

LEBANESE
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UNIVERSITY



جامعة
اللبناني
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School Of Arts and Sciences
Computer Science Department

CSCI380 – Software Engineering

[Hospital Management System]

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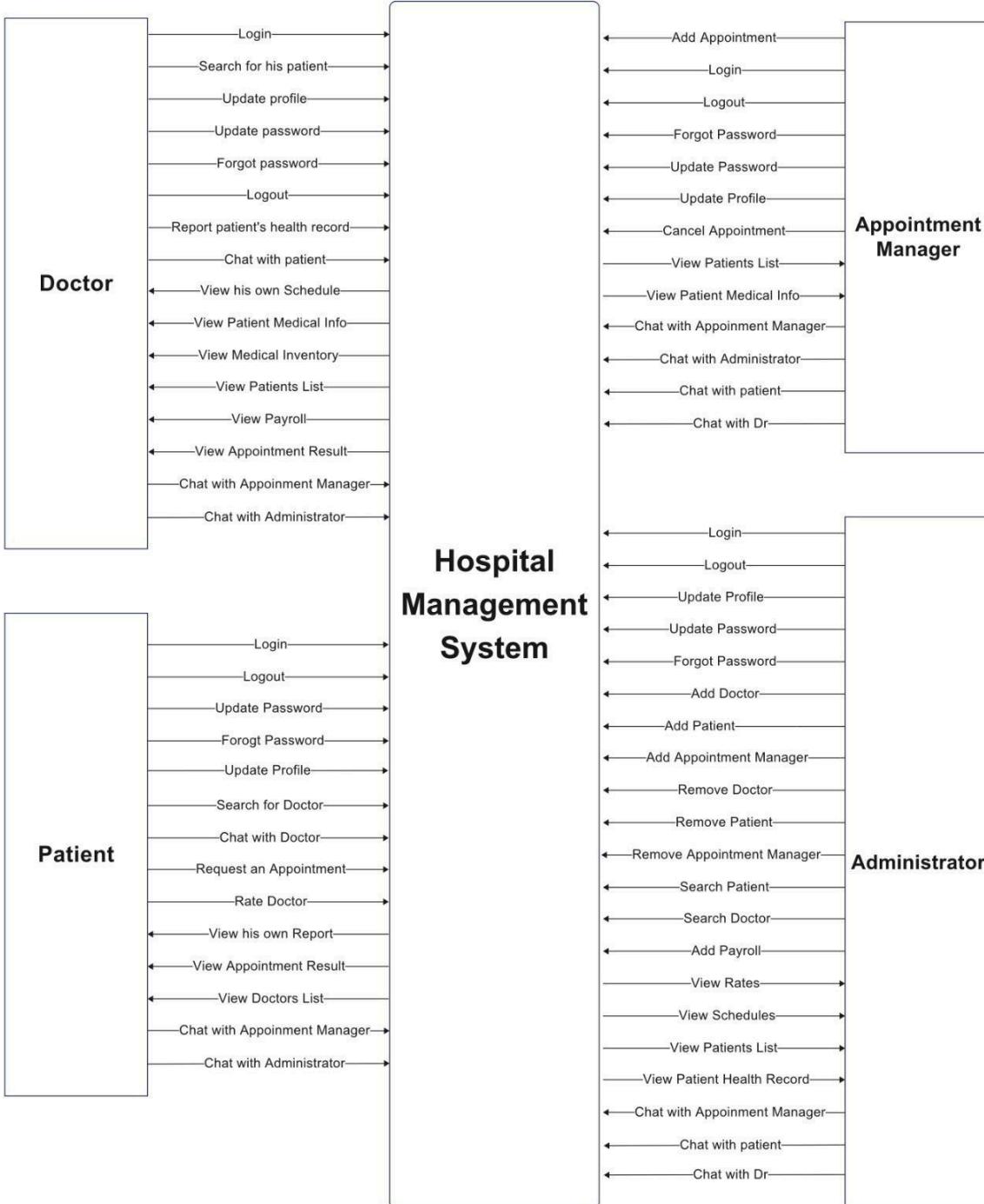
Introduction:

To facilitate the hospital's management, this project was designed. It develops an integrated healthcare management system to facilitate hospital operations. It enhances patients' convenience with features like appointment scheduling, chatting with the hospital services, and health record management. The system supports secure data handling for patients, doctors, appointment managers, and administrators. Data Flow Diagrams (DFDs) illustrate the logical & physical flow of information.

Phase1: Requirement Analysis

Context Diagram (Draw using Visio Software or Online Drawing)

(It consists of a picture showing the information system with the various stakeholders and their interactions with it.)



Tentative List of Requirements

Functional Requirements:

1. Login
2. Logout
3. Update password

- | |
|-----------------------------------|
| 4. Forgot password |
| 5. Update profile |
| 6. Search for Patient |
| 7. Report patient's health record |
| 8. Chat |
| 9. View schedule |
| 10. View patient medical info |
| 11. View medical inventory |
| 12. View patients list |
| 13. View Payroll |
| 14. View Appointment Result |
| 15. Search for Doctor |
| 16. Request an appointment |
| 17. Rate doctor |
| 18. View report |
| 19. View doctors list |
| 20. Add appointment |
| 21. Cancel appointment |
| 22. Add Doctor |
| 23. Add Patient |
| 24. Add Appointment Manager |
| 25. Remove Doctor |
| 26. Remove Patient |
| 27. Remove Appointment Manager |
| 28. Add Payroll |
| 29. View Rates |
| 30. View patient's health record |

Non-Functional Requirements: (Minimum of 5 requirements)

- | |
|--|
| 1. The systems database will be implemented using MySQL. |
| 2. The system implementation will be written using JAVA programming language. |
| 3. The system will work on both Android & Ios versions. |
| 4. The system should respond to user interactions within 5 seconds under normal load conditions. |
| 5. The system should make a monthly backup for users' information. |

Phase2: Requirement Analysis

Modeling System Requirements (Use-Case Table)

Actor	Use-Case Name	Description	ID
Patient	Rate Doctor	This use case allows patient to rate his doctor from 1 star to 5 stars	UC1
	Update password	This use case allows the patient to change his password.	UC2
	Login	This use case allows the patient to access the system.	UC3
	Logout	This use case allows the patient to end access the system.	UC4
	Search for Doctor	This use case allows the patient to search for doctor.	UC5
	View Doctors list	This use case allows the patient to view the doctors list in the hospital.	UC6
	View his report	This use case allows the patient to view his/her health report.	UC7
	View appointment result	This use case allows the patient to view the result of the appointment request.	UC8
	Chat with doctor	This use case allows the patient to chat with the doctor.	UC9
	Update Profile	This use case allows the patient to change profile information.	UC10
	Forgot Password	This use case allows the patient to reset password.	UC11
	Chat with Administrator	This use case allows the patient to chat with the administrator.	UC54
	Chat with Appointment manager	This use case allows the patient to chat with the appointment manager.	UC53

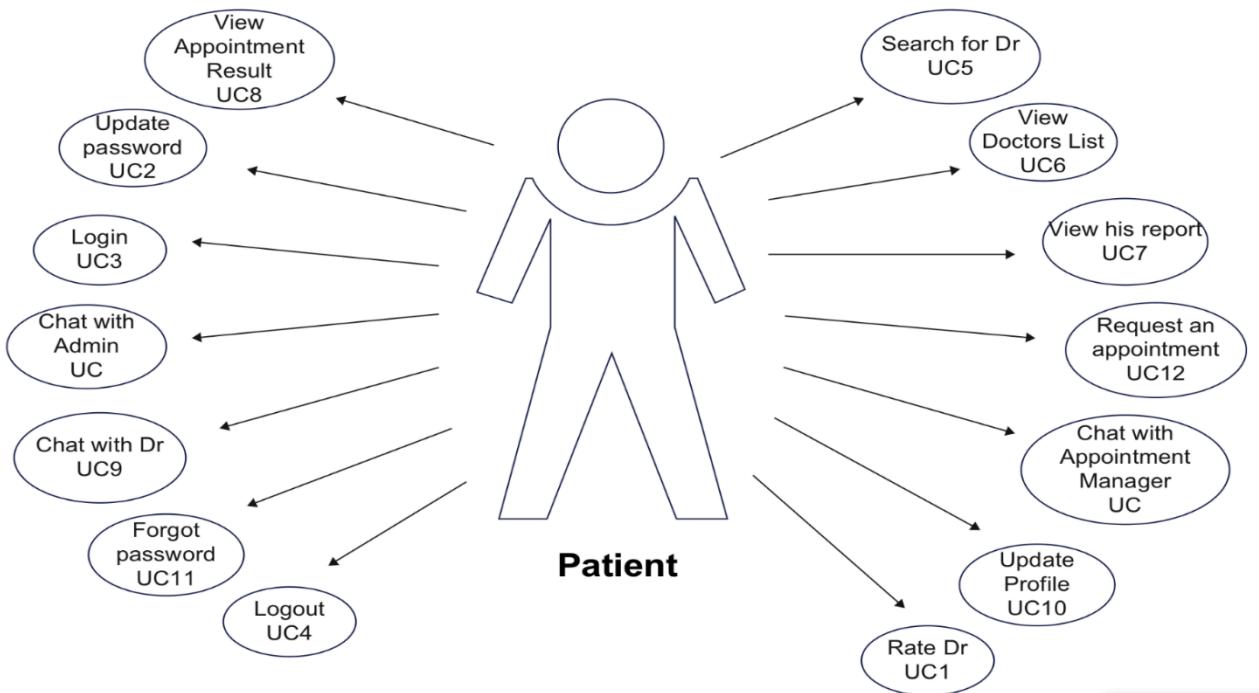
Modeling System Requirements (Use-Case Table)

