

SOFTWARE REQUIREMENTS SPECIFICATION

1.0 INTRODUCTION

Paperless Hospital Service – provides a user friendly way of managing patient and hospital staff records. It allows admitting clerks, department admin, doctors and other staff to manage and view patient details and history from the central repository.

1.1 PURPOSE

The aim of this project is to leverage Paperless Hospital Service where patients do not have to do any paper work for consulting a doctor, by providing an application that could handle patient information and provide efficient healthcare services. The diagnosis and tests to be done on the patient by the doctor are stored in the database and updated in the patient's history which can be accessed by entering the unique patient id. The medication is provided by the pharmacy as per the prescription and the billing department calculates the expenses and charges the patient from his/her debit/credit card or from Insurance.

1.2 SCOPE

- Create different users like doctors, nurses and assign their respective privileges and duties.
- All users are authenticated to avail the services.
- Create a secure centralised database where all the users can access data as per their respective privileges.
- The patient's entire medical history can be viewed by entering his/her unique patient id.
- Allows administrator to add, view, edit and delete patients, staff, stock and also generate reports.
- Allows patients to register by giving their details to the admitting clerk who enters the data and confirms the appointment and generates the patient id.
- Allows registered patients to make appointments, complaints and suggestions online.

- The patient id which can be used during any further visit is sent via SMS to the patients' mobile phone.
- Allows doctors to do diagnosis and enter medication which is sold in the pharmacy.
- Maintains patient history and allows patient reports to be generated in pdf or other formats.
- Allows tracking of patients and hospital staff details.
- Maintain an FAQ section as guidance for all the users.
- Secure Socket Layer (SSL) connectivity to ensure security.
- Usage of JQuery for a pluggable look and feel.
- Usage of SOA for easier connectivity and enhancement.

1.3 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

- **AJAX:** Asynchronous Javascript and XML is a technique used in Javascript to create dynamic web pages.
- **DB2:** IBM Database 2 is a database management system that provides a flexible and efficient database platform to raise a strong "on demand" business applications.
- **EJB:** Enterprise Java Beans is an architecture for the development and deployment of distributed object application based server side software components.
- **HTML:** Hyper Text Markup Language is used to create static websites.
- **HTTP:** Hypertext Transfer Protocol is a transaction oriented client/server protocol between web browser and a web server.
- **HTTPS:** Secure Hypertext Transfer Protocol is HTTP over SSL (Secure Socket Layer).
- **JAVASCRIPT:** is a scripting language used for client side web development.
- **JQUERY:** is a Javascript library that emphasizes interaction between Javascript and HTML.
- **JSP:** Java Server Pages is used to create dynamic web content.
- **J2EE:** Java 2 Enterprise Edition is a programming platform, part of the Java platform, which is used for developing and running distributed java applications, based on modular software components running on an application server.
- **RAD:** Rational Application Developer is a toolkit which is designed for the creation of more complex projects, providing fully dynamic web application utilizing EJB's.
- **SOA:** Service Oriented Architecture.

- **WASCE:** Web Sphere Application Server Community Edition is an application server that runs and supports the J2EE and the web service applications.
- **Web 2.0:** It is commonly associated with web applications which facilitate interactive information sharing, interoperability, user-centred design and collaboration on the World Wide Web.
- **XML:** Extensible Markup Language is a markup language that was designed to transport and store data.
- **Administrator:** The administrator can add, edit and delete patients, staff and also grant privileges to the different users.
- **Patient details:** These are the details of the patient such as name, address, date of birth, sex etc.
- **Staff:** The hospital staff includes doctors, nurses and other personnel working in the hospital.
- **Staff Details:** These are the details of the staff like name, address, designation, experience etc.

1.4 REFERENCES

- Object Oriented Systems Development Using Unified Modelling Language by Ali Bahrami. McGraw Hill, 1999
- Wikipedia: www.wikipedia.com

1.5 TECHNOLOGIES TO BE USED

- **AJAX:** Asynchronous Javascript and XML
- **DB2 Express C:** IBM Database
- **EJB:** Enterprise Java Beans
- **HTML:** Hyper Text Markup Language
- **JAVA:** Application Architecture
- **Javascript:** Script Language
- **J2EE:**(Servlet, JSP, JAXP, Java Beans) Application Architecture
- **RAD 7.0:** Development Tool

- **RSA:** IBM Rational Software Architect
- **SOA:** Service Oriented Architecture
- **UML:** Unified Modelling Language
- **WASCE:** (Web Sphere Application Server Community Edition) Web Server
- **Web 2.0:** RSS Feed 2.0
- **XML:** Extensible Markup Language

1.6 OVERVIEW

The SRS includes two sections namely:

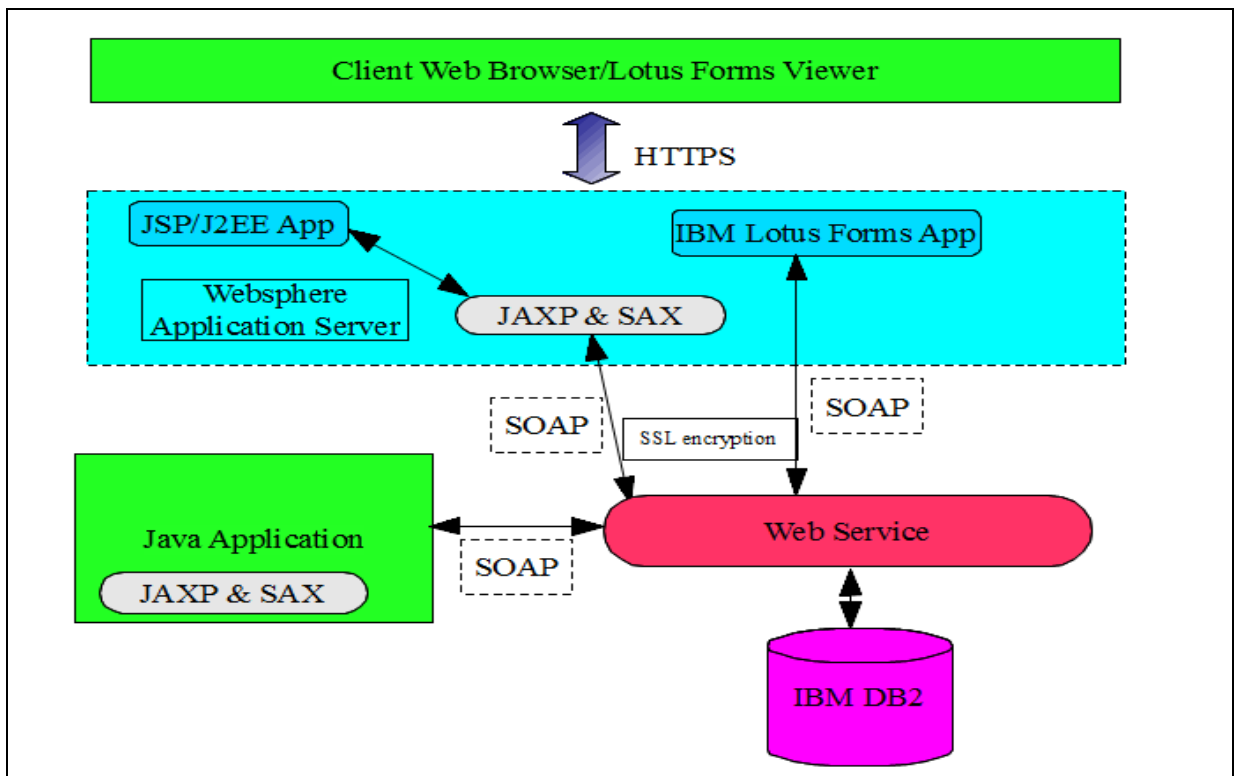
- **Overall Description:** This section will describe major components of the system, interconnections and external interfaces.
- **Specific Requirements:** This section will describe the functions of actors, their roles in the system and the constraints faced by the system.

2.0 OVERALL DESCRIPTION

This describes the major components of the system, inter-connections and external interfaces.

2.1 PRODUCT PERSPECTIVE

- The Paperless Hospital Service follows a Service-based Architecture for easy pluggability and interaction with other Services.
- The Front-end tier has a Java application that interfaces to the web service and a JSP application that, combined with a Lotus Forms application does the same.
- JAXP/SAX is used for parsing the required XML data that is transferred through the SOAP – based Web Service.
- The business components then interact with IBM DB2 database. Pure XML is used as it offers a hierarchical storage mechanism that is easier to use.



2.2 SOFTWARE INTERFACE

- **Front End Client:** Web Browser, Operating System (any)
- **Web Server:** WASCE, Operating System (any)
- **Database Server:** DB2, Operating System (any)
- **Back End:** DB2, Operating System (any)
- **Development Tool:** RAD (J2EE, Java, Java Bean, JSP, EJB), Windows, Web Sphere (Web Server)

2.3 HARDWARE INTERFACE

Client Side			
Internet Explorer 6.0 and above, Mozilla Firefox, Google Chrome	Processor	RAM	Disk Space
	Pentium III at 500MHz	128 MB	1 GB
Server Side			
Websphere Application Server v8.0	Pentium IV at 1.3GHz	512 MB	2 GB
DB2 Express C V9.7	Pentium IV at 1.3GHz	512 MB	1 GB (Excluding data size)

2.4 PRODUCT FUNCTIONALITIES

- **Administrator Facilities:** The administrator facilities include adding new users, editing user profiles, viewing patient/staff history and generating reports.

- **Registration:** The details of the patient like name, address etc. are entered by the Admitting Clerk and the patient id is generated.
- **Appointment:** The patient requests appointment and the Department Admin confirms the appointment with the doctor.
- **Treatment:** The doctor diagnoses the patient and prescribes the tests and medication or transfers patient to ward.
- **Medication:** The medication can be purchased from the pharmacy according to the prescription.
- **Stock:** The details of medicines available in the pharmacy is maintained and a record of equipment in the hospital is kept.
- **Billing:** The patient can pay the hospital bill by credit/debit card or by Insurance.
- **Reports:** The patient reports can be generated for patients. The patient history can also be generated for assisting diagnosis of patients.
- **User facilities:** The users can view/edit their profiles, change password, login and logout. The users are assigned different privileges as per their roles.

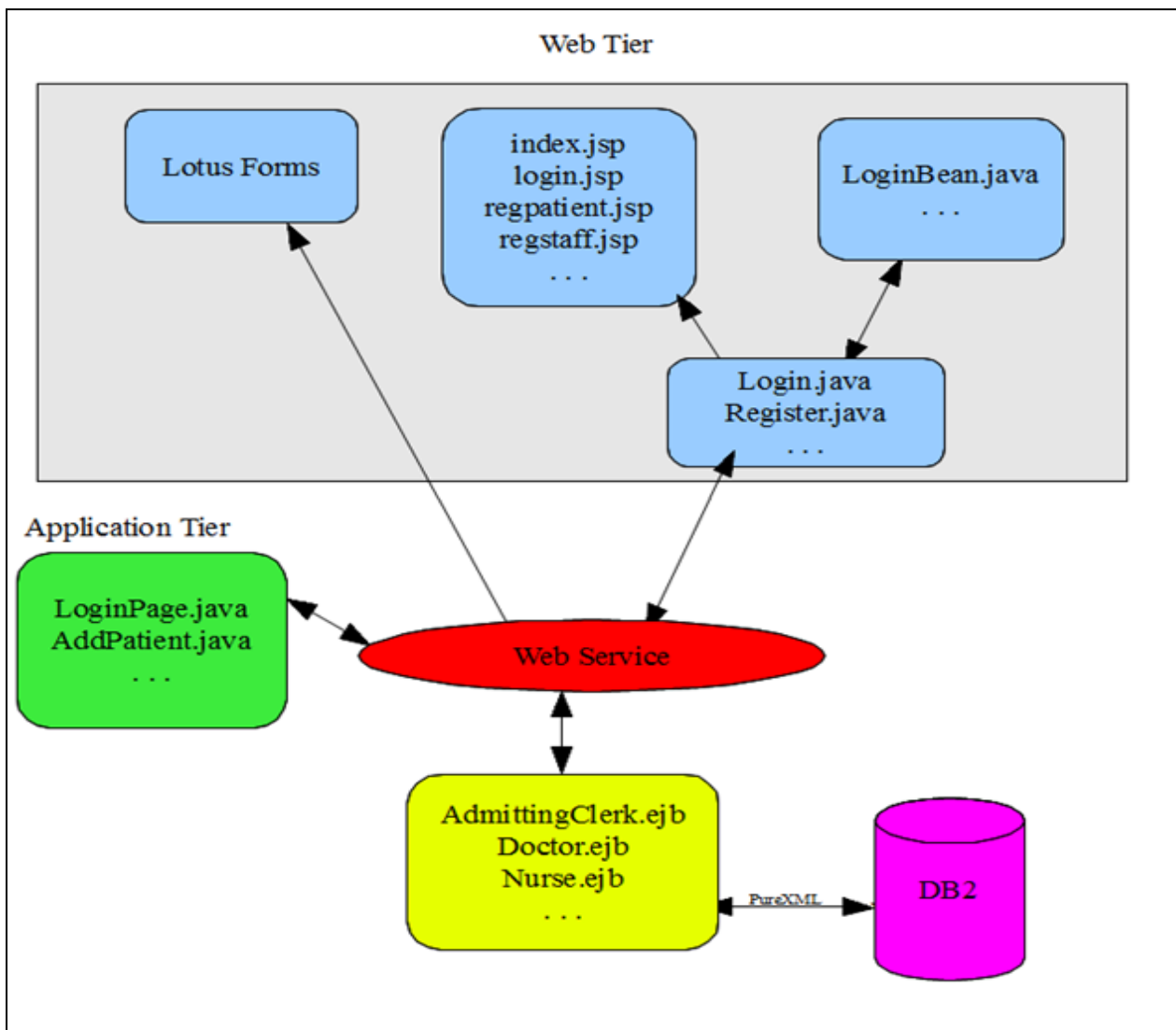
2.5 USER CHARACTERISTICS

The user must have the knowledge of operating a computer, browsing the internet and English in order to login and access the facilities assigned to him/her. However, if the user (patient) directly visits the hospital, it is only required that he/she should be able to communicate with the Hospital Staff for registration and making appointments.

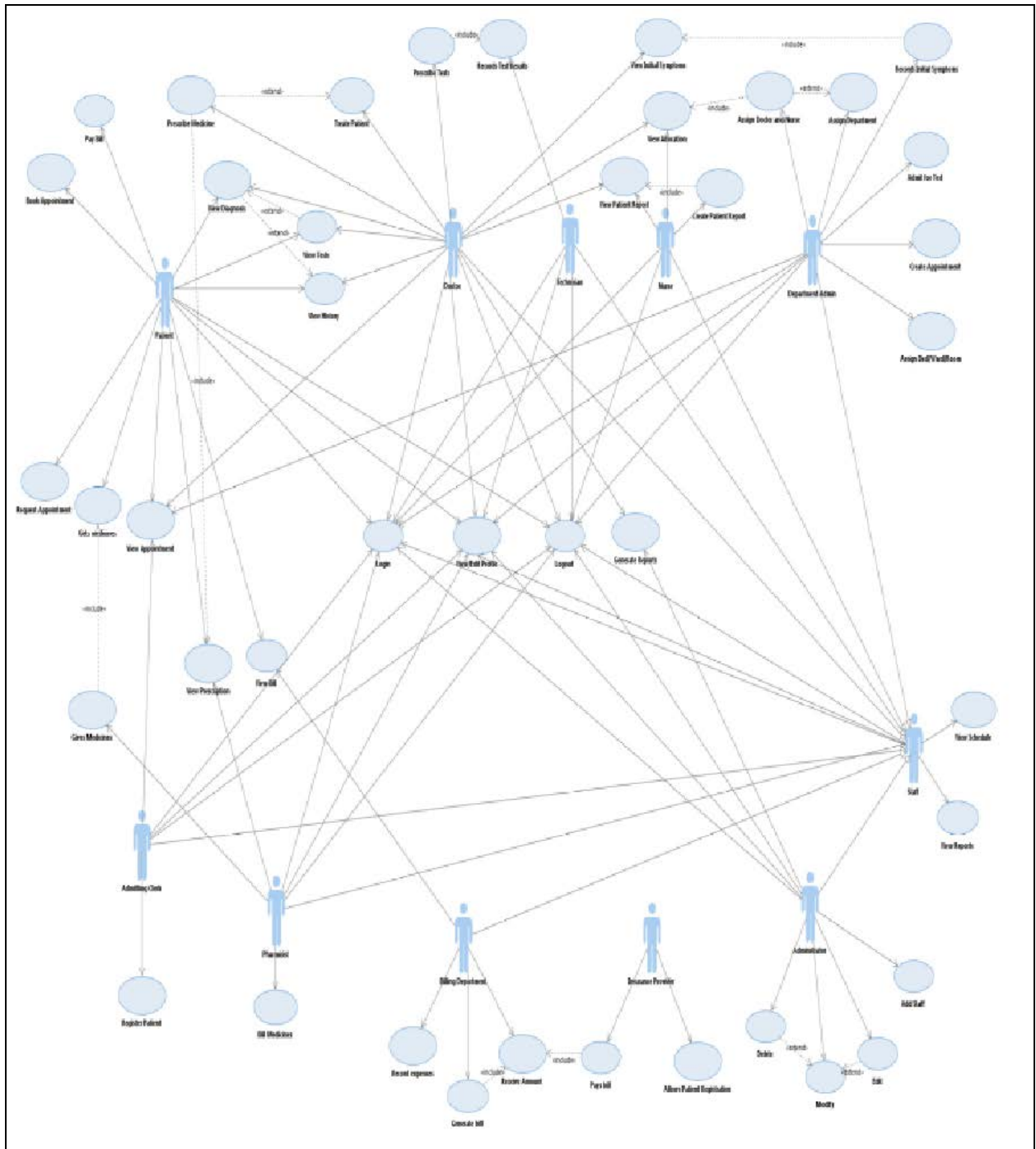
2.6 CONSTRAINTS

1. GUI is only in English.
2. Username and password are only used for authentication of users.
3. Only registered patients and hospital staff are allowed to use the services.

