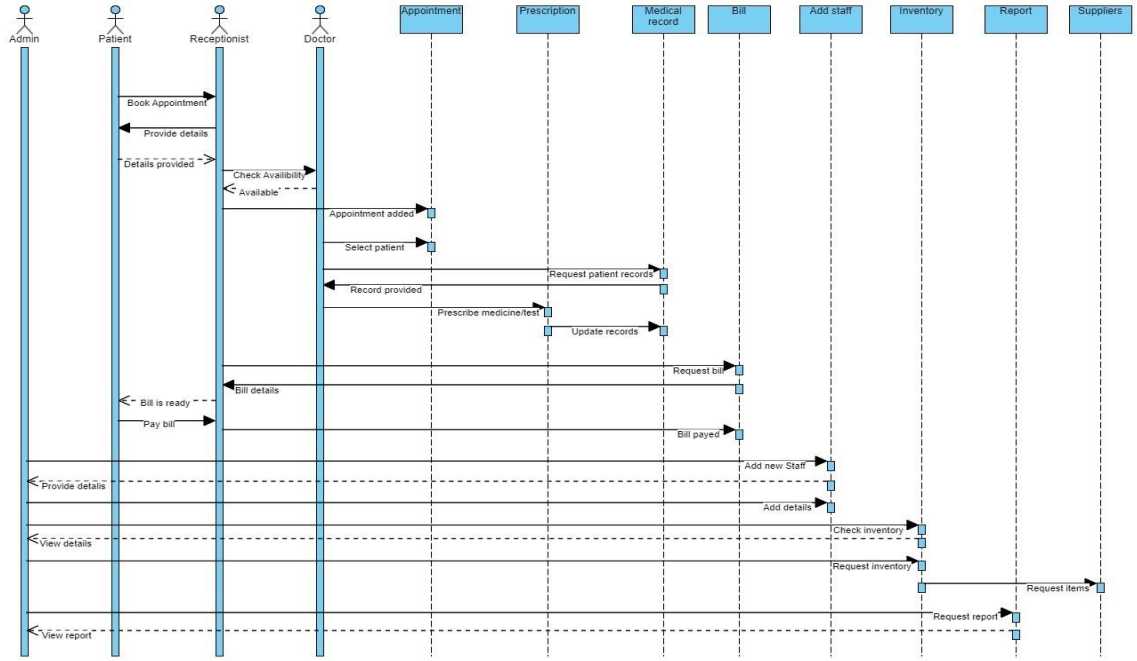
- **Scalability:** The system will be designed to handle growth and changes in the healthcare facility, ensuring that the system can handle new users and increased data volumes.

- **Compliance:** The system should comply with regulatory requirements, including HIPAA and other privacy laws, to protect patient data and ensure that the system is legally compliant.

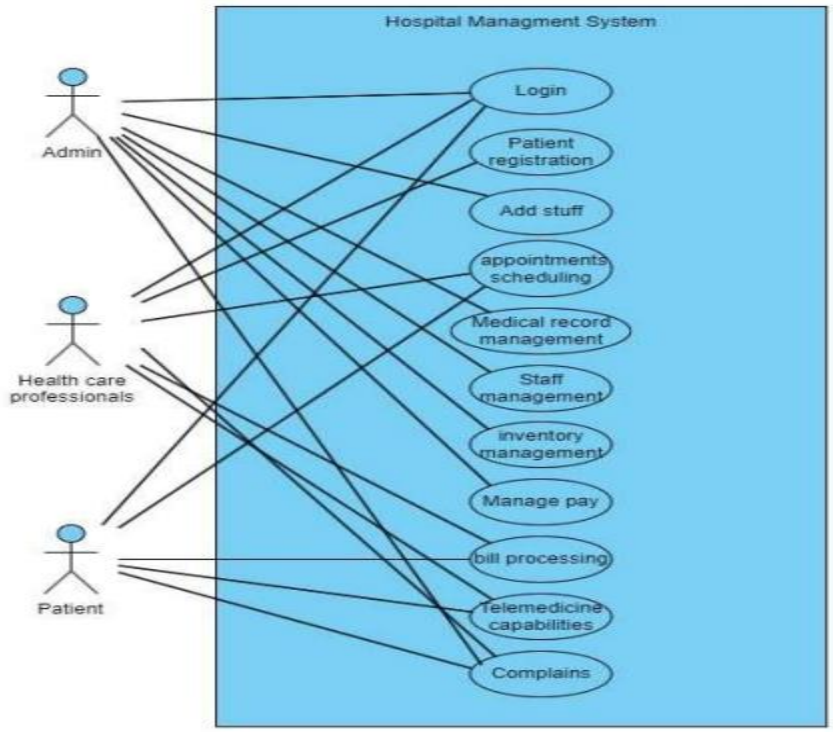
Class Diagram:



Sequence Dagram:



Use Case:



Dataflow Diagram: