
SOFTWARE REQUIREMENTS SPECIFICATION

for

PATIENT PORTAL

Version 1.1 approved

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1 Introduction

1.1 Purpose of the SRS

This Software Requirements Specification is used to specify a web application called PATIENT PORTAL. The current version of PATIENT PORTAL is 1.1 which is based on the basic version 1.0. This SRS not only includes the basic requirements of the PATIENT PORTAL to meet the clinic daily usage and but also deal with the alternative situations such as password reset; activate, deactivate and delete patient and employee accounts.

1.2 Scope

The PATIENT PORTAL is a web application that manages electronic patient records to provide rapid and efficient means to handle medical information of a clinic. This SRS has specify 22 use cases and including actors such as patient, nurse, physician and receptionist, etc. It is the first document for PATIENT PORTAL. No other references is available right now.

1.3 Acronyms, abbreviations, notational conventions

None.

1.4 Overview

This is a partial SRS. It includes a UML use case diagram showing all identified use cases with a brief description of the use case diagram; A UML class diagram for the system showing all identified classes and their attributes and a brief description of the class diagram; Three state diagrams of Appointment, BillPayment and DoctorCalendar; Sequence diagrams for all the use cases; Non-functional requirements; UI descriptions; One backlog with story points and priority; And brief descriptions of all stories.

1.5 References

The essential requirements of the PATIENT PORTAL from CS5103 Project 1.

2 General description

2.1 Product perspective : the environment

The overall goal of the PATIENT PORTAL is to provide physicians, nurses, and clinical staff with a powerful, easy-to-use tool that securely assists them in gathering, storing, and manipulating patients' information. The PATIENT PORTAL to-be-built will facilitate a clinic to provide a dependable and effective health care to the patients at reduced cost while respecting the privacy of the patients.

2.2 Product functions

- The PATIENT PORTAL should handle medical and patient's information of a clinic efficiently and securely.
- PATIENT PORTAL should be able to handle medical records in a variety of forms, such as images, scanned scripts, and audio recording.
- The PATIENT PORTAL shall enable patients to schedule appointments with the doctors at the clinic.
- Using the PATIENT PORTAL, patients are able to request appointments with the doctors by exchanging messages with receptionists. Also, the PATIENT PORTAL shall send a reminder to a patient 24 hours before the appointment time.
- The PATIENT PORTAL shall assist a patient's office visit, enabling a nurse to enter into the system the patient's current medical conditions, such as the blood pressure and the weight. A doctor's diagnosis shall be entered into the patient's chart.
- PATIENT PORTAL shall support financial billing applications, which will collect the co-payments and transmit the appropriate information to the patients' insurance agencies.
- The PATIENT PORTAL shall ensure the storage and processing of medical records are regulatory compliant.

2.3 User characteristics

The User like physicians, receptionist and nurses will be trained by us either training sessions or online training videos on how to use the Patient Portal and also what are the features for and scope of each and every role onto the portal. User like Patients should have basic knowledge about accessing websites and use of internet. They will also have the access to questionnaire onto the portal to understand the interfaces, usage and scope of the product.

2.4 General constraints

The product must conform to requirements as specified in order to be accepted.

2.5 Assumptions and Dependencies

Since the Patient Portal is only accessible through the Internet, it is assumed that the end user has a connection to the Internet. It is also assumed that the user has a compatible web browser and updated relevant browser plugins to display the website and its contents.

3 Specific Requirements

3.1 Functional requirements

3.1.1 Use case diagrams and brief description

Figure 3.1: PatientPortal Use Case Diagram

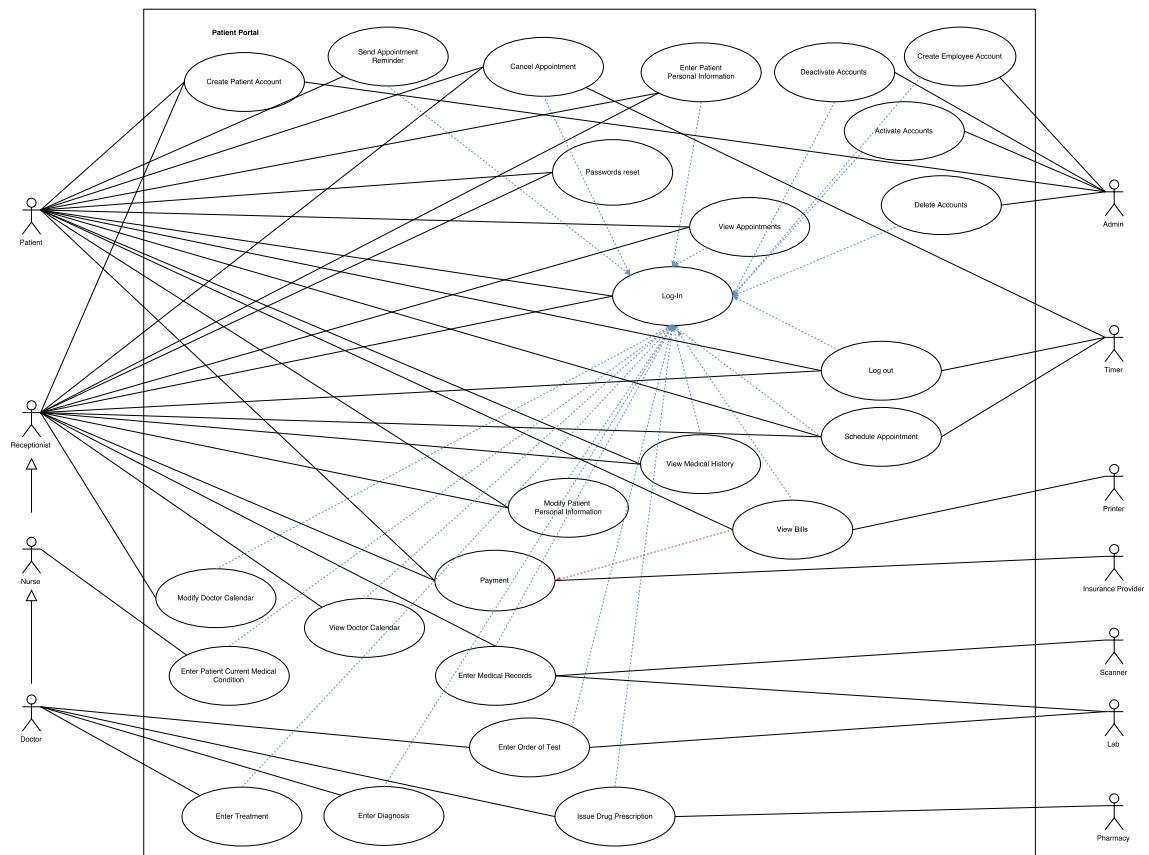


Figure 3.1 shows a UML use case diagram of PATIENT PORTAL web application. It includes 11 actors: patient, nurse, doctor, receptionist are the main actors who lead the majority part; insurance provider, printer, admin, scanner, timer, lab and pharmacy are in the supporting role. There are 25 use cases in total. Blue dash line indicates include. Almost every use cases include Log-In use case. Red dash line stands for extend. And the details are shown in the sequence diagrams in the later section.

3.1.2 Class diagrams

Figure 3.2: PatientPortal Class Diagram

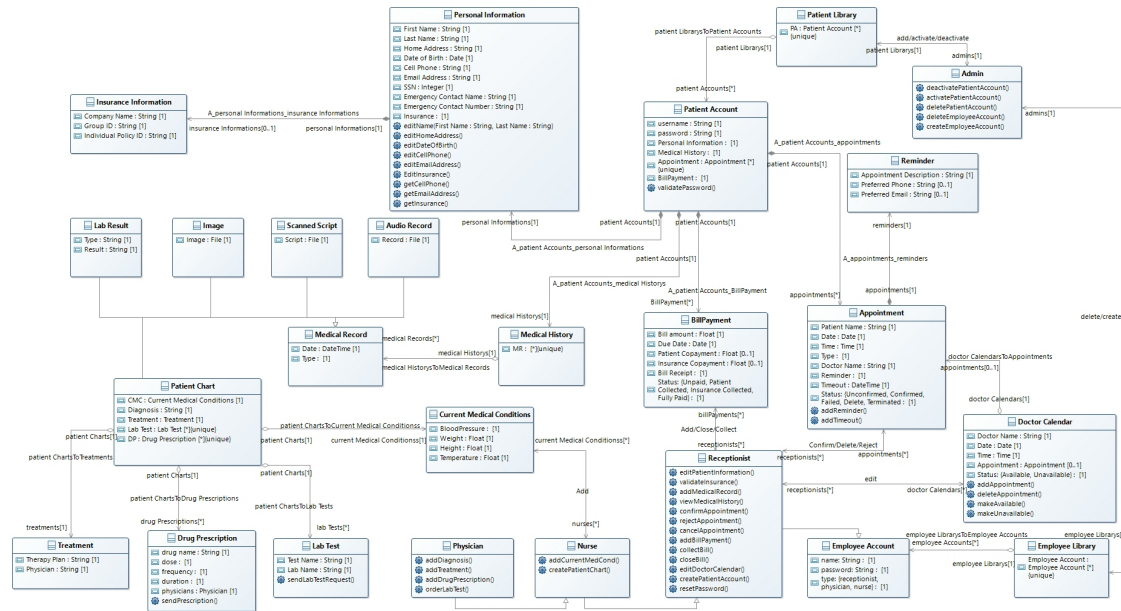


Figure 3.2 shows the class diagram of PATIENT PORTAL web application. It includes 25 classes. Among them, Patient Account, Patient Information, Patient Chart, BillPayment, Appointment, Doctor Calendar and Receptionist are the major classes. Employee Library includes a list of Employee Accounts. Patient Library includes a list of Patient Accounts. Only Admin can delete from these two libraries. Physician inherits from Nurse and Nurse inherits from Receptionist. Receptionist inherits from Employee Account. Lab Result, Image, Scanned Script, Audio Record and Patient Chart are all types of Medical Records and they can be added by Receptionist. Because of the space limitation, some of the associations are not shown in the class diagram. This class diagram is able to support all the use cases we discussed in the previous section.

3.1.3 State Diagrams

Figure 3.3: State diagram for Doctor Calendar

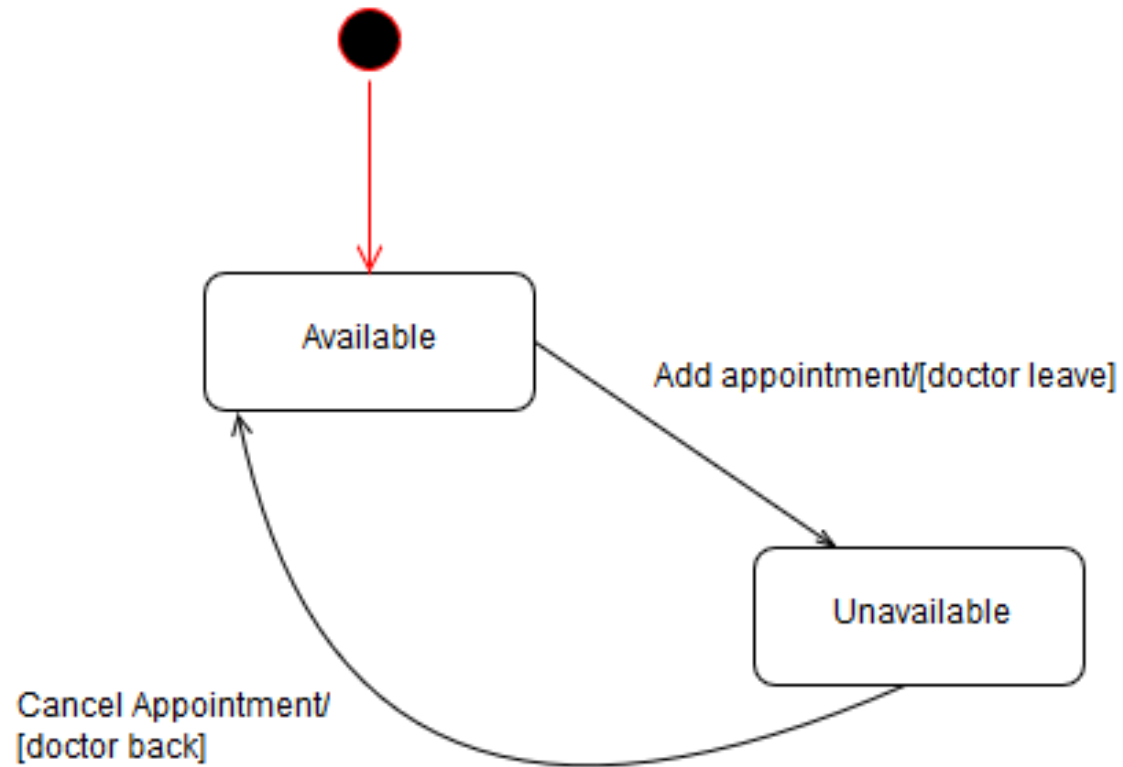


Figure 3.3 shows a state machine for Doctor's calendar.

Available: The initial state that the doctor calendar goes into when it is created is the Available state. This means that doctor is available and new appointments can be added.