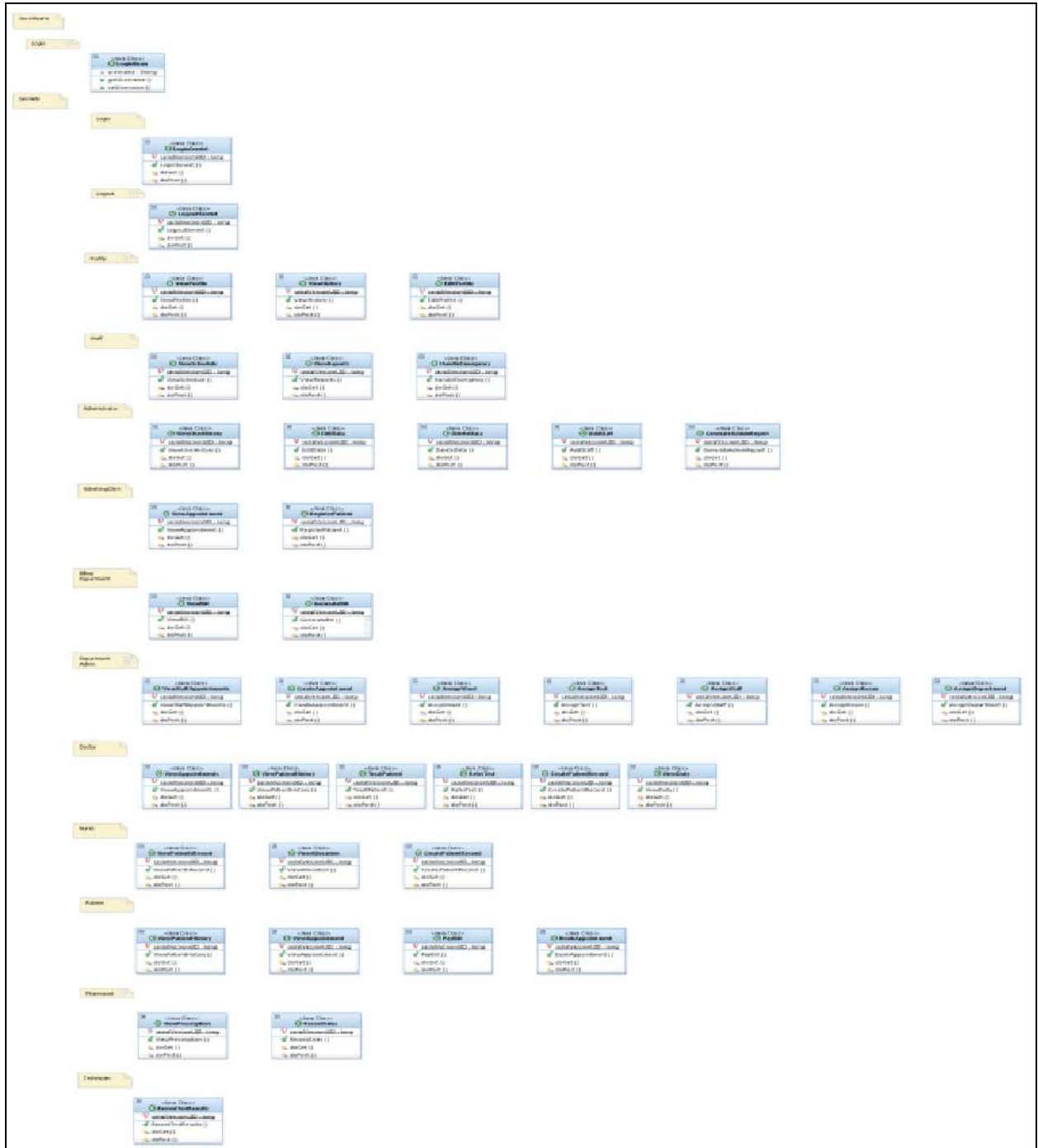
2.7 ARCHITECTURE DIAGRAM



2.8 USE CASE MODEL DESCRIPTION

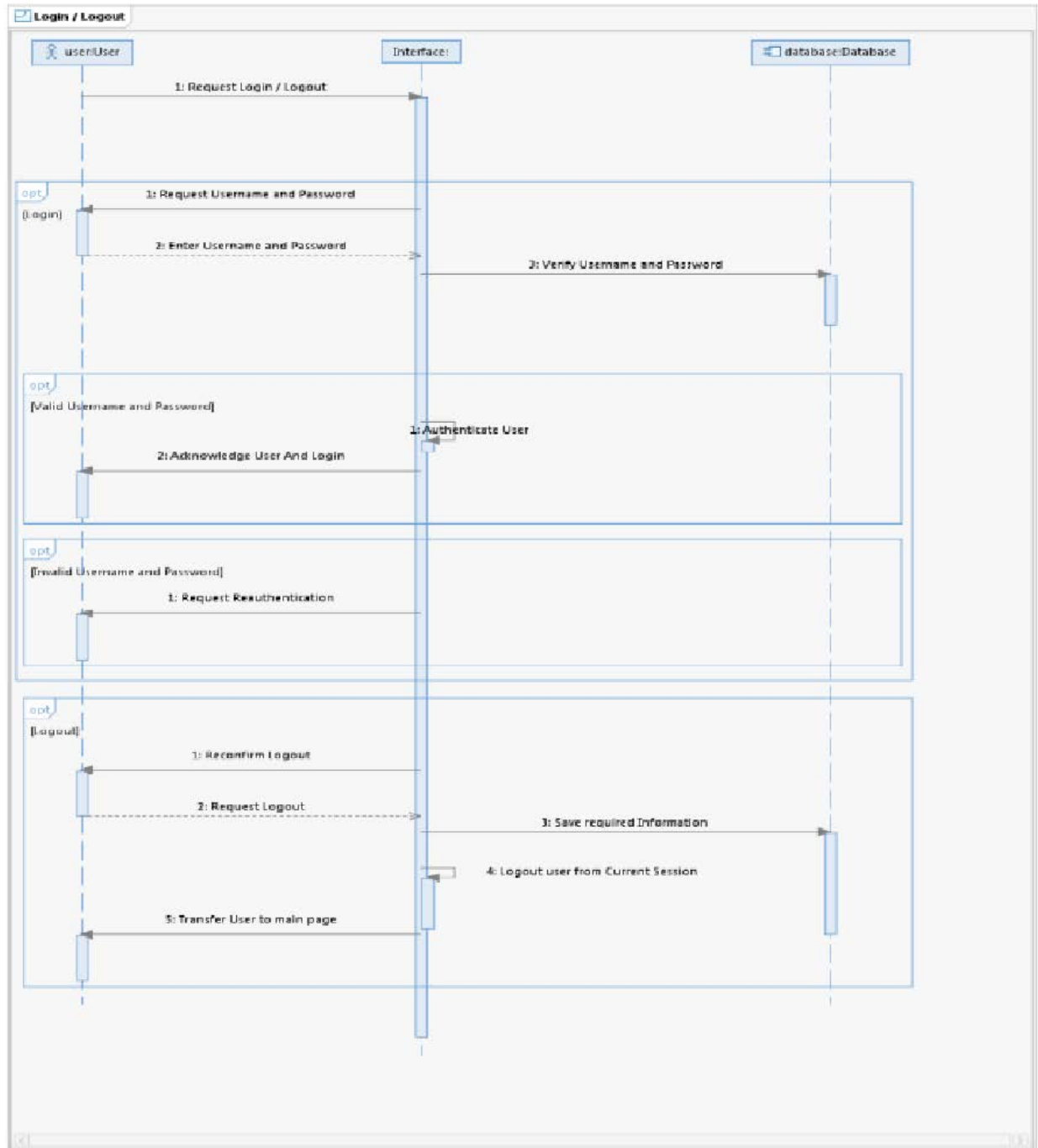


2.9 CLASS DIAGRAM

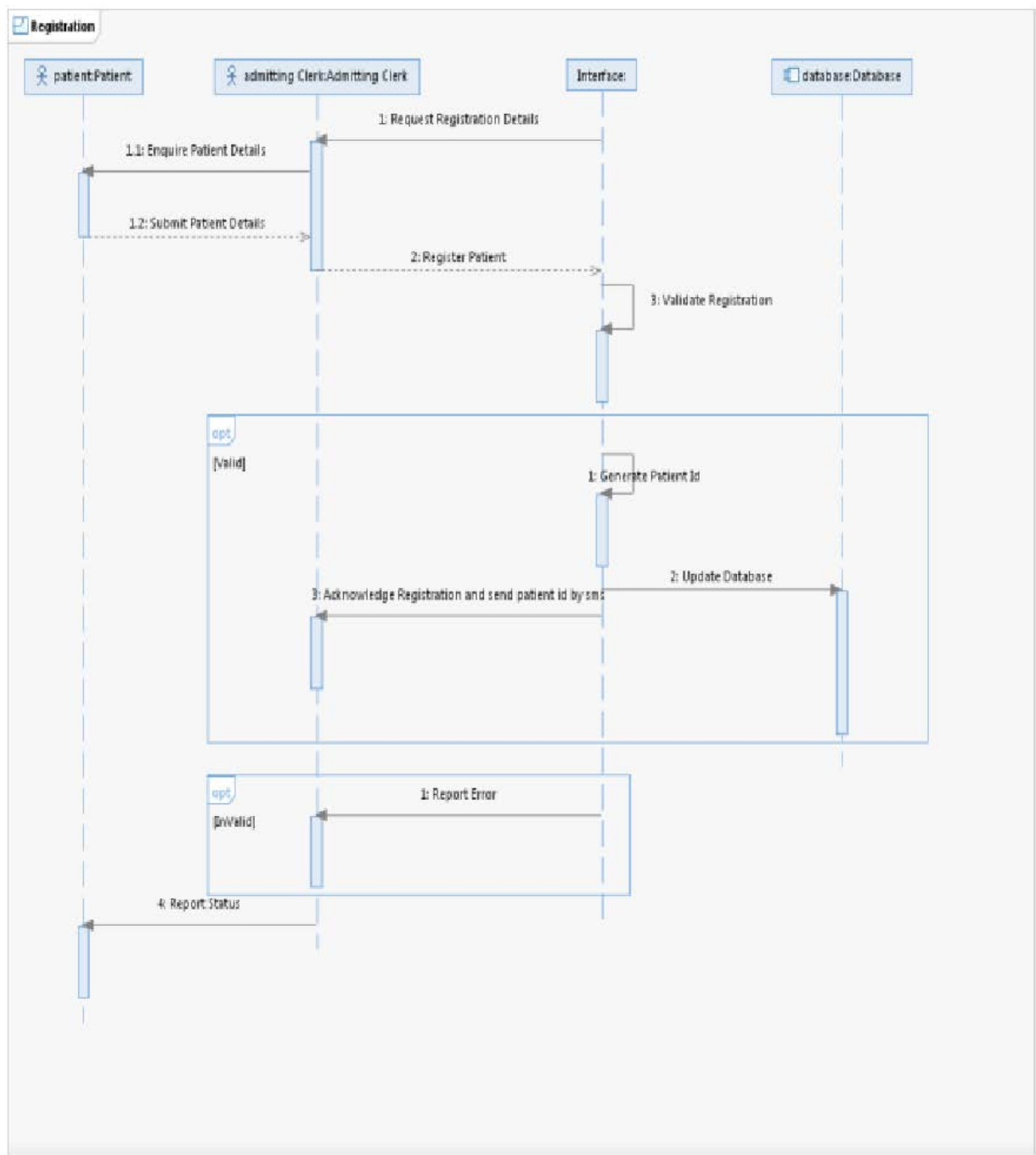


SEQUENCE DIAGRAM

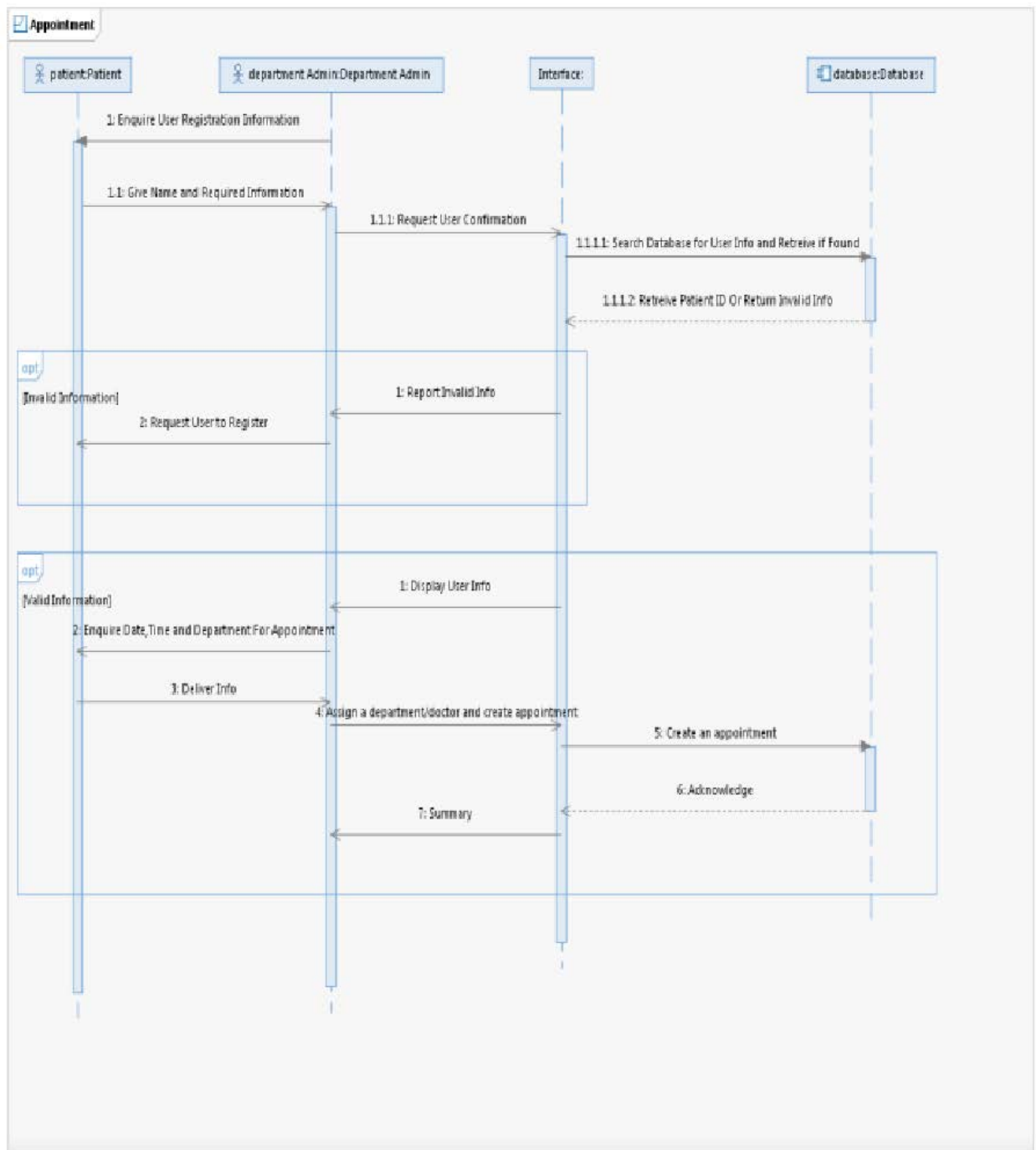
Case 1: Login/Logout



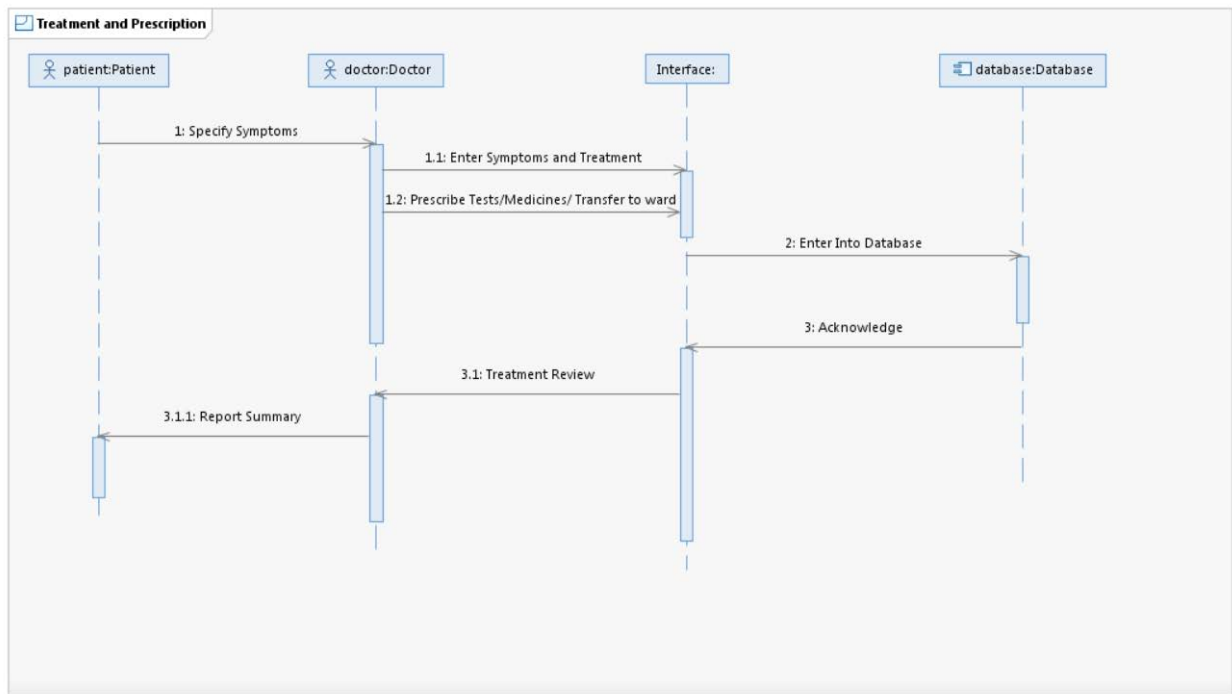
Case 2: Patient Registration



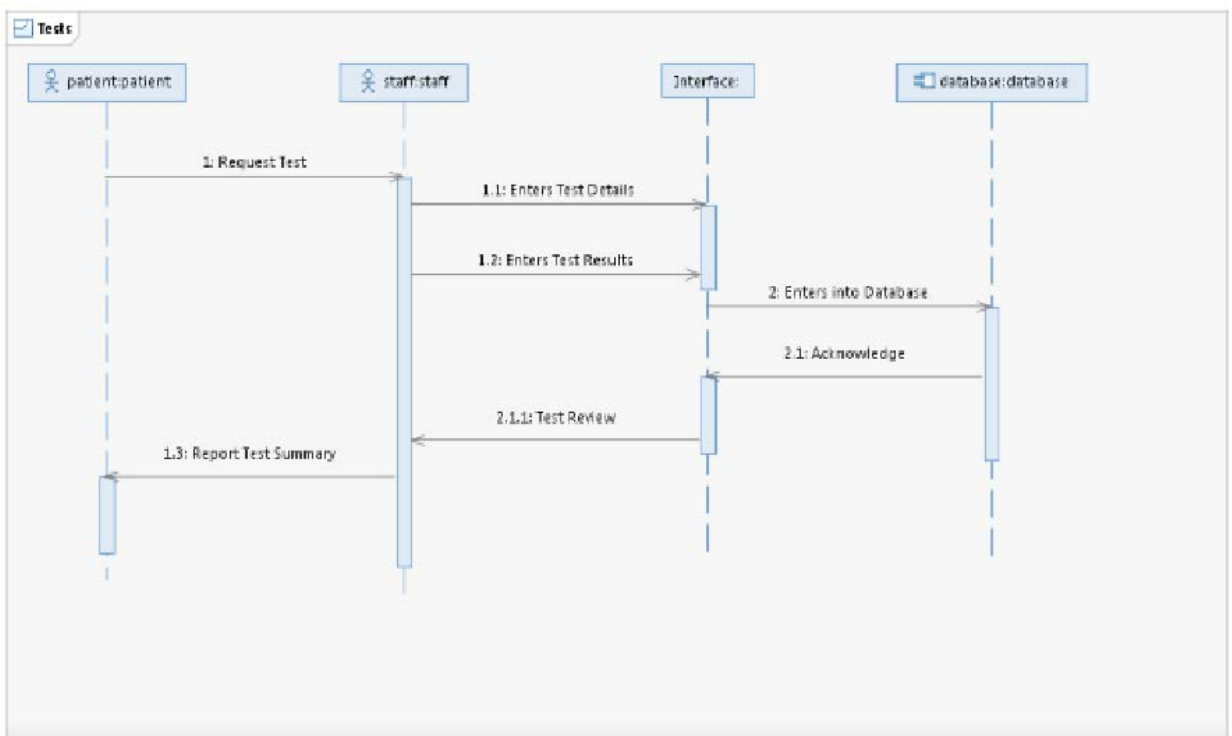
Case 3: Patient Appointment



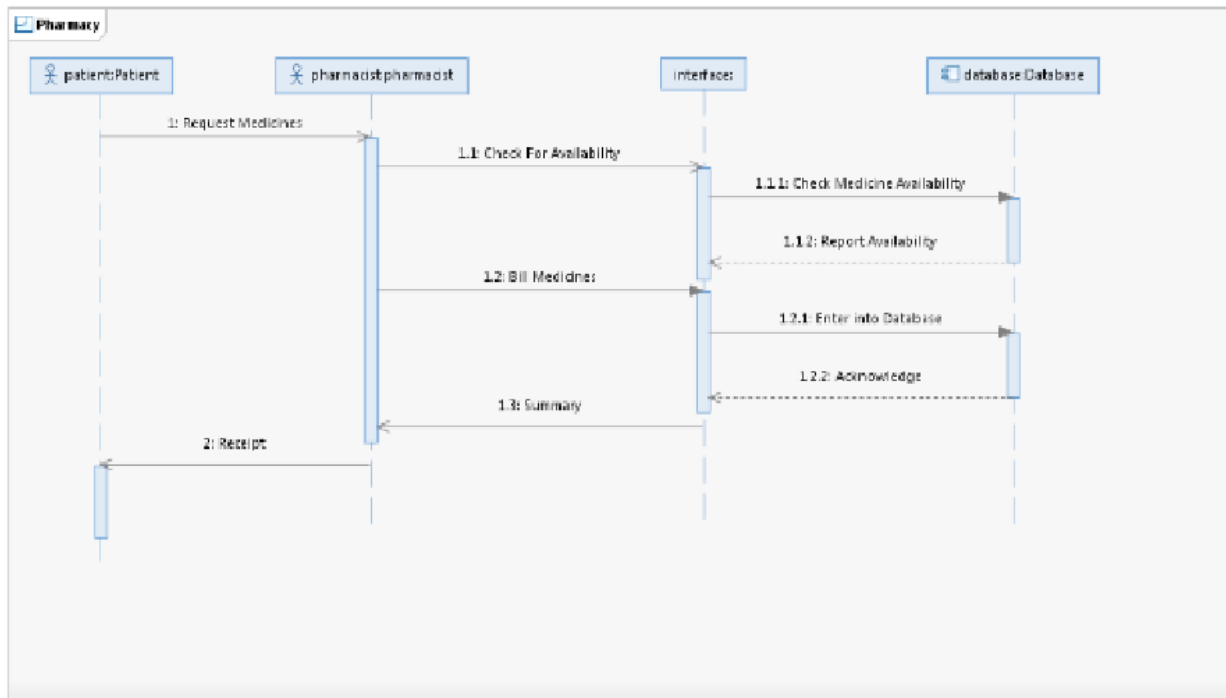
Case 4: Treatment and Prescription



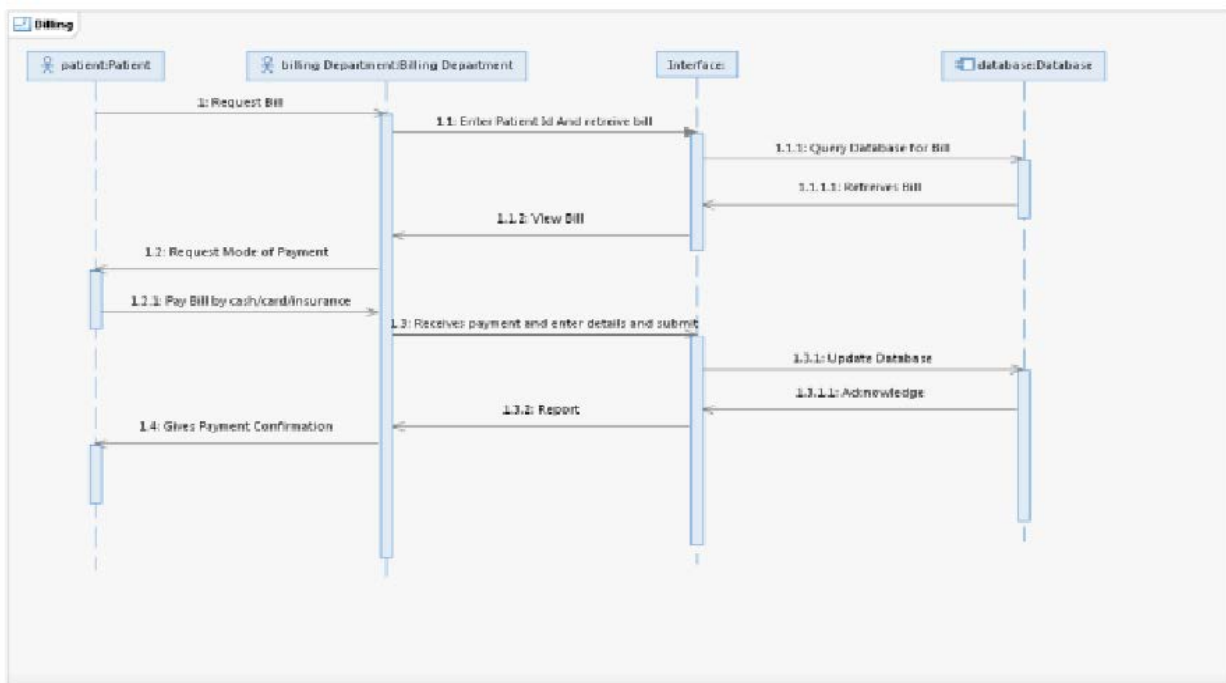
Case 5: Tests



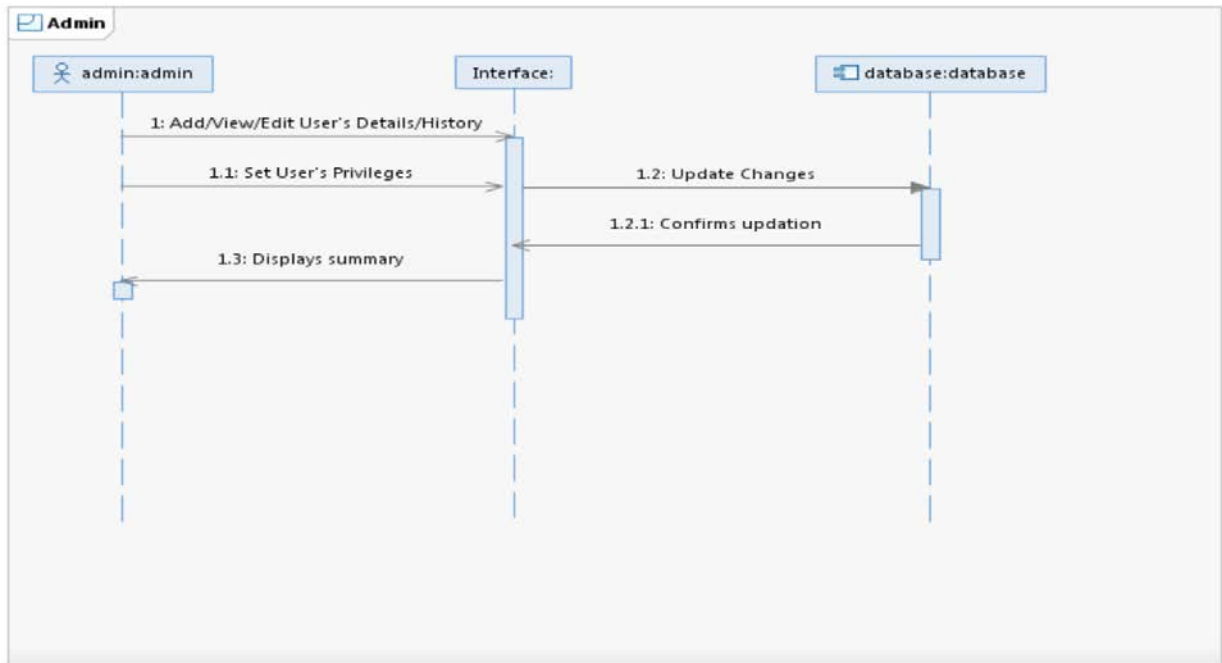
Case 6: Pharmacy



Case 7: Billing



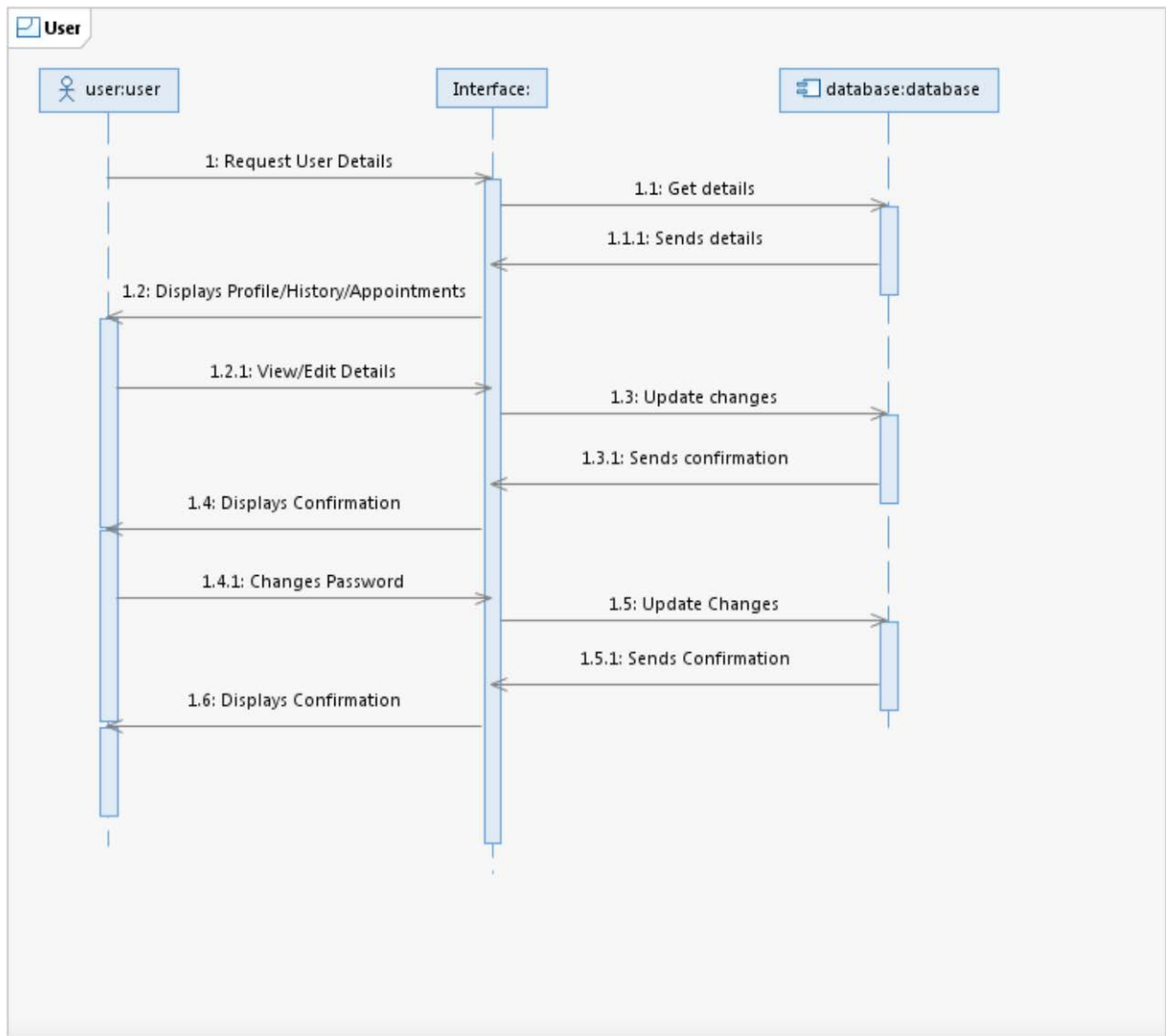
Case 8: Administrator



Case 9: Staff

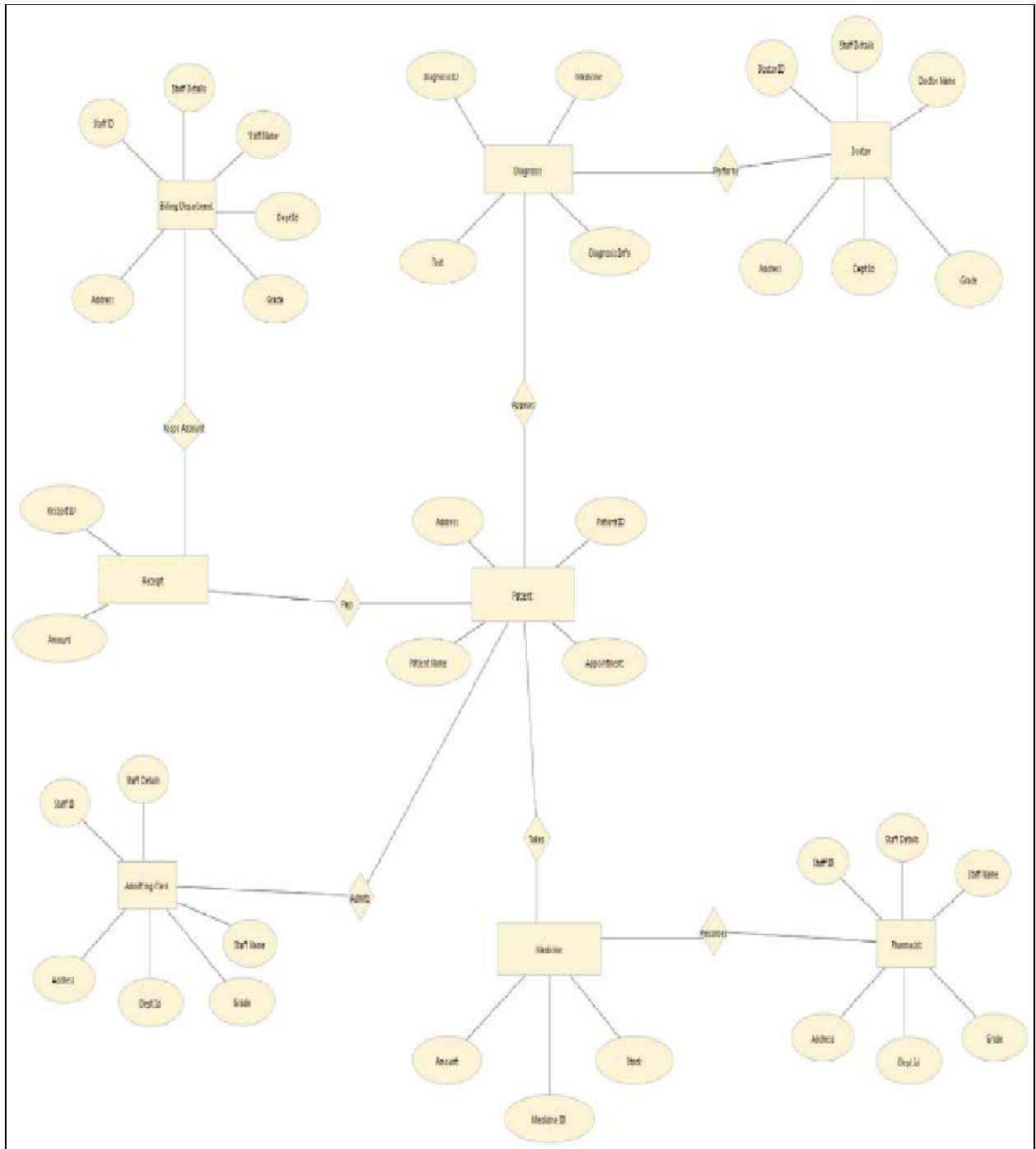