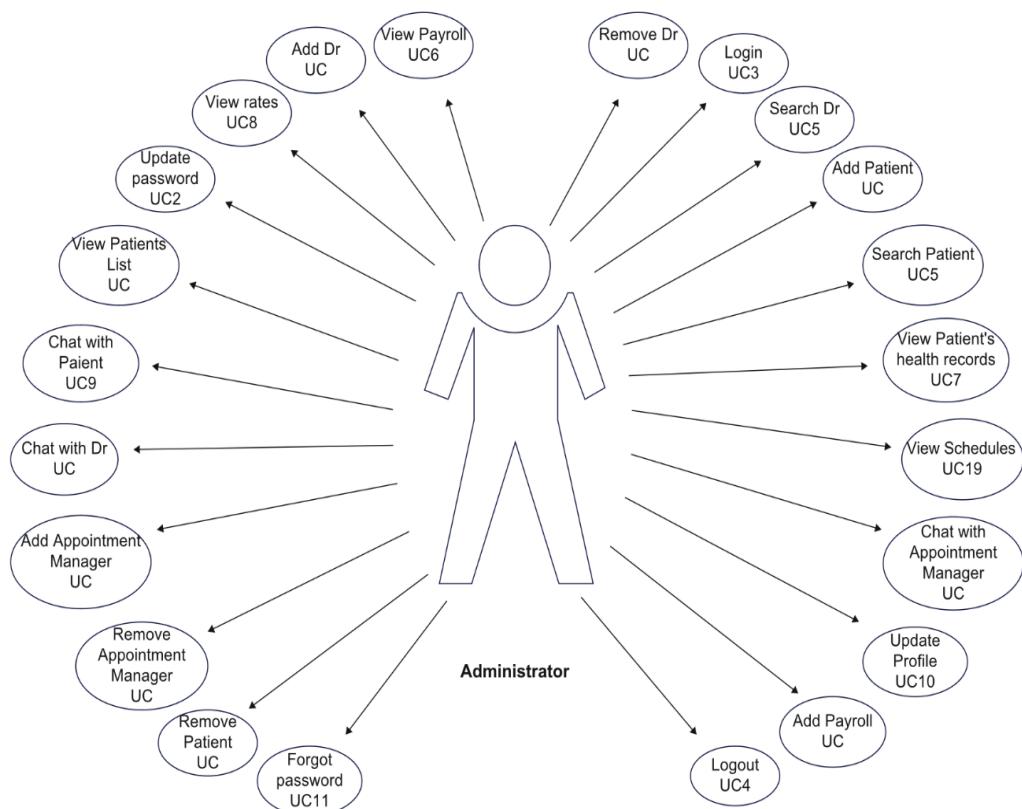
	Request an appointment	This use case allows the patient to request an appointment at his convenience.	UC12
Doctor	Log in	This use case allows the DR to access the system.	UC13
	Chat with Appointment manager	This use case allows the Dr to chat with the appointment manager.	UC55
	Chat with Administrator	This use case allows the Dr to chat with the administrator.	UC56
	Log out	This use case allows the DR to end access the system.	UC14
	Update Profile	This use case allows the DR to change profile information.	UC15
	Update Password	This use case allows the DR to change password.	UC16
	Forgot password	This use case allows the DR to reset password	UC17
	Chat with patient	This use case allows the DR to chat with the patient.	UC18
	View medical inventory	This use case allows the DR to view the available medical inventory in the hospital.	UC19
	View payroll	This use case allows the DR to view his monthly payroll.	UC20
	Report his patient's health record	This use case allows the DR to report the patient's health record	UC21
	View his patient's medical info	This use case allows the DR to view his patient medical information.	UC22
	View his schedule	This use case allows the DR to view his schedule.	UC23
	Search for patient	This use case allows the DR to search for his patients	UC24

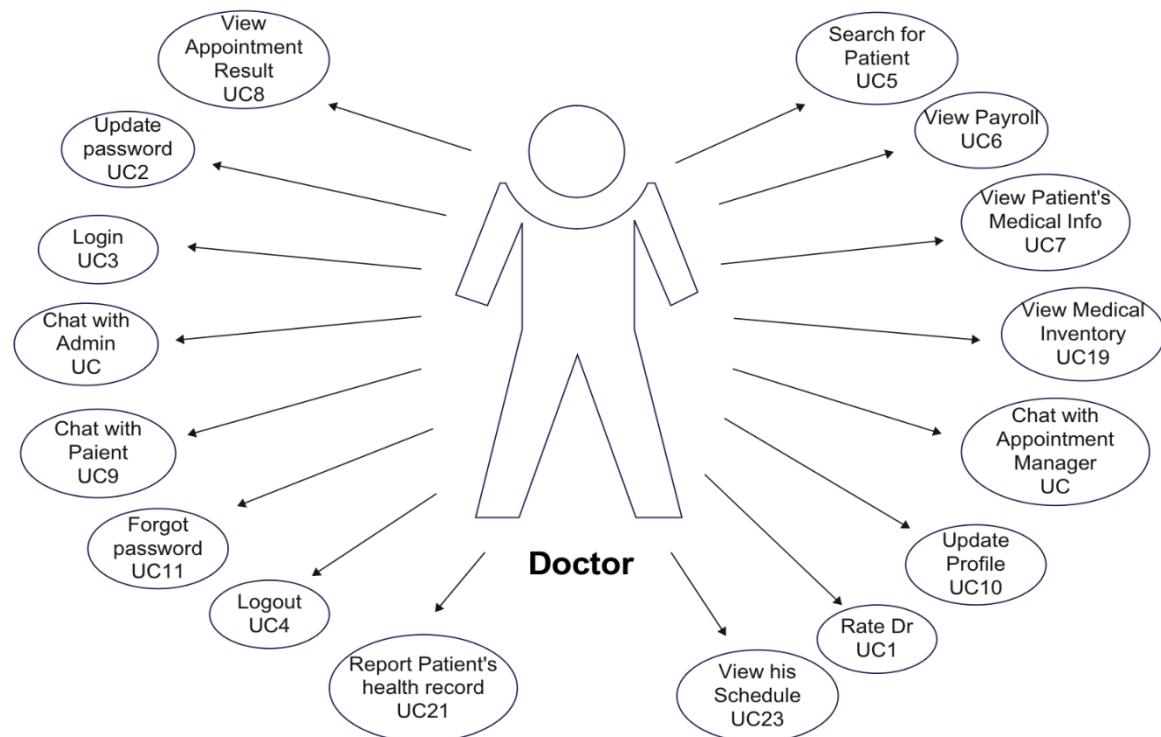
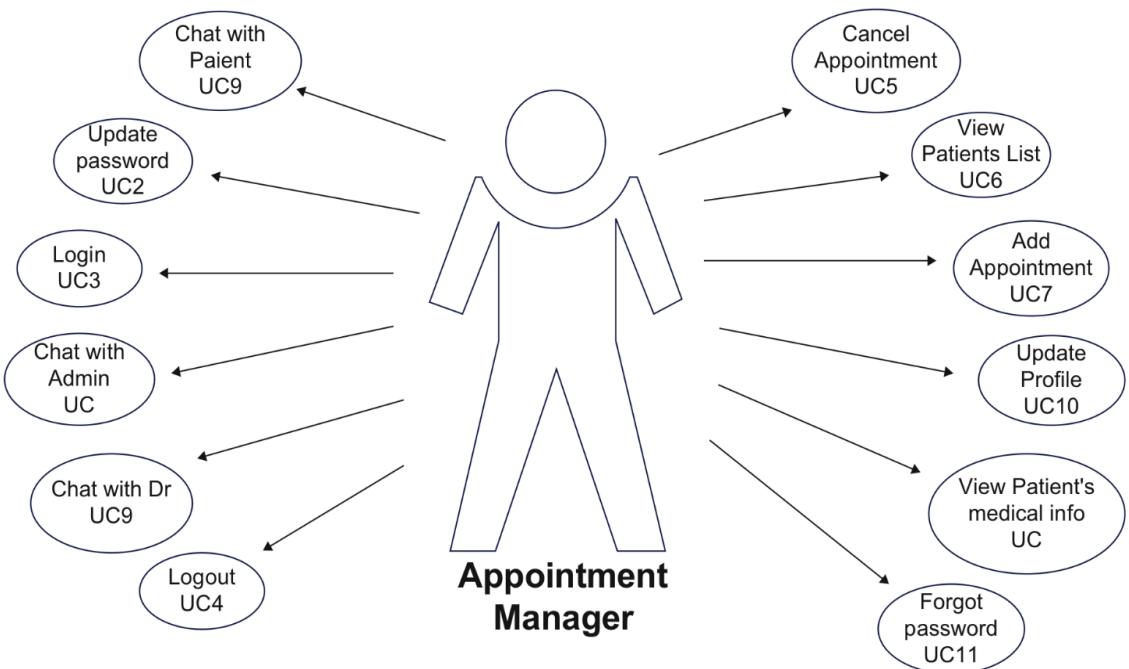
	View appointment result	This use case allows the DR to view the appointment result that's requested by the patient.	UC25
Appointment manager	login	This use case allows the appointment manager to access the system.	UC26
	Chat with Administrator	This use case allows the appointment manager to chat with the administrator.	UC59
	Chat with Doctor	This use case allows the appointment manager to chat with the Dr.	UC58
	Chat with Patient	This use case allows the appointment manager to chat with the patient.	UC60
	Log out	This use case allows the appointment manager to end access the system.	UC27
	Update Profile	This use case allows the appointment manager to change profile information.	UC28
	Update Password	This use case allows the appointment manager to change password.	UC29
	Forgot password	This use case allows the appointment manager to reset password	UC30
	Add appointment	This use case allows the appointment manager to add the requested appointment	UC31
	Cancel appointment	This use case allows the appointment manager cancel appointment request.	UC32
Administrator	View patients list	This use case allows the appointment manager to view patients list.	UC33
	View patient's medical info	This use case allows the appointment manager to view patient's medical information.	UC34
Administrator	login	This use case allows the administrator to access the system.	UC35