Unavailable: If an event occurs such as receptionist added an appointment for patient in the doctor's calendar or the doctor is on leave, the state transitions to unavailable state. If the patient cancels his/her appointment on that particular date or if the doctor is back, the state of the object again goes back from the unavailable state to the available state

Figure 3.4: State diagram for Bill Payment

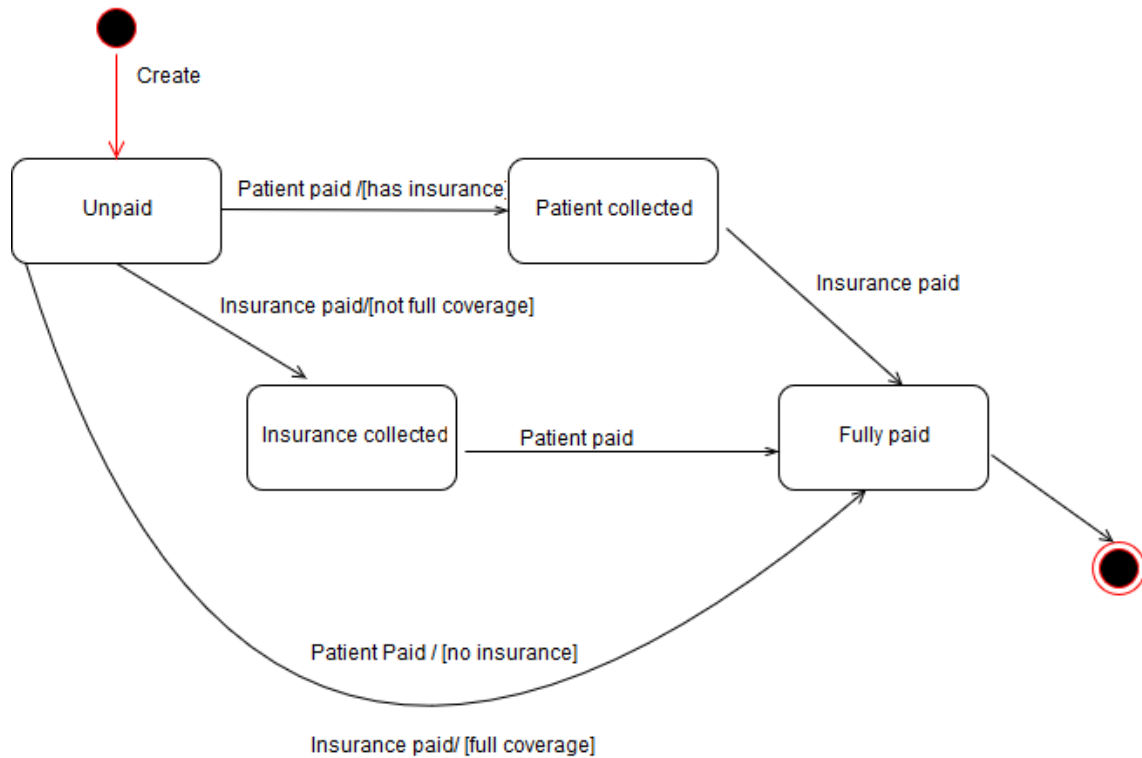


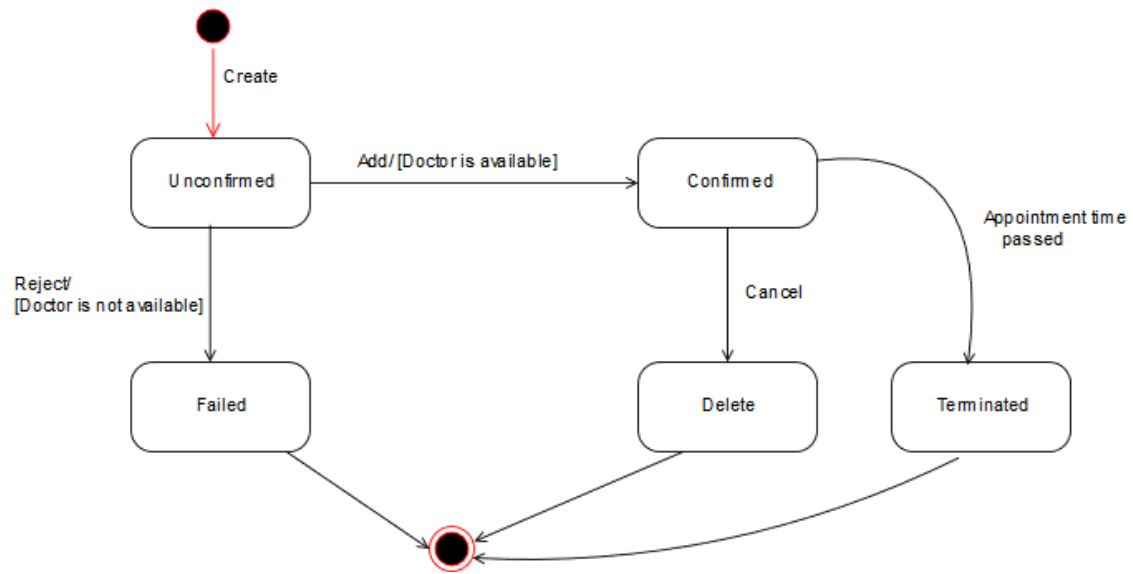
Figure 3.4 The figure shows the state diagram for Bill payment class. Unpaid: The initial state that the bill goes to when it is created is the unpaid state.

Patient collected: When an event occurs like the patient pays his co-pay and also has insurance, a transition occurs from the unpaid state to the Patient collected state.

Insurance collected: Alternatively, when insurance pays first goes to insurance collected state leading to patient paying its part of the bill.

Fully Paid: When money is collected from both Patient as well as Insurance leads to the Fully paid state. From the unpaid state, If the Patient pays the entire amount of money (assuming patient has no insurance) or the Insurance pays the entire amount (assuming patient has full coverage) will also lead to fully paid state which then transits to the Final state.

Figure 3.5: State diagram for Appointment



The 3.5 shows the state diagram for Appointment.

Unconfirmed(Initial): The initial state that the object goes to as soon as its created is the unconfirmed state. This means no appointment is confirmed or scheduled yet.

Confirmed: When the appointment for a patient is scheduled by the receptionist and added in the calendar along with the guard condition that the doctor is available on the day the patient chose, the transition takes place to the confirmed state.

Failed: Transition from the unconfirmed state to the failed state takes place on the event that the doctor is unavailable and the appointment is rejected for that reason.

Delete: Once the appointment is confirmed but it is cancelled by the patient the state transitions to the delete state.

Terminated state: When the appointment time has passed, the state is terminated state. Finally the failed state, delete state, terminated state goes to the final state.