Case 10: User

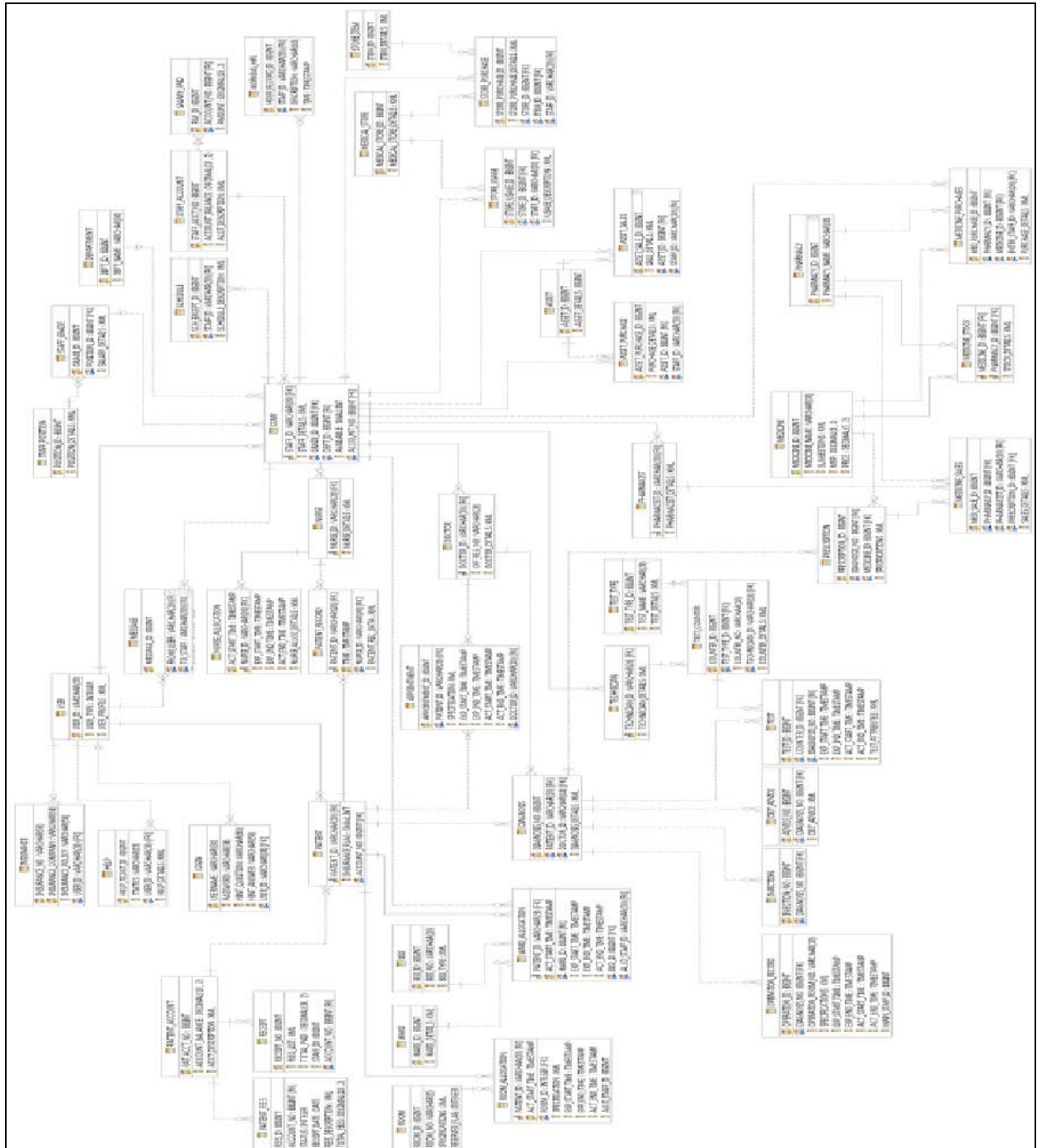


2.10 DATABASE DESIGN

2.10.1 ER DIAGRAM



2.10.2 SCHEMA



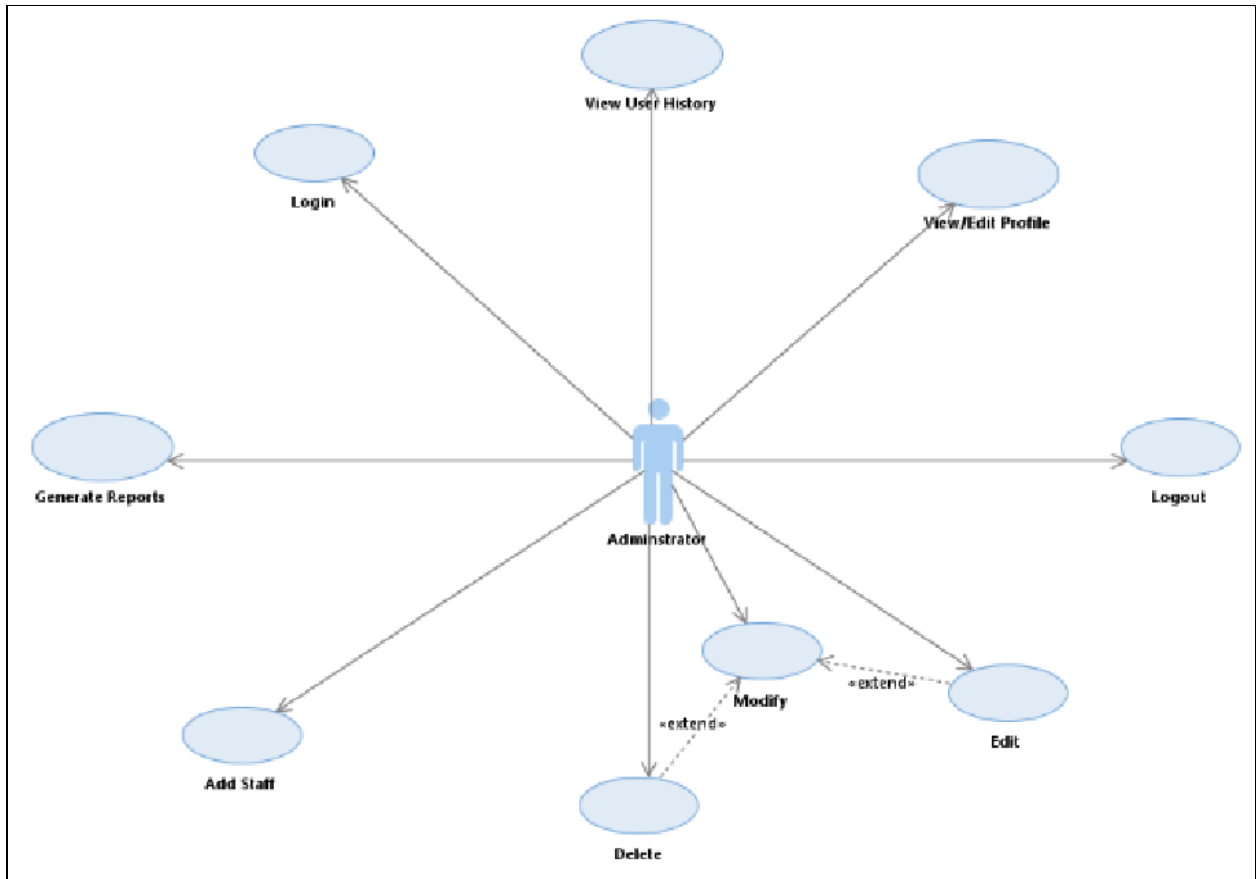
2.11 ASSUMPTIONS AND DEPENDENCIES

- The administrator is created in the system already to add, edit, delete and view the details of users.
- The users and their roles are predefined.
- The user of the system should have basic knowledge of English and on how to operate a computer and a web browser.

3.0 SPECIFIC REQUIREMENTS

3.1 USE CASE REPORTS

Administrator



Login: The administrator can login with username and password.

View/Edit Profile: The administrator can view/edit his/her profile.

View User's History: The administrator can view the history of users in the system.