	Chat with Doctor	This use case allows the administrator to chat with the Dr.	UC63
	Chat with Patient	This use case allows the administrator to chat with the patient.	UC62
	Chat with Appointment Manager	This use case allows the administrator to chat with the appointment manager.	UC61
	Log out	This use case allows the administrator end access the system.	UC36
	Update Profile	This use case allows the administrator to change profile information.	UC37
	Update Password	This use case allows the administrator to change password.	UC38
	Forgot password	This use case allows the administrator to reset password	UC39
	View schedules	This use case allows the administrator to view Dr's and Appointment Manager's schedule.	UC40
	View patient health record	This use case allows the administrator to view patients health record.	UC41
	Add payroll	This use case allows the administrator to add payrolls	UC42
	Search dr	This use-case allows the Administrator to search for Doctor by his name or his specialty	UC43
	Search patient	This use case allows the administrator to search for patient by his name or disease	UC44
	Remove patient	This use case allows the administrator to remove patient from the system.	UC45
	Remove DR	This use case allows the administrator to remove DR from the system.	UC46

Modeling System Requirements (Use-Case Model Diagram)

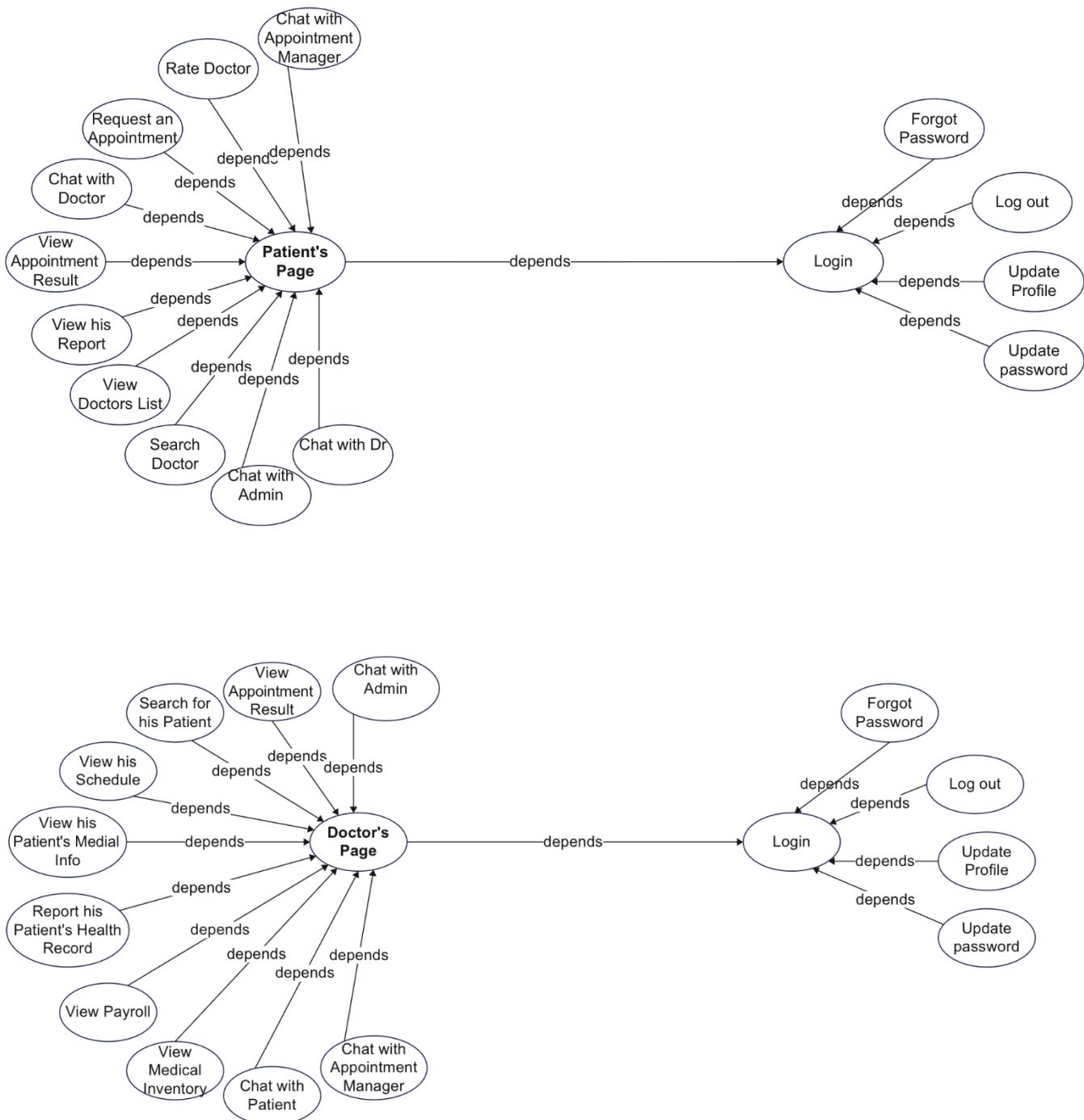


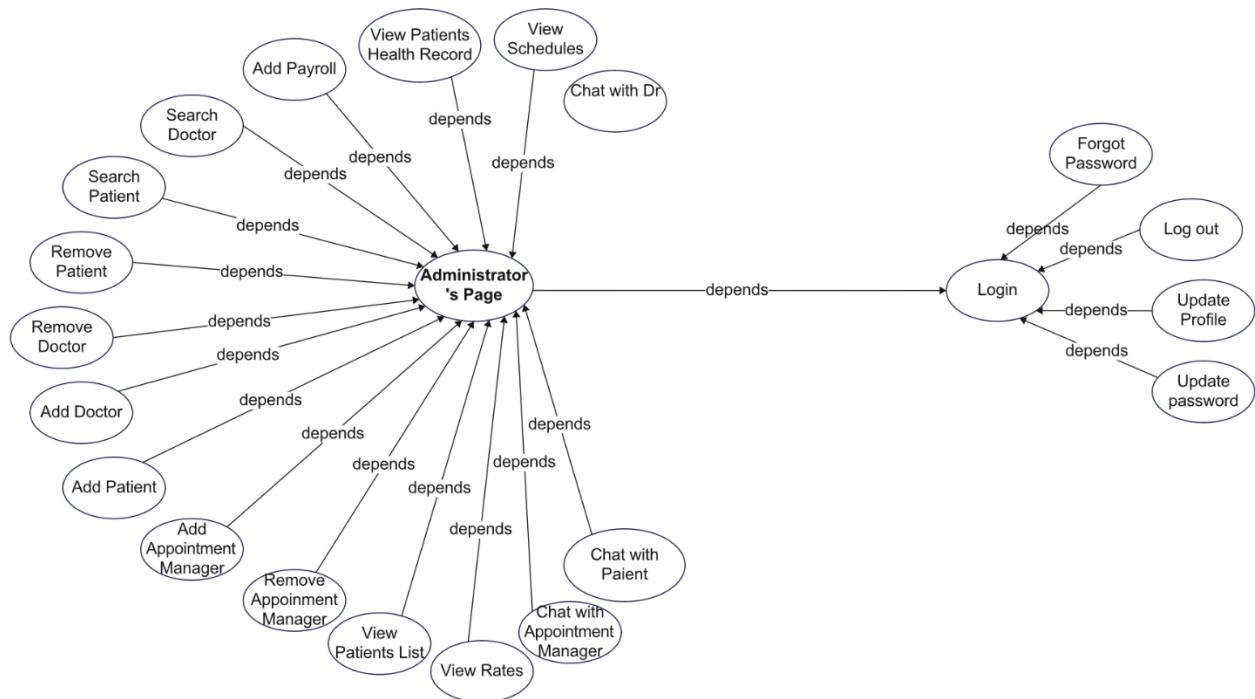
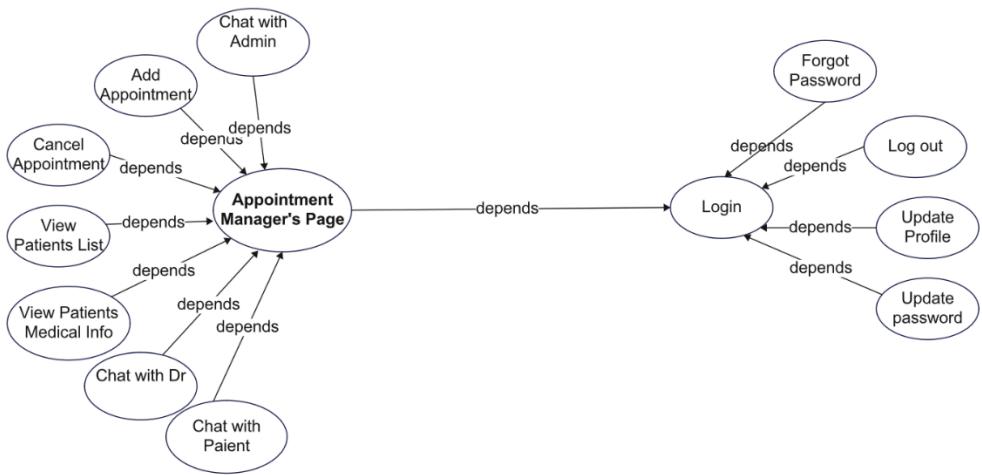




Modeling System Requirements (Use-Case Dependency Diagram)

(It can be done using Visio or some other software such as Rational Rose)





Modeling System Requirements (Use-Case Narrative)

(Write the Use-Case Narrative for 3 main Use-Cases (1 for EACH actor)

1.