3.1.4 Sequence Diagrams

Figure 3.6: Create account sequence diagram

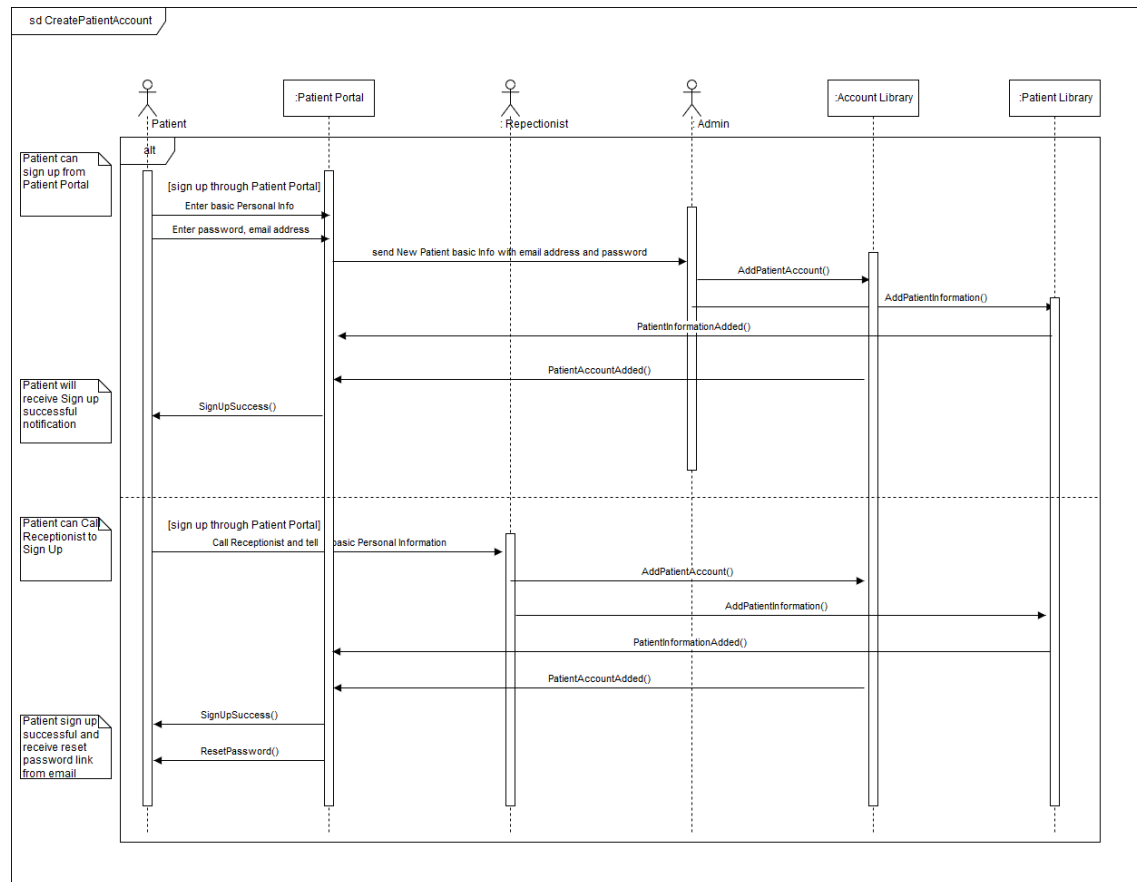


Figure 3.7: Enter Personal Information sequence diagram

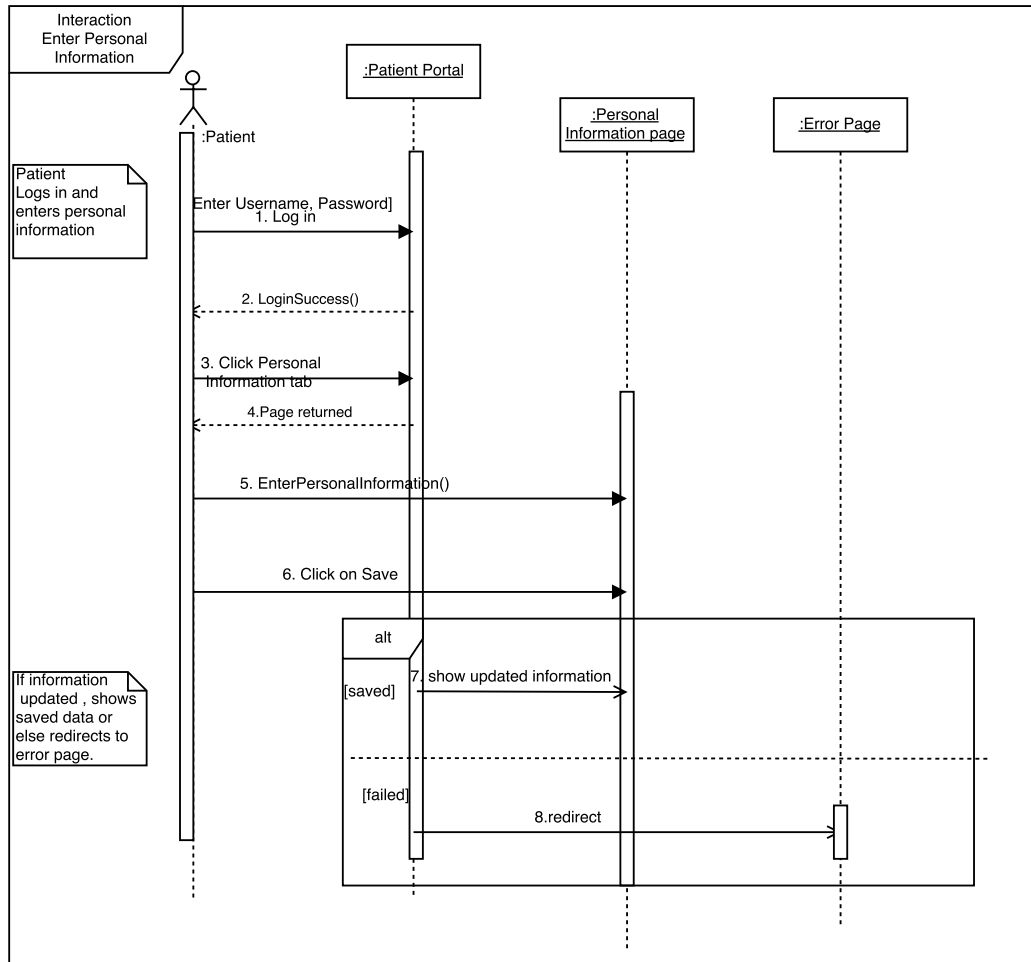


Figure 3.8: Login sequence diagram

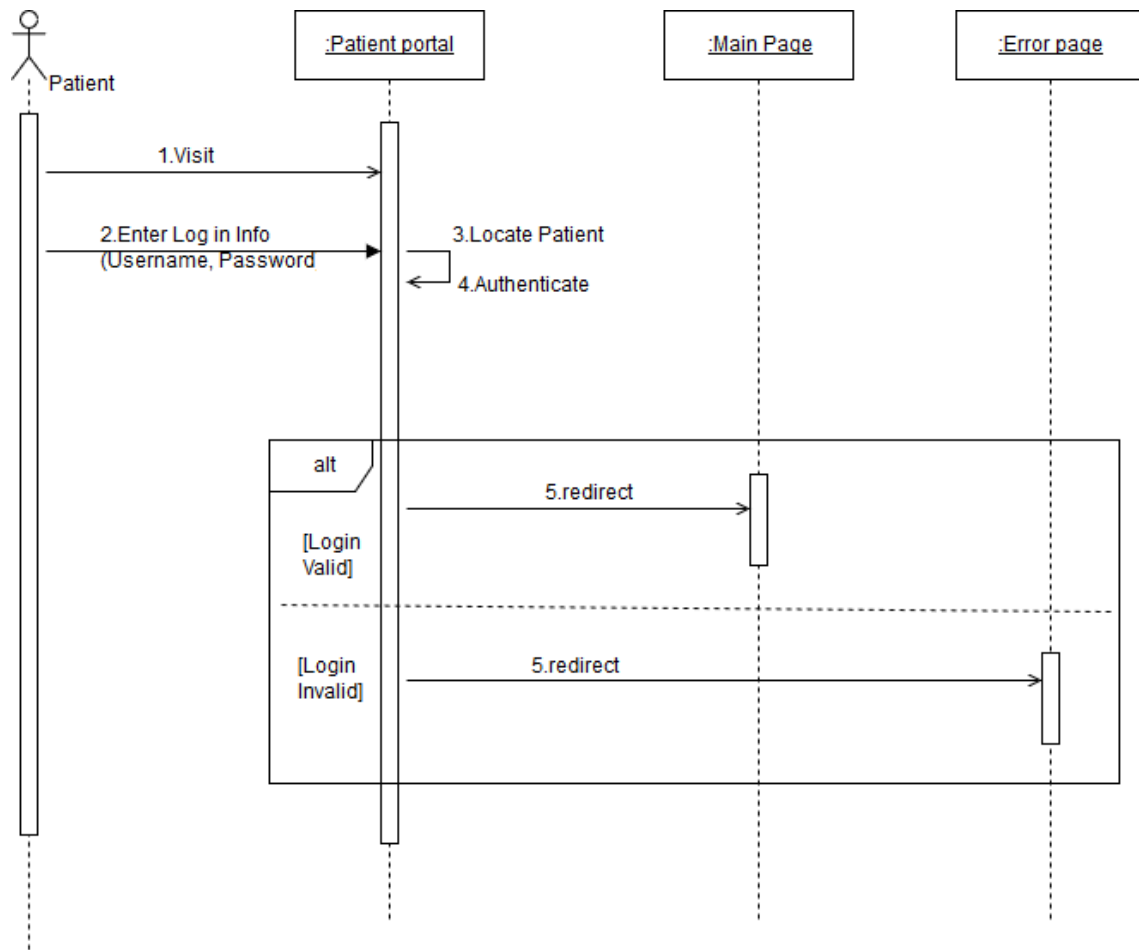


Figure 3.9: Password re-set sequence diagram

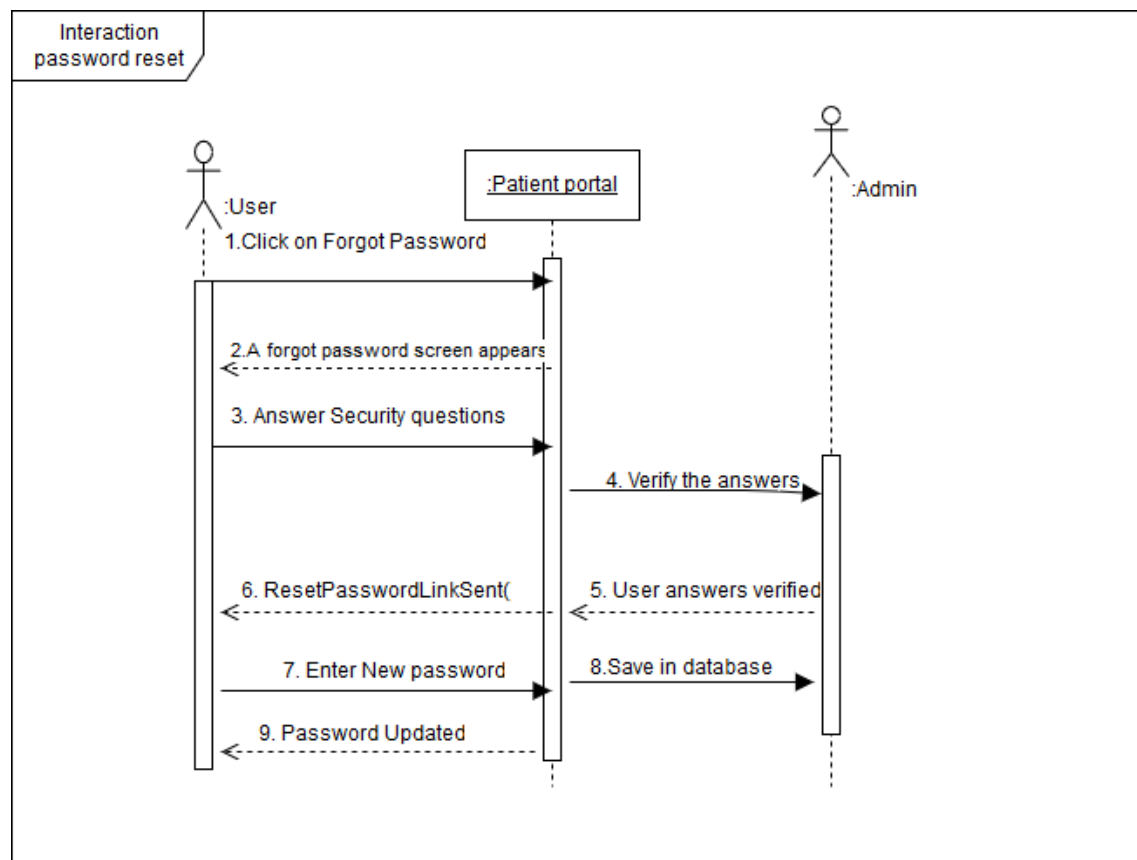


Figure 3.10: Logout sequence diagram

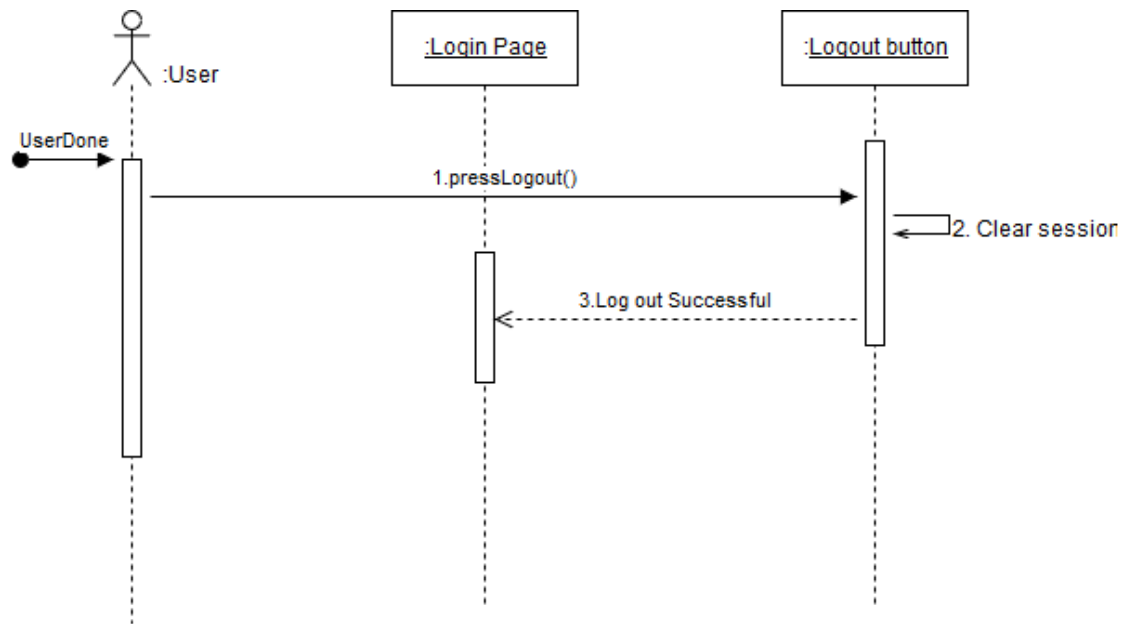


Figure 3.11: Modify Patient Personal Information