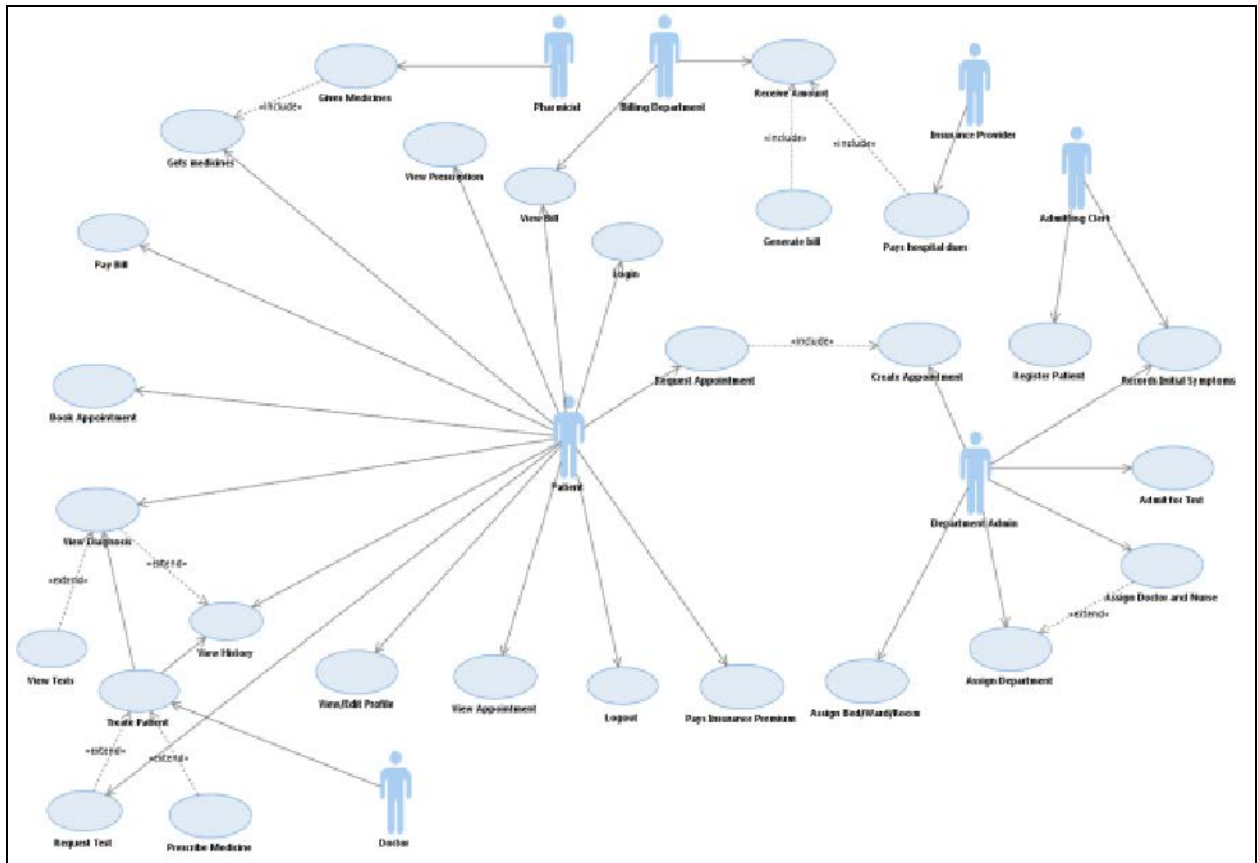
Generate Reports: The administrator can generate reports.

Add staff: The administrator can add staff in the hospital.

Delete/Edit: The administrator can delete/edit any user's details.

Logout: The administrator can logout of the system.

Patient



Login: The patient can login with the patient id as username and password provided during registration.

View/Edit Profile: The patient can view/edit his/her profile.

Book Appointment: The patient can book appointments with a doctor.

View Appointment: The patient can view appointments with a doctor.

View Diagnosis: The patient can view the diagnosis made by the doctor.

View Prescription: The patient can view the prescription given by the doctor.

