E-HEALTHCARE ONLINE CONSULTATION AND MEDICAL SUBSCRIPTION SYSTEM

PROJECT REPORT BY

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❖ **PROBLEM STATEMENT:** **To create a system that allows users to consult with Doctors on their health issues through an online portal.**

It might have happened so many times that you or someone you know needed doctors help urgently, but it was not available due to travelling reasons(Hospital is far away), unavailability of the doctor or due to some other reason. Thus, to avoid these things we thought of bringing up an idea to develop a system where we can provide instant help or medication on an urgent basis to avoid any fatal accident .The E-HEALTHCARE system is an end user support and online consultation system. We have proposed a system that allows users to get instant consultation on their health issues through an intelligent health care system online. This system also consists of providing prescriptions so that the user can directly show the e-prescription to the chemists so that they can avail the medicines. It also provides a discount to the user if he wants the prescribed medicine from their store. This system is useful for the user in many ways as they are provided with all these benefits with a nominal consultation fee.

❖ GOALS OF THE SYSTEM:

1. E-HEALTHCARE offers a rapid, direct, and documented communication pathway for consultation.
2. It offers help and consultation on an urgent basis.
3. It allows the User to interact with the Doctor via Normal (Message) Chat or Video Chat.
4. Doctors will be available 24/7 for consultation so that the user can consult them whenever they want.
5. The system aims to build an environment where the users can get doctors consultation sitting at their home.
6. The system builds an environment which can be helpful for urgent cases that do not reach the hospital.
7. The system provides the medicines prescribed as well so that the user can get the medicines directly delivered to their homes without any delay.
8. The system provides e-prescriptions which are mailed to them and can be stored for future use.
9. The system provides one to one communication with the Doctor
10. The system provides discount to the user if medicine order is placed through the system
11. The system provides a feedback section for the users on the facility provided.
12. The system provides an appointment system as well for the users to consult a particular doctor.

❖ EXPLANATION:

The E-Healthcare system is an end user support and online consultation project . Here we have proposed a system that connects patients to available doctors for online consultation and also allows doctors to email subscriptions in printable format. Our proposed system aims to build an environment where various patients needing doctor's help at their homes can consult doctors, send their images(for skin diseases/beauty related issues), chat with doctors, Video Chat with Doctors , tell them their issues and ask for remedies.

ADMIN INTERFACE:

The admin of the system is the backbone of the system as he is the one who monitors all the scenarios in the system. The Admin looks after all the facilities provided in the system and creates a healthy atmosphere between the doctor and the Patient. The admin can login to the system with his unique user id and password. The admin of the system has the full overview about all the patients and doctors who have logged in to the system. The admin can add doctors to the system on the basis of requirement. The Admin has access to the doctor details as well as the patient details. The admin can view the feedback provided by the patient so that he can get necessary suggestions on the improvement of the system. The admin will also get a doctor's feedback which will help him to check and rate the performance and accuracy of the doctor. We have also provided a help button on the system which can be used to directly connect with a doctor in an emergency situation and the admin keeps monitoring the requests to provide immediate help. The Admin can view the payment status wherein he can see whether a patient has completed the payment or it is pending.As this system allows the user to get e-prescriptions wherein they can order for these medicines in the system only. The admin keeps track of the medicine order placed so that it can be assured that the medicines are properly and safely delivered to the user.

ADMIN CLASS:

Attributes- 1. Name
              2. User Id
              3. Password

Methods: 1-Login()
          2-AddDoctors()
          3-RemoveDoctors()
          4-CheckDoctorsPerformance()
          5-ViewPaymentStatus()
          6-ViewLoggedInList()
          7-ViewPatientsFeedback()
          8-CheckPaymentRemainingList()
          9-UpdatePaymentList()
        10-SendPaymentReminderMessage()
        11-CheckDoctorsAvailability()

USER INTERFACE:

If the user has already registered i.e. if he is an existing user he can login to the system by entering the username and password. After Logging in to the system the user can change his password by entering the previous password. If the user has forgotten his/her password he can click the forgot password button from where he can reset his/her password. For resetting the password an OTP will be sent to the mobile number of the user. If the user has not registered then he can click the register button wherein the user needs to enter his details, set a username and password. The user can also select the help button wherein he will be directly connected to the doctor for consultation. If the user is logged in to the system he can check the doctors list to consult a particular doctor. The system will check whether that particular doctor is available or not and give a message to the user. If the doctor is not available then the user has two options. (1) The user can book an appointment for the doctor he wants to consult or (2) The user can choose another doctor from the provided list. The user will get the appointment details in their mail so that they can refer to it for future purposes. If the doctor is available then the user can do online chat with the doctor for their health issues. The user will be given an e-prescription which will be directly mailed to their email accounts which can be used to avail the medicines. The system also provides the medicines with discounts to the

users so that they can get the medicines with immediate effect directly delivered to their homes. The user needs to pay the consultation fees to the doctor which will be a nominal charge for the benefit of the users. The system also keeps track of the order delivered and the prescriptions mailed so that it is taken care that the user receives all the benefits on a timely basis.

USER CLASS:

Attributes- 1-User Details
             2-Username
             3-Password

Methods- 1-Login()
           2-Register()
           3-ViewDoctorsList()
           4-ShowDoctorsAvailability()
           5-GetDoctorsAppointment()
           6-RequestVideoChat()
           7-RequestNormalChat()
           8-PayConsultationFee()
           9-GiveFeedback()
           10-GetPrescriptionMail()

DOCTOR INTERFACE:
The doctor can log in to the system by entering the doctor id and password. The doctor can update his/her availability for the users on timely basis. The doctor can view the patient requests and respond to the requests by confirming his/her availability. The doctor can chat with patient either in normal chat (Message) or video chat. The doctor can send the prescription to the email id's of the users so that they can have a copy of their prescriptions to avail the medicines. The doctor can also check whether the user has done the consultation payment or not after the prescription has been mailed. The doctor will update his/her availability after consulting with a patient so that other patients can see their availability. The doctor will get timely feedback on their consultations which will be seen and monitored by the admin so as to improve the system as well as the facilities provided. On the basis of the feedback, if the doctor's rating is not above average then the admin can remove that particular

doctor from the system. This will enable the system to be more transparent and user friendly.

DOCTOR CLASS:

Attributes- 1-Doctor Details
         2-Username
         3-Password

Methods- 1-Login()
        2-UpdateAvailability()
        3-ViewRequests()
        4-AttendPatient()
        5-VideoChat()
        6-NormalChat()
        7-GetEmailId()
        8-MailPrescription()
        9-ViewPaymentStatus()

VIDEO CHAT CLASS

Attributes- 1-User Id
         2-Doctor Id

Methods- 1-GetPatientVideo()
        2-GetDoctorVideo()

LOGIN CLASS

Attributes- 1-Username
         2-Password

Methods- 1-GetId()
        2-GetUsername()
        3-GetPassword()
        4-CheckPassword()
        5-CheckUsername()
        6-ChangePassword()
        7-ForgetPassword()

REGISTER CLASS

Attributes- 1-User Details
           2-Username
           3-Password

Methods- 1-GenerateId()
         2-GetUsername()
         3-GetPassword()
         4-SetUsername()
         5-SetPassword()

FEEDBACK CLASS

Attributes- 1-Patient Details
           2-Doctor Details

Methods- 1-GiveFeedback()
         2-GetFeedback()
         3-CheckDoctorsPerformance()

PHARMACY CLASS

Attributes- 1-Name

Methods- 1-GetAddress()
         2-GetOrder()
         3-DeliverOrder()

PLACE ORDER CLASS

Attributes- 1-Prescription Details
    2-Patient Details
    3-Patient Address
    4-Type of Delivery

Methods- 1-GetPrescriptionDetails()
   2-PlaceOrder()
   3-SelectTypeOfDelivery()
   4-PayTotalAmount()

PRESCRIPTION CLASS

Attributes- 1-Patient Details
    2-Name of Medicine
    3-Type of Medicine
    4-Patient Id

Methods- 1-GivePrescription()
   2-GetPrescriptionId()

BANK CLASS
Attributes- 1-Name

Methods- 1-CheckCardDetails()
   2-GenerateOTP()

MEDICINE CLASS

Attributes- 1-Name of Medicine
    2-Type of Medicine

Methods- 1-GetMedicine()
   2-CheckMedicineAvailability()

CASE DIAGRAM:

CLASS DIAGRAM:

ADMIN

1-Details
2-Username
3-Password

1-Login()
2-AddDoctors()
3-RemoveDoctors()
4-CheckDoctorsPerformance()
5-ViewPaymentStatus()
6-ViewLoggedInList()
7-ViewPatientsFeedback()
8-CheckPaymentRemainingList()
9-UpdatePaymentList()
10-SendPaymentReminderMessage()
11-CheckDoctorsAvailability

USER/PATIENT

1-User Details
2-Username
3-Password

1-Login()
2-Register()
3-ViewDoctorsList()
4-ShowDoctorsAvailability()
5-GetDoctorsAppointment()
6-RequestVideoChat()
7-RequestNormalChat()
8-PayConsultationFee()
9-GiveFeedback()
10-GetPrescriptionMail()