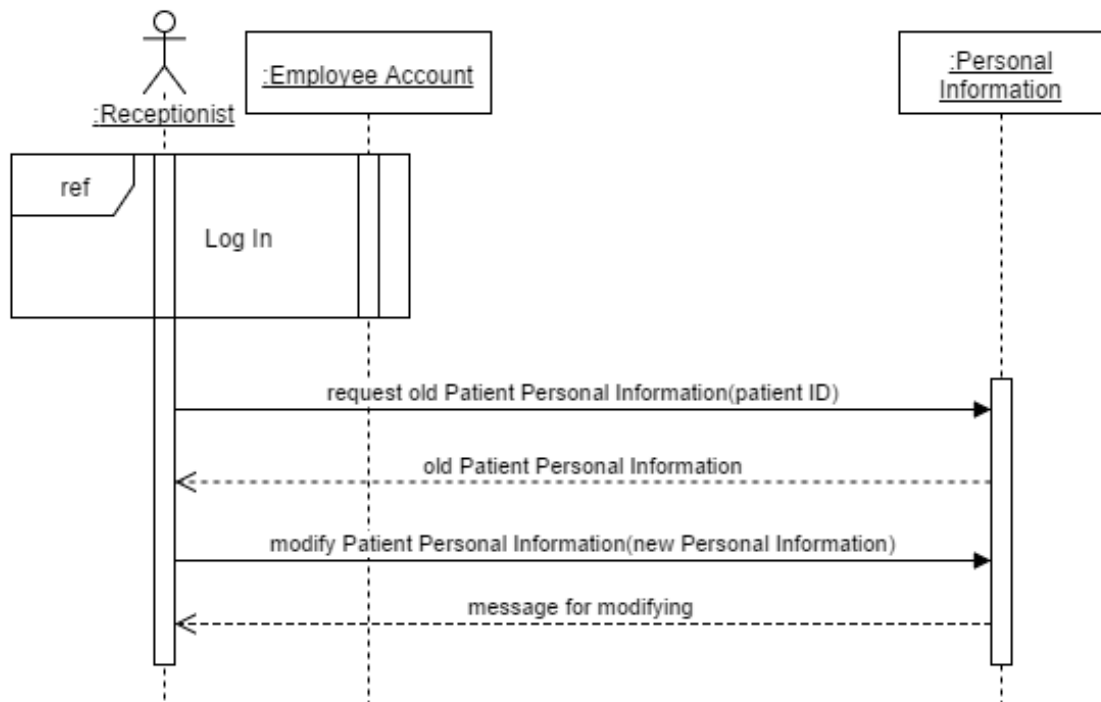


Figure 3.12: View Bills

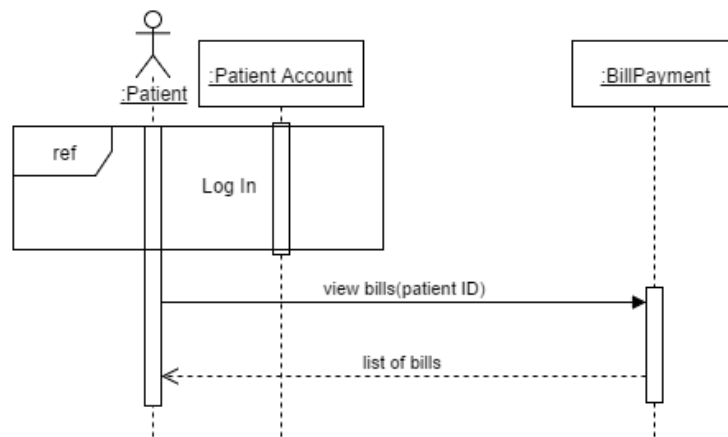


Figure 3.13: Schedule Appointment

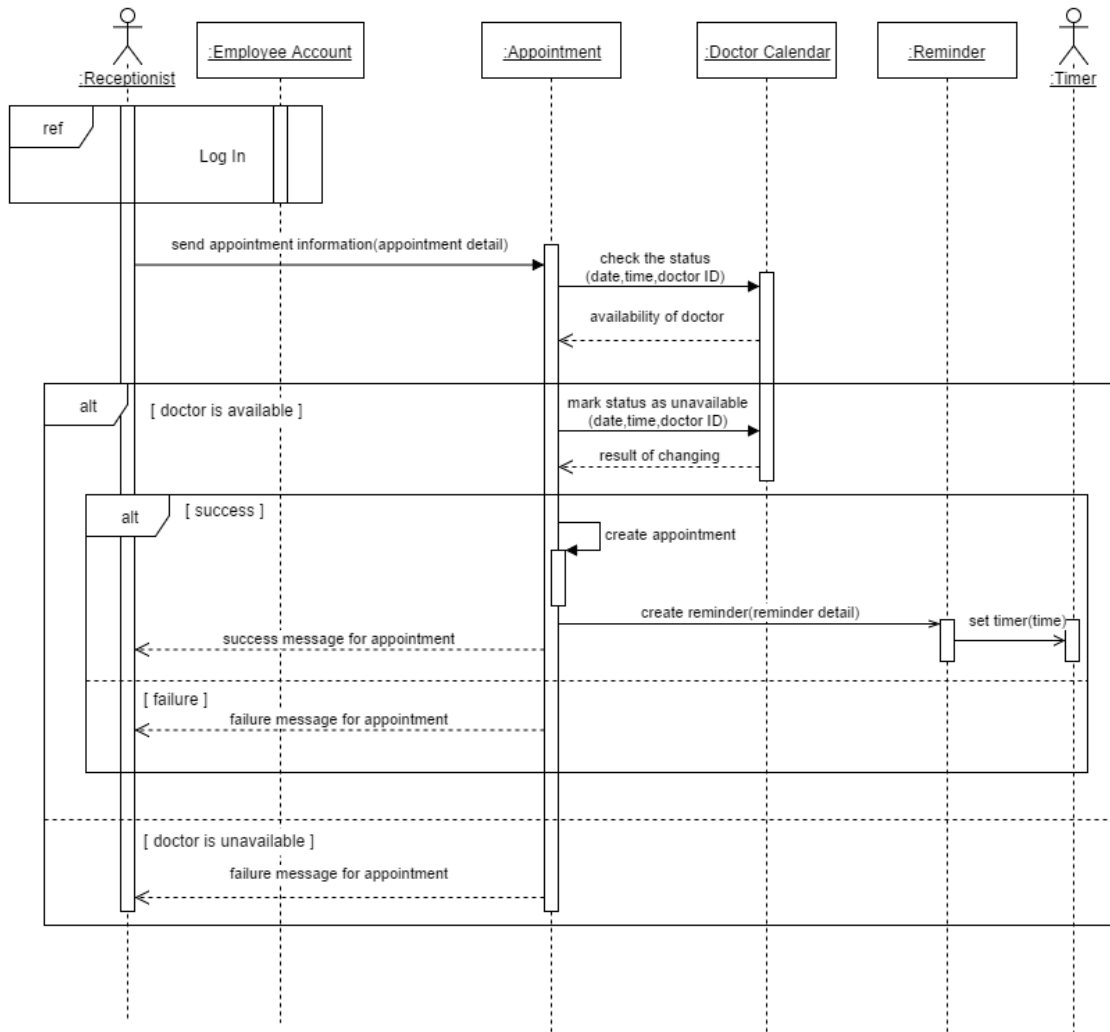


Figure 3.14: View Appointment

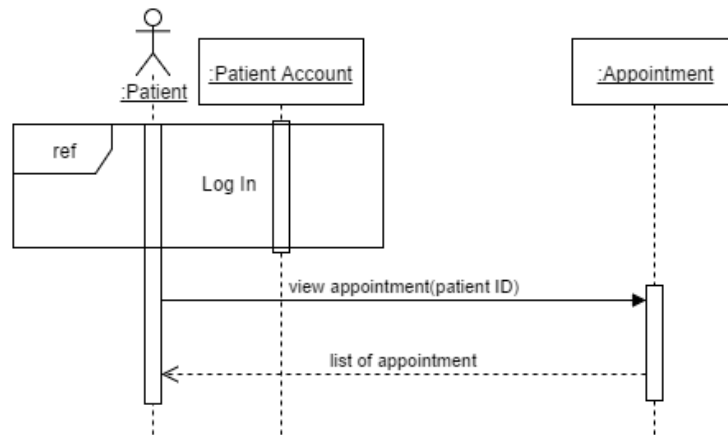


Figure 3.15: Cancel Appointment

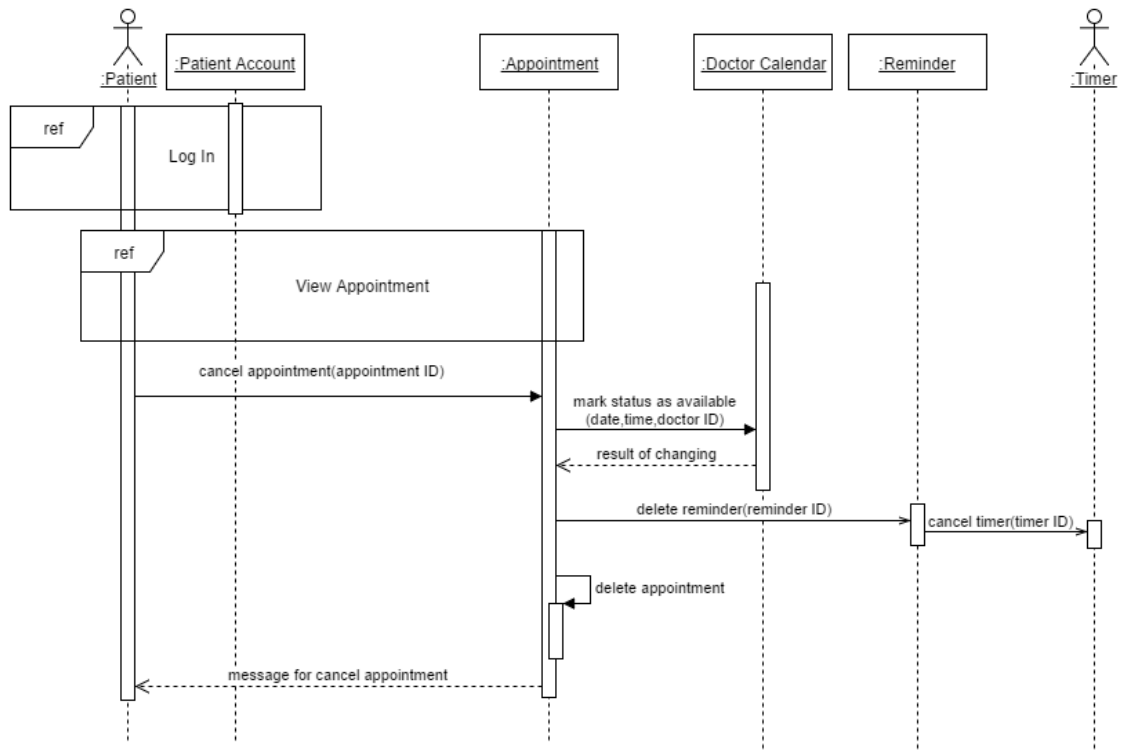


Figure 3.16: Send Appointment Reminder

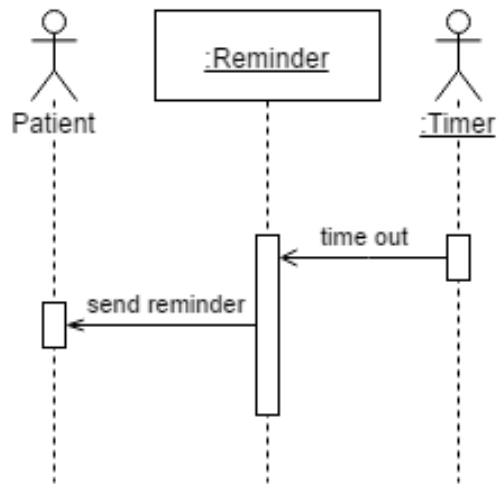


Figure 3.17: View Medical History