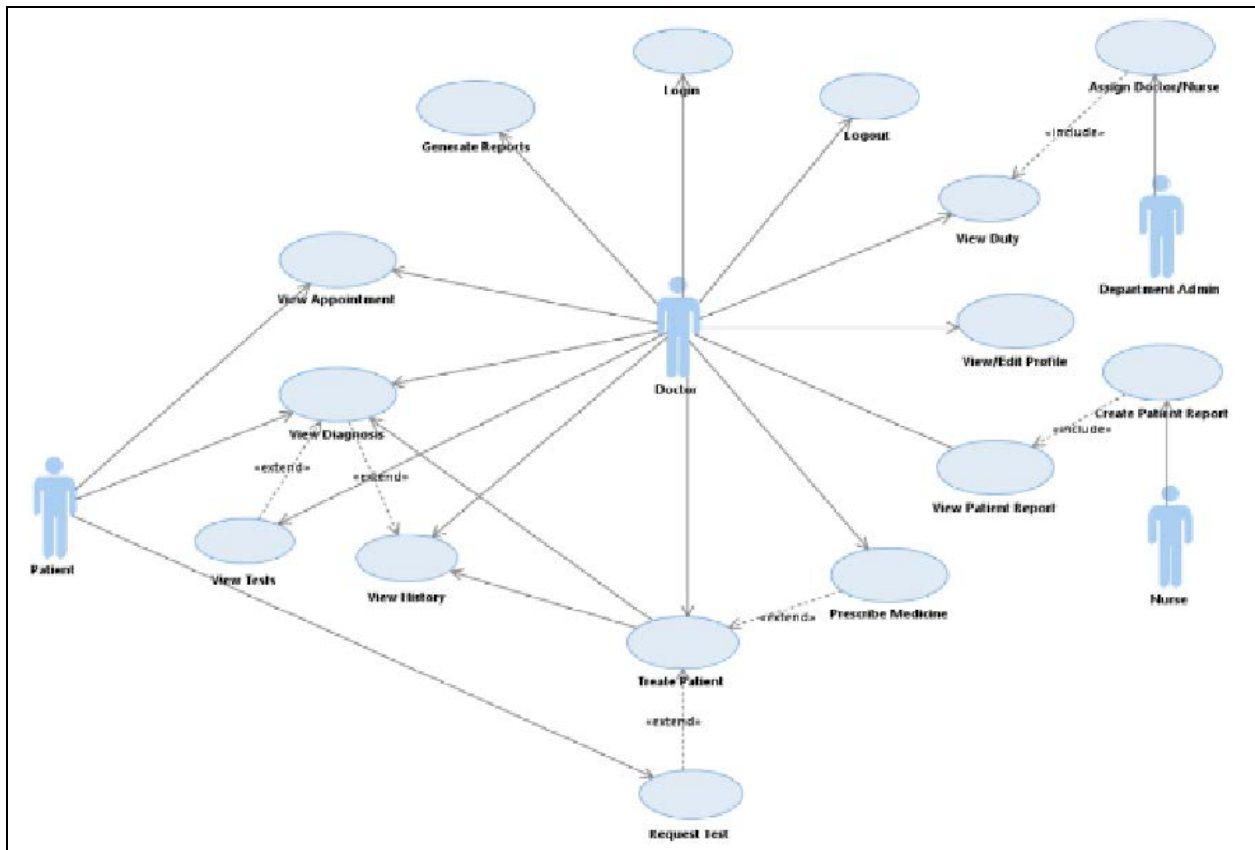
View History: The patient can view his/her medical history.

Get Medicines: The patient can purchase medicines from the pharmacy as per the prescription.

Pay Bill: The patient can pay his/her hospital dues using cash/card/Insurance.

Logout: The patient can logout of the system.

Doctor



Login: The doctor can login with username and password.

View/Edit Profile: The doctor can view/edit his/her profile.

View Appointments: The doctor can view the appointments made by patients.

Treat Patient: The doctor can treat patients and make diagnosis.

Request Tests: The doctor can request tests to be made on the patient for further diagnosis.

Create Patient Record: The doctor can create a patient record.

View Patient Record: The doctor can view a patient record.

View Patient History: The doctor can view the patient history.

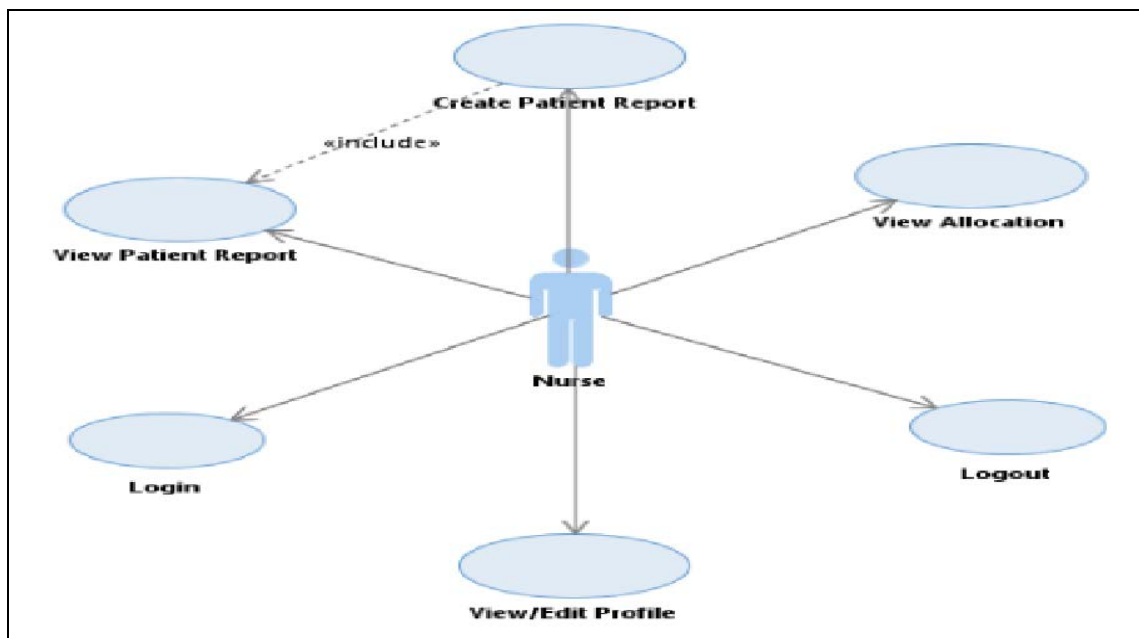
View Diagnosis: The doctor can view the diagnosis.

Prescribe Medicine: The doctor can prescribe medication for the patients.

View Duty: The doctor can view the duties assigned to him/her.

Logout: The doctor can log out of the system.

Nurse



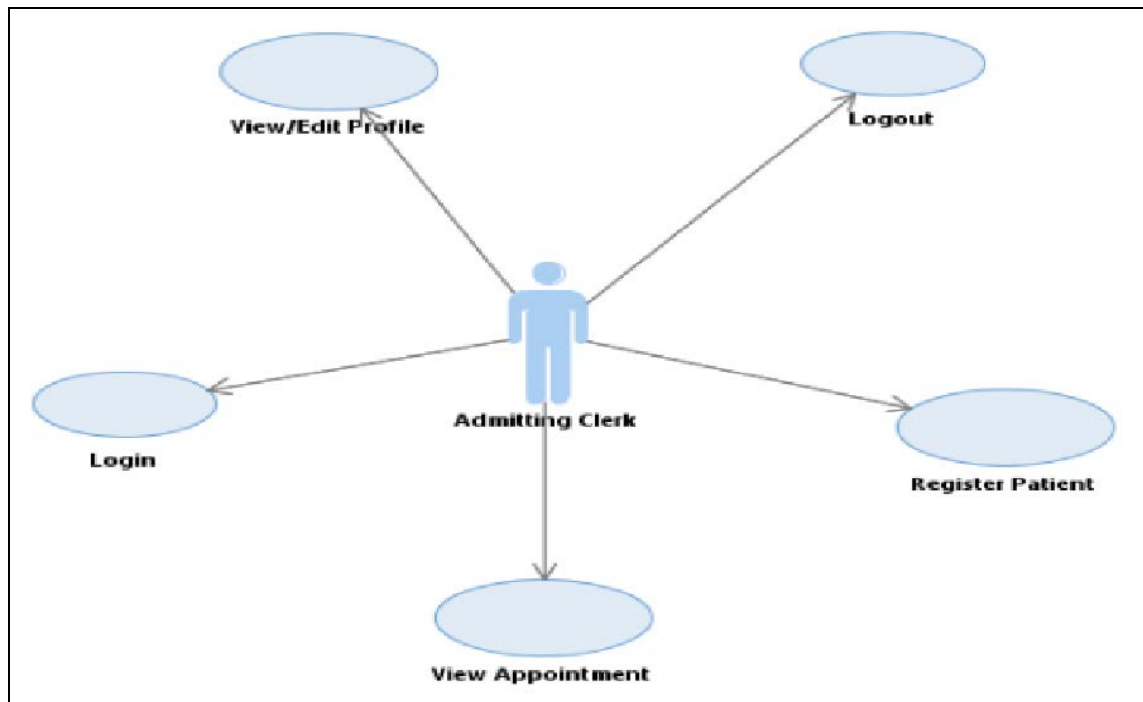
Create Patient Report: The nurse can create a patient report and enter details.

View Patient Record: The nurse can view the patient's report.

View Allocation: The nurse can view the patients allocated and the duties assigned to him/her.

Logout: The nurse can logout of the system.

Admitting Clerk



Login: The admitting clerk can login with username and password.

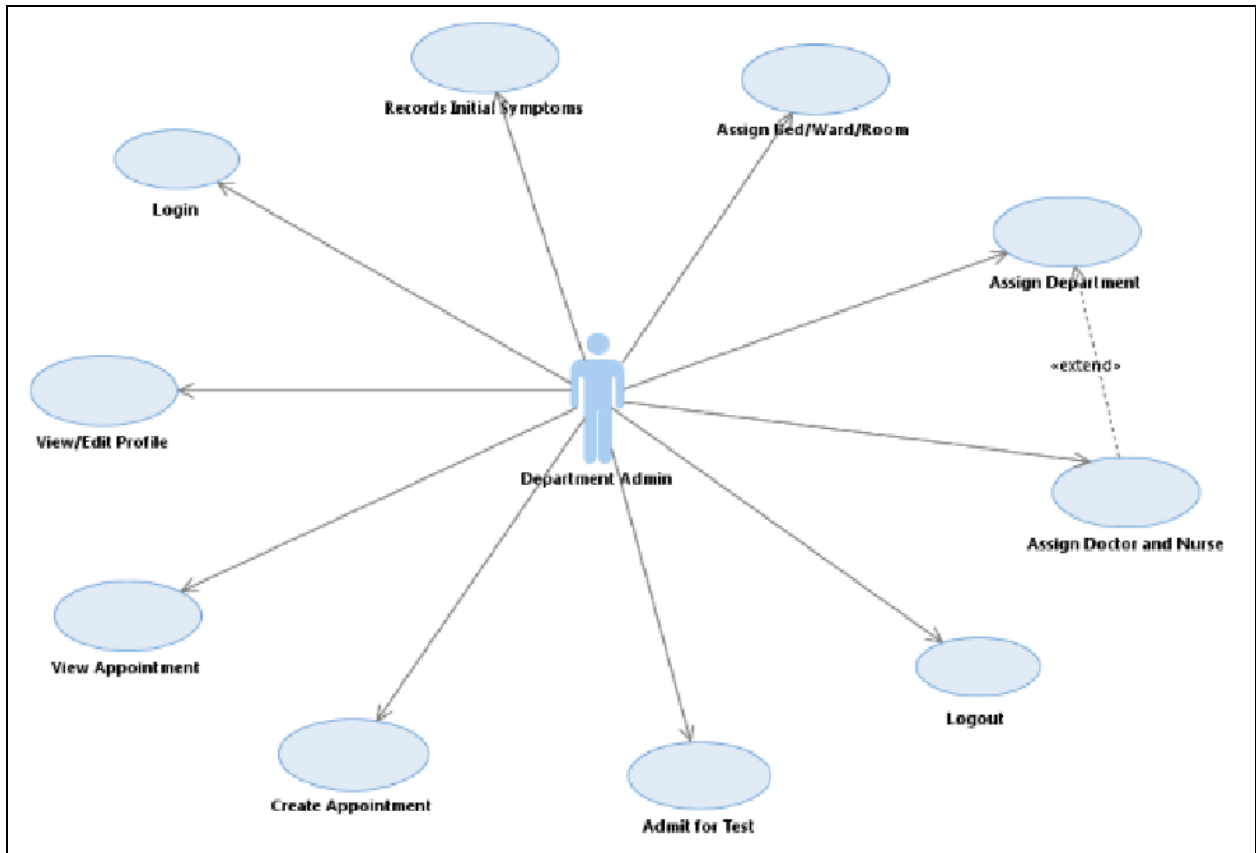
View/Edit Profile: The admitting clerk can view/edit his/her profile.

Register Patient: The admitting clerk can make the registration of a new patient.

View Appointment: The admitting clerk can view appointments of patients and doctors.

Logout: The admitting clerk can logout of the system.

Department Admin



Login: The department admin can login with username and password.

View/Edit Profile: The department admin can view/edit his/her profile.

View Appointment: The department admin can view appointments of patients and doctors.

Records initial symptoms: The department admin records the initial symptoms of the patient.

Create Appointment: The department admin can create an appointment of a patient with a doctor.

Assign Department: The department admin can assign the patient to a department in the hospital.