Use- case name:	Rate Doctor	Use- Case ID:	UC1
Priority:	Low		
Business Actor:	Patient		
Description:	This use-case allows the patient to rate the doctor		
Precondition:	The user must have an account & access to Patient's page.		
Trigger:	This use-case is initiated when "Rate Doctor" button is submitted.		
Typical course of Events:	Actor Action	System Response	
	<p>Step 1: The user clicks between 0 number of stars and 5 numbers of star in order to rate the Doctor from 0 to 5 stars</p> <p>Step 2: The user confirms his rating by clicking on "Confirm" button</p>	Step 3: The system records the rating data including the patient's name and his rating.	

	N/A	
Alternate Course:		
		z
Conclusion:	This use-case concludes when the Rate is confirmed	
Post Condition:	The System records that the Patient has rated the Doctor and records his rating.	

2.

Use- case name:	Search Doctor	Use- Case ID: UC43						
Priority:	LOW							
Business Actor:	Administrator							
Description:	This use-case allows the Administrator to search for any Doctor by his name or his specialty.							
Precondition:	The user must have an account & access Administrator Page							
Trigger:	This use-case is initiated when “Search Doctor” button is submitted.							
Typical course of Events:	<table border="1"> <thead> <tr> <th>Actor Action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>Step 1: The user clicks on the Search bar</td> <td>Step 3: The System responds by verifying that either the Doctor’s Name or Specialty has been provided.</td> </tr> <tr> <td>Step 2: The user types the Doctor’s Name or Specialty.</td> <td>Step 4: The System verifies that entered Name or Specialty exists. Step 5: The System views all Doctors with the entered Name or Specialty.</td> </tr> </tbody> </table>	Actor Action	System Response	Step 1: The user clicks on the Search bar	Step 3: The System responds by verifying that either the Doctor’s Name or Specialty has been provided.	Step 2: The user types the Doctor’s Name or Specialty.	Step 4: The System verifies that entered Name or Specialty exists. Step 5: The System views all Doctors with the entered Name or Specialty.	
Actor Action	System Response							
Step 1: The user clicks on the Search bar	Step 3: The System responds by verifying that either the Doctor’s Name or Specialty has been provided.							
Step 2: The user types the Doctor’s Name or Specialty.	Step 4: The System verifies that entered Name or Specialty exists. Step 5: The System views all Doctors with the entered Name or Specialty.							

		Step 6: The System records the Search History.
Alternate Course:	Alt-Step 3: The User didn't enter neither Doctor's Name nor Specialty. The User is asked to re-enter them. Alt-Step 3: The User enters a non-existing Doctor's Name or Specialty. The User receives a Pop-out Message "This Doctor or Specialty does not exist please enter existing name or specialty".	
Conclusion:	This use-case concludes when the System views all the searched Doctor's Name & Specialty.	
Post Condition:	The System records the Search History.	

3.

Use- case name:	Chatting with patient	Use- Case ID:	UC18
Priority:	LOW		
Business Actor:	Doctor		
Description:	This use-case allows the Doctor to chat with his patient.		
Precondition:	The user must have an account & access on the Doctor's Page.		
Trigger:	This use-case is initiated when "Chat with Patient" button is submitted.		
	Actor Action		System Response

Typical course of Events:

	<p>Step 1: The User enters his email & password.</p> <p>Step 2: The User enters the targeted Patient's email.</p> <p>Step 3: The User types his text in the Chatting box.</p> <p>Step 4: The User confirms his chatting by clicking on the "Submit" button.</p>	<p>Step 5: The System responds by verifying that the User's email, password, and the Patient's email have been provided.</p> <p>Step 6: The System verifies that the entered emails are valid.</p> <p>Step 7: The System verifies that the User's email & password are compatible.</p> <p>Step 7: The System send the User's text to the targeted Patient.</p>
Alternate Course:	<p>Alt-Step 5: The User didn't enter the Emails and Password. The user is asked to re-enter them.</p> <p>Alt-Step 6: The User enters incorrect Emails. The user is asked to re-enter them.</p> <p>Alt-Step 7: The User enters incorrect Email or Password. The user is asked to re-enter both.</p>	
Conclusion:	This use-case concludes when the User's text is sent to the targeted Patient.	
Post Condition:	The System records the Chatting History.	

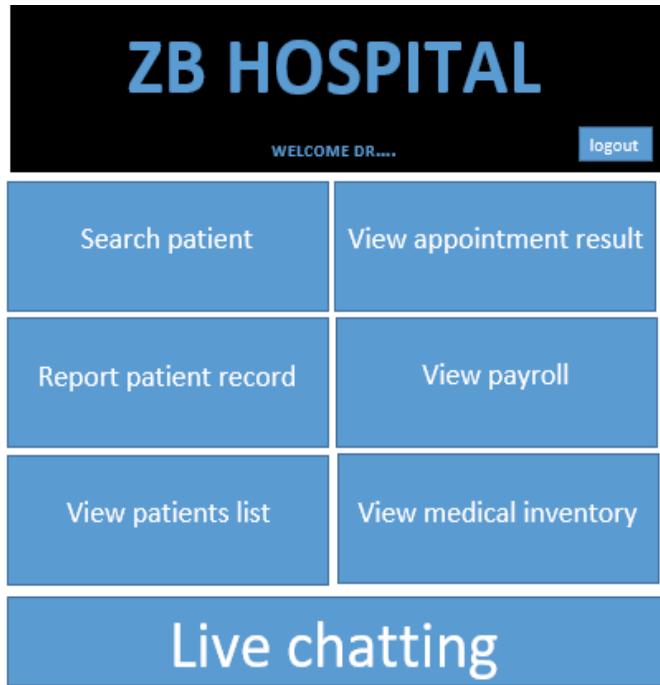
Use- case name:	View Patients list	Use- Case ID:	UC33, UC51
Priority:	Low		
Business Actor:	Appointment Manager, Administrator		
Description:	This use case allows the user to view the Patient List		
Precondition:	The user must have an account & access to Appointment Manager's page or access to Administrator's page		
Trigger:	This use-case is initiated when the "View Patients List" button is submitted.		
		Actor Action	System Response
Typical course of Events:			Step 2: The system views all Patients list including the patient's name & disease.
Alternate Course:	N/A		
Conclusion:	This use-case concludes when the Patients List is viewed.		
Post Condition:	None. The System's state doesn't change.		

Phase3: Architectural Design

Frontend Modeling (User Interface)

(It can be done using Figma)

Home page design:



view chating page design:

The chatting page design form is titled "chatting". It includes fields for "Dr's Name:", "Dr's Email:", and "Patients Email:". There is also a text input area with the placeholder "Write here! -->" and a blue "SUBMIT" button.

Home page design:

view search page design:

ZB HOSPITAL

WELCOME ADMINISTRATOR....

logout

Search patient

Search Doctor

View patient record

Add payroll

View patients list

View medical inventory

Search here →

Doctor:

Specialty:

- Dr. smith
- Dr. john
- Dr. jack
- Dr. fred

- Heart disease
- Mental health
- Plastic surgeon
- Eyes difficulties

DONE

Home page design:

ZB HOSPITAL

WELCOME DEAR (PATIENTS NAME)

logout

Rate Doctor

Search Doctor

View your record

view payroll

View Doctors list

View medical inventory

Live chatting

view search page design:

Write dr's name →

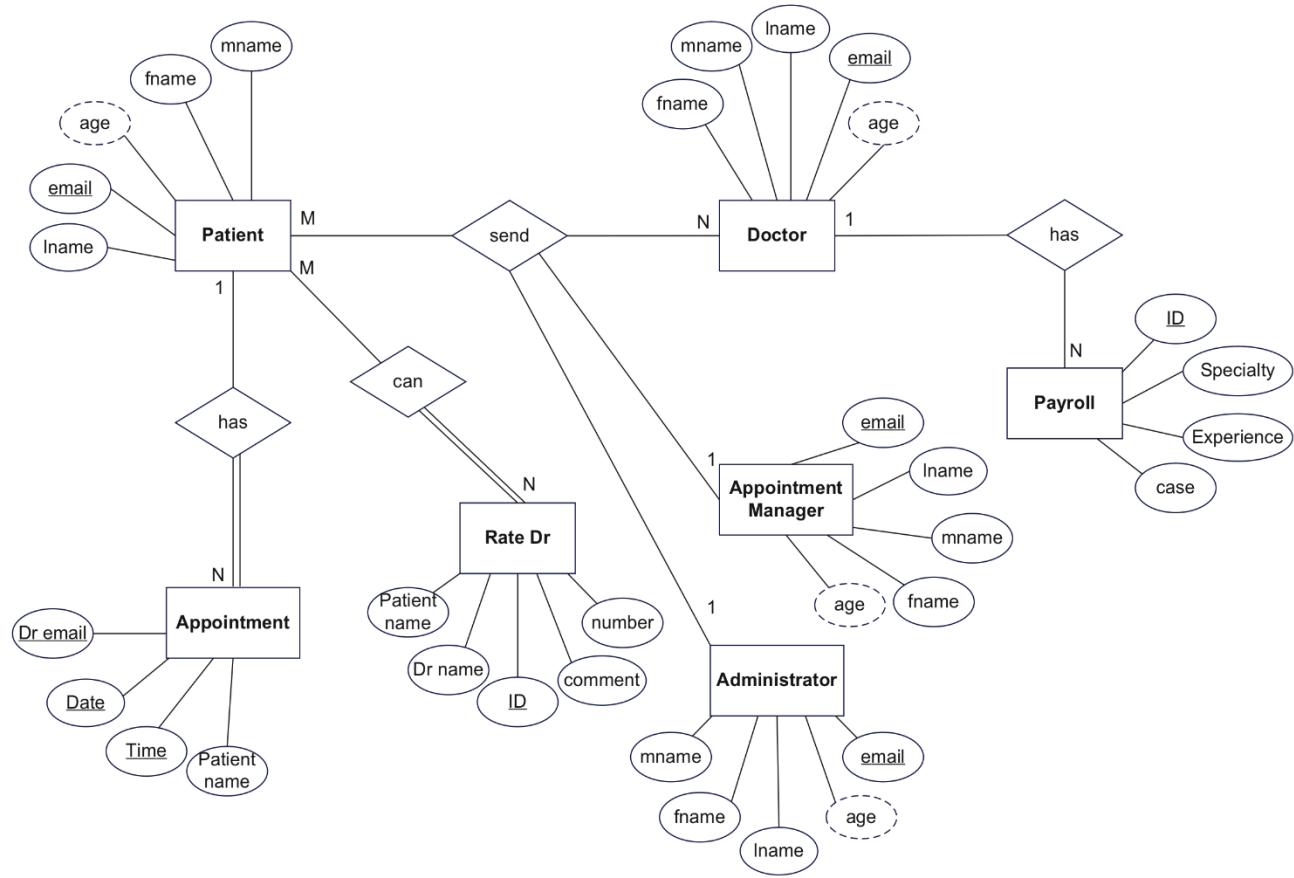
Rate :