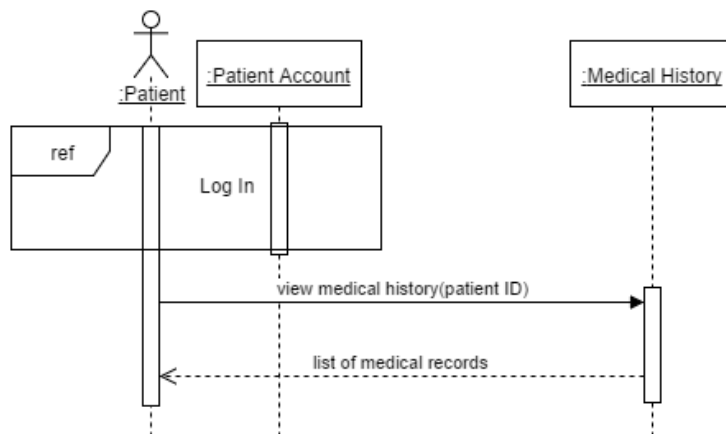


Figure 3.18: Payment

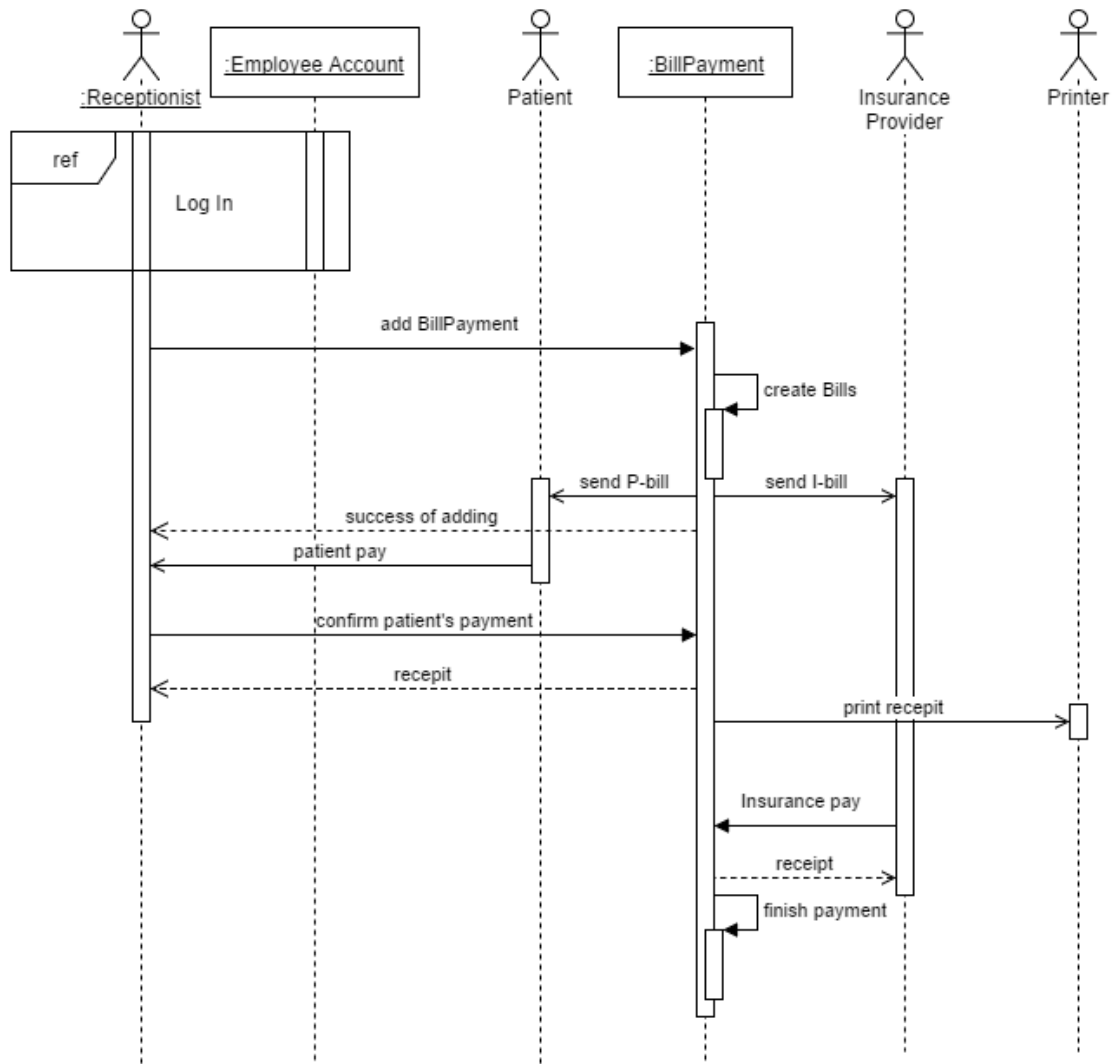


Figure 3.19: Enter Medical Records

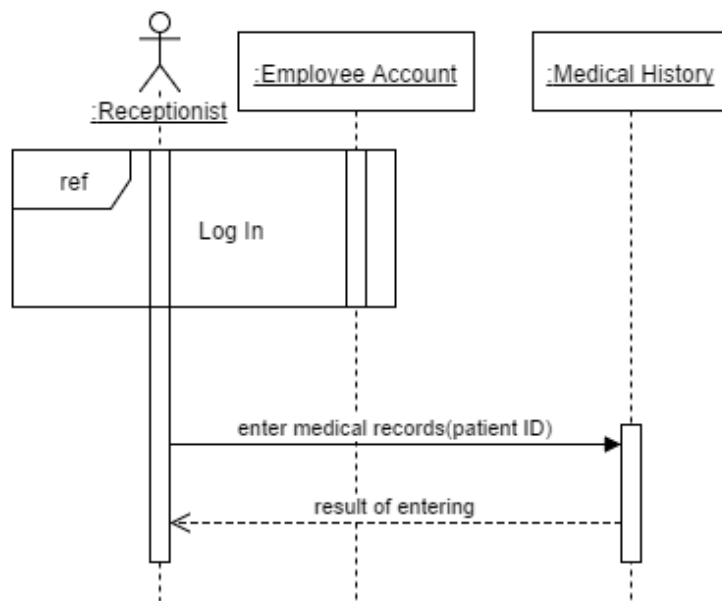


Figure 3.20: Modify Doctor Calendar

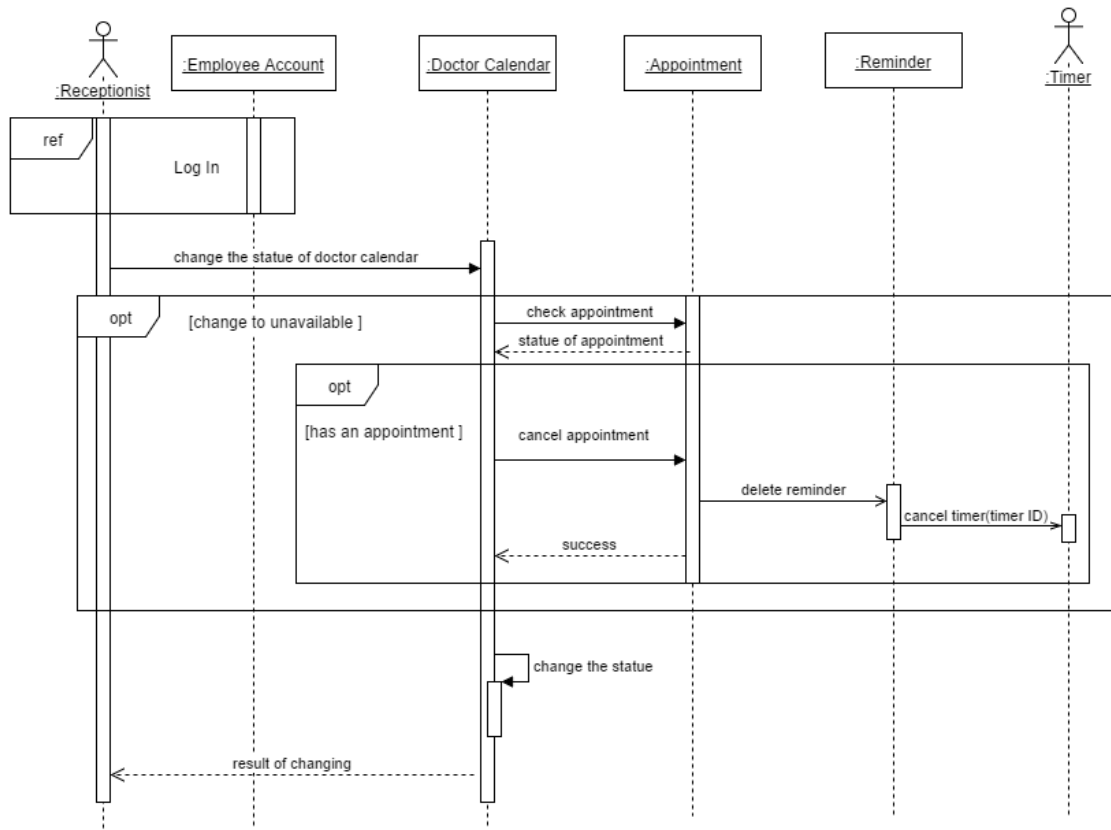


Figure 3.21: View Doctor Calendar

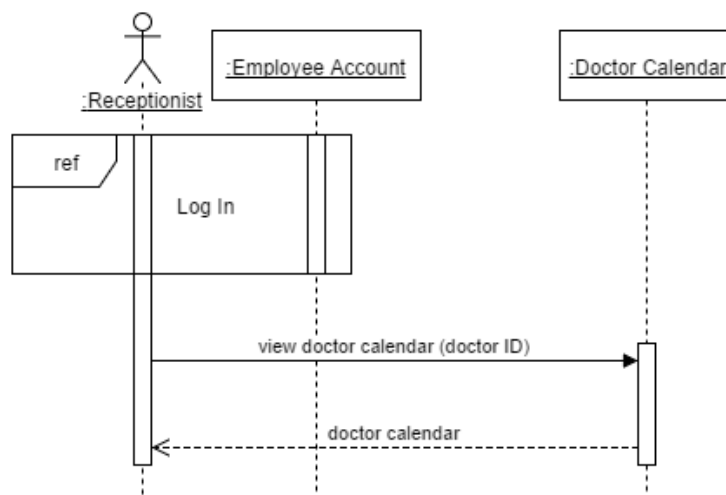


Figure 3.22: Enter Diagnosis

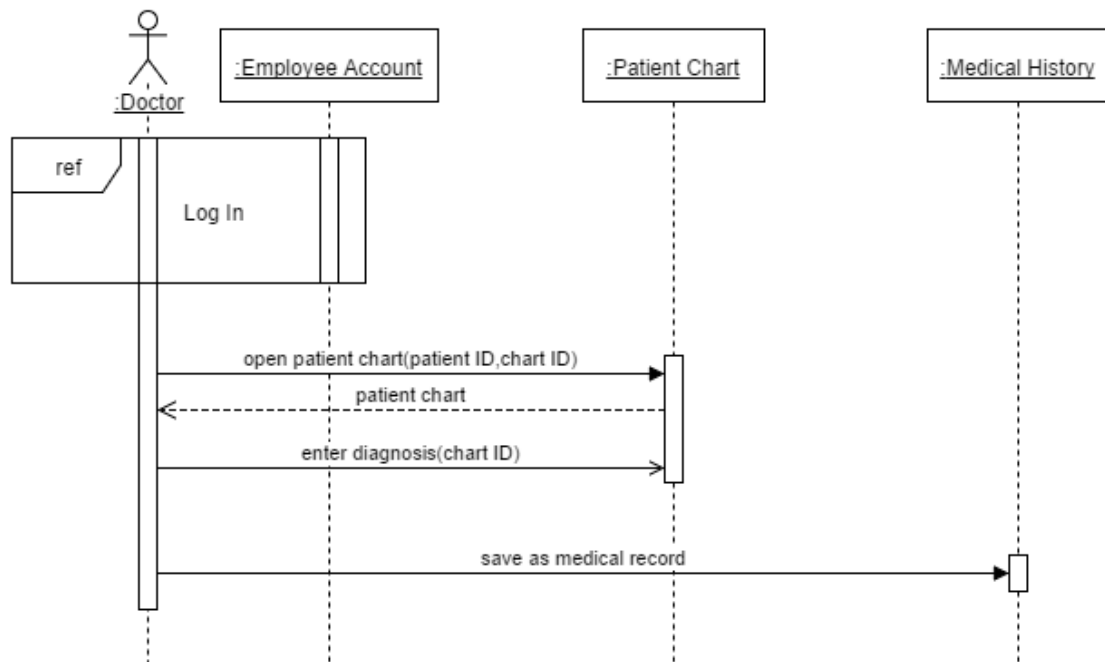


Figure 3.23: Enter Treatment

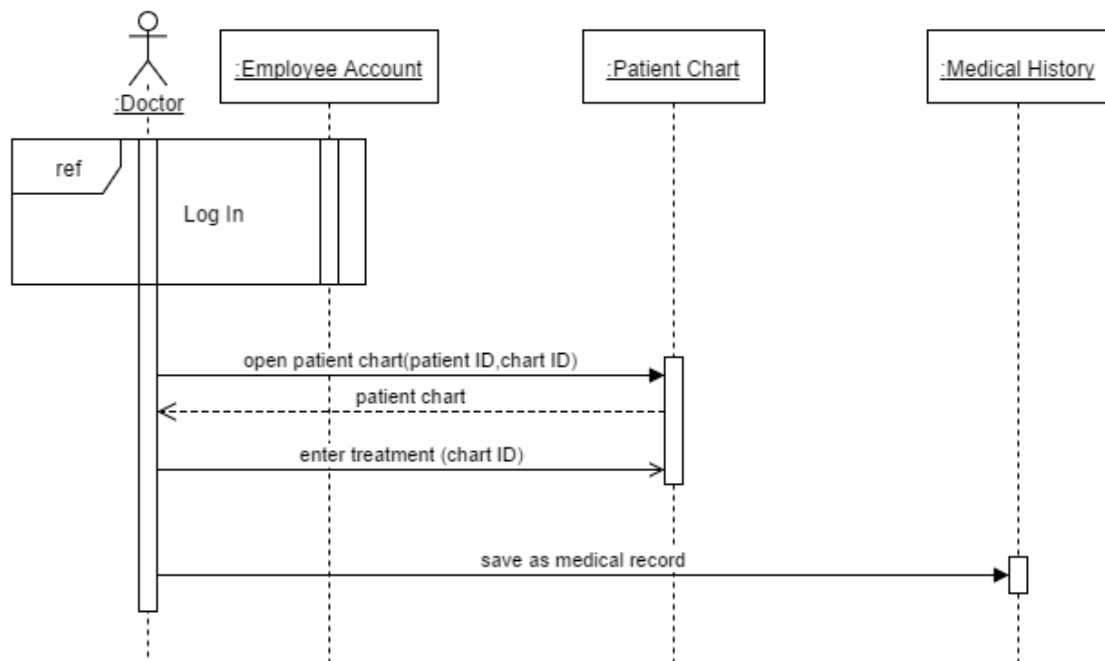


Figure 3.24: Issue Drug Prescription