DOCTOR

1-Doctor Details
2-Username
3-Password

1-Login()
2-UpdateAvailability()
3-ViewRequests()
4-AttendPatient()
5-VideoChat()
6-NormalChat()
7-GetEmailId()
8-MailPrescription()
9-ViewPaymentStatus()

NORMAL CHAT

1-User Id
2-Doctor Id

1-GetPatientchat()
2-GetDoctorChat()

VIDEO CHAT

1-User Id
2-Doctor Id

1-GetPatientVideo()
2-GetDoctorVideo()

LOGIN

1-Username
2-Password

1-GetId()
2-GetUsername()
3-GetPassword()
4-CheckPassword()
5-CheckUsername()
6-ChangePassword()
7-ForgetPassword()

REGISTER

1-User Details
2-Username
3-Password

1-GenerateId()
2-GetUsername()
3-GetPassword()
4-SetUsername()
5-SetPassword()

FEEDBACK

1-Patient Details
2-Doctor Details

1-GiveFeedback()
2-GetFeedback()
3-CheckDoctorsPerformance()

MEDICINE

1-Name of Medicine
2-Type of Medicine

1-GetMedicine()
2-CheckMedicineAvailability()

PHARMACY

1-Name

1-GetAddress()
2-GetOrder()
3-DeliverOrder()

PLACE ORDER

1-Prescription Details
2-Patient Details
3-Patient Address
4-Type of Delivery

1-GetPrescriptionDetails()
2-PlaceOrder()
3-SelectTypeOfDelivery()
4-PayTotalAmount()

PRESCRIPTION

1-Patient Details
2-Name of Medicine
3-Type of Medicine
4-Patient Id

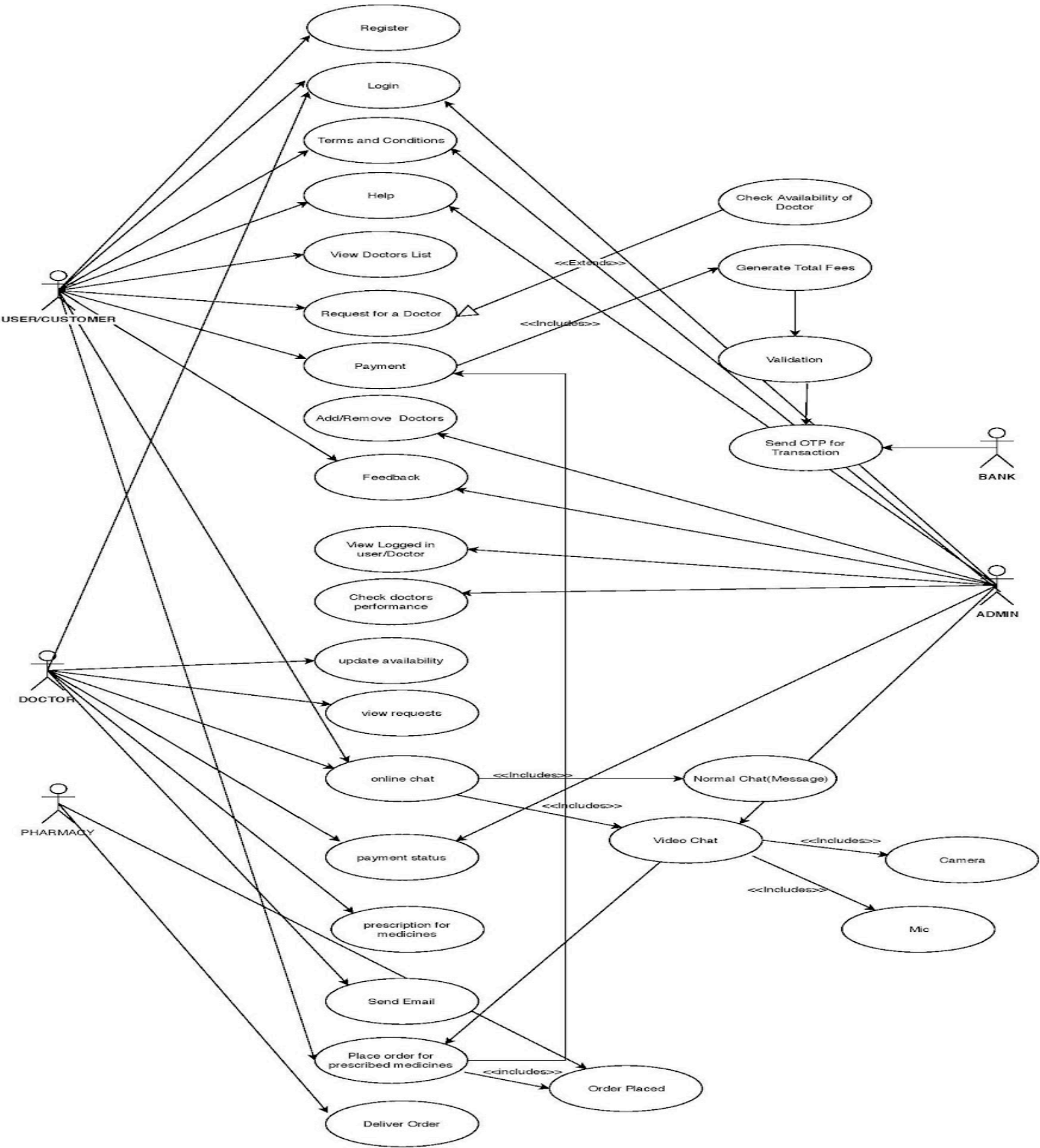1-GivePrescription()
2-GetPrescriptionId()

BANK

1-Name

1-CheckCardDetails()
2-GenerateOTP()

SEQUENCE DIAGRAM:

1. Patient Login Sequence Diagram:

PATIENT LOGIN SEQUENCE DIAGRAM

2. Change Password Sequence Diagram:

CHANGE PASSWORD SEQUENCE DIAGRAM

PATIENT   LOGIN SCREEN   E HEALTHCARE SYSTEM   DATABASE

1.Login

1.a Enter a Valid Username

1.a1.Authenticating Username

1.a.2.Valid Username

1.b.Enter a Valid Password

1.b.1.Authenticating Password

1.b.2.Valid Password

1.c.Patient Logged In

1.d.Login Successful

1.f.Change Password

Enter Previous Password

Authenticating Previous Passqword

Valid Previous Password

Enter new Password

Confirm New Password

New Password Set

Change Password successful

3. Forgot Password Sequence Diagram:

FORGOT PASSWORD SUQUENCE DIAGRAM

USER

LOGIN E- HEALTHCARE SYSTEM DATABASE

1. Login

1.1 Enter Valid User ID

1.1.1Authenticating User ID

1.1.1.1 Valid ID

1.1.1.1.1 User logged in

1.1.1.1.1.1 Login successfull

1.1.1.2 Invalid ID

1.1.1.1.1.2 Login unsuccesfull

2. Forgot Password

2.1 Enter User ID

2.1.1 Get Mobile no.

2.1.1.1 Send OTP

3. User Enters Valid OTP

3.1 Set New Password

3.1.1 Confirm Password

3.1.1.1 Password set succesfully

4. Register Sequence Diagram

REGISTER SEQUENCE DIAGRAM

5. ADMIN-Medicine Order Sequence Diagram:

MEDICINE ORDER SEQUENCE DIAGRAM
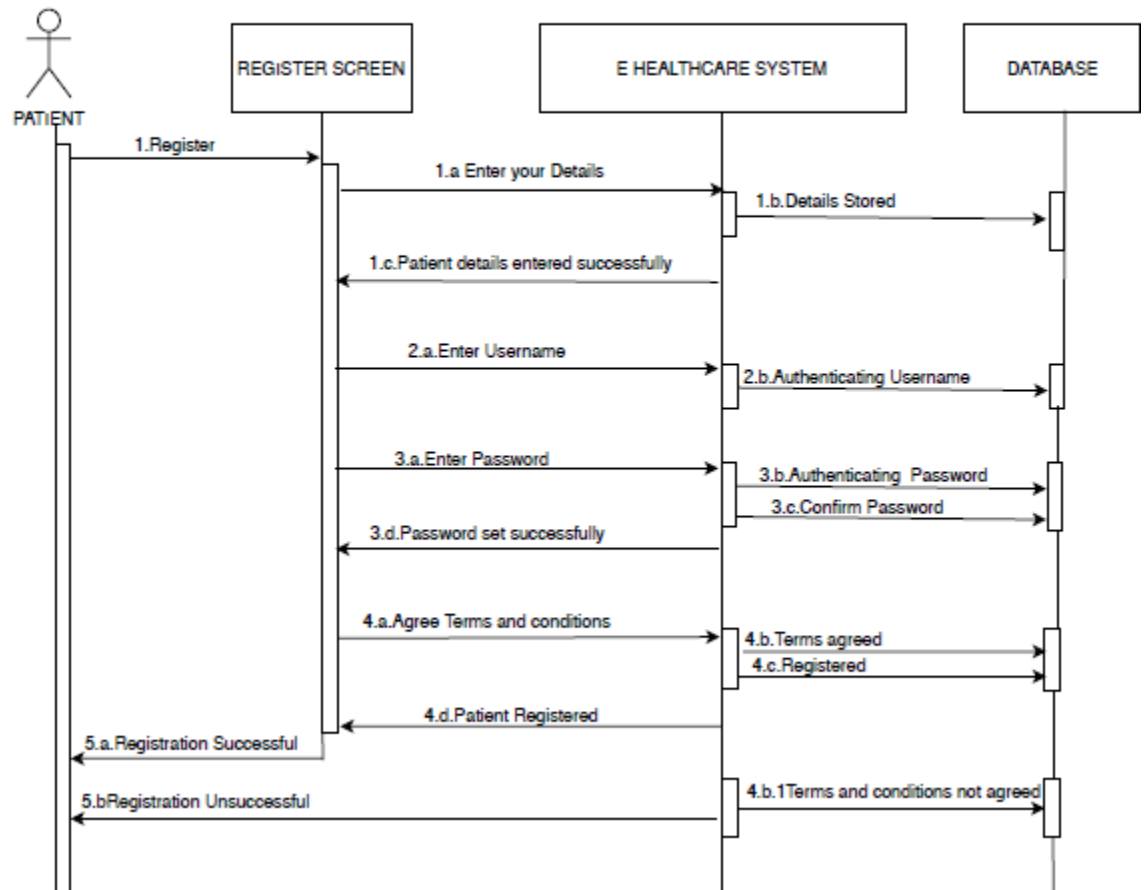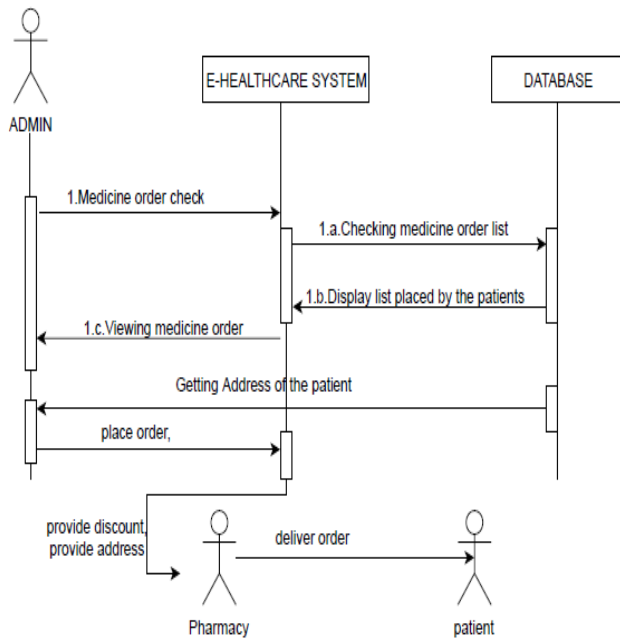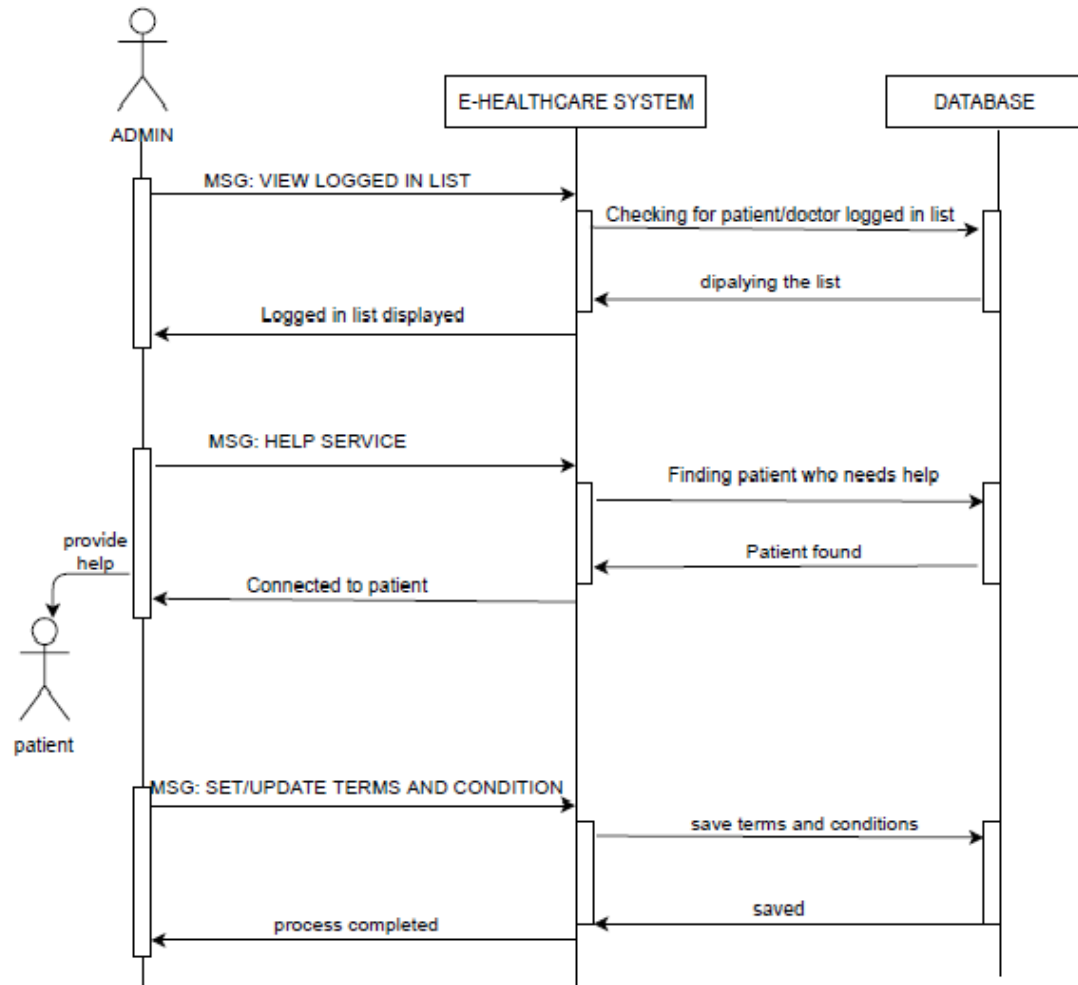
6. ADMIN-View Logged in List Sequence Diagram

VIEW LOGGED IN LIST ,TERMS AND CONDITION, HELP SERVICE SEQUENCE DIAGRAM

```
        Ο
       /|\
       / \
      ADMIN                    ┌─────────────────────┐        ┌──────────────┐
        │                      │ E-HEALTHCARE SYSTEM │        │   DATABASE   │
        │                      └─────────────────────┘        └──────────────┘
        │     MSG: VIEW LOGGED IN LIST      │                        │
        ├──────────────────────────────────►│                        │
        │                                   │ Checking for patient/doctor logged in list
        │                                   ├───────────────────────►│
        │                                   │     dipalying the list  │
        │                                   │◄───────────────────────┤
        │     Logged in list displayed      │                        │
        │◄──────────────────────────────────┤                        │
        │                                   │                        │
        │     MSG: HELP SERVICE             │                        │
        ├──────────────────────────────────►│                        │
        │                                   │ Finding patient who needs help
        │                                   ├───────────────────────►│
   provide                                  │      Patient found      │
    help                                    │◄───────────────────────┤
        │     Connected to patient          │                        │
     Ο  │◄──────────────────────────────────┤                        │
    /|\ │                                   │                        │
    / \ │                                   │                        │
   patient                                  │                        │
        │ MSG: SET/UPDATE TERMS AND CONDITION│                        │
        ├──────────────────────────────────►│                        │
        │                                   │ save terms and conditions
        │                                   ├───────────────────────►│
        │                                   │        saved            │
        │        process completed          │◄───────────────────────┤
        │◄──────────────────────────────────┤                        │
```