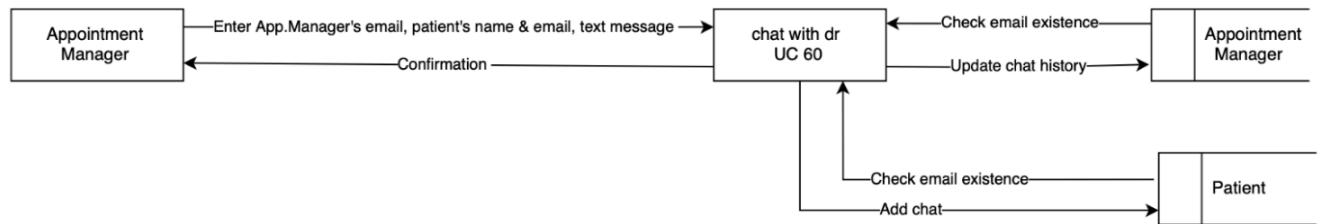
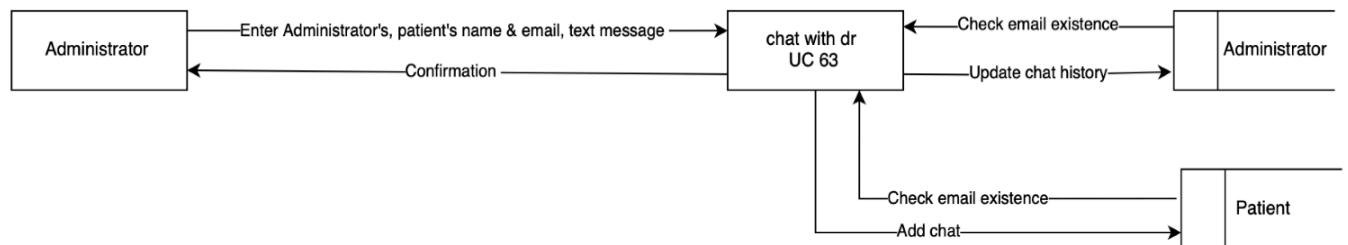
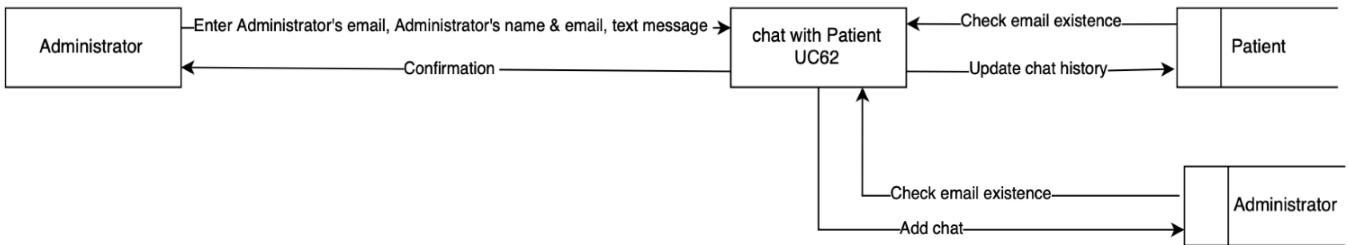
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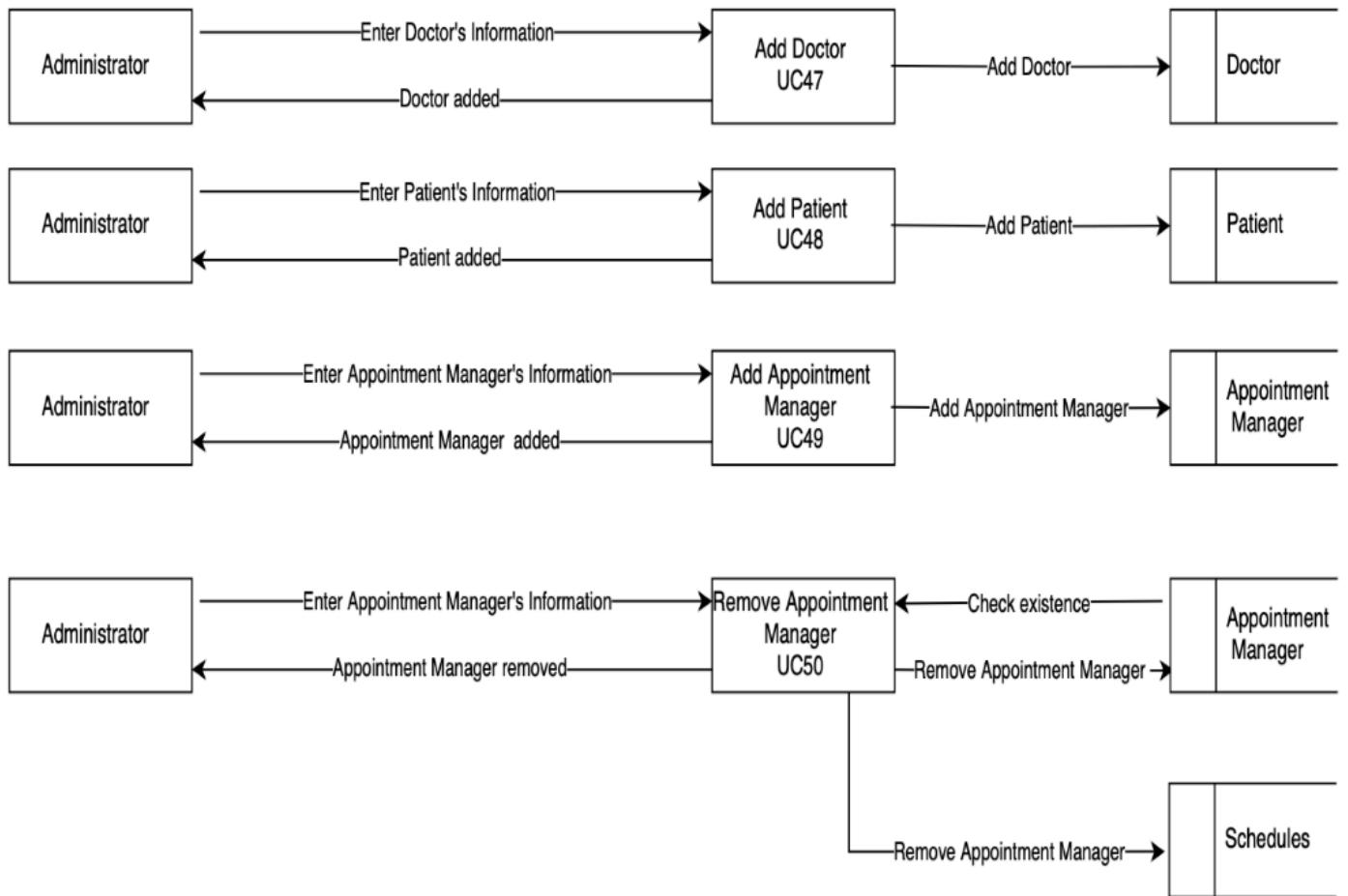
CONFIRM