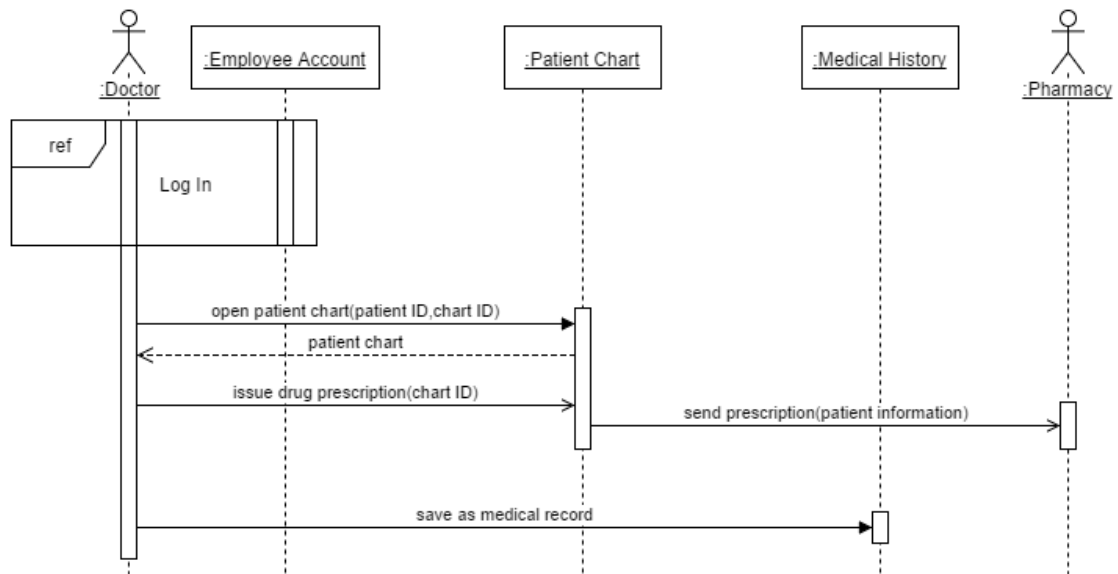


Figure 3.25: Enter Order of Test

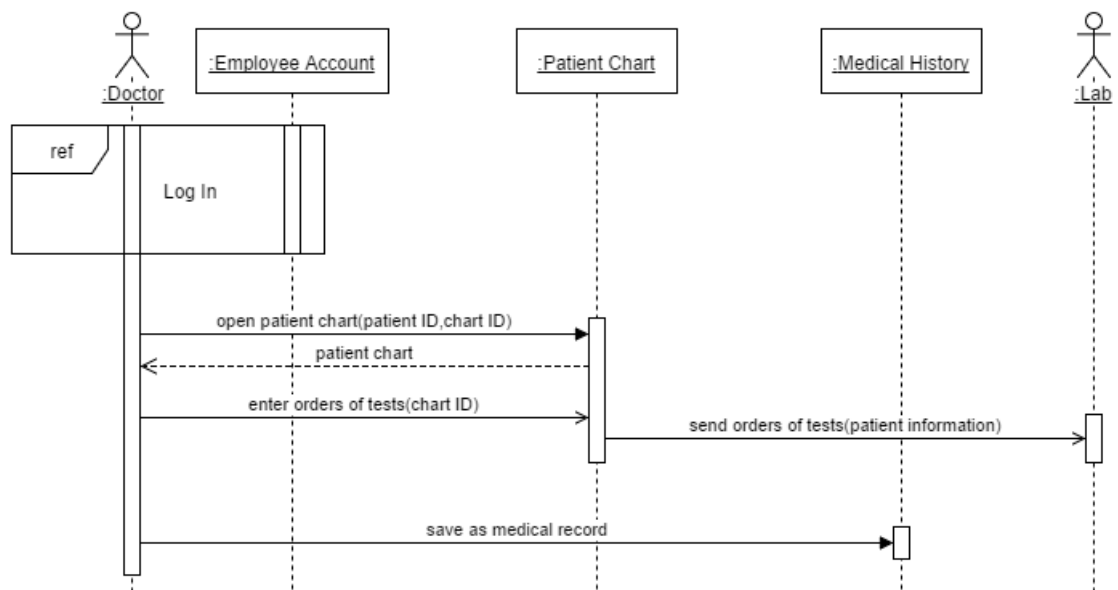


Figure 3.26: Enter Patient Current Medical Condition

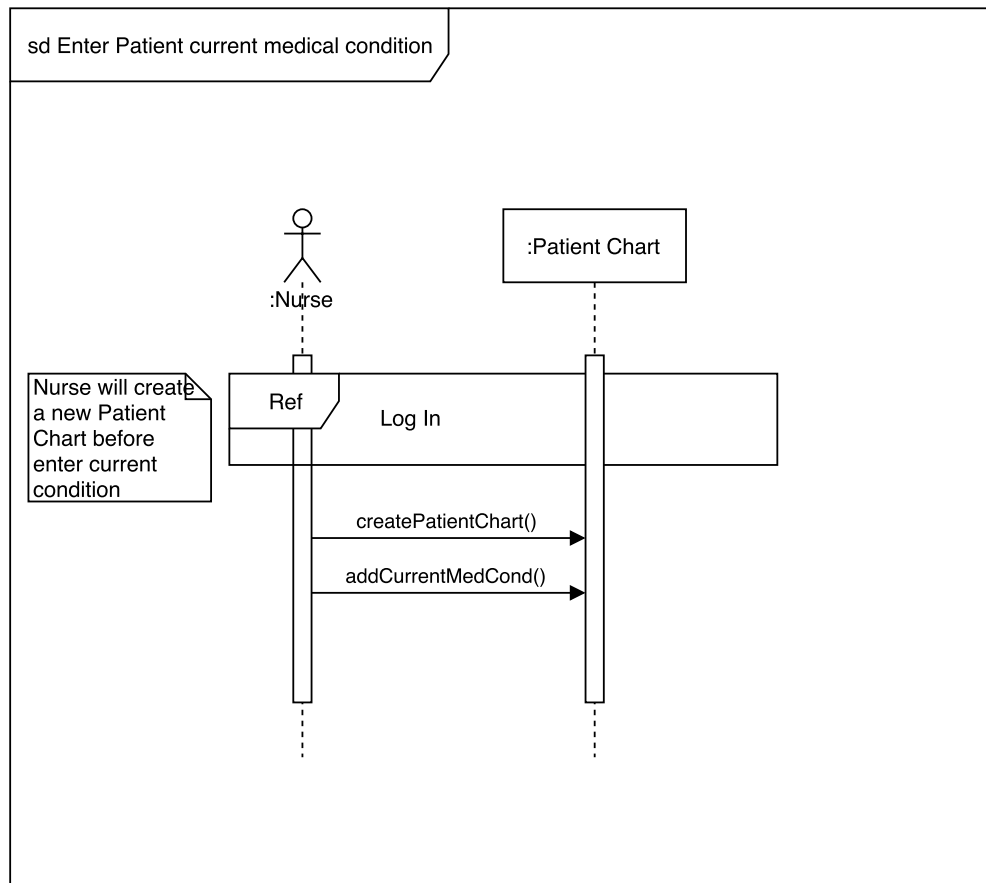


Figure 3.27: Deactivate Account

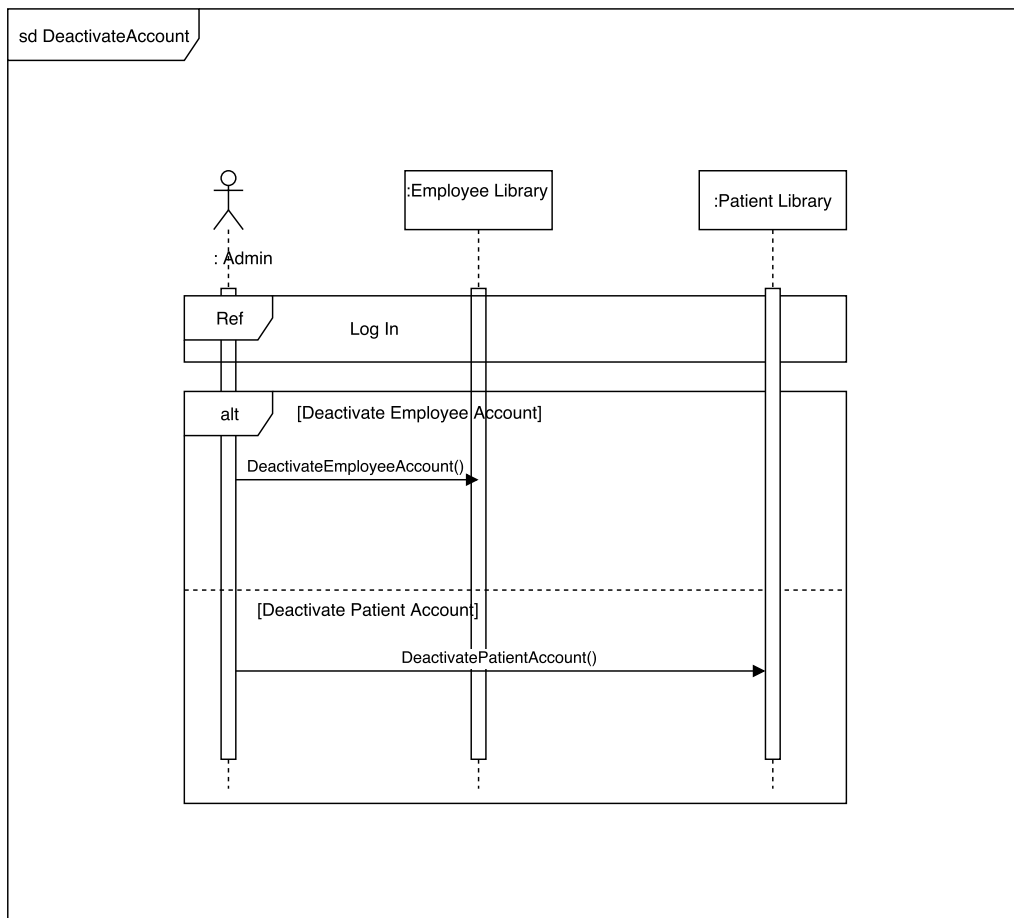


Figure 3.28: Activate Account

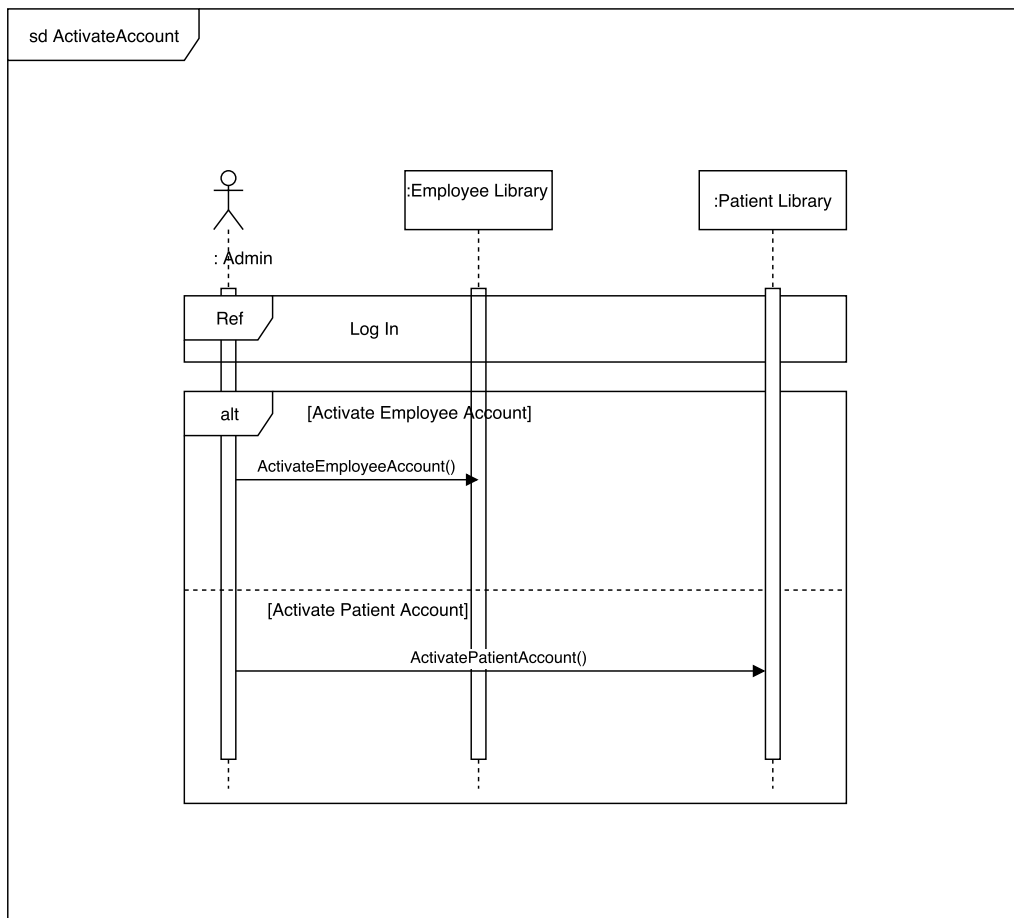


Figure 3.29: Delete Account

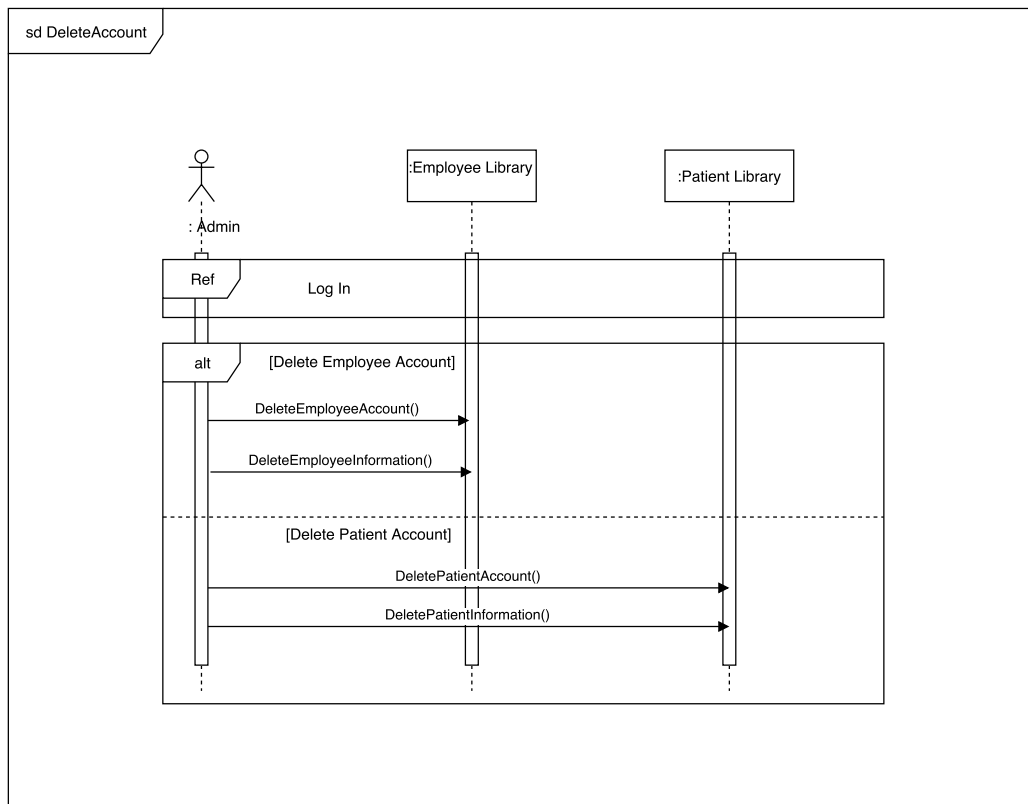
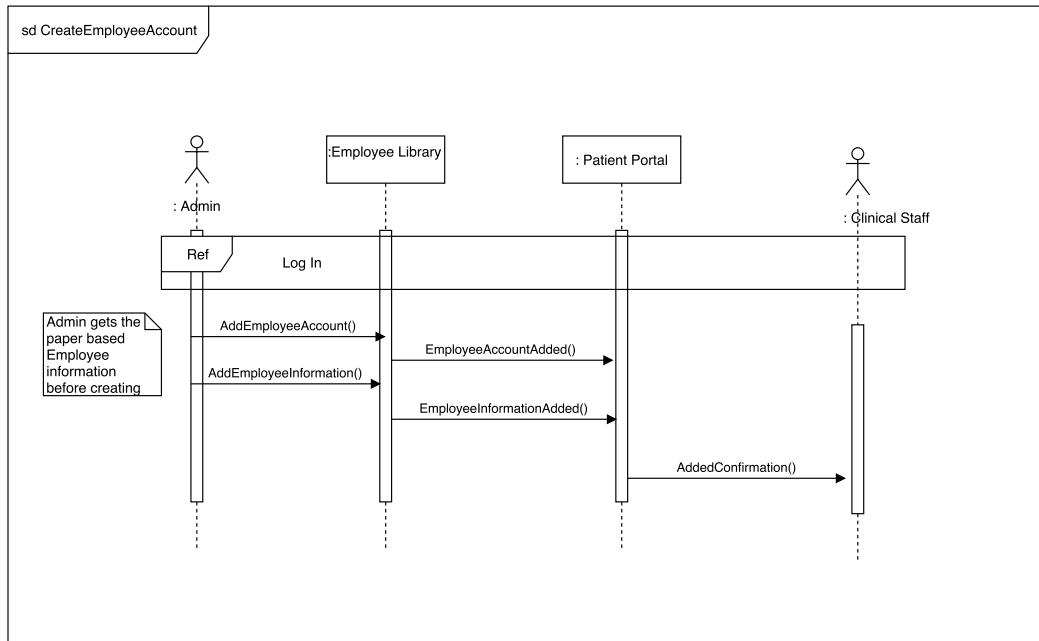