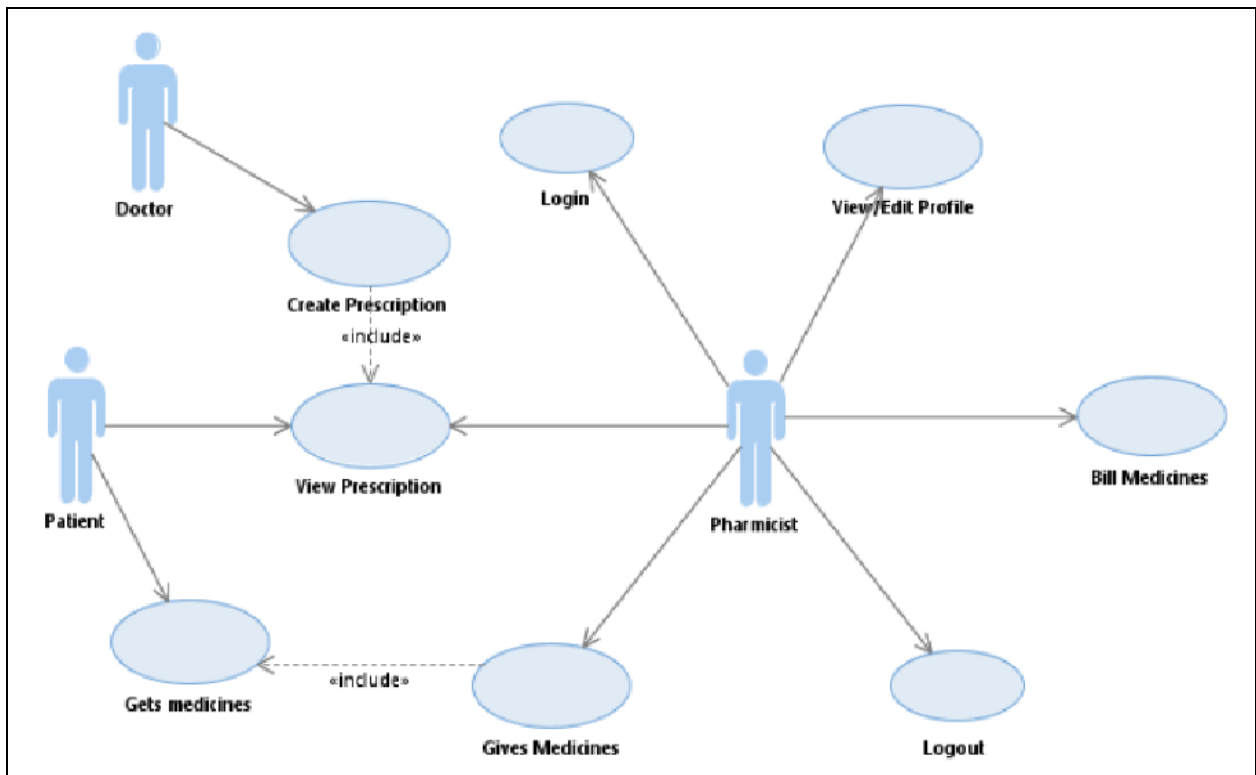
Assign Doctor and Nurse: The department admin assign doctors and nurses to a patient.

Assign Bed/Ward/Room: The department admin can assign a bed/ward/room for the patient.

Admit for Test: The department admin can be admit a patient for conducting a test.

Logout: The department admin can logout of the system.

Pharmacist



Login: The pharmacist can login with username and password.

View/Edit Profile: The pharmacist can view/edit his/her profile.

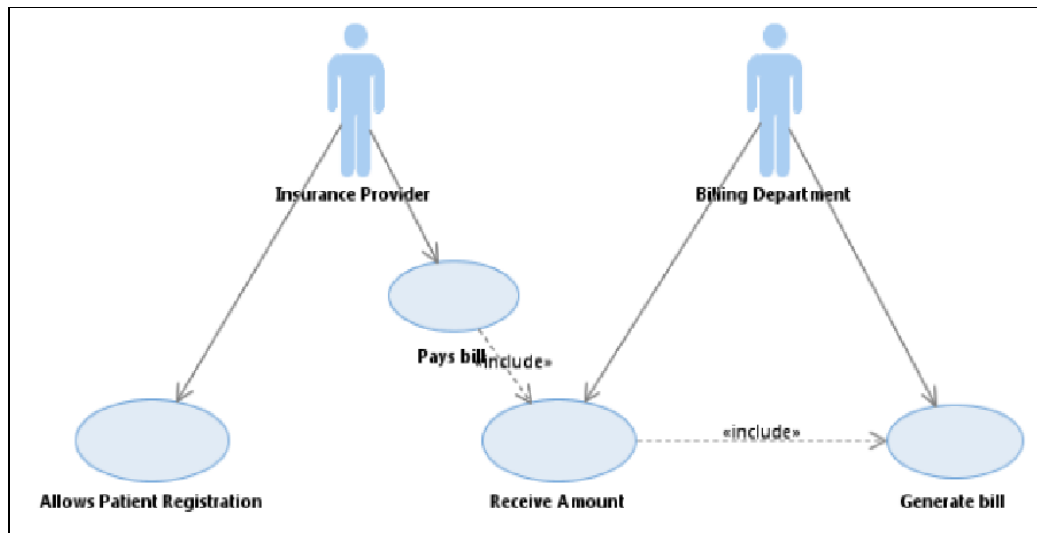
View Prescription: The pharmacist can view the prescription made by the doctor.

Give Medicines: The pharmacist can give medicines to the patient based on the prescription given by the doctor.

Bill Medicines: The pharmacist can bill medicines to the patient's account.

Logout: The pharmacist can logout of the system.

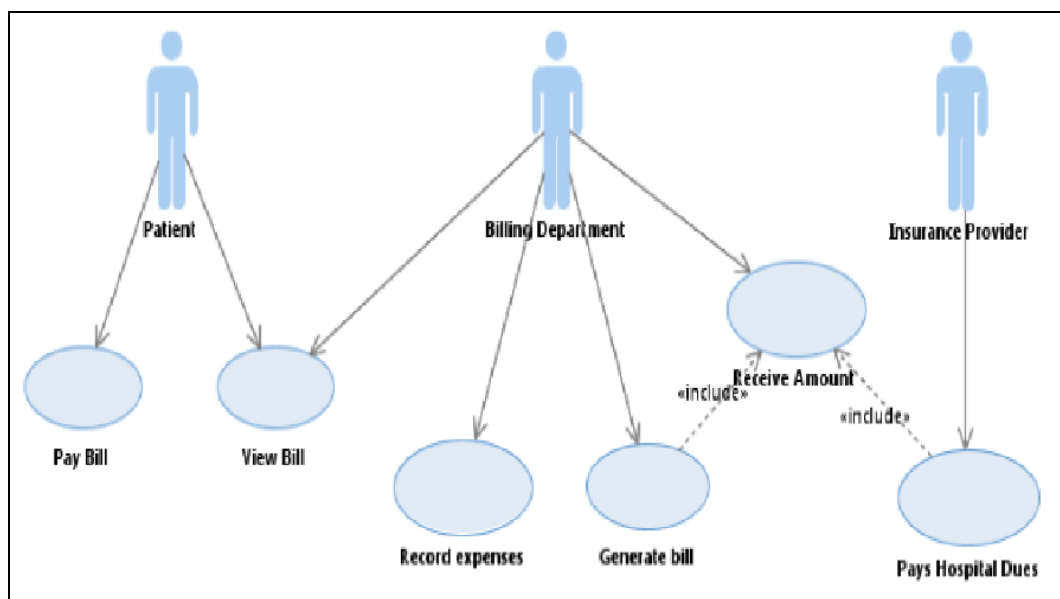
Insurance Provider (External Actor)



Allow Patient Registration: The Insurance provider allows patient registration for medical insurance.

Pays bill: The Insurance Provider pays the Hospital Dues for the patient who has Medical Insurance.

Billing Department



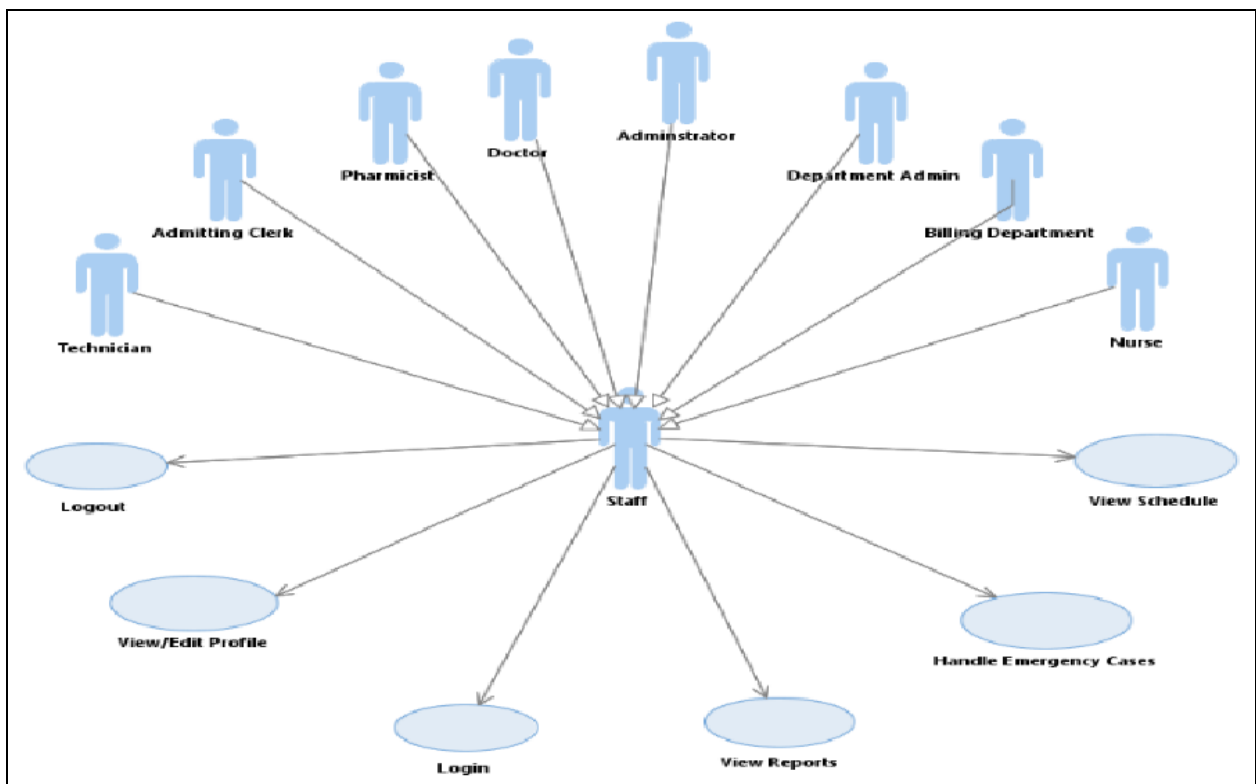
Record Expenses: The billing department keeps a record of the patient's hospital dues.

View Bill: The billing department can view the patient's hospital dues.

Receive Amount: The billing department receives the hospital dues from the patient either by cash, card or from the Insurance provider.

Generate Bill: The billing department generates bill after payment is made which is send to the patient email.

Staff



The hospital staff include administrators, doctors, nurses, admitting clerks, department admins, pharmacists, technicians etc.

Login: The staff can login with username and password.

View/Edit Profile: The staff can view/edit his/her profile.

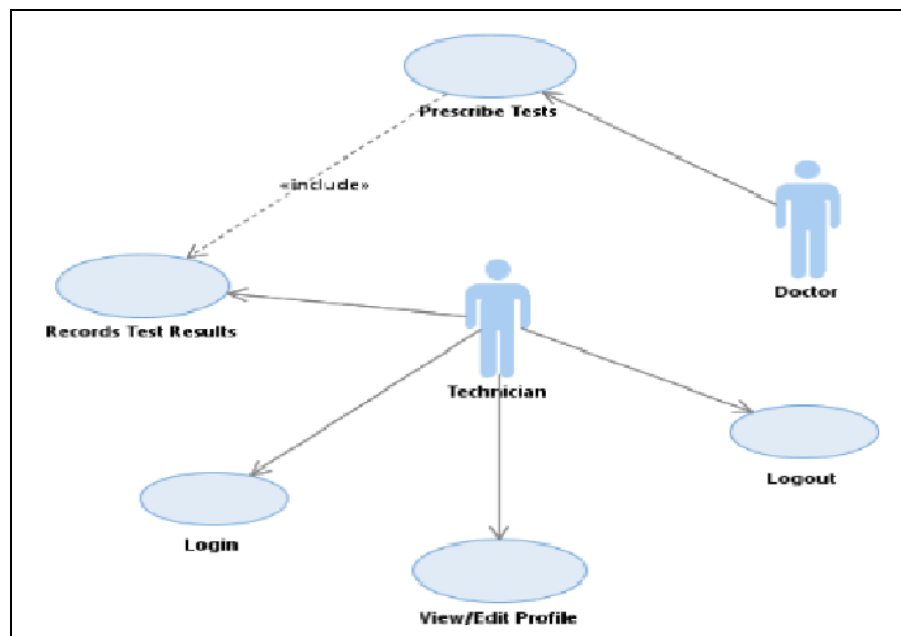
View Schedule: The staff can view schedule of duties assigned to him/her.

View Reports: The staff can view the reports of the patient.

Handle Emergency Cases: The staff can handle emergency cases in the hospital as per the duty assigned to him/her.

Logout: The staff can logout of the system.

Technician



Login: The technician can login with username and password.

View/Edit Profile: The technician can view/edit his/her profile.

Record Test Results: The technician can record patient test results.

Logout: The technician can logout of the system.

FUNCTIONAL REQUIREMENTS

The following common functions shall be performed by any one of the users – administrator, patient, doctor, nurse, admitting clerk, department admin, pharmacist, technician and other hospital staff.

- **Login**

Use Case Name	Login
Priority	Essential
Trigger	Menu Selection
Precondition	The user account is existing in the database and the user is not yet logged in.
Basic Path	<ol style="list-style-type: none">1. The user enters the username and password and clicks submit.2. This information is validated and then sent to the database for authentication.3. If authenticated, the user is granted permission and is logged in.
Alternate Path	If the user enters incorrect username/password, an error message is displayed and the user is requested to re-enter credentials. If the user forgot password, the user clicks the Forgot Password button and the password will be send to the user's email address.
Postcondition	The user is logged in and has access to all the privileges that have been assigned.
Exception Path	If there is a connection failure, the user shall be requested to re-enter credentials.
Other	-
Reference	SRS 3.1

- **Logout**

Use Case Name	Logout
Priority	Essential
Trigger	Menu Selection

Precondition	The user is logged in.
Basic Path	1. The user clicks the logout button. 2. The user is requested to confirm the logout, after which the logout confirmation is made.
Alternate Path	If the user does not confirm the logout, the user is directed back to the original page.
Postcondition	The user is logged out and will not be able to access the privileges assigned.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View/Edit Profile**

Use Case Name	View/Edit Profile
Priority	Essential
Trigger	Menu Selection
Precondition	The user is logged in.
Basic Path	1. The user clicks the View Profile button to view profile. 2. The user can click the Edit Profile to edit details or change password. 3. If the user requests a change in password, the old password will be requested and the user will be asked to enter the new password twice.
Alternate Path	If the user enters the incorrect old password, an error message is displayed and the password change is denied.
Postcondition	The profile/password changes are made.
Exception Path	N/A
Other	-
Reference	SRS 3.1

The user specific functionalities are as follows:

ADMINISTRATOR

- **View User's History**

Use Case Name	View User's History
Priority	Essential
Trigger	Menu Selection
Precondition	The administrator is logged in.
Basic Path	1. The Administrator clicks on View User's History and selects the required option.
Alternate Path	N/A
Postcondition	The Administrator can view the details and actions of all the users in the system.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Generate Reports**

Use Case Name	Generate Reports
Priority	Essential
Trigger	Menu Selection
Precondition	The administrator is logged in.
Basic Path	1. The Administrator clicks on Generate Reports and selects the required option.
Alternate Path	N/A

Postcondition	The Administrator can generate the reports of any hospital staff/patient/any other information in the database.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Add Staff**

Use Case Name	Add Staff
Priority	Essential
Trigger	Menu Selection
Precondition	The administrator is logged in.
Basic Path	1. The Administrator clicks on Add Staff and selects the required category. 2. The details of the staff are entered and saved in the database.
Alternate Path	N/A
Postcondition	The staff is allotted a username and password for access to the privileges allocated.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Edit/Delete**

Use Case Name	Edit/Delete
Priority	Essential
Trigger	Menu Selection
Precondition	The administrator is logged in.

Basic Path	1. The Administrator clicks on Edit to edit any details in the database. 2. The details are edited and saved. 3. If any user/data is to be deleted, the data is selected and the Delete button is clicked.
Alternate Path	N/A
Postcondition	The user/data is edited or deleted from the database.
Exception Path	N/A
Other	-
Reference	SRS 3.1

PATIENT

- **Book Appointment**

Use Case Name	Book Appointment
Priority	Essential
Trigger	Menu Selection
Precondition	The patient has registered in the hospital and has a patient id.
Basic Path	1. The patient selects the date on which the appointment is to be made and the doctor he/she wishes to meet. 2. The availability of doctors is displayed and the patient confirms the appointment.
Alternate Path	N/A
Postcondition	The appointment with the doctor is confirmed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View Appointment**

Use Case Name	View Appointment
Priority	Essential
Trigger	Menu Selection
Precondition	The patient has registered in the hospital and has a patient id.
Basic Path	1. The patient clicks the View Appointments button and selects the required option.
Alternate Path	N/A
Postcondition	The list of appointments and their details are displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View History**

Use Case Name	View History
Priority	Essential
Trigger	Menu Selection
Precondition	The patient has registered in the hospital and has a patient id.
Basic Path	1. The patient clicks the View History button and selects the required option.
Alternate Path	N/A
Postcondition	The patient's history like diagnosis, prescription, treatment is displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Pay Bill**

Use Case Name	Pay Bill
Priority	Essential
Trigger	Menu Selection
Precondition	The patient has registered in the hospital and has a patient id.
Basic Path	1. The patient selects the Pay Bill button and selects the required method of payment(Card/Insurance) 2. The payment is confirmed.
Alternate Path	If there is any error in card details, the appropriate error message is displayed.
Postcondition	The payment of hospital dues is made and payment is confirmed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

DOCTOR

- **View Appointment**

Use Case Name	View Appointment
Priority	Essential
Trigger	Menu Selection
Precondition	The doctor has a username and password and is logged in.
Basic Path	1. The doctor clicks the View Appointments button and selects the required option.
Alternate Path	N/A
Postcondition	The list of appointments with patients and their details are displayed.
Exception Path	N/A
Other	-

Reference	SRS 3.1
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- **Create Patient Record**

Use Case Name	Create Patient Record
Priority	Essential
Trigger	Menu Selection
Precondition	The doctor has a username and password and is logged in.
Basic Path	1. The doctor enters the patient id and creates a patient record if the patient is visiting the hospital for the first time.
Alternate Path	N/A
Postcondition	The patient record is created.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View Patient History**

Use Case Name	View Patient History
Priority	Essential
Trigger	Menu Selection
Precondition	The doctor has a username and password and is logged in.
Basic Path	1. The doctor enters the patient id and clicks the View History button and selects the required option.
Alternate Path	N/A
Postcondition	The patient's history like diagnosis, prescription, treatment and other details are displayed.
Exception Path	N/A

Other	-
Reference	SRS 3.1

- **Treat Patient**

Use Case Name	Treat Patient
Priority	Essential
Trigger	Menu Selection
Precondition	The doctor has a username and password and is logged in.
Basic Path	1. The doctor enters the patient id and makes the diagnosis and enters the prescription in the database.
Alternate Path	N/A
Postcondition	The patient diagnosis and medication is entered in the database.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Request Tests**

Use Case Name	Request Tests
Priority	Essential
Trigger	Menu Selection
Precondition	The doctor has a username and password and is logged in.
Basic Path	1. The doctor enters the patient id and requests tests to be made to confirm the diagnosis.
Alternate Path	N/A
Postcondition	The tests to be conducted on the patient are entered in the database.
Exception Path	N/A

Other	-
Reference	SRS 3.1

- **View Duty**

Use Case Name	View Duty
Priority	Essential
Trigger	Menu Selection
Precondition	The doctor has a username and password and is logged in.
Basic Path	1. The doctor clicks the View Duty button and selects the required option.
Alternate Path	N/A
Postcondition	The duties assigned to the doctor are displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

NURSE

- **Create Patient Report**

Use Case Name	Create Patient Report
Priority	Essential
Trigger	Menu Selection
Precondition	The nurse has a username and password and is logged in.
Basic Path	1. The nurse enters the patient id and enters the details in the patient report.
Alternate Path	N/A
Postcondition	The details of the patient are entered in the patient report.

Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View Patient Report**

Use Case Name	View Patient Report
Priority	Essential
Trigger	Menu Selection
Precondition	The nurse has a username and password and is logged in.
Basic Path	1. The nurse enters the patient id and clicks to View the patient report.
Alternate Path	N/A
Postcondition	The details of the patient's report are displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View Allocation**

Use Case Name	View Allocation
Priority	Essential
Trigger	Menu Selection
Precondition	The nurse has a username and password and is logged in.
Basic Path	1. The nurse clicks on the option to view the duties allocated.
Alternate Path	N/A
Postcondition	The details of the duties allocated are displayed.

Exception Path	N/A
Other	-
Reference	SRS 3.1

ADMITTING CLERK

- **Register Patient**

Use Case Name	Register Patient
Priority	Essential
Trigger	Menu Selection
Precondition	The admitting clerk has a username and password and is logged in.
Basic Path	1. The admitting clerk does the registration of a new patient by entering all the patient details into the database.
Alternate Path	N/A
Postcondition	The registration of the patient is done and the patient id is generated and send via sms to the patient's mobile phone.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View Appointment**

Use Case Name	View Appointment
Priority	Essential
Trigger	Menu Selection
Precondition	The admitting clerk has a username and password and is logged in.
Basic Path	1. The admitting clerk clicks the View Appointments button and selects the required option.

Alternate Path	N/A
Postcondition	The list of appointments of doctors is displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

DEPARTMENT ADMIN

- **Create Appointment**

Use Case Name	Create Appointment
Priority	Essential
Trigger	Menu Selection
Precondition	The department admin has a username and password and is logged in
Basic Path	1. The patient tells the department admin, the date on which the appointment is to be made and the doctor he/she wishes to meet. 2. The admitting clerk checks for availability and tells the patient for confirming the booking.
Alternate Path	If the doctor is unavailable, the admitting clerk makes a booking with another doctor in the same department.
Postcondition	The appointment with the doctor is confirmed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **View Appointment**

Use Case Name	View Appointment
Priority	Essential
Trigger	Menu Selection

Precondition	The department admin has a username and password and is logged in
Basic Path	1. The department admin clicks the View Appointments button and selects the required option.
Alternate Path	N/A
Postcondition	The list of appointments of doctors is displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Assign Department**

Use Case Name	Assign Department
Priority	Essential
Trigger	Menu Selection
Precondition	The department admin has a username and password and is logged in.
Basic Path	1. The department admin gets the basic symptoms of the patient and clicks Assign to assign the patient to the appropriate department.
Alternate Path	N/A
Postcondition	The patient is directed to the appropriate department for treatment.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Assign Doctor and nurse**

Use Case Name	Assign Doctor and Nurse
Priority	Essential
Trigger	Menu Selection

Precondition	The department admin has a username and password and is logged in.
Basic Path	1. The department admin enters the patient id and assigns the patient to a doctor and nurses as per their availability.
Alternate Path	N/A
Postcondition	The patient is assigned doctors and nurses for consultation.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Assign Bed/Ward/Room**

Use Case Name	Assign Bed/Ward/Room
Priority	Essential
Trigger	Menu Selection
Precondition	The department admin has a username and password and is logged in.
Basic Path	1. The department admin enters the patient id and assigns bed/ward/room to patient who is to be admitted as per the availability.
Alternate Path	If not available, the patient is transferred.
Postcondition	The patient is assigned bed/ward/room.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Admit for Test**

Use Case Name	Admit for Test
Priority	Essential
Trigger	Menu Selection

Precondition	The department admin has a username and password and is logged in.
Basic Path	1. The department admin enters the patient id and admits patient who have to undergo tests.
Alternate Path	N/A
Postcondition	The patient's admission for tests is entered.
Exception Path	N/A
Other	-
Reference	SRS 3.1

PHARMACIST

- **View Prescription**

Use Case Name	View Prescription
Priority	Essential
Trigger	Menu Selection
Precondition	The pharmacist has a username and password and is logged in.
Basic Path	1. The pharmacist enters the patient id and views the medication prescribed by the doctor and gives medicines to patient.
Alternate Path	N/A
Postcondition	The medication prescribed by the doctor is displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Give medicines**

Use Case Name	Give medicines
Priority	Essential

Trigger	Menu Selection
Precondition	The pharmacist has a username and password and is logged in.
Basic Path	1. The pharmacist enters the patient id and gives the medicines to the patient.
Alternate Path	N/A
Postcondition	The medication given is entered in the database.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Bill medicines**

Use Case Name	Bill medicines
Priority	Essential
Trigger	Menu Selection
Precondition	The pharmacist has a username and password and is logged in.
Basic Path	1. The pharmacist enters the patient id and includes the medical along with the hospital dues.
Alternate Path	N/A
Postcondition	The cost of medication is included in hospital bill.
Exception Path	N/A
Other	-
Reference	SRS 3.1

BILLING DEPARTMENT

- Record Expenses

Use Case Name	Record Expenses
Priority	Essential
Trigger	Menu Selection
Precondition	The clerk has a username and password and is logged in.
Basic Path	1. The clerk enters the patient id and records all the hospital dues to be paid by the patient.
Alternate Path	N/A
Postcondition	The hospital dues are recorded.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- View Bill

Use Case Name	View Bill
Priority	Essential
Trigger	Menu Selection
Precondition	The clerk has a username and password and is logged in.
Basic Path	1. The clerk enters the patient id and views the bill of the patient.
Alternate Path	N/A
Postcondition	The bill that contains the hospital dues of the patient is displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Generate Bill**

Use Case Name	Generate Bill
Priority	Essential
Trigger	Menu Selection
Precondition	The clerk has a username and password and is logged in.
Basic Path	1. The clerk enters the patient id and views the amount to be paid by the patient. 2. After the payment is made by card/ Insurance, the bill is generated and send to the email id of the patient.
Alternate Path	N/A
Postcondition	The bill is generated after payment of hospital dues.
Exception Path	N/A
Other	-
Reference	SRS 3.1

STAFF

- **View Schedule**

Use Case Name	View Schedule
Priority	Essential
Trigger	Menu Selection
Precondition	The staff has a username and password and is logged in.
Basic Path	1. The staff clicks Schedule to view the duties assigned.
Alternate Path	N/A
Postcondition	The schedule of the staff is displayed.
Exception Path	N/A

Other	-
Reference	SRS 3.1

- **View Reports**

Use Case Name	View Reports
Priority	Essential
Trigger	Menu Selection
Precondition	The staff has a username and password and is logged in.
Basic Path	1. The staff enters the patient id and views the patient's reports.
Alternate Path	N/A
Postcondition	The patient's reports are displayed.
Exception Path	N/A
Other	-
Reference	SRS 3.1

- **Handle Emergency Cases**

Use Case Name	Handle Emergency Cases
Priority	Essential
Trigger	Menu Selection
Precondition	The staff has a username and password and is logged in.
Basic Path	1. The staff enters the patient details and transfers the patient to the respective department.
Alternate Path	N/A
Postcondition	The patient data is recorded and is transferred to Emergency Department.
Exception Path	N/A

Other	-
Reference	SRS 3.1

TECHNICIAN

- Record Test Results**

Use Case Name	Record Test Results
Priority	Essential
Trigger	Menu Selection
Precondition	The technician has a username and password and is logged in.
Basic Path	1. The technician enters the patient id and enters the details of the test and the test results to be viewed by the doctor for diagnosis.
Alternate Path	N/A
Postcondition	The test details are entered in the database.
Exception Path	N/A
Other	-
Reference	SRS 3.1

3.2 SUPPLEMENTARY REQUIREMENTS

- Secure access of confidential data.
- 24*7 availability – System can be automated so that it works round the clock and during power failures, UPS should be provided so that 24-hour service can be provided.
- Better component design to get better performance at peak time.
- Flexible service based architecture for future extension.