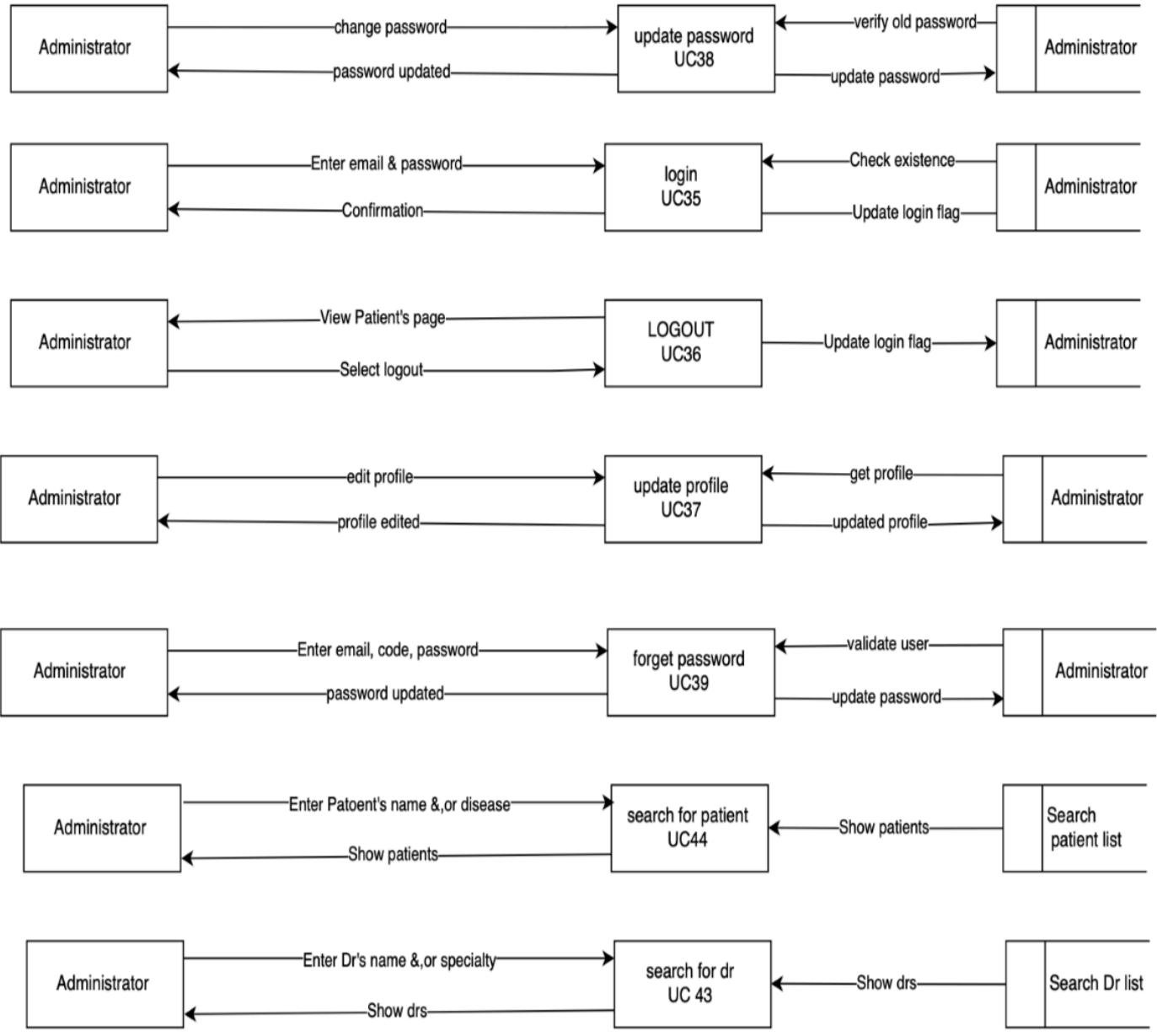
Backend Modeling (ER Diagram)

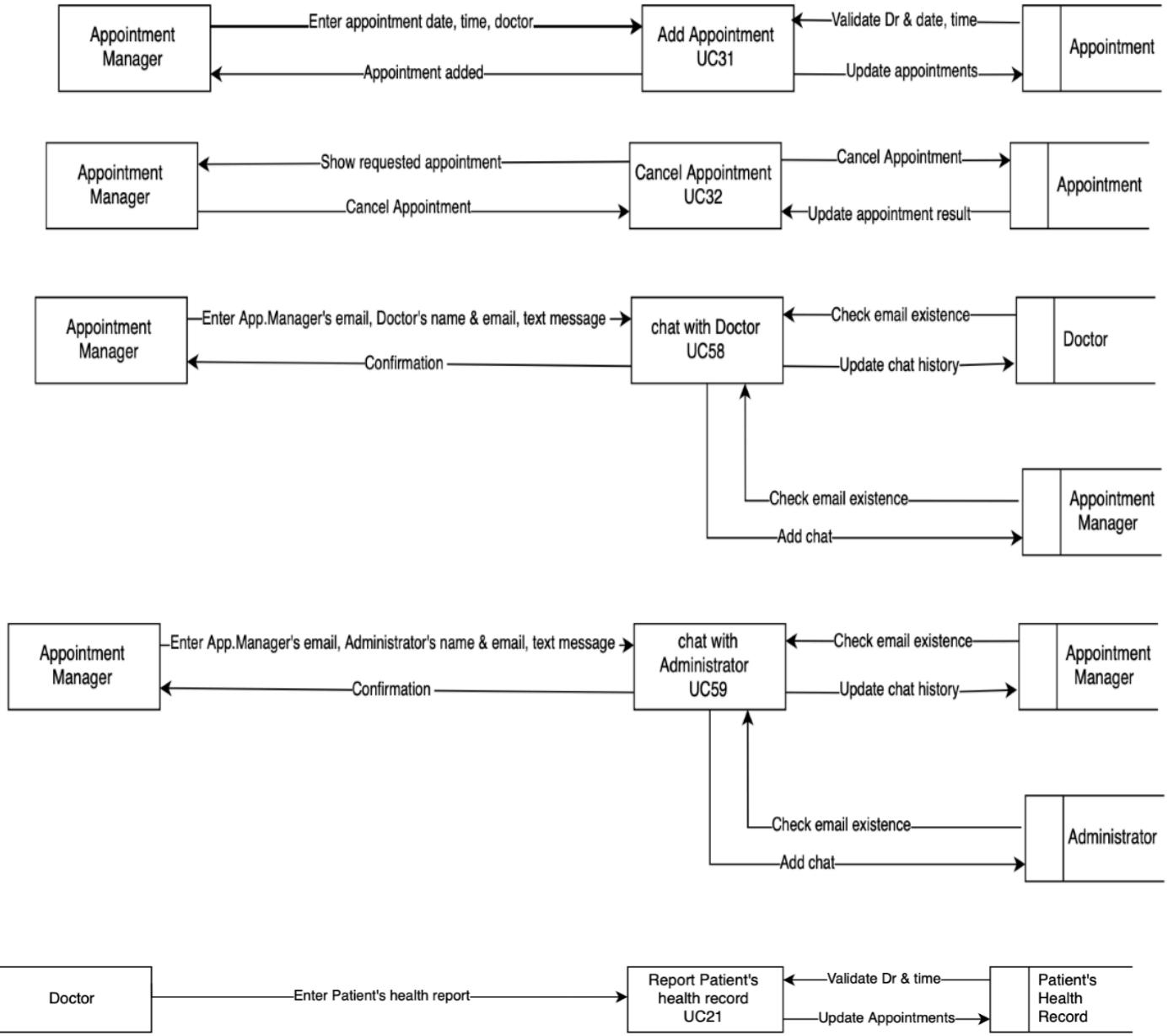


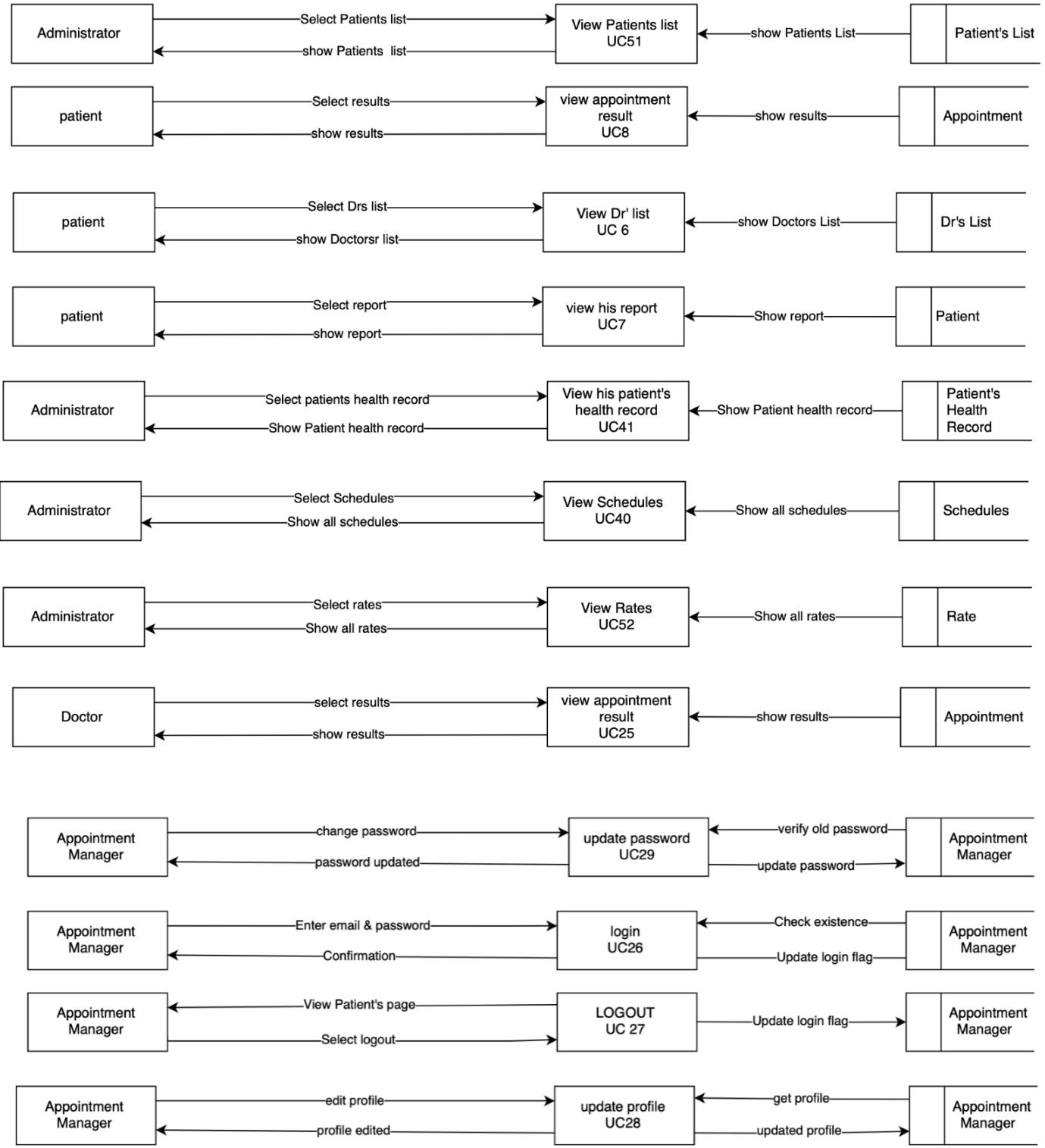
DFD (Data Flow Diagram)