Figure 3.30: Create Employee Account



3.1.5 User Interface requirements

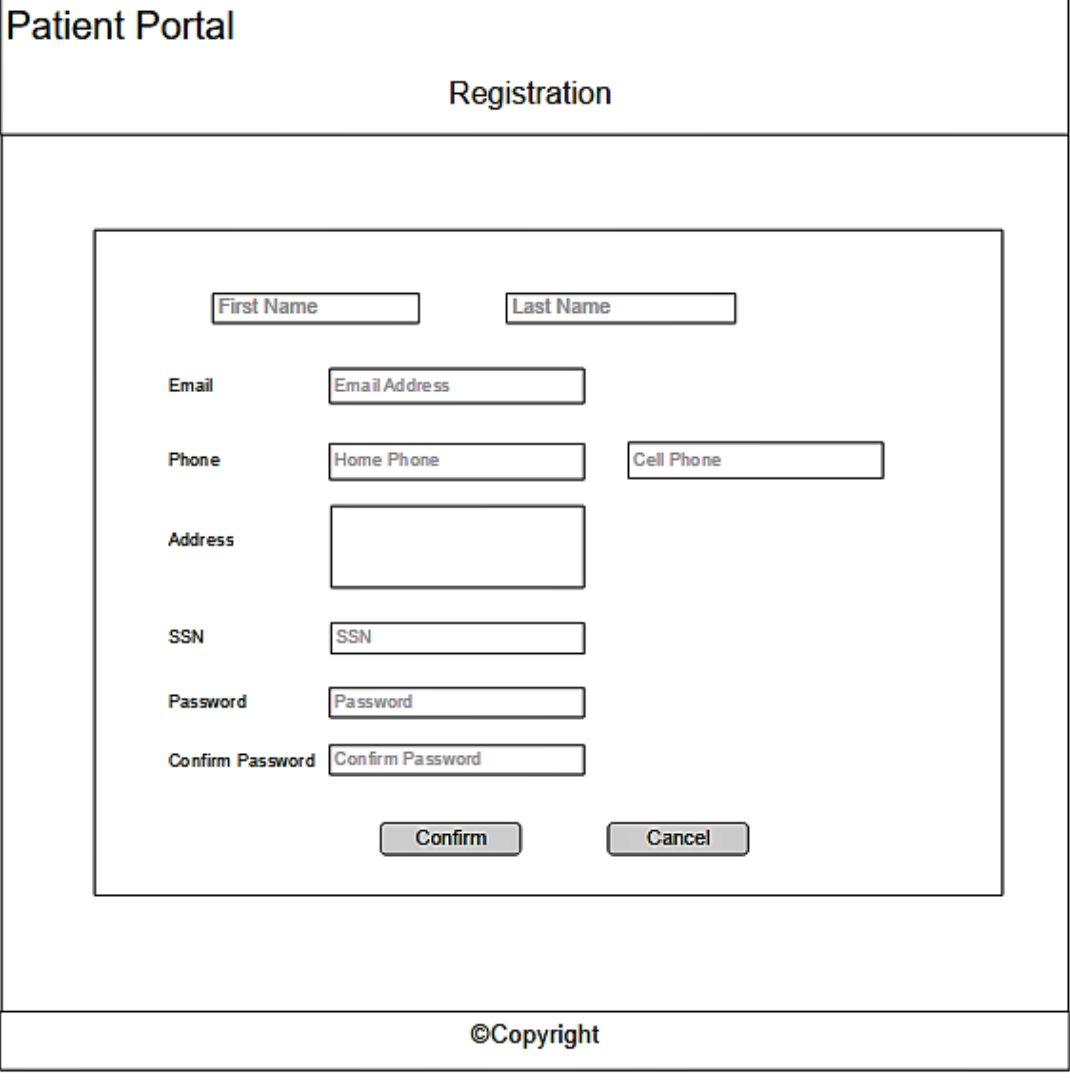
Figure 3.31: Login UI

The image is a wireframe of a Patient Portal login interface. It is enclosed in a rectangular border. At the top, a horizontal bar contains the text "Patient Portal" in a large, bold, black font. Below this bar, the main content area is centered and contains a login form. The form is a rounded rectangle with a thin black border. Inside the form, there are two input fields: the top one is labeled "Username" and the bottom one is labeled "Password", both in a medium-sized black font. Below the password field is a button labeled "Login" in a bold black font. Underneath the button are two links: "Forgot password?" and "SignUp", both in a blue font and underlined. At the bottom of the main content area, there is a horizontal bar containing the text "©Copyright" in a bold black font.

Figure 3.31 shows the first UI every user will see onto the portal. This prototype defines how the user will first interact with the system. It has a simple UI consists of form, having attributes username and password. After the user, has entered the credentials and click login, it will redirect them to the Home page of the intended and authenticated user. It also has signup link which will redirect the patient to the

registration page. Additionally, it has forget password link in case the user wants to reset the password if they accidentally forgets their account password and are unable to login.

Figure 3.32: Registration UI



The image shows a registration form titled "Patient Portal" with a sub-header "Registration". The form is enclosed in a rectangular frame. It contains several input fields for user information: "First Name", "Last Name", "Email Address", "Home Phone", "Cell Phone", "Address", "SSN", "Password", and "Confirm Password". Each field is preceded by its respective label. At the bottom of the form, there are two buttons: "Confirm" and "Cancel". Below the form frame, the text "©Copyright" is displayed.

Patient Portal		
Registration		
First Name	Last Name	
Email	Email Address	
Phone	Home Phone	Cell Phone
Address		
SSN	SSN	
Password	Password	
Confirm Password	Confirm Password	
Confirm		Cancel

©Copyright

Figure 3.32 shows Registration UI prototype which gives an overview of how the form will look like when the patient click on signup link. It has general form features with validators which will allow the user to enter their information as desired and register themselves successfully. It also has two buttons at the bottom, which is confirm and cancel.

Figure 3.33: Home UI

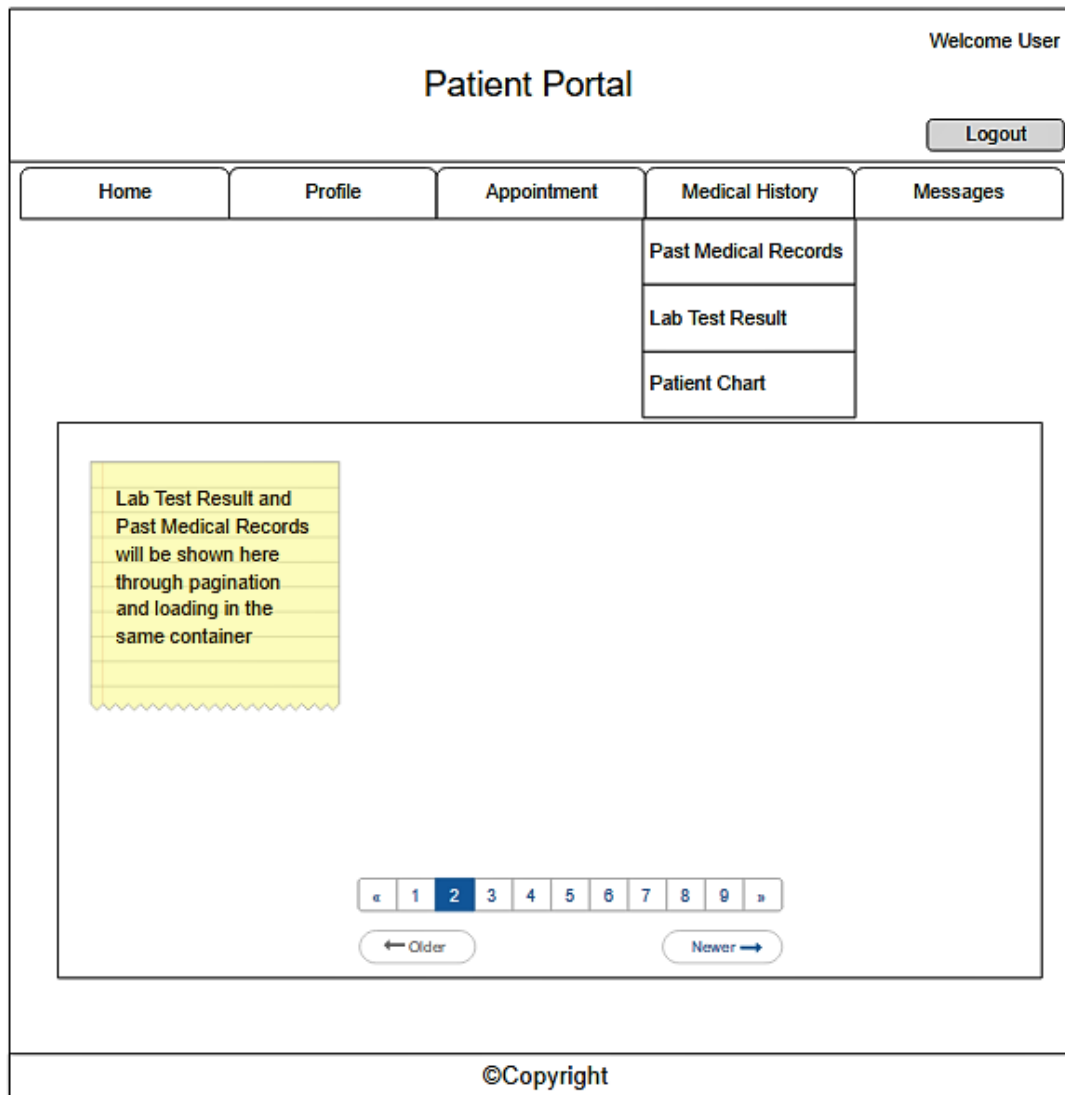


Figure 3.33 shows the landing page i.e. Home UI prototype after patient has successfully login onto the patient portal. The prototype gives an overview of what it consists of. It has a tab section which consists of 5 widgets and they are Home, profile, appointment, medical history and messages. The patient will access it by clicking on the desired tab and the related information will be fetched from the database and loaded on the empty container which will also has pagination feature. Patient can see their name on the top right corner with a greeting message and also logout button to inactive their session.

Figure 3.34: Patient Profile UI

The image is a UI prototype for a Patient Profile. It features a header bar with the title "Patient Portal" on the left, a "Home" link, a "Personal Information" title, and a "Logout" button. Below the header, there is a section for profile management. On the left, there is a placeholder for a profile picture labeled "Image", with "Upload" and "Remove" links. To the right of this is a "Deactivating Account" link. The main area contains a form with the following fields: "First Name", "Middle Name", and "Last name" (all in one row); "DOB" with a date input showing "4/22/2012" and a calendar icon; "Email" with an "Email Address" input and a "Change Password" link; "Phone" with "Home Phone" and "Cell Phone" inputs; "Address" with a large text area; "SSN" with an "SSN" input; "Emergency Contact" with "Name" and "Phone" inputs and an "Add" link; and "Insurance Provider" with "Company name", "Group ID", and "Policy ID" inputs. At the bottom of the form are "Edit", "Save", and "Cancel" buttons. A footer bar contains the text "©Copyright".

Patient Portal

[Home](#) Personal Information [Logout](#)

Image [Upload](#) [Remove](#) [Deactivating Account](#)

First Name Middle Name Last name

DOB 4/22/2012

Email Email Address [Change Password](#)

Phone Home Phone Cell Phone

Address

SSN SSN

Emergency Contact Name Phone [Add](#)

Insurance Provider Company name Group ID Policy ID

Edit Save Cancel

©Copyright

Figure 3.34 shows user profile UI prototype which provides an overview of what the dashboard of patient will look like to them. It has all the fields linked with the registration fields along with some additional sensitive information attributes which can be only filled once a user is able to register and login successfully. It will also have deactivating account link and change password attribute. Additionally, it will have edit, save and cancel button with their natural meanings to the user.

Figure 3.35: Patient Chart UI

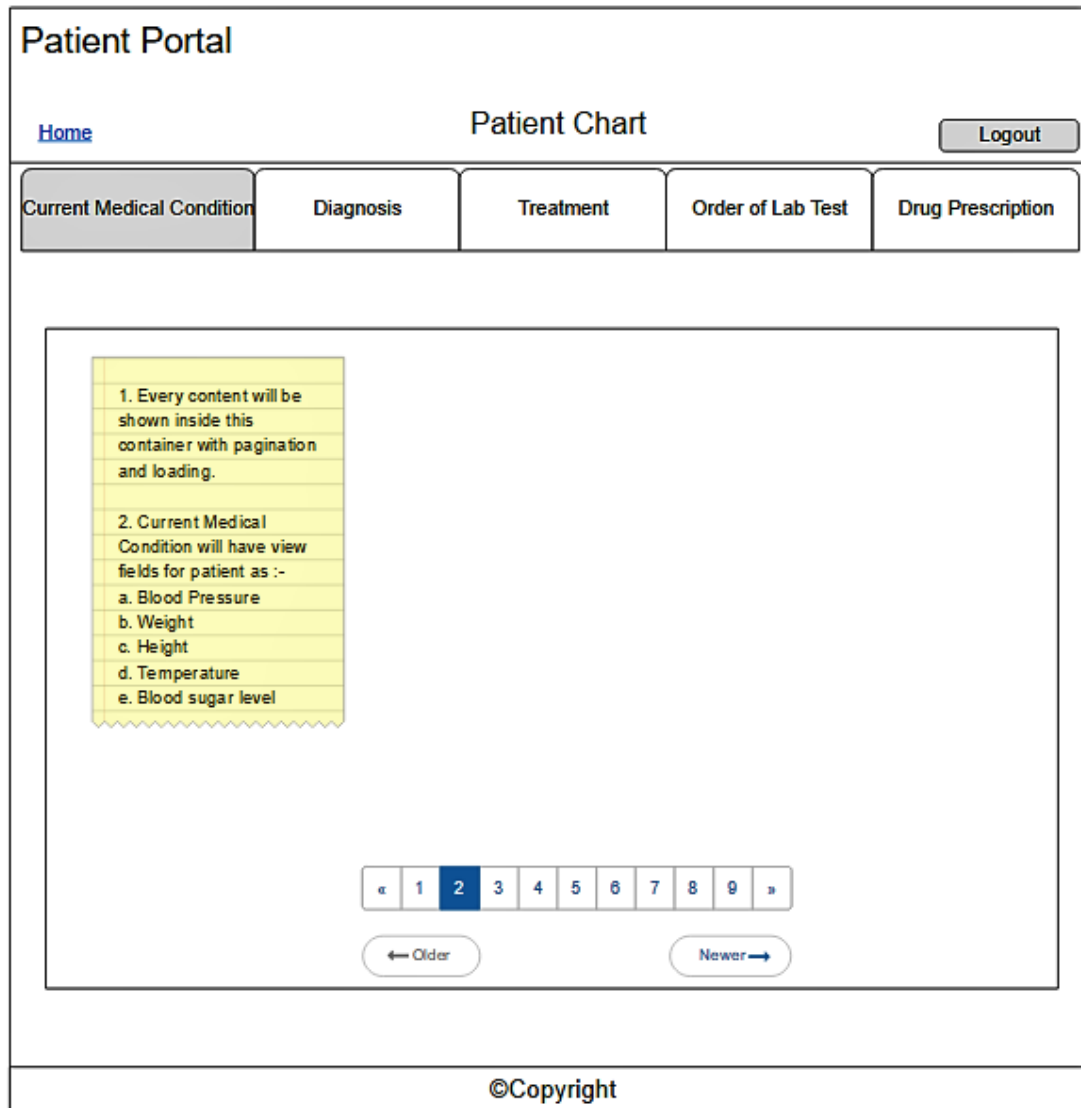


Figure 3.35 shows patient chart UI prototype, which provides an overview of perhaps the most usable section in patient portal. This is the module where patient can see current medical condition, diagnosis, treatment, order of lab test and drug prescription related information by clicking on the respective tab. Related information will be fetched from the database and loaded on the empty container which will also has pagination feature. This section shows the most confidential details about the patient.

Figure 3.36: Appointment UI

The image shows a web application interface titled "Patient Portal". Below the title is a navigation bar with a link to "Home" and a tab labeled "Appointment". A "Logout" button is located in the top right corner. Below the navigation bar are two main tabs: "Schedule an Appointment" (active) and "Cancel an Appointment". The "Schedule" tab contains a form with the following fields: "Doctor" (dropdown menu), "Type" (dropdown menu), "Name" (text input with placeholder "Patient Name"), "Reminder" (radio buttons for "Text" and "Email"), and "Message" (text area with placeholder "Word Limit --"). At the bottom of the form are "Submit" and "Reset" buttons. A yellow sticky note on the right side of the form states: "The same content container will be shown for cancel an appointment tab where there will be a grid listing confirmed appointments with pagination and loading feature". The footer of the page contains the text "©Copyright".

Figure 3.36 shows appointment UI prototype, which can be access by clicking on the appointment tab on the homepage. This prototype of UI will provide an overview of what attributes will be there in order to request a doctor's appointment from the clinic staff through Internal Messaging System. It also has a tab of cancel appointment which will let user cancel the scheduled appointment shown in the grid view.

Figure 3.37: Messages UI

Patient Portal

[Home](#)Messages

Logout

Inbox

InboxSent Mail

▼ <input type="checkbox"/>	▼ From	▼ Status	▼ Subject	▼ Date
<input type="checkbox"/>	Demo	New Message	Hi	Jan 1st 17 09:50 AM

Select Action▼

Submit

©Copyright

Figure 3.37 shows the prototype of Messages UI, which provides an overview about the Internal Messaging System where patient can receive, reply and see to mails/messages by clicking on the tabs and buttons as shown and applicable to the user. This section has IMS whose scope is limited to the portal itself without any third-party mail server support and for the secure communication between patient and clinic staff. This page can be viewed and navigated by clicking on message tab on the homepage.

Figure 3.38: Doctor Calendar UI

Patient Portal Receptionist

Home Doctor's Calendar Logout

March 2017

Doctor Name : xyz
Time: xx - xx

OK Cancel

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Available Unavailable

©Copyright

Figure 3.38 shows This is the one of the most critical section which will be accessible by receptionist from their separate account module, only in order to find availability and confirm the appointment on behalf of patient's request. This is an integrated calendar UI prototype which will designed to sync and look the doctor's calendar in order to successfully make an appointment for the patient.

3.2 Non-functional requirements

Table 3.1: Non-functional requirement

Type	Description	Use Case
Security	Systems shall be protected against possible threats such as viruses, hackers, and malware.	log In
Security	In the event of an attack no more than 5% shall be compromised, and none of the data protected by HIPAA.	DeletePatientAccount
Security	The skill required to hack into the system shall be the professional level, no novice shall be able to harm the system.	Log In
Security	System shall be protected against a variety of attacks by all the users that can harm the system, and locking out possible threats after a reasonable number of attempts.	Log In
Security	System shall have multiple ways to authenticate users along with methods of identifying possible threats through an intrusion detection and intrusion prevention system.	Log In
Security	Passwords requirement should be a minimum of 8 characters with special characters and numbers. Users should be able enter their passwords within five tries, if not they will be locked out and will be required to enter their personal information before their password can be reset.	Log In
Security	Integrity of user accounts should be maintained by using Role-based authorization. For example, Patients are unable to see the Physician's calendar.	CreatePatientAccount, CreateEmployeeAccount
Security	SSL Encryption should be used for the transmission of chat between the receptionists and patients.	Schedule Appointment, Cancel Appointment, Send Appointment Reminder
Usability	The system shall be easy to use for all levels of user skill, and maintain an interface that is easy to understand and navigate.	Enter Patient Personal Information, Modify Patient Personal Information
Usability	The system shall be comprehensible within 20 minutes of viewing time.	Create Patient Account
Usability	The system will have reliable reference documentation available online.	Password Reset
Usability	The system should require minimum scrolling, clicking.	Enter Patient Personal Information, Modify Patient Personal Information

Table 3.2: Non-functional requirement (cont.)

Usability	The user shall complete common tasks quickly for example clicking from page to page should happen in 3 seconds or less.	View Medical History, manage personal information
Usability	The user transactions for payment should complete in 3 steps.	Payment
Performance	The site shall be available 99% of the time, barring unforeseen circumstances.	CreatePatientAccount
Performance	Processing speeds shall be at the highest attainable levels during peak hours.	Schedule Appointment, Payment
Performance	By monitoring website data, the system shall adjust server capacity and maintenance time accordingly.	CreatePatientAccount, EnterMedicalRecords
Performance	The throughput required for shall be flexible in order to obtain a 100% performance when completing transactions.	Payment
Reliability	The system shall allow patients to continue surfing where they last left the system, as well as access to new information added in real time.	View Medical history, View bills, View Appointments
Maintainability	The portal shall be manageable and malleable to change as the requirements requested by the users are met.	Modify patient personal information, Password reset
Maintainability	System should figure out the best time for maintenance based on usage statistics and give fair warning to patients in case they are going to access the system during maintenance times.	Log In

4 Requirements table

4.1 Backlog

Table 4.1: Backlog

Story	Points	Priority
1. As a patient, I want to create an account.	5	1
2. As a receptionist, I want to create patient account.	5	1
3. As an admin, I want to create accounts for all employees.	5	2
4. As a user, I want to log in.	3	3
5. As a user, I want to reset password.	8	3
6. As a patient, I want to manage my personal information.	5	4
7. As a patient, I want to schedule an appointment.	13	5
8. As a patient, I want to manage an appointment.	8	5
9. As a patient, I want to receive a reminder in my preferred way.	21	5
10. As a receptionist, I want to manage doctor calendar.	5	5
11. As a receptionist, I want to help patients manage appointments.	13	5
12. As a user, I want my account automatically log out after 15 minutes no action.	8	6
13. As a user, I want to log out.	3	6
14. As a timer, I want to send timeout to Patient Portal.	5	6
15. As a nurse, I want to add patient current medical condition.	3	7
16. As a doctor, I want to enter diagnosis, treatment, prescriptions and order of tests.	3	7
17. As a patient, I want to view my medical history.	5	8
18. As a doctor, I want to view patient medical history.	3	8
19. As a patient, I want to make payment.	21	9
20. As a patient, I want to view the bill.	3	9
21. As a receptionist, I want to collect copay from patient.	3	9
22. As a receptionist, I want to send bills to insurance company.	3	9
23. As an insurance provider, I want to sent validation and copay information.	3	9
24. As a receptionist, I want to add patient medical records such as images, scanned scripts, audio recording, also lab results .	13	10
25. As a scanner, I want to scan patient hard copy medical records into system.	5	10
26. As an insurance provider, I want to receive bill receipts of patients.	3	11
27. As a phramacy, I want to receive patient prescription.	3	12
28. As a printer, I want to print bill receipts to patient.	3	13
29. As an admin, I want to active, deactive, delete patients and employees accounts.	21	14

Following are the description for each story.

1. As a patient, I want to create an account.

The actors involved in the story are Patients. They can access the Patient portal online and Sign up for themselves by entering the basic personal information like email address, password, phone no., address, SSN, First name, last name. Their information will be stored into the database library and they will be registered successfully.

2. As a receptionist, I want to create patient account.

The actors involved in the story are Patient, Receptionist. Receptionist can access the Patient portal online and Sign up on behalf of patients by entering their basic personal information like email address, password, phone no., address, SSN, First name, last name on demand via call or in-person meeting at the clinic. Their information will be stored into the database library and they will be registered successfully. The patient will receive the reset password link on their registered email id from where patient can change their password accordingly.

3. As an admin, I want to create accounts for all employees.

The actors involved in the story are Receptionist, Nurse, Physician, Admin. Admin can access the Patient portal online and Sign up on behalf of clinic staff's by entering their basic personal information given to the admin already and to provide an account to the clinic staff on Patient Portal by registering them successfully.

4. As a user, I want to log in.

The actors involved in the story are Receptionist, Nurse, Physician, Patient. It is the first page every user will see on the Patient Portal. Users can enter their username and password and start accessing their account onto the portal.

5. As a user, I want to reset password.

The actors involved in the story are Receptionist, Nurse, Physician, Patient. If users forget their password, they have been provided with forget password link onto the login page of the portal from where they can reset their password provide they have the registered email account active for recovery.

6. As a patient, I want to manage my personal information

The actors involved in the story are Patients. Once the user registered and login successfully, they can access the patient portal and manage their personal information by clicking on the profile tab on the home page where they can enter more information like, insurance related information, DOB, emergency contact, profile photo.

7. As a patient, I want to schedule an appointment.

The actors involved in the story are Receptionist, Patient. Patient can schedule an appointment by going to the appointment section onto the homepage and submit information like Doctor name, type, patient's name, reminder preference and message to initiate the appointment request to the receptionist through Internal Messaging System.

8. As a patient, I want to manage an appointment.

Patients should be allowed to manage their existing appointments. They can view the details of the appointments. They can cancel an old appointment and schedule a new one.

9. As a patient, I want to receive a reminder in my preferred way.

Patient will receive a reminder of his/her appointment 24 hours ahead. And he/she can choose the way to receive it: by text message or by email.

10. As a receptionist, I want to manage doctor calendar.

Receptionist should be allowed to access doctor calendar to add/delete appointments and to mark the date when doctor is on a leave unavailable.

11. As a receptionist, I want to help patients manage appointments.

Receptionist should respond to patient scheduling appointment request. He can view the request and either add or reject this appointment to doctor calendar.

12. As a user, I want my account automatically log out after 15 minutes no action.

As an authorized user, Patient Portal should help keep safety. When there is no action for one user within 15 minutes. A log-in timeout will be send from Timer to Patient Portal and Patient Portal will log out the user.

13. As a user, I want to log out.

Patient Portal should allow user to log out at anytime.

14. As a timer, I want to send timeout to Patient Portal.

Timer will send two types of Timeout to Patient Portal. One is reminder timeout for appointments. The other is login timeout for users.

15. As a nurse, I want to add patient current medical condition.

A Nurse can enter various amounts of information to the Patient's chart such as, but not limited to, blood pressure, weight, height, temperature, and blood sugar level.

16. As a doctor, I want to enter diagnosis, treatment, prescriptions and order of tests

A Doctor is able to enter information after seeing the Patient, including diagnosis they came up with, the treatment required for the patient and the prescriptions for the patient to take to fix the ailment. The Doctor will also include the order of the tests necessary to complete the diagnosis.

17. As a patient, I want to view my medical history.

Patient and all clinical staffs can review the medical history for the patient and view the treatment given as well as any tests that were completed or are still required, the medical history will also contain any prior prescriptions to prevent conflicts and log of all of the patients visits.

18. As a doctor, I want to view patient medical history

A doctor can pull up any patient's medical history and see what the prior diagnosis was for that patients. They can also review previous treatments that were employed and view any allergens or ailments the patient feels are still persistent; the doctor is also able to see when the tests requested for the patient were completed and the results from the lab.

19. As a patient, I want to make payment

The patient can make a payment after receiving the final receipt from the receptionist, and is given an amount that they need to pay after the insurance has done their part.

20. As a patient, I want to view the bill

The patient is able to see the e-receipt for the bill on the patient portal by going to the billing area, the information is updated after each visit and will show the most current information for the patient.

21. As a receptionist, I want to collect copay from patient

The Receptionist gathers the information required to provide the patient with a receipt by validating the insurance, then assessing the amount of co-pay requested by the insurance, the final bill will be calculated by the patient portal and has the lab test, treatment, insurance information, take off and co-pay costs.

22.As a receptionist, I want to send bills to insurance company

After receptionist collects co-pay from patient, they need to send the rest bill to patient insurance provider through insurance network or by sending the paper bill that contains lab test, treatment, insurance information, take off and co-pay costs.

23.As an insurance provider, I want to send validation and copay information.

Patient's insurance plan and coverage will be reviewed by the insurance provider and will be reviewed to determine the co-pay the patient must pay immediately as well as a detailed report of what was covered by them. Any remaining balance will be sent to the patient through the insurance provider

24.As a receptionist, I want to add patient medical records such as images, scanned scripts, audio recording, also lab results

Receptionist will enter all the medical records of patients including images, scanned scripts, audio recordings and lab results. All such information will be entered in the Patient's chart.

25.As a scanner, I want to scan patient hard copy medical records into system.

The scanner will be used to organize patient's paper based records so that they can be uploaded on to the portal and be available to the patient.

26.As an insurance provider, I want to receive bill receipts of patients

Receptionist's responsibilities include billing, make receipts, and collecting co-pay from the patient and send the report to the insurance company. -Bill receipt contains lab results cost, treatment cost, insurance information, take off and co-pay. After receptionist collects co-pay from patient, they need to send the rest of the bill to the patient's insurance provider through the insurance network or by sending a paper bill.

27.As a pharmacy, I want to receive patient prescription.

The patients required prescription will be sent to the pharmacy by the portal and will have the name of the medicine as well as the regiment of the pills to be taken by the patient.

28.As a printer, I want to print bill receipts to patient

The printer will print out the receipt for the patients to review, and will contain all the details of the doctor's diagnosis as well as all tests performed during the appointment.

29.As an admin, I want to active, deactivate, delete patients and employees accounts.

The admin has the privilege to create, deactivate and delete patient and employee accounts, in normal circumstances they will be held in the system for a minimum for 10 years and will be deleted after that, if it has been unused for 2 years then it will be deactivated. When regarding patient accounts that have been inactive or if the patient has expired, the information is kept in the system for 10 years, or until the notification of expiry. Employee information is also kept for 10 years even if they leave.