7. ADMIN- View Payment Status

VIEW PAYMENT STATUS SEQUENCE DIAGRAM
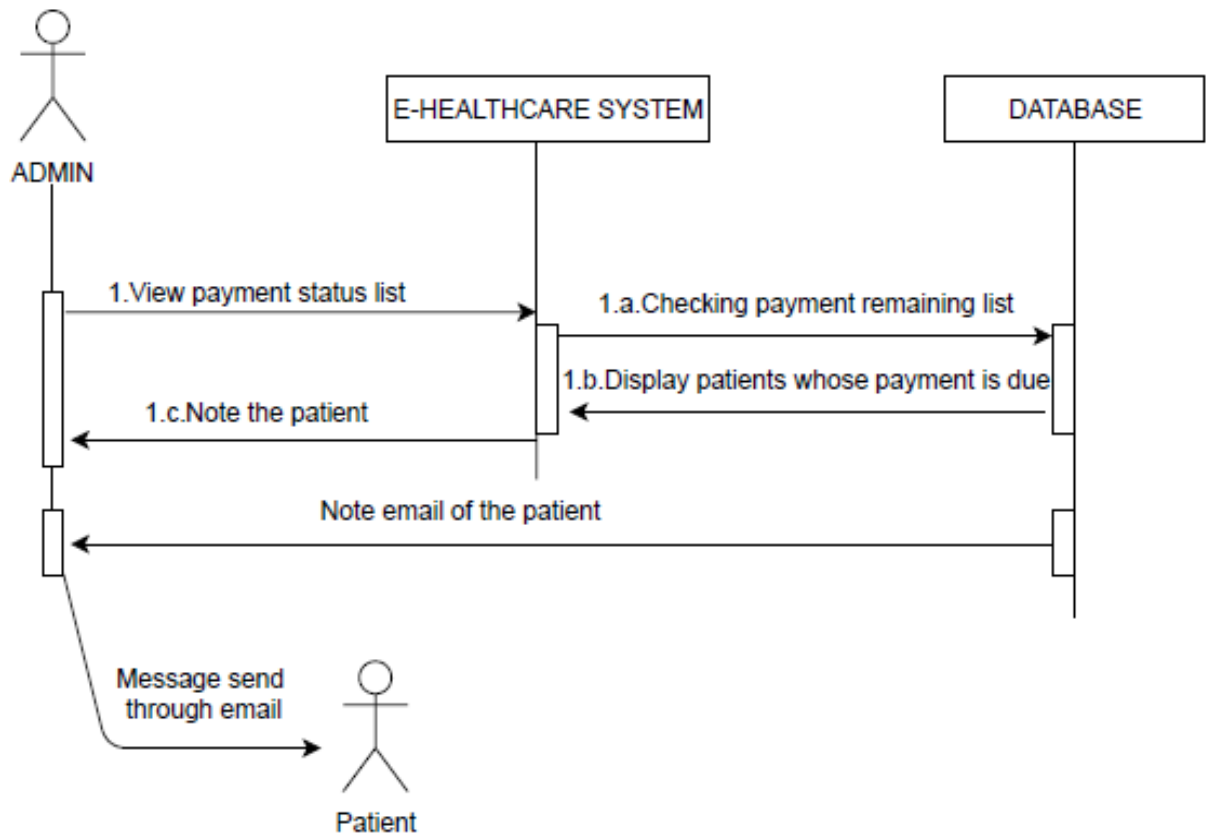
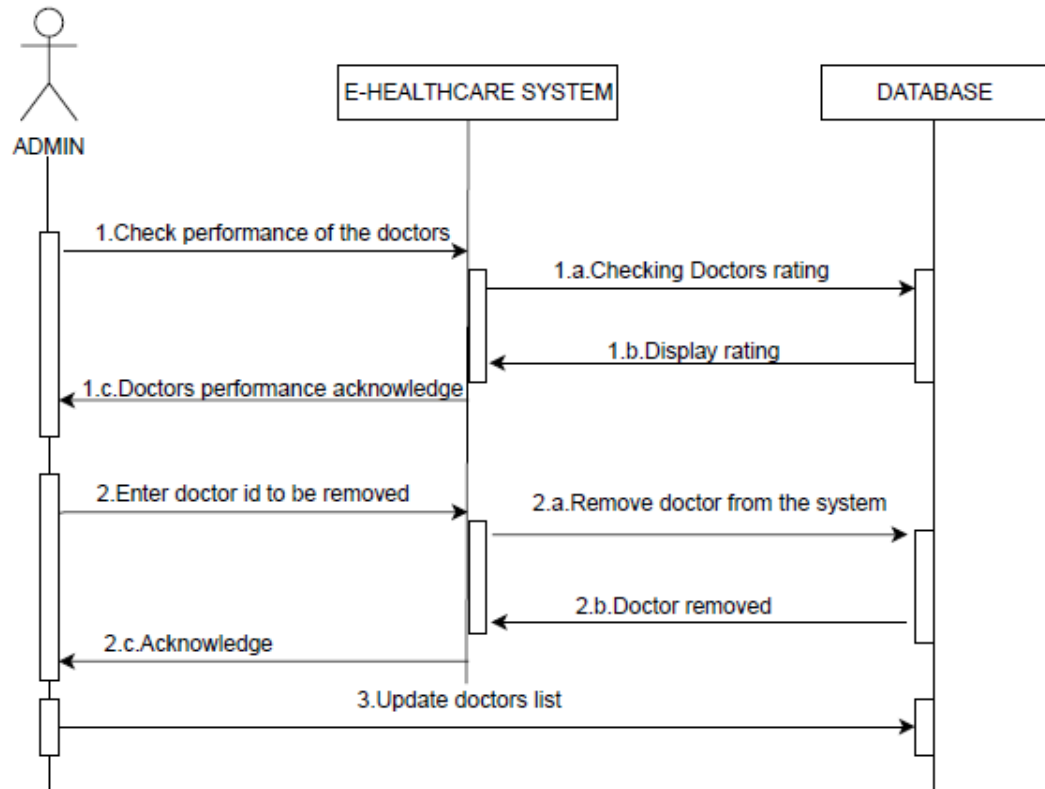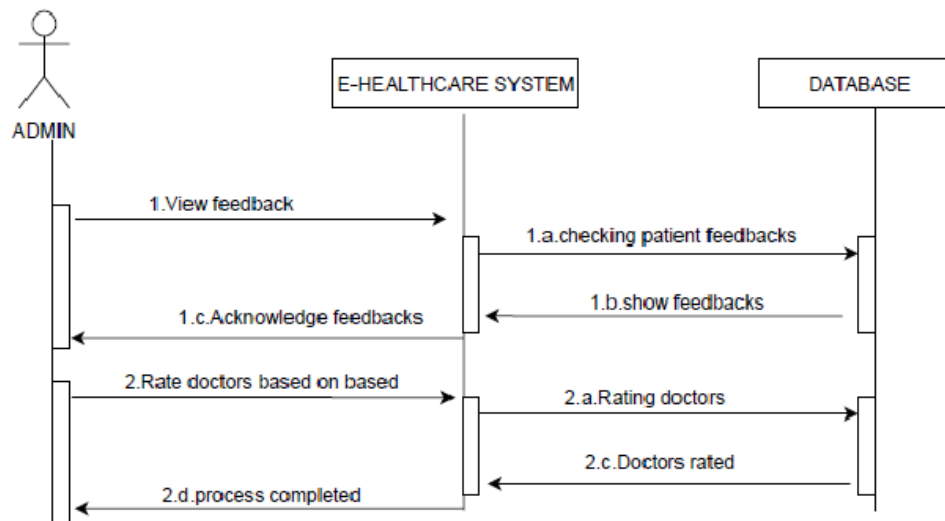## 8. ADMIN-Add Doctor Sequence Diagram:

ADD DOCTOR SEQUENCE DIAGRAM
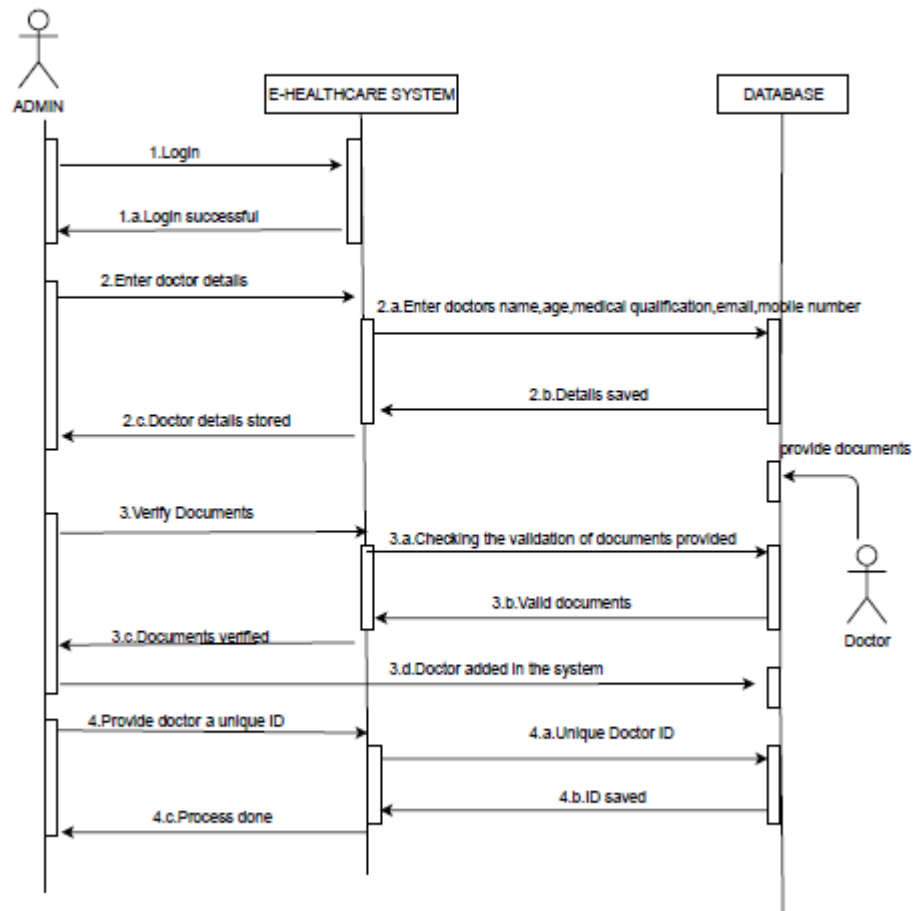
9. ADMIN-Remove Doctor Sequence Diagram
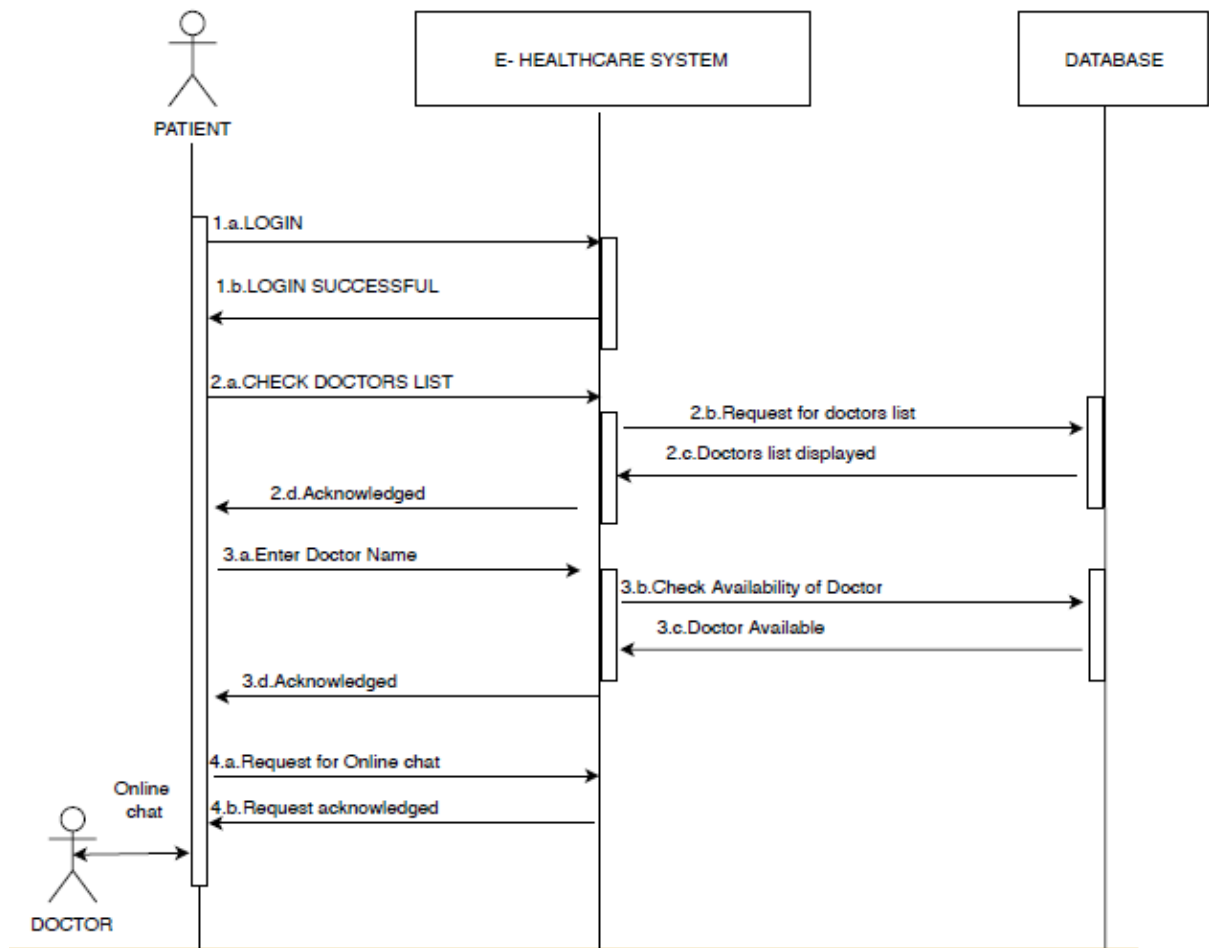
REMOVE DOCTORS BASED ON PERFORMANCE SEQUENCE DIAGRAM
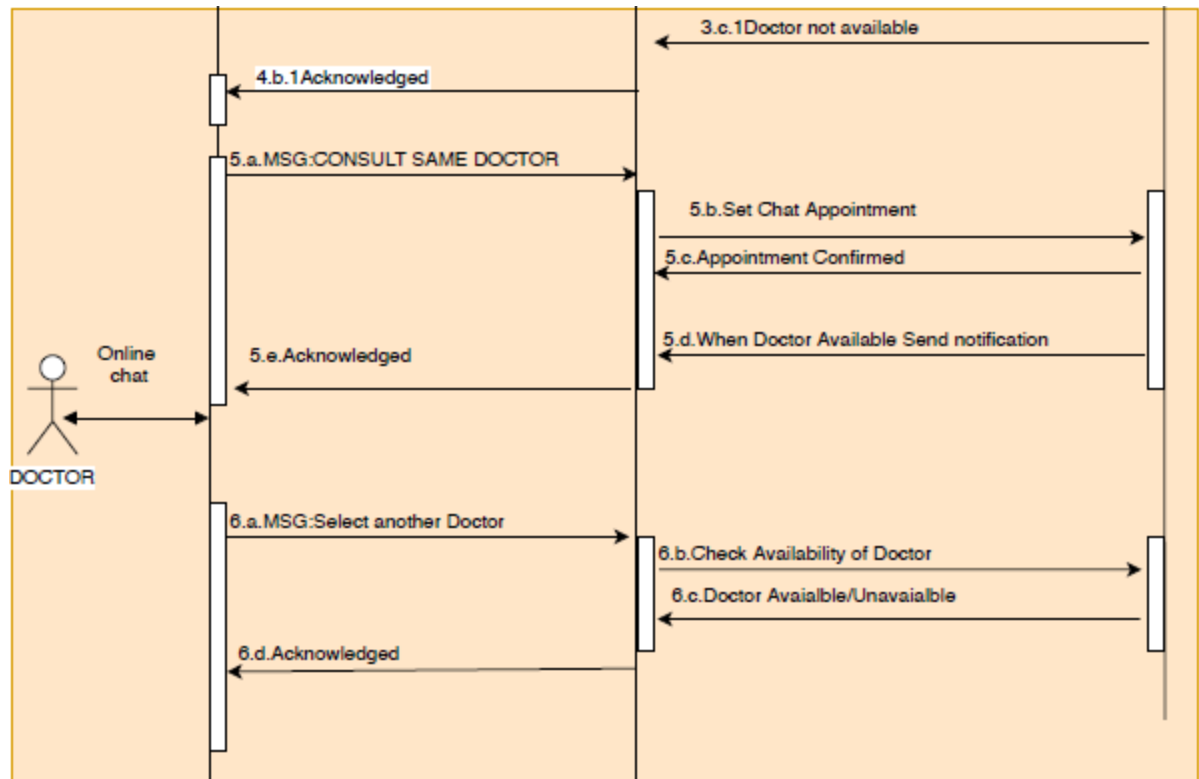
10. ADMIN- View Feedback Sequence Diagram
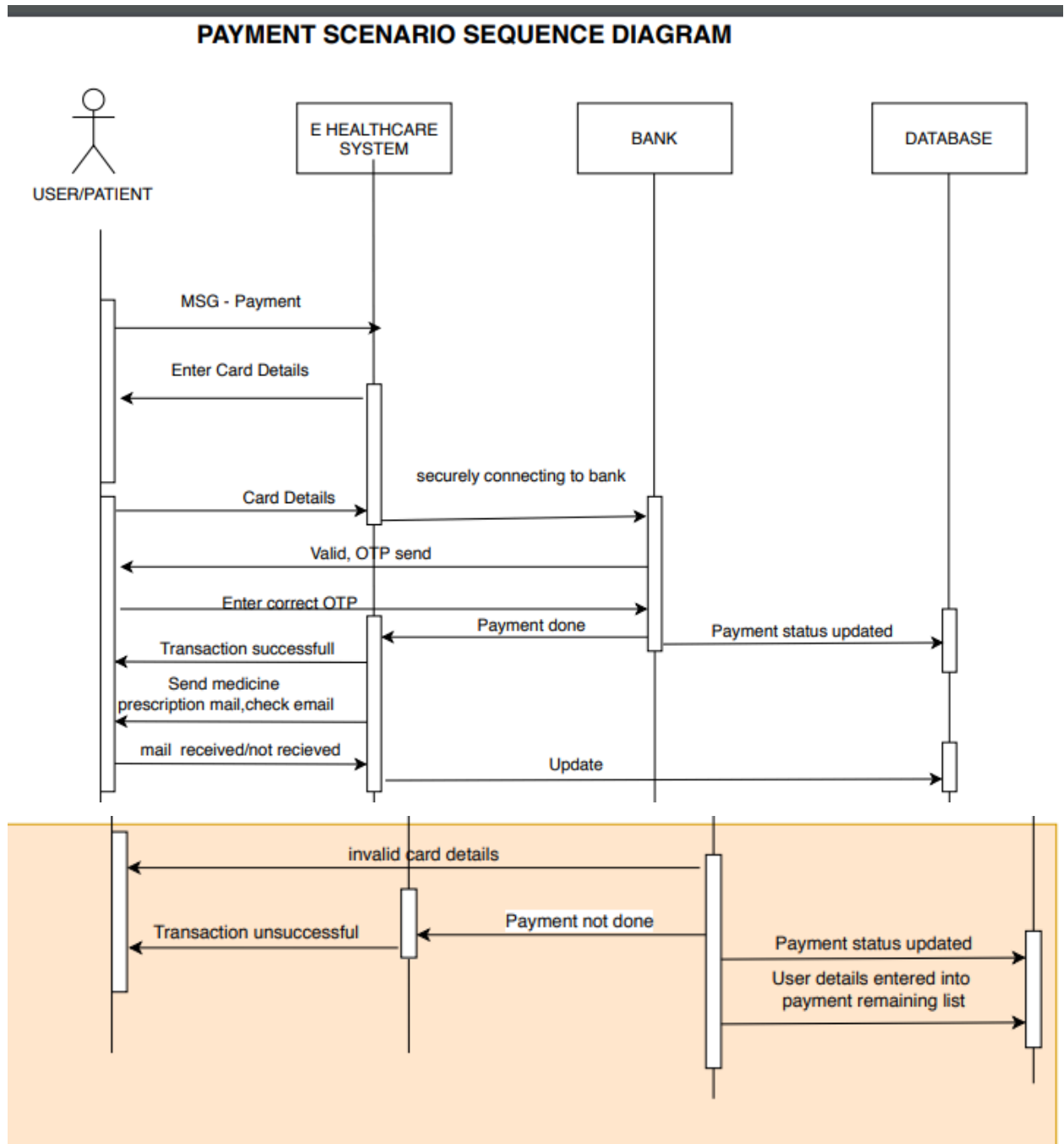
VIEW FEEDBACK AND RATE DOCTOR PERFORMANCE SEQUENCE DIAGRAM

11. USER INTERFACE - SEQUENCE DIAGRAM

USER INTERFACE SEQUENCE DIAGRAM

PATIENT

E- HEALTHCARE SYSTEM

DATABASE

1.a.LOGIN

1.b.LOGIN SUCCESSFUL

2.a.CHECK DOCTORS LIST

2.b.Request for doctors list

2.c.Doctors list displayed

2.d.Acknowledged

3.a.Enter Doctor Name

3.b.Check Availability of Doctor

3.c.Doctor Available

3.d.Acknowledged

4.a.Request for Online chat

Online chat

4.b.Request acknowledged

DOCTOR

3.c.1Doctor not available

4.b.1Acknowledged

5.a.MSG:CONSULT SAME DOCTOR

5.b.Set Chat Appointment

5.c.Appointment Confirmed

5.d.When Doctor Available Send notification

Online chat

5.e.Acknowledged

DOCTOR

6.a.MSG:Select another Doctor

6.b.Check Availability of Doctor

6.c.Doctor Avaialble/Unavaialble

6.d.Acknowledged

12. Payment Scenario Sequence Diagram

PAYMENT SCENARIO SEQUENCE DIAGRAM

USER/PATIENT — E HEALTHCARE SYSTEM — BANK — DATABASE

MSG - Payment
Enter Card Details
securely connecting to bank
Card Details
Valid, OTP send
Enter correct OTP
Payment done
Payment status updated
Transaction successfull
Send medicine prescription mail,check email
mail received/not recieved
Update

invalid card details
Payment not done
Transaction unsuccessful
Payment status updated
User details entered into payment remaining list
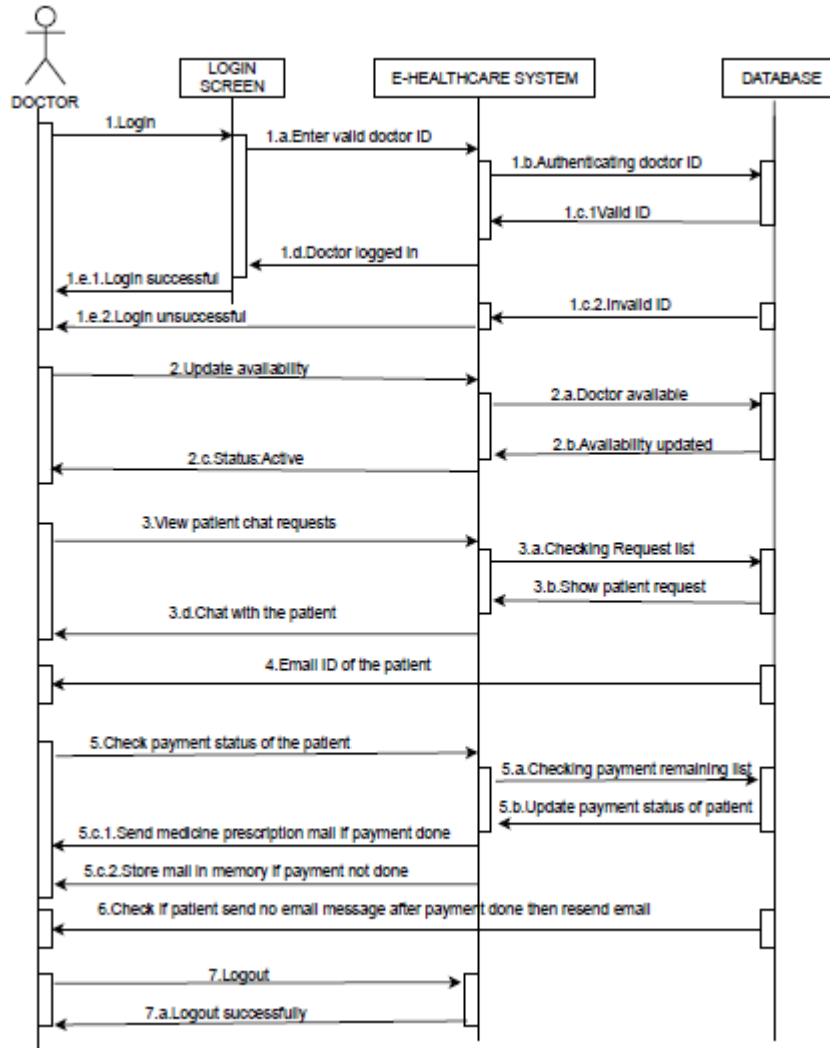
13. Place Order Sequence Diagram:

USER PLACED ORDER SEQUENCE DIAGRAM
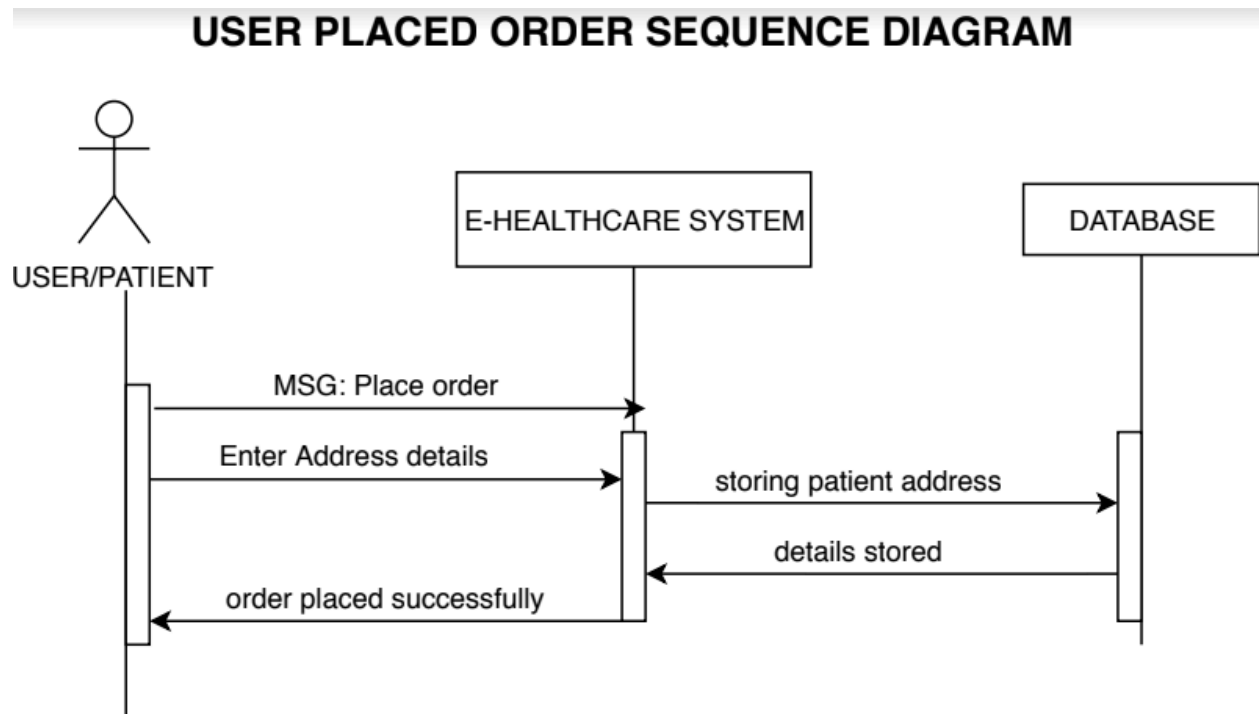
14. Doctor Interface- Sequence Diagram:

CONCEPT MAP REPRESENTATION:

We have used the Concept Map Representation to show all the possible scenarios of the system. It will help us to know how the system will behave in different scenarios which will be easier to understand and implement. It gives us a detailed representation of all the functions performed by the system in a flowchart format.
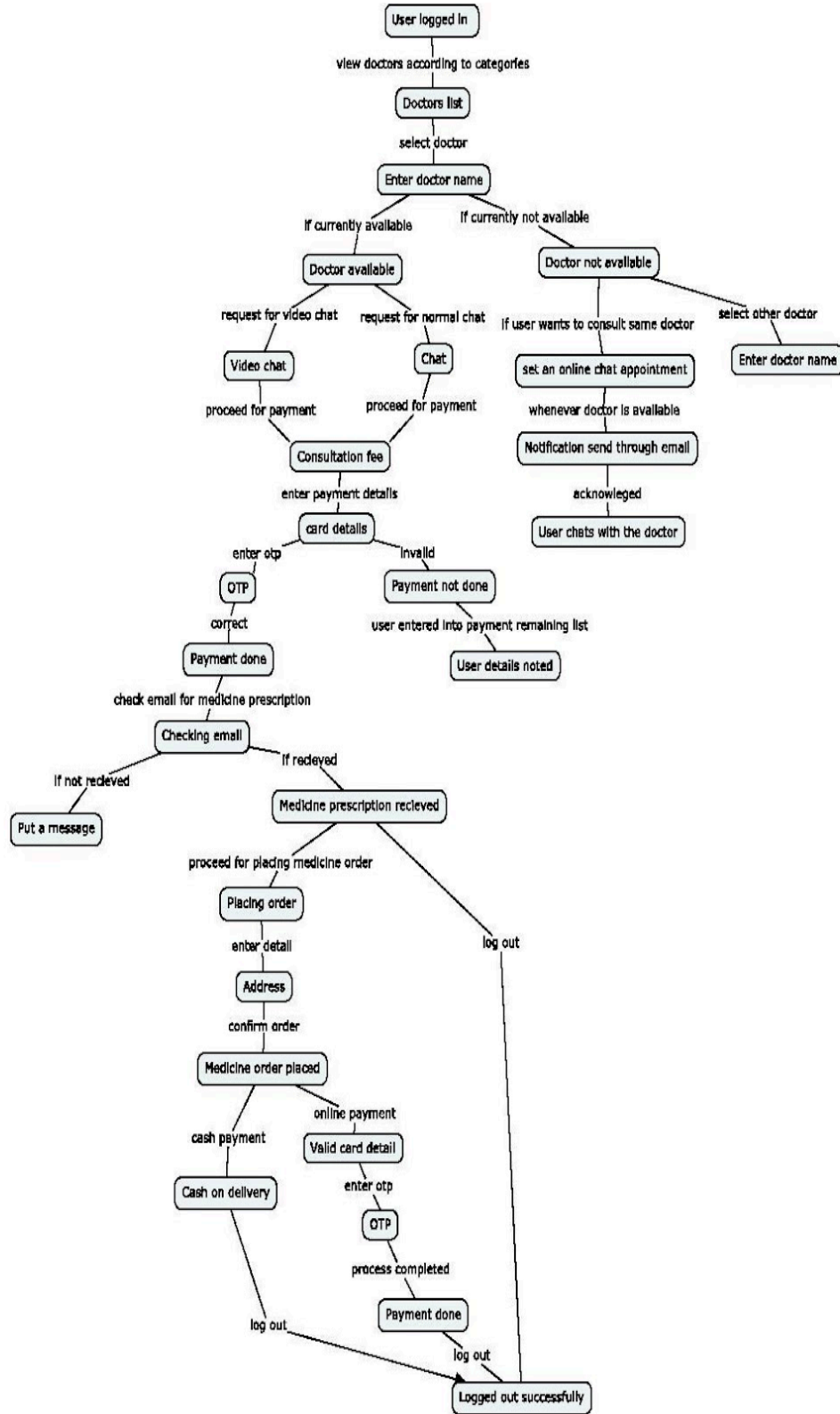
ADMIN INTERFACE CONCEPT MAP: All the functions which the admin can perform have been represented in this Concept Map.
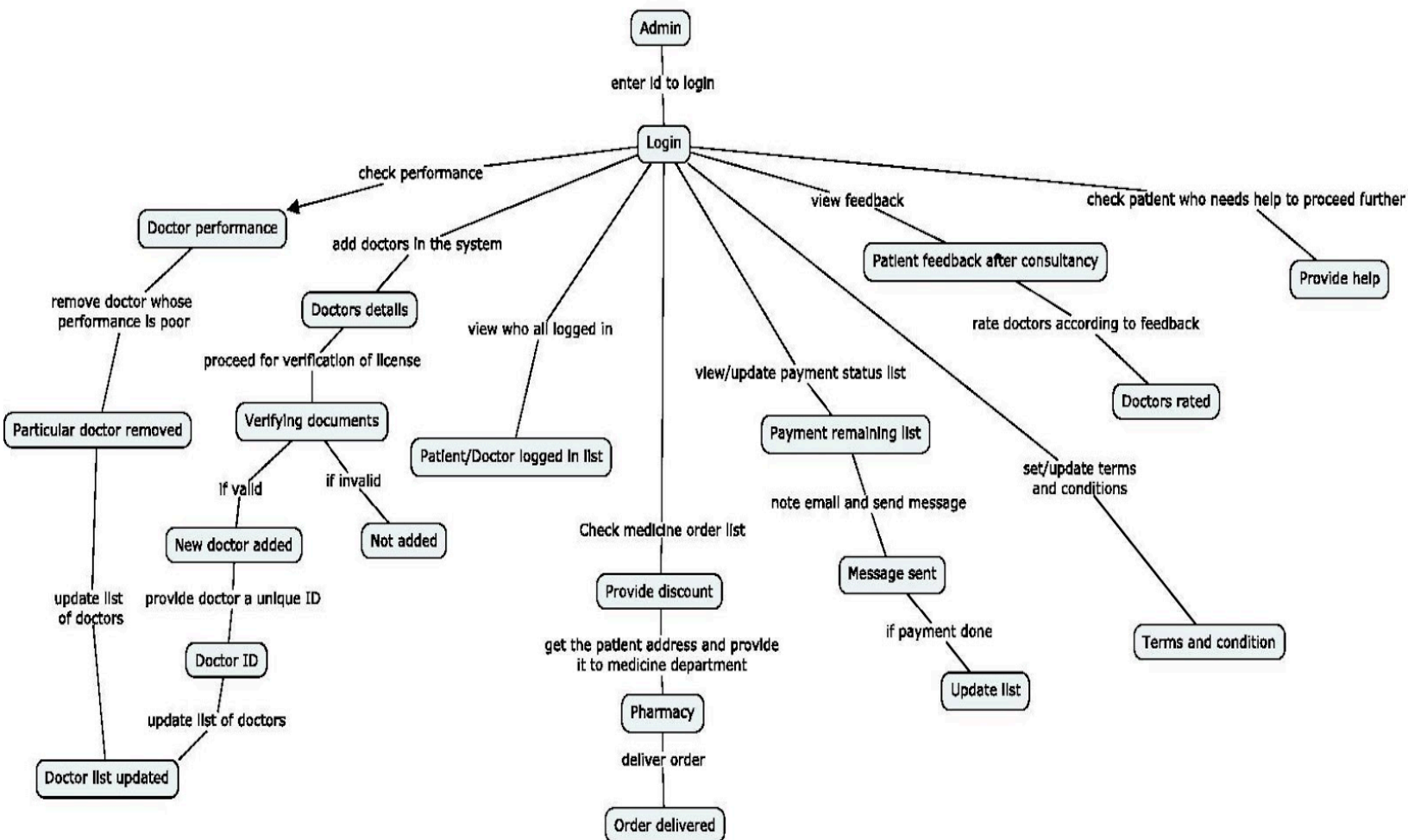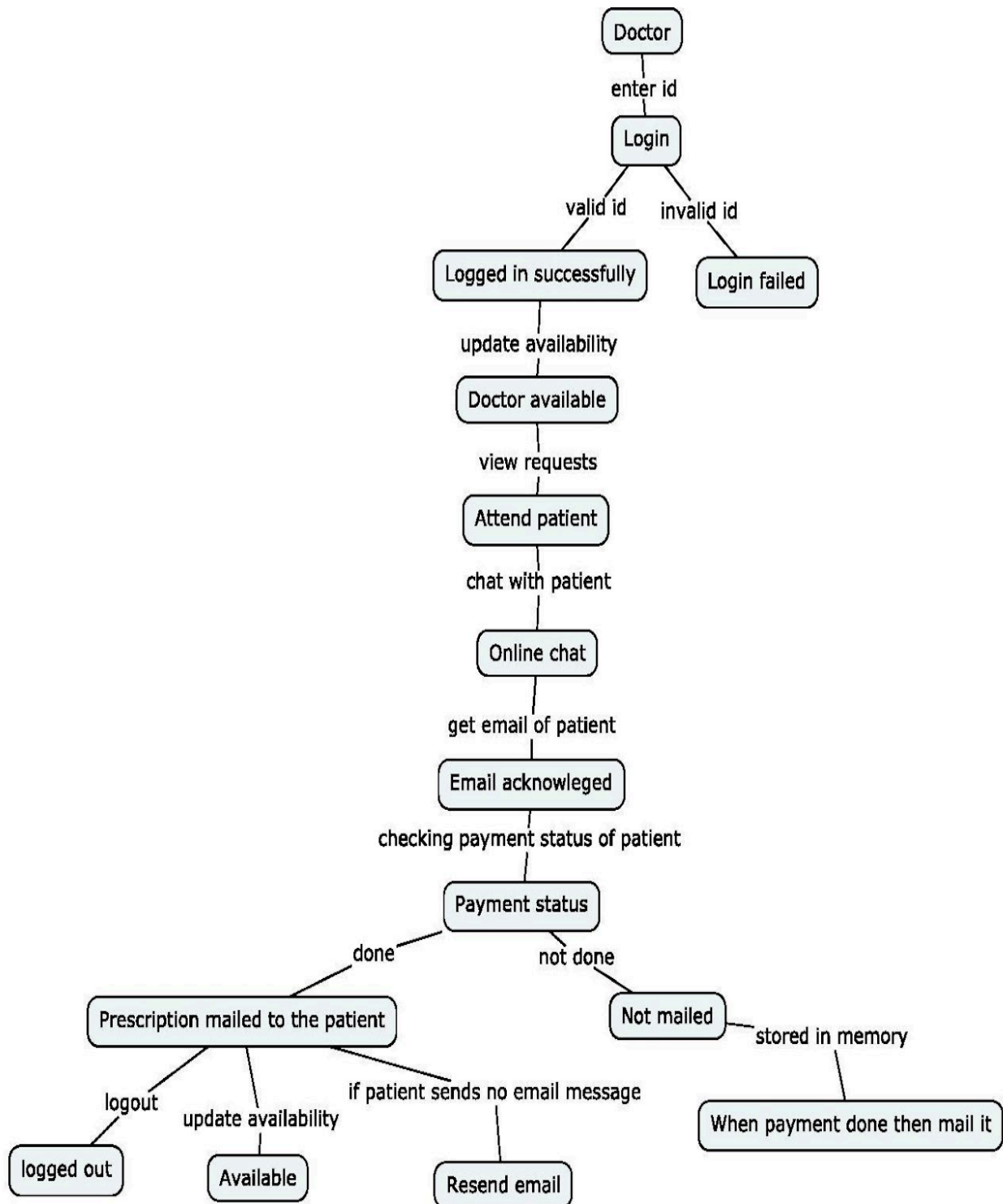
USER INTERFACE 1 CONCEPTMAP: It includes the Login and register scenarios for a user to use the system.
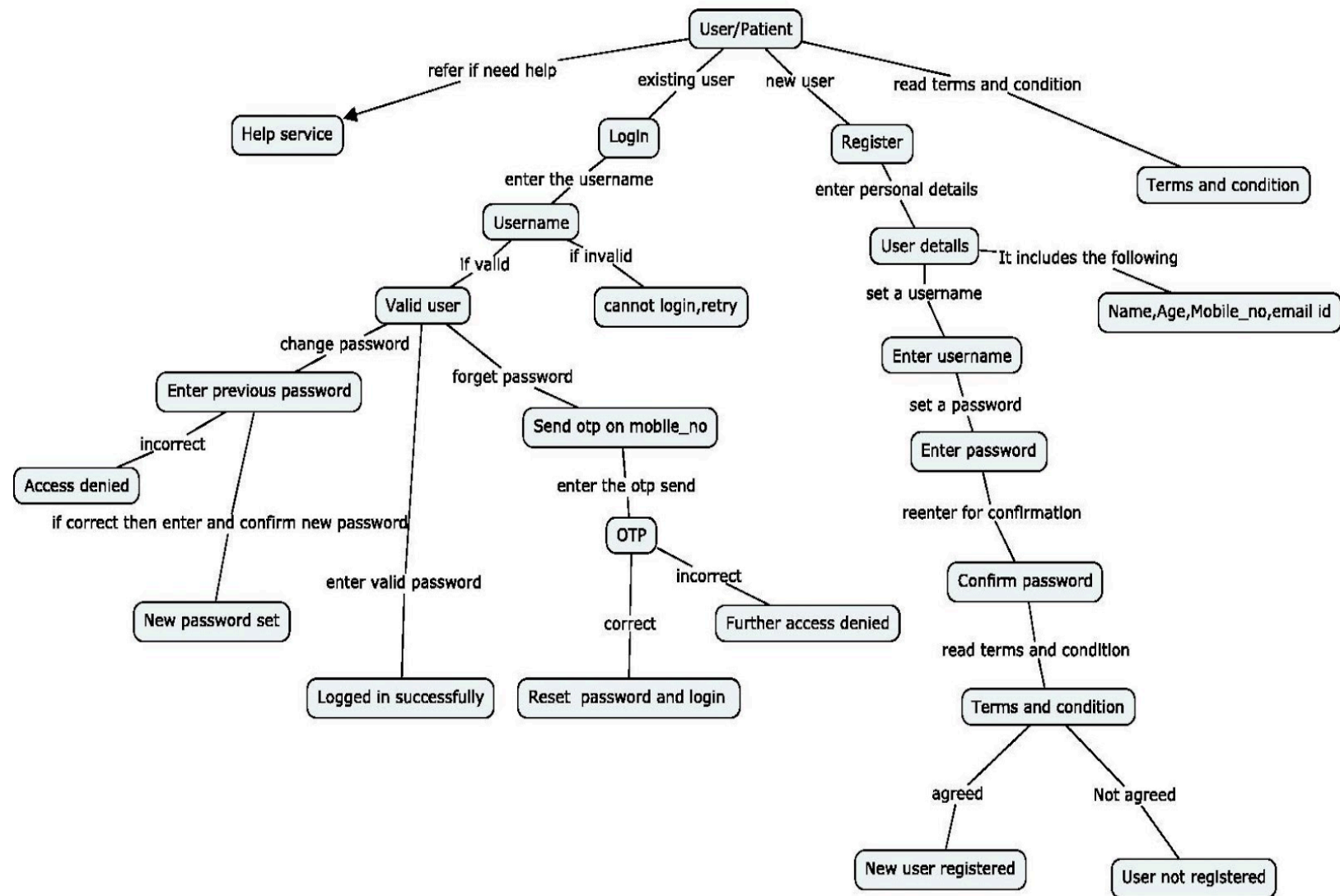
USER INTERFACE 2 CONCEPTMAP:

DOCTOR INTERFACE CONCEPTMAP:

```
                        Doctor
                          |
                       enter id
                          |
                        Login
                       /       \
                 valid id      invalid id
                    /              \
        Logged in successfully    Login failed
                  |
          update availability
                  |
          Doctor available
                  |
            view requests
                  |
           Attend patient
                  |
          chat with patient
                  |
            Online chat
                  |
         get email of patient
                  |
        Email acknowleged
                  |
  checking payment status of patient
                  |
           Payment status
            /            \
          done          not done
          /                 \
Prescription mailed        Not mailed
  to the patient              \
   /    |    \            stored in memory
logout update  if patient        \
      availability sends no    When payment
         |     email message   done then mail it
logged out  Available  Resend email
```

CONCLUSION:

The Main Objective of creating this type of system is to provide an online interaction portal for the users who need Doctor's Consultation and medication at their homes. This system provides the users with many facilities which create a healthy communication path between the user and doctor. The Doctors can advise the users on their health issues and can prescribe medicines as well as can ask them to perform particular tests so that they can get a clearer idea of their problem and can provide the proper and correct medication. The system consists of highly qualified doctors who have good communication and can talk to the users freely so that the user is comfortable to share their problems. This helps to create a healthy atmosphere among the patient and doctor which is the most important thing needed for the betterment of the society. We thought of this design to provide help to users who are unable to reach the hospital or visit a doctor whenever they need so as to cure their problem in an urgent and immediate basis.

*********************************THANK YOU*****************************