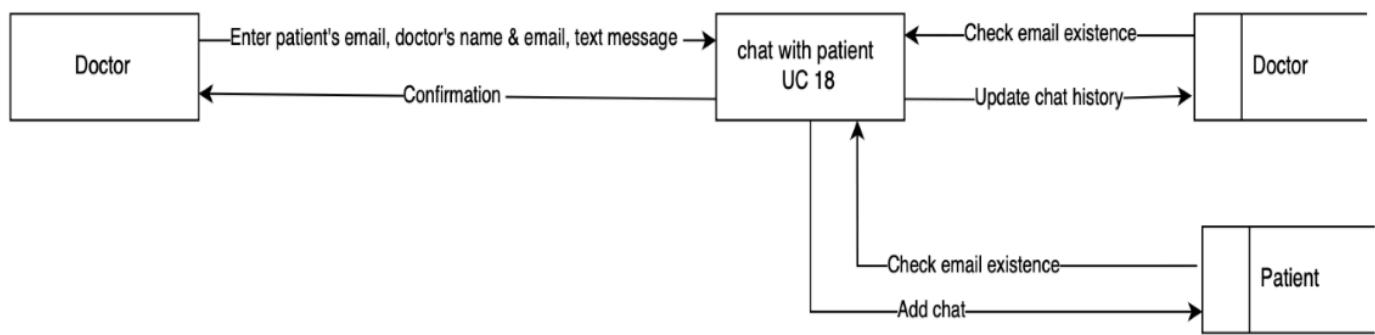
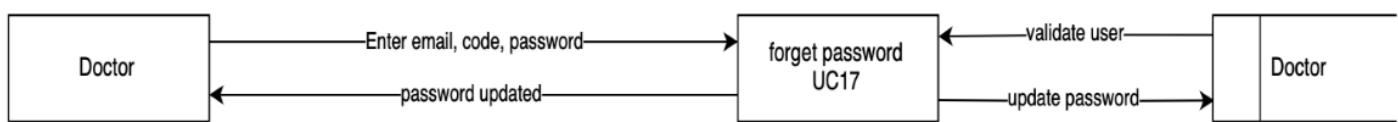
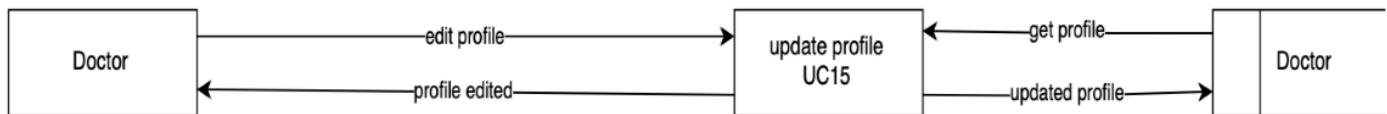


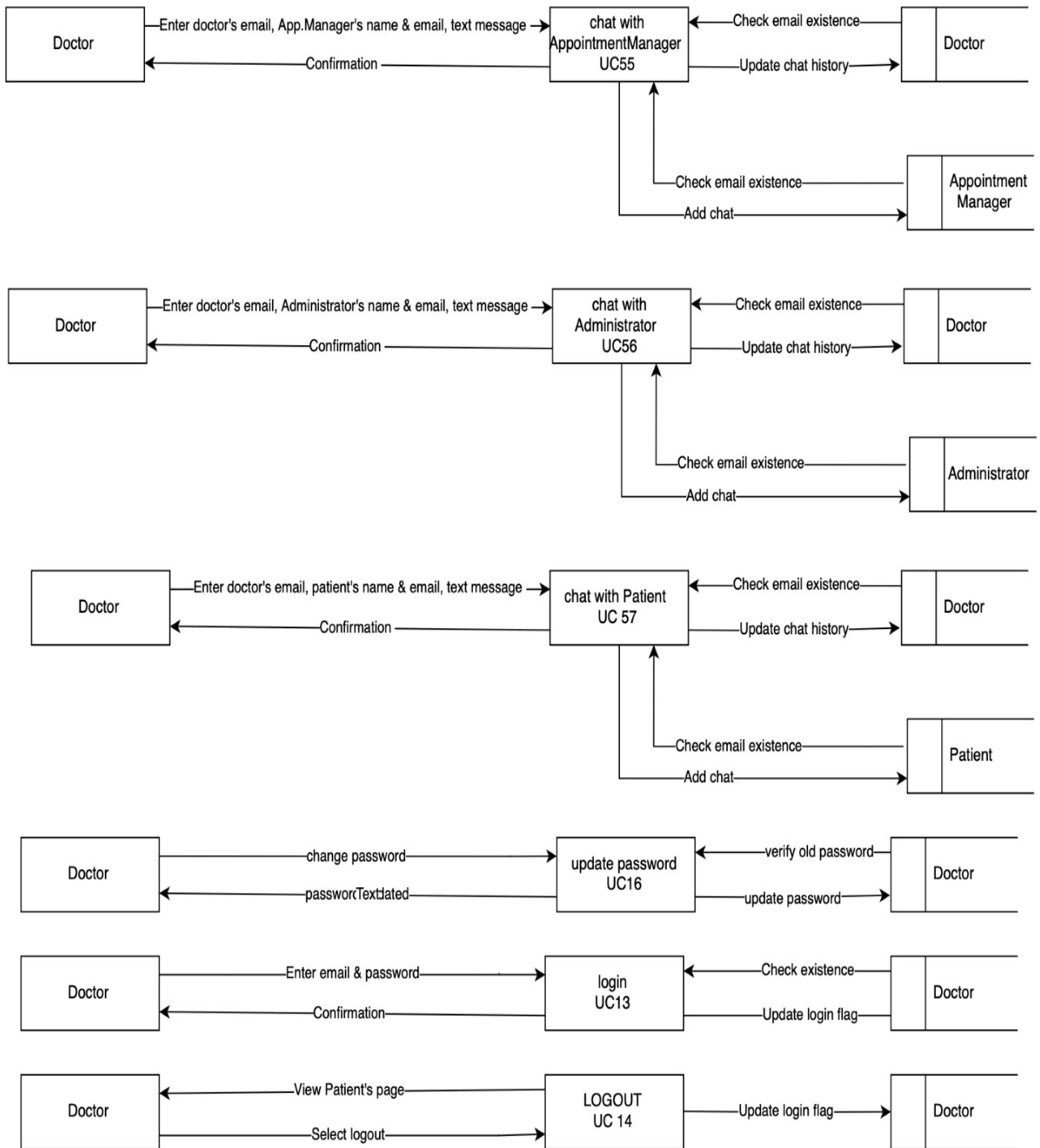


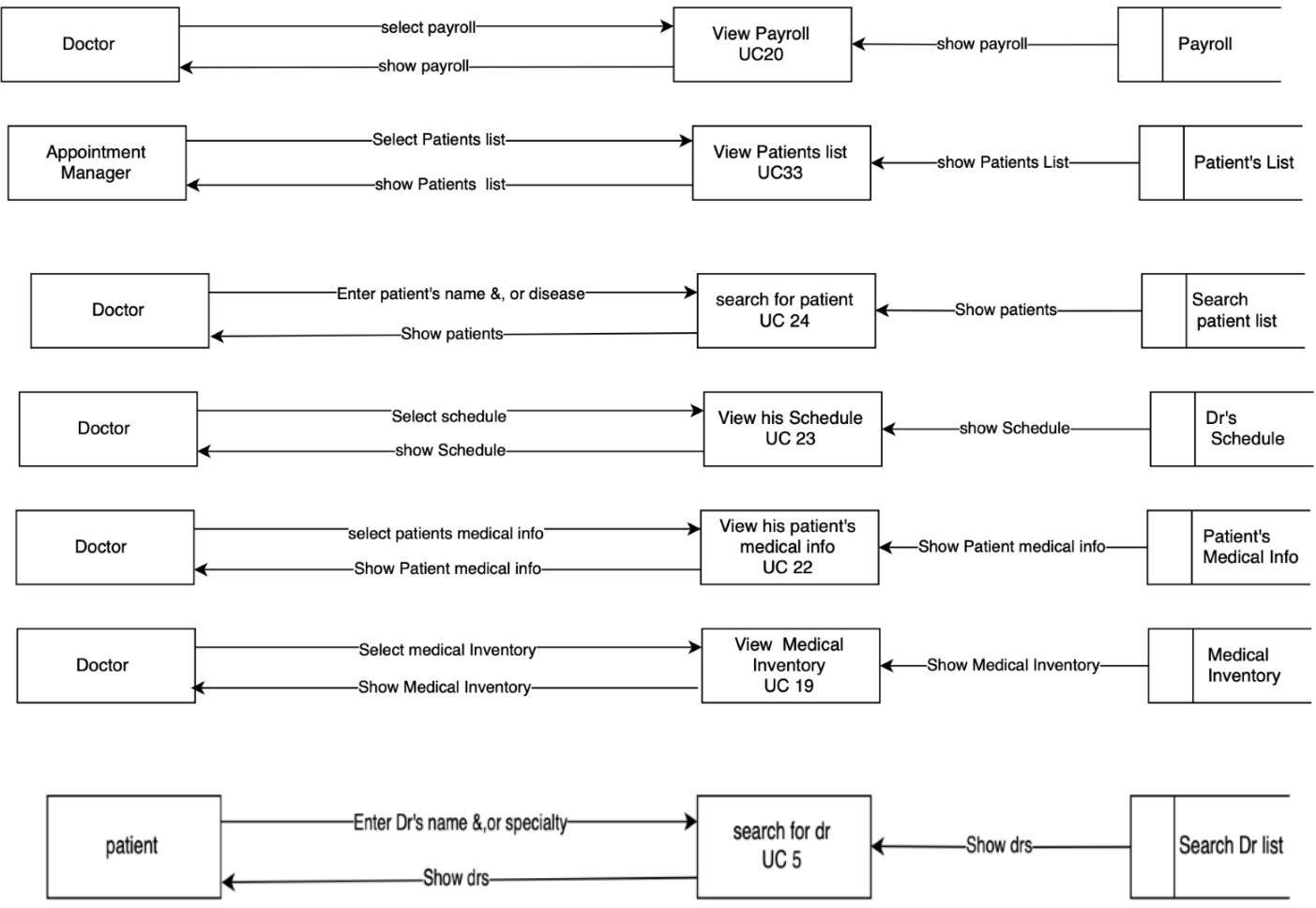


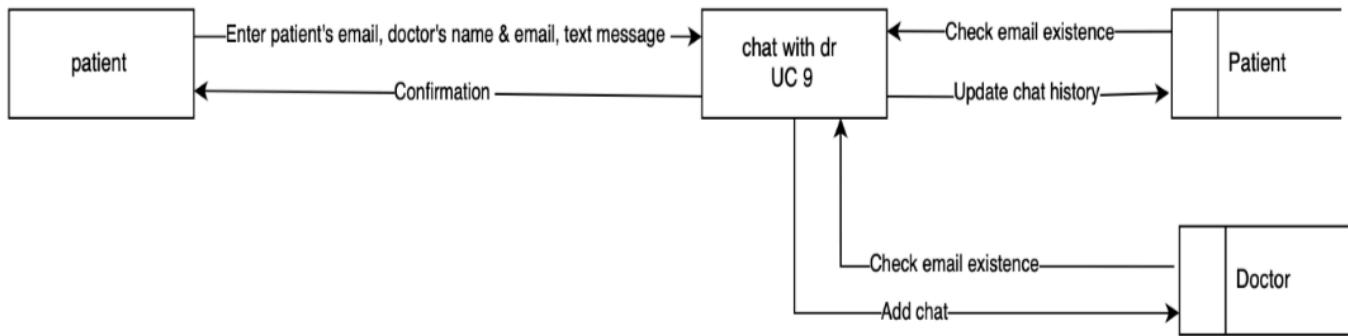
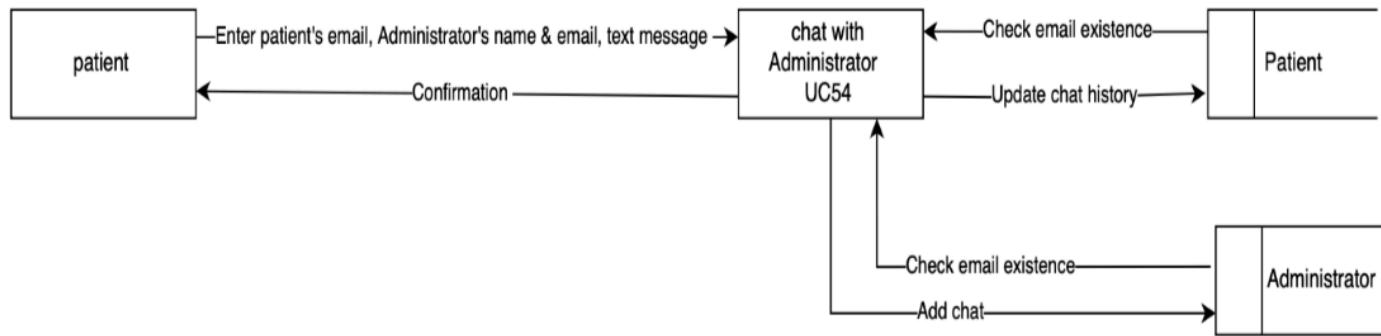
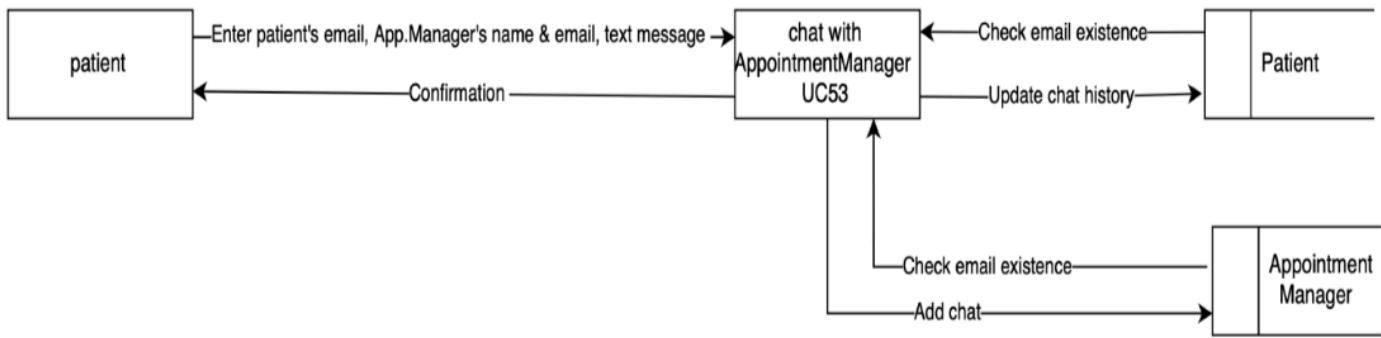


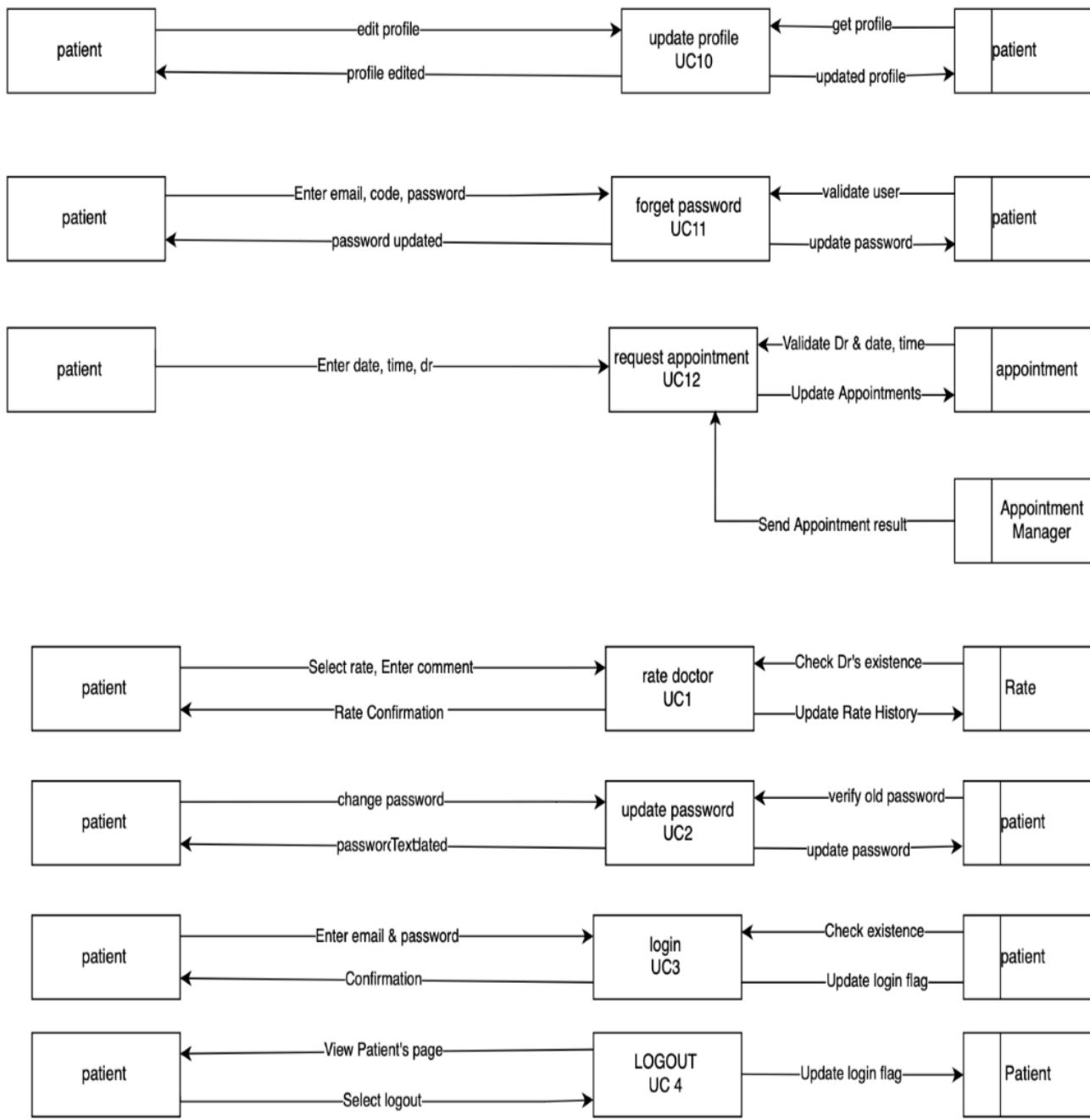












Single DFD “Physical”:

