UMM AL-QURA UNIVERSITY

COLLEGE OF COMPUTER AND INFORMATION SYSTEMS

INFORMATION SYSTEMS DEPARTMENT

Health e-club

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College of Computer and Information Systems, Al-Zaher Campus

February 2023

ABSTRACT

Since Health is an essential factor in an individual's life, medical applications have become very popular. They provide a quick and easy service at anytime and anywhere. Since many patients need help to adapt to their Illnesses, the Health E-club mobile application helps them manage their illnesses. It includes the essential features that are available in useful health applications. One of the most important features is that there are groups to bring together patients who suffer from the same disease to exchange their information and treatment experiences. It facilitates communication between the treating physician and the patient through appointment and chat services. This report will discuss all the project steps we followed, from planning and analysis to design and implementation. All these steps are mentioned in detail to understand the act clearly.

DECLARATION

We hereby declare that our dissertation is entirely our work and genuine/original. We understand that in case of discovery of any PLAGIARISM at any stage, our group will be assigned an F (FAIL) grade, which may result in our Bachelor's degree withdrawal.

Group members:

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ACKNOWLEDGMENT

We are grateful and thankful for Allah then we would like to express our special thanks to our mentor Dr. Hassen Sallay for the time and efforts he provided throughout the year. And his useful advices and suggestions were really helpful to us during the project’s completion. In this aspect, we are eternally grateful to you.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The globe is seeing numerous sequential changes in various industries, particularly healthcare. We chose to work on the Health e-Club application to keep up with the demands of the times to provide good services to help patients, facilitate their communication with doctors, and review similar disease cases by communicating with other patients. The state aspires to the 2030 vision, which includes electronic transformation and a focus on the digital aspect (National Transformation Program in the Health Sector, 2020).

The notion of health care eventually arose due to the growth and expansion of information technology until it became a formal, efficient communication between recipients and providers of health care.

With the help of the Health e-Club application, you may connect with other patients by joining a group with others who share your ailment and share experiences dealing with sickness and new medicines. You can use the Health e-Club application to consult with a doctor from the elite of doctors and consultants through a conversation in more than one online clinic, in addition to attaching your health files to be sure of your Health. This is in addition to the ability to follow up on appointments by informing them of the time of the recorded appointment.

1.2 Problem domain

1. Patients who have difficulty coping with the disease
2. The doctor who give advice.

1.3 Problem statement

in recent years, many applications related to health care and health services have emerged with the aim of early detection of many diseases, reducing the risk of infection, and enabling doctors to make the appropriate decision. Health e-club application aims to provide patient comfort, which includes providing medical consultations from your home in different specialties, exchanging experiences with people suffering from a specific disease, and choosing the right healthcare provider for you. Furthermore, it facilitates scheduling at the right time for you to maintain and raise the quality of your healthy life.

1.4 Proposed system

1.4.1 Aims and Objectives

Health e-Club aims to provide a helping hand to the patient through communication and its effectiveness between doctors and beneficiaries, and the following points explain the most important aims and objectives of our applications:

1. Help patients adapt and deal with the diseases they suffer from.
2. Exchange of experiences between patients about a specific disease.
3. Organizing and scheduling appointments for the patient and facilitating the follow-up by the doctor.
4. Consult a doctor at any time that suits you and from anywhere, without the need to wait in the corridors of hospitals.
5. Achieve the integrated health goal to reach an integrated, healthy society.

1.4.2 Proposed system features

The Health e-club application is characterized as follows:

1. Helps patients share their experiences and treatment journey.
2. Provide comfort to the patient.
3. Access from anywhere and at any time.
4. Contribute to raising the quality of healthy life in society.
5. Deploying the remote medical advice service in the Kingdom.
6. Facilitate communication with specialized doctors.
7. Ease of scheduling appointments.

1.5 Project Methodology

In our project, we decided to use the waterfall methodology because it suits projects with a fixed duration and built in a certain way from the beginning and is more organized than agile, which is a software development technique or method that is used to develop any program by following and using specific steps: analysis, planning, design, construction, then test and publish. This technique follows a sequential methodology by dividing the project activities into successive, linear phases. Each phase depends on the outputs of the previous phase and corresponds to a specialization in tasks. In other words, it can be said that each step depends on the previous step to continue.

1.6 Resource Requirement

- User interface design using Figma.
- Implement the application using the flutter, visual studio.
- Database design using firebase.

1.7 Report Layout

This report is structured as the following:

- **Chapter one** provides an introduction and background about the project.
- **Chapter two** gives a general overview of the related system.
- **Chapter three** defines the functional and non-functional requirements specification

Chapter four discusses the system design, presents the architectural strategies, and mentions the project's hardware and software environment plans.

- **Chapter five** shows the implementation and validation
- **Chapter six** provides a conclusion and future work.

CHAPTER 2

BACKGROUND/EXISTING WORK

(Literature Review, Existing Work)

2.1 Introduction

When we thought about an idea for our project, we tried to have a different feature from the rest of the existing applications and to add various innovations that benefit the community. We searched for other health applications and sorted out the positives and negatives to better define our idea and make our project different from the other existing applications.

2.2 Overview of existing projects

Here are some of the names of the applications that we found: Sanar, Speetar, Altibbi, Oladoc, Doctor Online for Patients, Marham, Cura, Labayh, and Estenarh.

2.3 Limitations of existing projects

Tool name	Sanar	Speetar	Altibbi	Oladoc	Doctor Online for Patients
Developer (owner)	Sanar eCommerce Company LLC	Speetar	Altibbi limited	Mediconnect Services PVT LTD	Virtual Solutions PK
Type mobile app, web, based, standalone	Mobile app, web-based	Mobile app, web-based	Mobileapp, web-based	Mobileapp, web-based	Mobileapp
open/closed source	Open source	Open source	Closed source	Open source	Open source
Free/not free	Free	Free	Free to download with paid services	Free	Free
Operating system	IOS, Android	IOS, Android	IOS, Android	IOS, Android	IOS, Android
User Interface	Phone, laptop, tablet	Phone, laptop, tablet	Phone, laptop, tablet	Phone, laptop, tablet	Phone, tablet
Size (Mbytes)	IOS-132.1MB	IOS-103.6MB	IOS-93.1MB	IOS-51.1MB	IOS-15.4MB
Services (offered functionalities)	Video medical advice, home medical analysis, home nursing service, home doctor visit, physiotherapy services, home rays, corona test, home dialysis, home vaccinations, intravenous vitamin solutions	Book a consultation online\ More than one different medical specialty can be chosen\ You can talk to your specialist through an audio and video call, or through SMS\ Notices are sent to you to remind you of your consultation date. Provides home care service.	Medical videos, medical calculators, medical laboratories, published papers and research, medical guide, questions and answers, pregnancy and childbirth, medical news, encyclopedia of medicines, medical articles	Book Appointment with Eltayeb, Book Online Video Consultations, Book Lab Tests, Patient Reviews, Make Payments Easier, Medical History, Reminder	Access video consultations with doctors Find & book appointments with a doctor near you Order medicines Book diagnostic online tests and full body checkups Buy affordable Read family health plans healthcare articles and tips
advantages	: •All your medical needs in one place •We will be with you anytime anywhere •More than 24 different medical clinics •Choose the right doctor for you •Your electronic medical record •Get your prescriptions and medical report	Calendar Schedule online or onsite doctor visits & keep track of all your appointments For Health can Create an electronic file to securely save, send & receive prescriptions, lab results, medical images & other important health information, Can you Find a doctor Browse Speetar's Physician Network of over 1000 healthcare providers & find the best specialist for your condition, Consult, Talk to your doctors over the phone or via video & stay connected through direct messages to answer health inquiries & share updates	•Enter your symptoms and the doctor will talk to you in minutes •Reliable medical advice •The best doctors in the Arab world •Complete privacy and a satisfactory answer	Search, find, book, and consult any specialist online; you can book a doctor's appointment in person in seconds, you can consult a doctor online while sitting at home, you can book lab tests from the best laboratories in Pakistan, view patient reviews, pay for your appointment with a doctor Using different payment methods, you can save medical records, receive advance reminders of the appointment of the consultation, consult in more than 120 specialties, you can know the cities and hospitals that allow consultation in Pakistan	Ask the doctor about concerns with a private call, chat or video consultation Connect with the best doctor in 60 seconds, online medical consultations, Follow up with a doctor for free chat, Book full body check-ups, Buy health products and medicines online, Explore patient stories, book an appointment with the doctor online
Drawabacks (limitations)	Some medical services are not available in all areas. Consultation is via video only.Inability to return to medical .advice.	Some medical services are .not available in all areas	Some consultant prices are high.	Video consultation only	-

Table 1:Existing projects

Tool name	Marham	Labayh	Estenarh	Cura
Developer (owner)	Marham Med Tech	Labayh LLC	Estenarh	Ubieve LLC
Type mobile app, web, based, standalone	Mobileapp	Mobileapp	Mobileapp, web-based	Mobileapp
open/closed source	Open source	Closed source	Closed source	Closed source
Free/not free	Free	Free to download with paid services	Free to download with paid services	Free to download with paid services
Operating system	IOS, Android	IOS, Android	IOS, Android	IOS, Android
User Interface	Phone, tablet	Phone, tablet	Phone, laptop, tablet	Phone, tablet
Size (Mbytes)	IOC-46,2MB	IOS-114.1MB	IOS-105.8MB	IOS-173.9MB
Services (offered functionalities)	-	Scheduled or instant or bilateral sessions, depression and anxiety scale, meetings, treatment programs	Estenarh provides psychological family counseling sessions with specialists	Consultations in all medical specialties, health care programs, home care services, urgent care clinic, and mental health clinic.
advantages	Accurate medical reservations Direct contact with the doctor. Immediate medical advice. Comprehensive medical record of the patient and his family Ease and speed of medical service Ease of use of the application.Comprehensive information about doctors, as well as their evaluations Ensure complete confidentiality of all transactions Several types of reservations according to the user's desire Reservation at low rates	Certified by the Saudi Ministry of Health Contains instant sessions easy to use	Complete privacy and confidentiality. Professional consultants with long extensive experience in their fields. Different methods of communication chat, text, phone, or video. Instant booking, which starts in less than 5 minutes.	-Shorter waiting times - Always available - Appointments throughout the day -easy to use
Drawbacks (limitations)	Not being able to get back to counseling	Some consultations prices are high. It does not include all medical specialties	The application specializes only in mental and family health counseling. Some consultation prices are high.	-

Table 2:Another existing projects

2.4 Innovations of our project

The innovations that distinguish our application are:

1. It includes most of the patient's needs, from helping patients to sharing their treatment journey
2. It facilitates their communication with the specialist doctor through free consultations
3. It makes scheduling medical appointments easier for patients and doctors.

CHAPTER 3

SOFTWARE REQUIREMENTS SPECIFICATION

3.1 Introduction

3.1.1 Purpose

The Health e-club application shows the importance of health services applications in psychological and Health support. A system related to health care and health services will be established. With the help of the Health e-club application, you can communicate with other patients by joining a group with others who have an account in the system who share your disease with you to exchange experiences in dealing with illness and new medications with a doctor's consultation. You can also choose a doctor from the elite doctors among the list of doctors who have an account in the system through a conversation to consult him about your health condition in more than one clinic. In addition, attaching your health files and the ability to follow up appointments by sending a notification of the time of the recorded appointment. Finally, To provide a helping hand and contribute to raising the quality of healthy life in the community.

3.1.2 Document Conventions

This document follows the graduation committees' instructions, which help make the document more effective and readable.

The font style for all documents is new roman times.

The font style is bold and center-aligned for headings, and the font size is 18.

For body text, the font style justified aligned and single line space with font size 12.

3.1.3 Intended Audience and Reading Suggestions

This report is directed to the graduation project unit, graduation project supervision committee, graduation project supervisor Dr. Hassen Sallay and the developers who will continue developing the project in the future.
For the reader, we suggest starting to read from the general use case to understand our system, boundary, and actors.

3.1.4 Product Scope

The end product (application) has two types of users: the doctor and the patient. The system allows the patient to book a medical consultation appointment with the appropriate doctor at any time and any place through a conversation

And the ability to follow up on recorded appointments

The doctor is allowed to respond to the patient's inquiries through a private conversation between two parties and inform the doctor about the dates of the registered consultations with him

It also enables the patient to join a group to communicate with other patients.

3.2 Overall Description

3.2.1 Product Perspective

The health e-club is designed to meet the needs of the health field. Help patients adapt to their diseases, organize their schedules, and many other services that distinguish our application from similar health applications.

3.2.2 Product Functions

3.2.2.1 Use Case Diagram

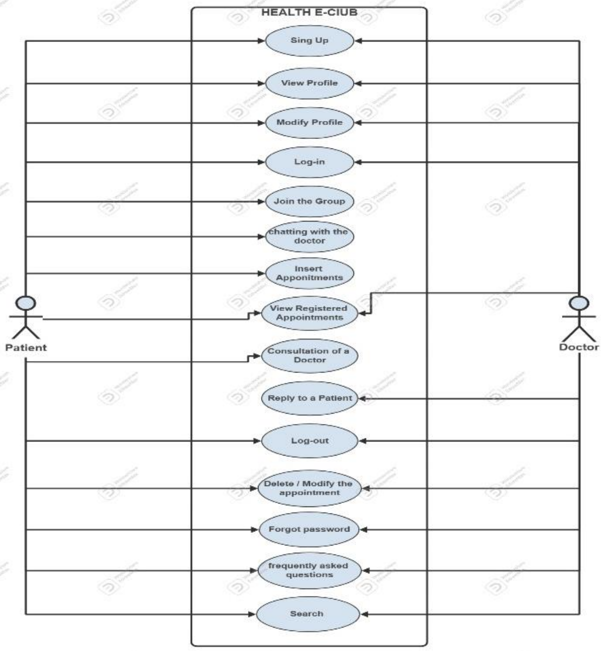


Figure 1: Use Case Diagram

3.2.2.2 Scenario (sign up)

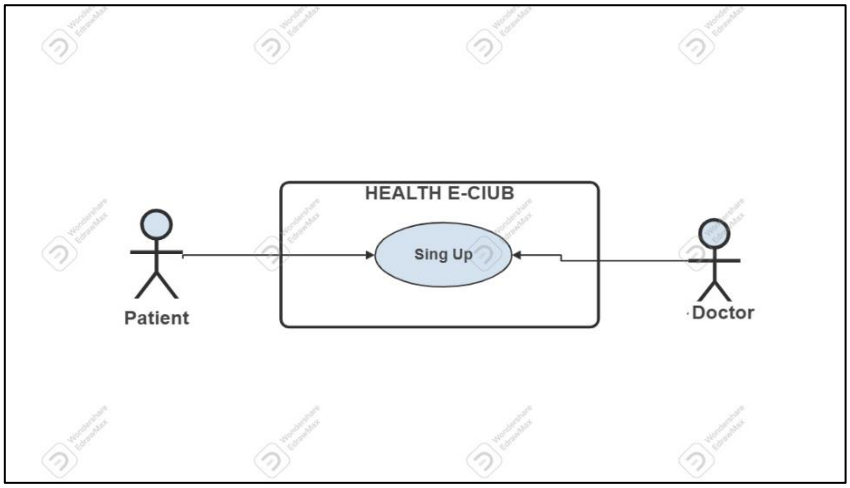


Figure 2 : sign up Scenario

Create an account (Sign up)	
Actors	Users (doctor-patient), database.
Description	1- The system will allow users to sign up by entering the needed data. 2- If the registration is by a doctor, the system will ask for a medical license number. 3- The system will check if the entered data is complete and correct. 4- The system stores all the entered data in the database.
Data	first name, last name, username, password, email, phone number, gender, date of birth, use by (doctor-patient), medical license (for doctors).
Precondition	None.
Output	The system will create an account for the user
Comment	The data entered must be non-repeated in the app database.

Table 3:sign up scenario

3.2.2.3 Scenario (view profile)

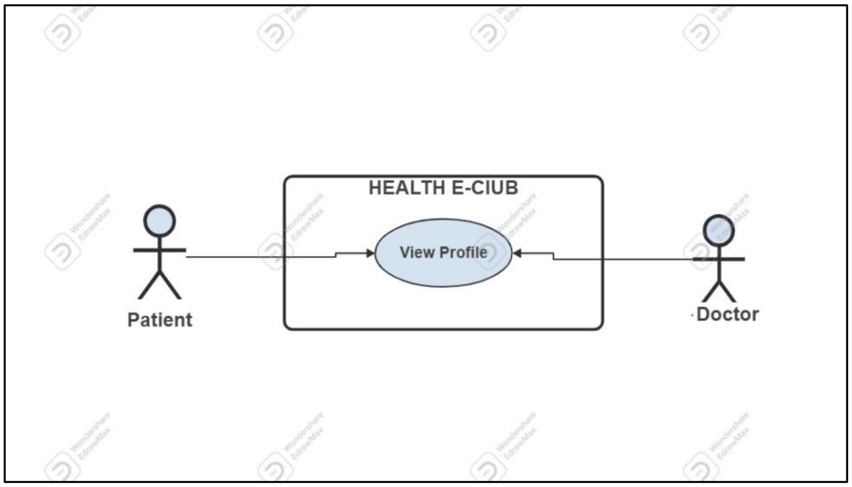


Figure 3 : view profile scenario

View profile	
Actors	Doctor, Patient
Description	1. The user allowed to edit his personal profile information 2. The system displays categories of profile personal information 3. The user can edit the profile information by pressing on each filed field the user wants to edit 4. The user will choose the button (save or cancel the option) 5. System validates data as required and updates the user profile
Precondition	If the user edits any information the system shall save the changes and update the profile
Output	The system displays a profile page or home page
Comment	If the user enters any information containing syntax error will the system display an error message and ask the user to refill it again

Table 4 :view profile scenario

3.2.2.4 Scenario (Modify Profile)

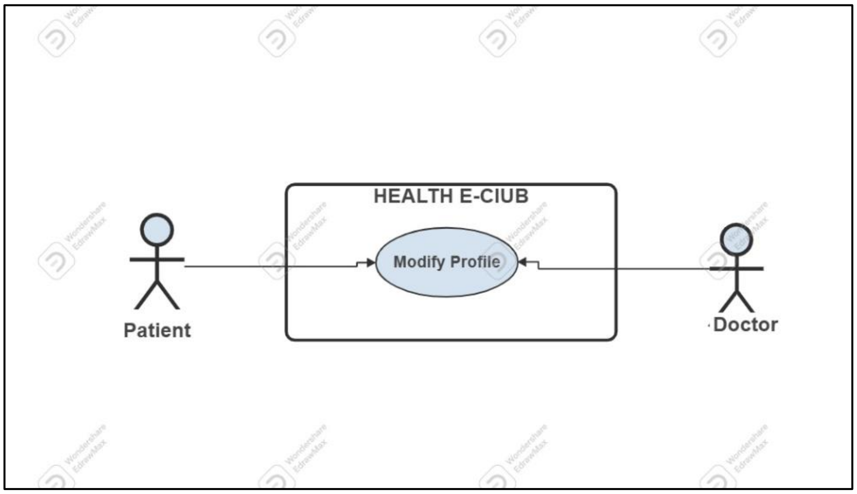


Figure 4 : Modify Profile Scenario

Modify Profile	
Actors	Doctor, Patient
Description	1. The user allowed to edit his profile information 2. The system displays categories of profile personal information 3. The user can edit the profile information by the press on each field the user wants to edit 4. The user will choose the button (save or cancel the option) 5. System validates data as required and updates the user profile
Precondition	If the user edits any information the system shall save the changes and update the profile
Output	The system displays a profile page or home page
Comment	If the user enters any information that contains a syntax error will the system display an error message and ask the user to refill it again

Table 5 : Modify Profile Scenario

3.2.2.5 Scenario (Log-in)

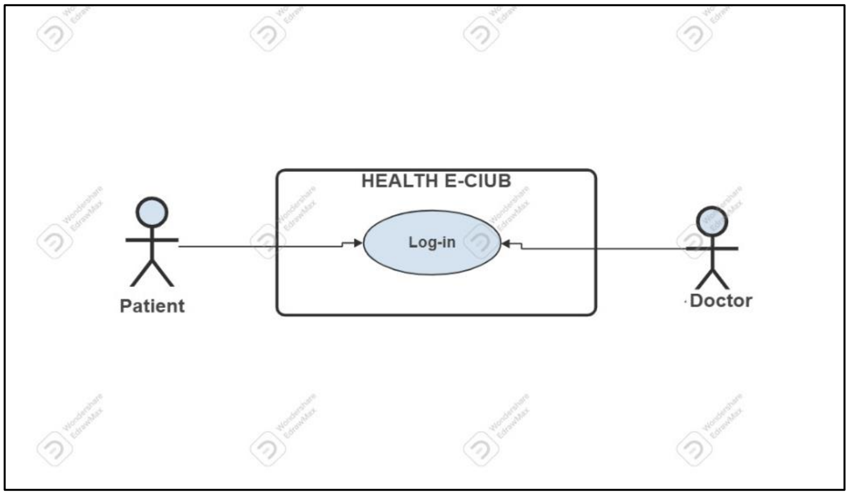


Figure 5 : Log in Scenario

Log in	
Actors	Users (doctor-patient), database
Description	1- The system will allow users to log in to the app by entering the required data (email or phone number and password). 2- The system will check if the data entered is correct from the database. 3- The system will display an error message to the user if the data entered is incorrect. 4- The system will display the main page to the user if the login data is correct.
Data	Username, password.
Precondition	Sign up.
Output	The app’s main page will display to the user.
Comment	None.

Table 6 : Log in Scenario

3.2.2.6 Scenario (Join the Group)

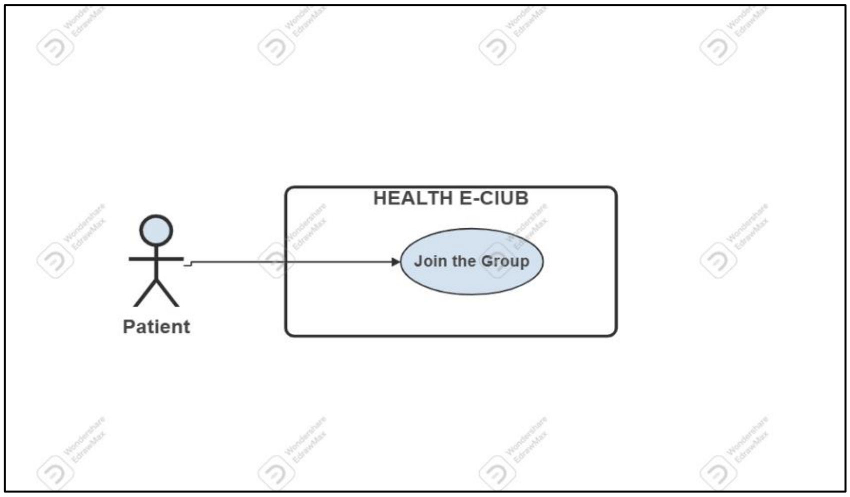


Figure 6 : Join the Group Scenario

Join the group	
Actors	Patient.
Description	1- The system will display a list of groups according to the diseases. 2- The user will choose the group needed. 3- The system will allow the patient to join the group. 4- The system displays the group chat page and allows the user to contact and send messages.
Data	Username.
Precondition	The patient should be logged in to the app.
Output	Join a group with other patients to share information about their mutual disease.
Comment	None.

Table 7 : Join the Group Scenario

3.2.2.7 Scenario (chatting with the doctor)

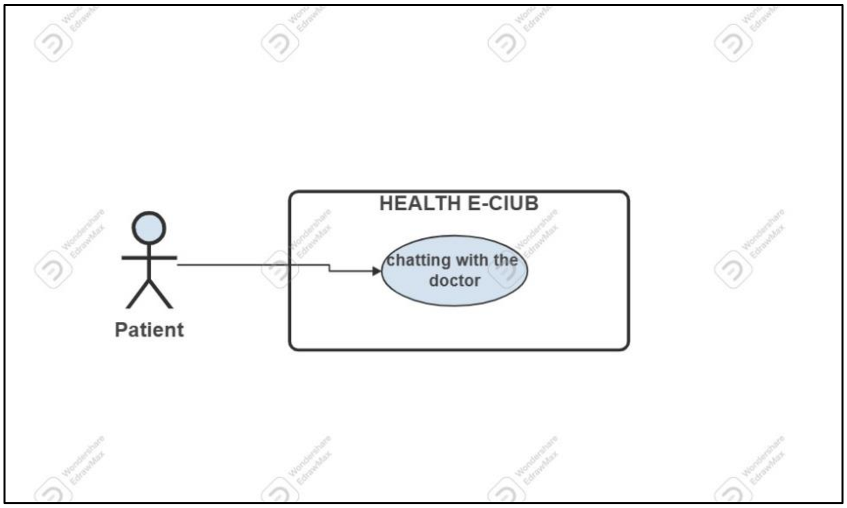


Figure 7 : chatting with the doctor Scenario

chatting with the doctor	
Actors	Patient
Description	1. The system allowed the patient to connect with the doctor 2. The system allows the patient to enter the page and ask the doctor 3. The system allows the patient to send and reply to the doctor 4. The users can easily see all message lists to find out what .prescription and instructions the doctor gave
Precondition	The user must be logged into the application.
Output	The system display chatting page.
Comment	None.

Table 8 : chatting with the doctor Scenario

3.2.2.8 Scenario (Insert Appointments)

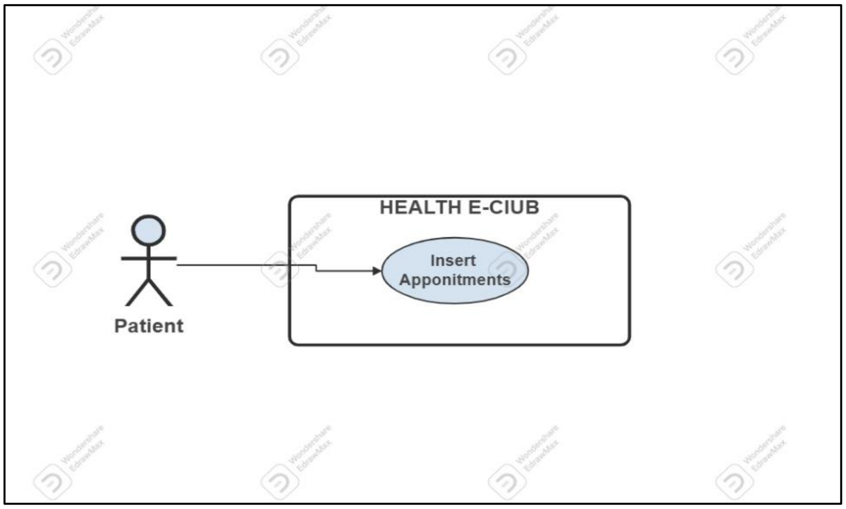


Figure 8 : Insert Appointments Scenario

Insert appointment	
Actors	Patient
Description	1-When the patient clicks on the Insert an appointment button, and the system will display the appointment insertion page. 2-Determine the date and time required for the appointment. 3-Add a label to the appointment. 4-Click the Save button.
Precondition	The user must be logged into the application
Output	The appointment will appear on the registered appointments page
Comment	The appointments can be edited or deleted later

Table 9 : Insert Appointments Scenario

3.2.2.9 Scenario (View Registered Appointments)

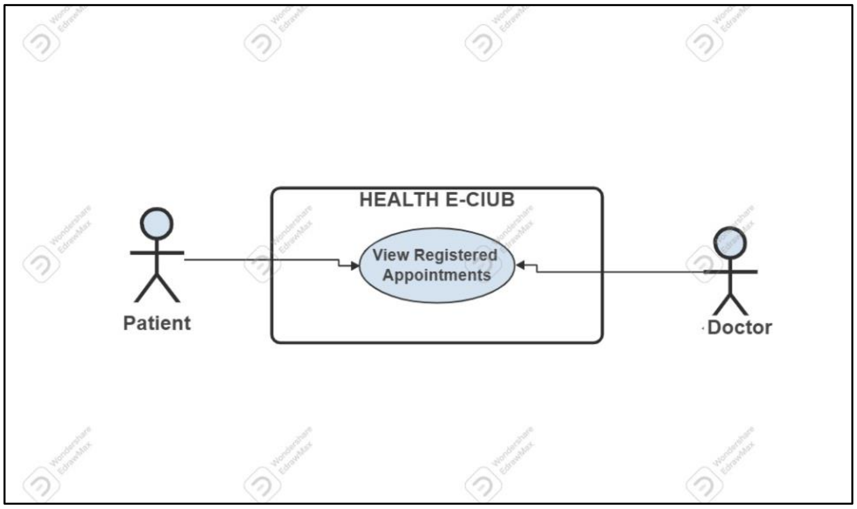


Figure 9 : View Registered Appointments Scenario

View registered appointments	
Actors	Patient, Doctor
Description	When the patient or doctor clicks on the View Appointments button from homepage, the system will display their registered appointments
Precondition	Insert an appointment
Output	View patient or doctor-registered appointments
Comment	The appointments can be edited or deleted

Table 10 : View Registered Appointments Scenario

3.2.2.10 Scenario (Consultation of a Doctor)

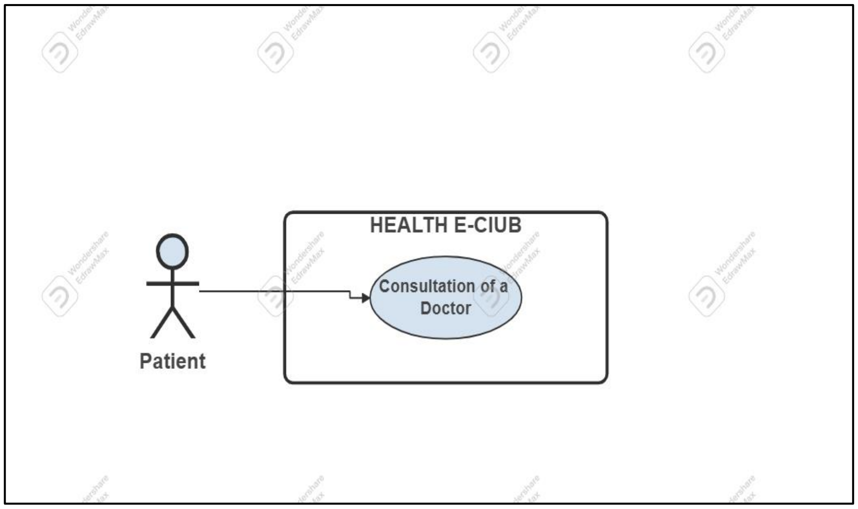


Figure 10 : Consultation of a Doctor Scenario

Consultation of a Doctor	
Actor	patient
Description	1- The system allow patient to choose the type of disease 2- The system allow patient to choose a doctor 3- The system allows determining the time of the medical consultation 4- The system will display the consultation appointment on the View Appointments page
Precondition	The patient should be logged in to the application
Output	The system displays the chat page
Comment	When a medical consultation is booked, the doctor will be notified

Table 11 : Consultation of a Doctor Scenario

3.2.2.11 Scenario (Reply to a Patient)

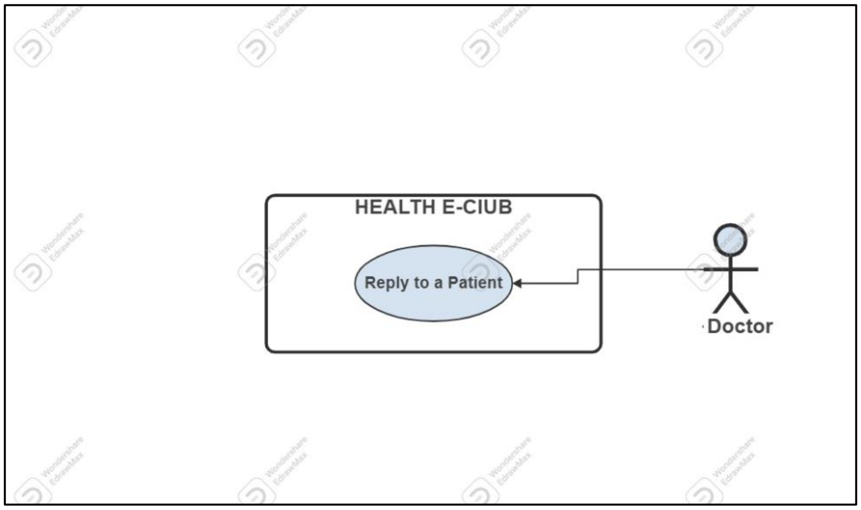


Figure 11 : Reply to a Patient Scenario

Reply to a Patient	
Actor	Doctor
Description	1- The system displays the chat page 2- The system allows a doctor to join the chat 3- The system allows the doctor to send and reply
Precondition	The doctor should be logged into the application
Output	Responding to patient inquiries about his health problems
Comment	The patient must book a medical consultation, and the doctor will be provided with a notification about the consultation

Table 12 : Reply to a Patient Scenario

3.2.2.12 Scenario (Log-out)

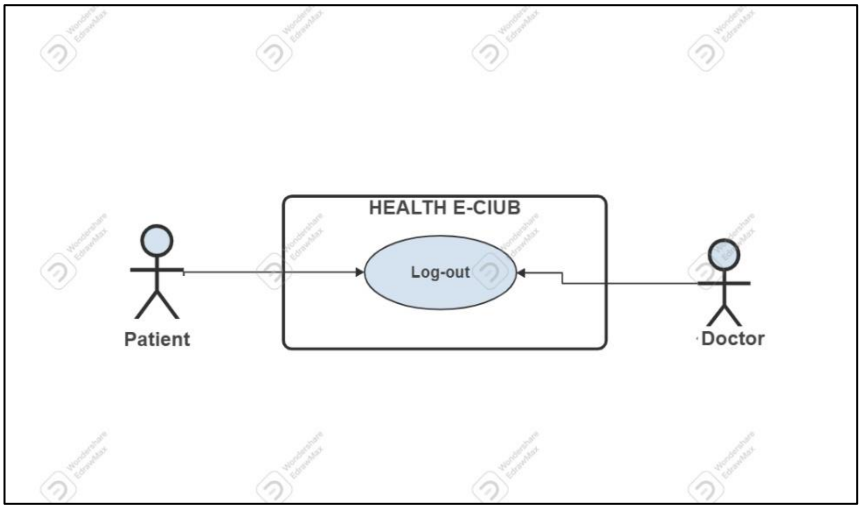


Figure 12 : Log-out Scenario

Log-out	
Actors	Doctor, Patient
Description	1. the user must sign in 2. The user is allowed to log out 3. the system redirects the user to the sign in page
Precondition	The user must sign into the system
Output	The system shall end the page and redirect the user to the home page
Comment	none

Table 13 : Log-out Scenario

3.2.2.13 Scenario (Delete / Modify the appointment)

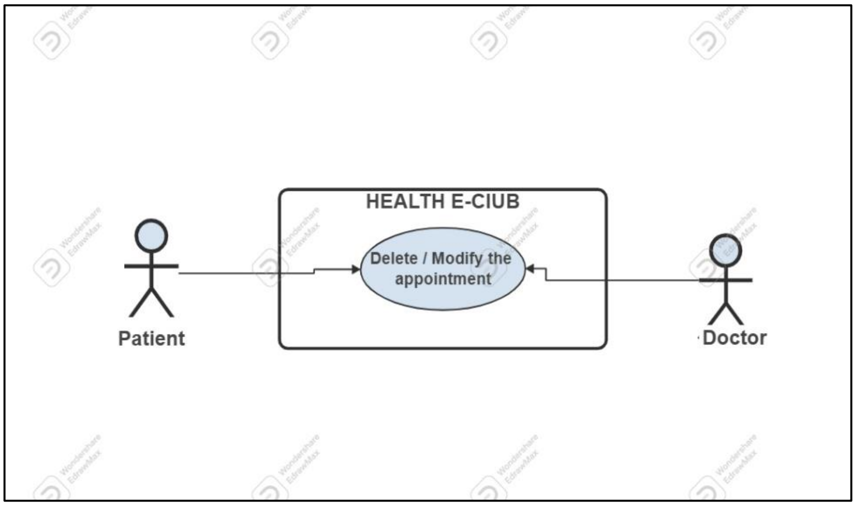


Figure 13 : Delete / Modify the appointment Scenario

Delete or modify an appointment	
Actors	Patient, Doctor
Description	1-When the patient or doctor clicks on the Edit button, the system will allow him to edit or delete an appointment. 2-After making changes such as changing the time, the user clicks on the done button. 3 -If the user clicks on delete button confirmation message will appear. 4-The system will navigate to the appointments page and shows the changes.
Precondition	Insert an appointment
Output	View patient-registered appointments
Comment	none

Table 14 : Delete / Modify the appointment Scenario

3.2.2.14 Scenario (forgot password)

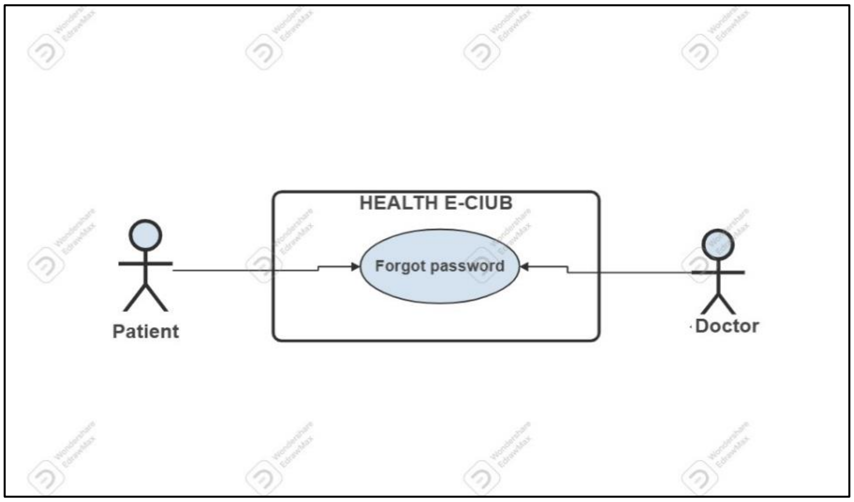


Figure 14 : forgot password Scenario

Forgot password	
Actors	Patient, Doctor
Description	1-When the patient or doctor forgot their passwords, they will click on forgot password. 2- a page to enter their email will appear. 3- the system will send a code to the entered email. 4- after entering the sent code in the email verification page the user will be able to change the password.
Precondition	The user must be logged into the application
Output	The user password will change
Comment	none

Table 15 : forgot password Scenario

3.2.2.15 Scenario (Frequently asked questions)

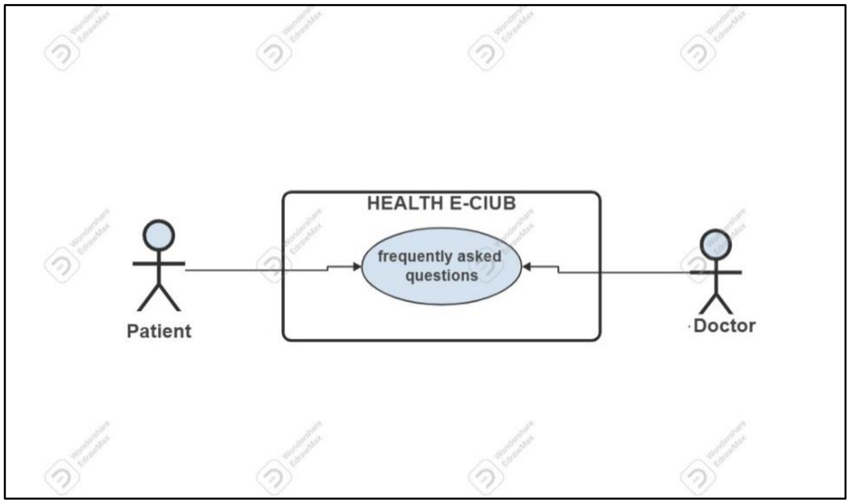


Figure 15 : Frequently asked questions Scenario

Frequently asked questions	
Actors	Patient, doctor
Description	1-When the patient or doctor has a query about anything, he will click on the Frequently Asked Questions from the home page. 2- list of frequently asked questions will appear 3- If he has a query that is not on the FAQ page, he can contact the technical support email located at the bottom of the page
Precondition	The user must be logged into the application.
Output	Responding to patient query.
Comment	none

Table 16 : Frequently asked questions Scenario

3.2.2.16 Scenario (search)

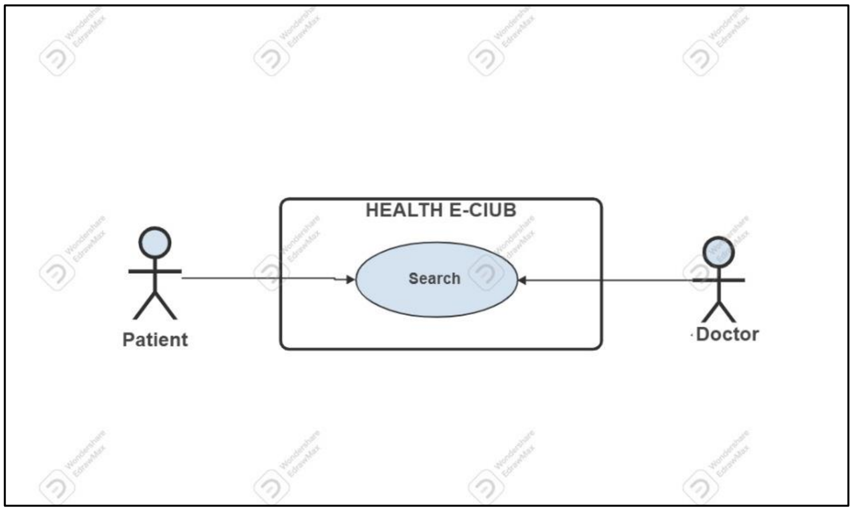


Figure 16 : search Scenario

Search	
Actors	Patient, doctor
Description	1- the search bar will appear at the top of the page. 2-When the patient or doctor are looking for specific thing on the app they will enter the needed at the search bar. 3- the system will find the element entered.
Precondition	The user must be logged into the application
Output	The user needs will be found.
Comment	none

Table 17 : search Scenario

3.2.3 User Classes and Characteristics

There are two main classes in system development: patient and doctor.

- Patients:
  A major class in our system register on the app to take advantage of the system Services such as joining groups to exchange experiences and following up on their appointments.
- Doctor:
  A major class in our app that registers in the application to help patients in several ways such as providing them with medical consultations

3.2.4 Operating Environment

The product should work in Android and IOS operating systems because it is a system based on cross-platform programming languages such as flutter. The database will be used to save the users' information, such as firebase.

3.2.5 Design and Implementation Constraints

- small screen sizes.
- Interfaces design.
- The system should be connected to the Internet to work well.
- Database management.

3.2.6 User Documentation

Users can take advantage of the application by connecting their devices to the Internet and downloading the application on their devices. Users can create an account as a doctor to help patients. Users can also create an account as a patient to join groups to exchange experiences.

3.2.7 Assumptions and Dependencies

The system should be connected to the Internet to work well, and all users should log in to the application to use all the services provided.

3.2.8 BPMN diagram

We used EdrawMax to draw the BPMN models that describe the most important ones in the app.

3.2.8.1 Sign up BPMN diagram

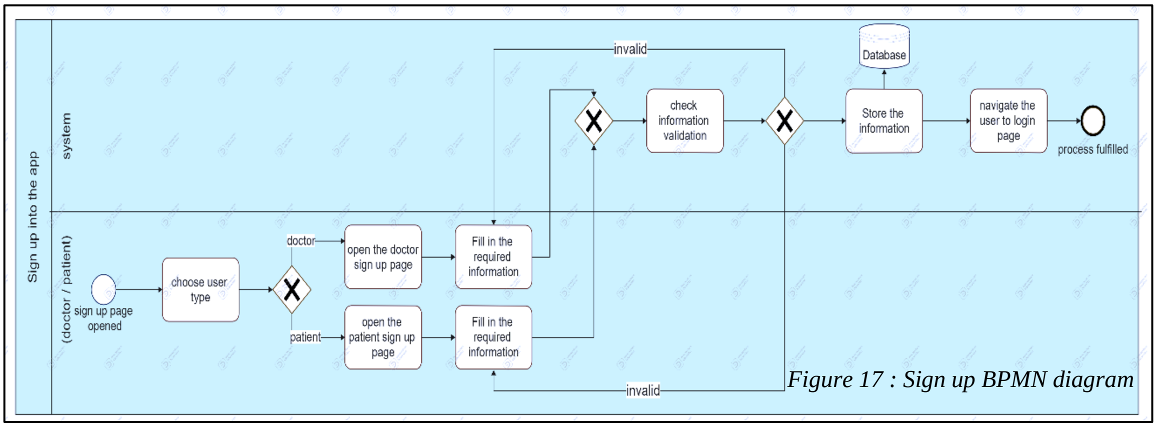

Sign up into the app
system
(doctor / patient)
sign up page opened
choose user type
doctor
patient
open the doctor sign up page
open the patient sign up page
Fill in the required information
Fill in the required information
invalid
check information validation
Database
Store the information
navigate the user to login page
process fulfilled
invalid

Figure 17 : Sign up BPMN diagram

3.2.8.2 Log in BPMN diagram

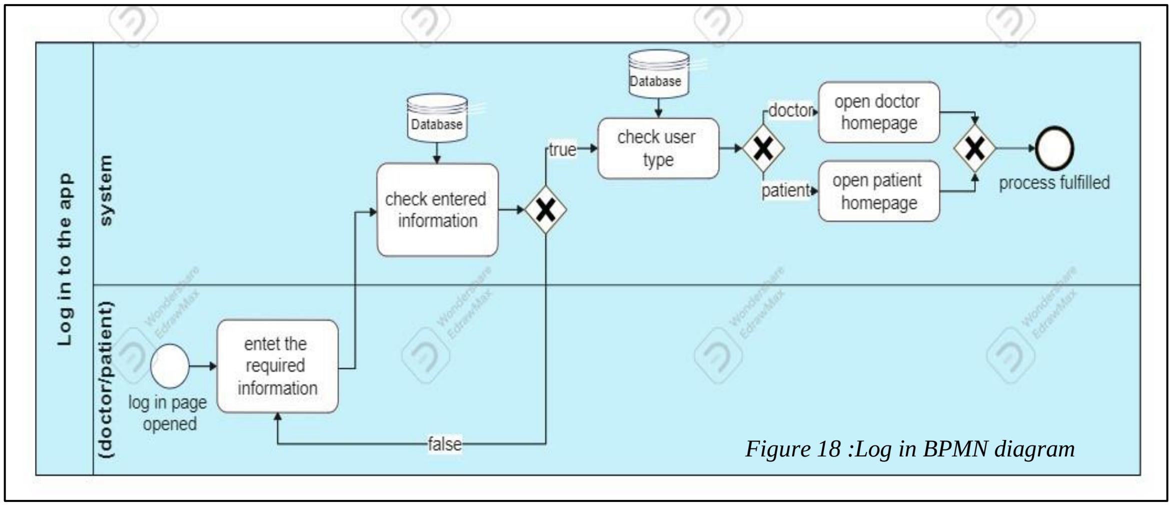


Figure 18 :Log in BPMN diagram

3.2.8.3 View and edit users profile page BPMN

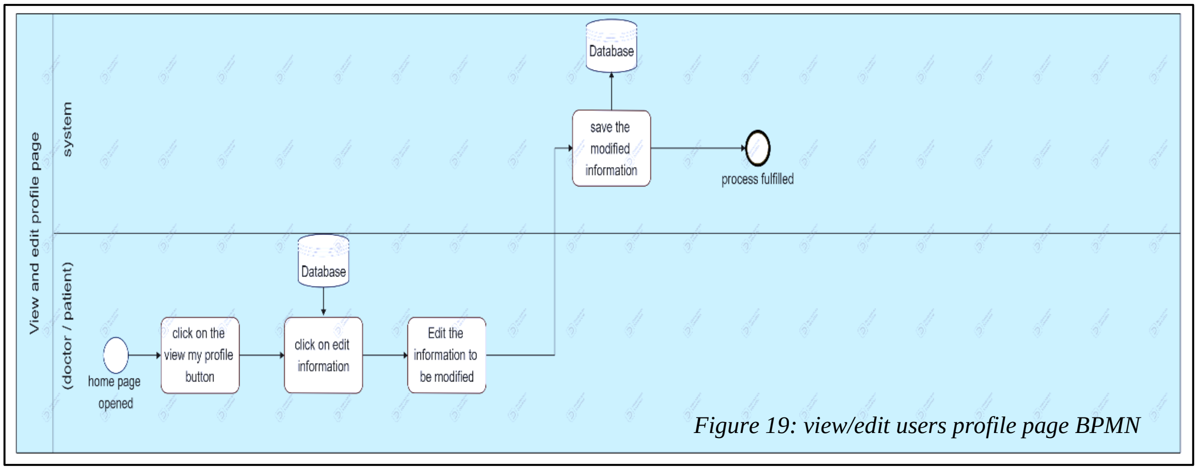

View and edit profile page
system
(doctor / patient)
Database
save the modified information
process fulfilled
Database
home page opened
click on the view my profile button
click on edit information
Edit the information to be modified

Figure 19: view/edit users profile page BPMN

3.2.8.4 Insert an appointment BPMN diagram

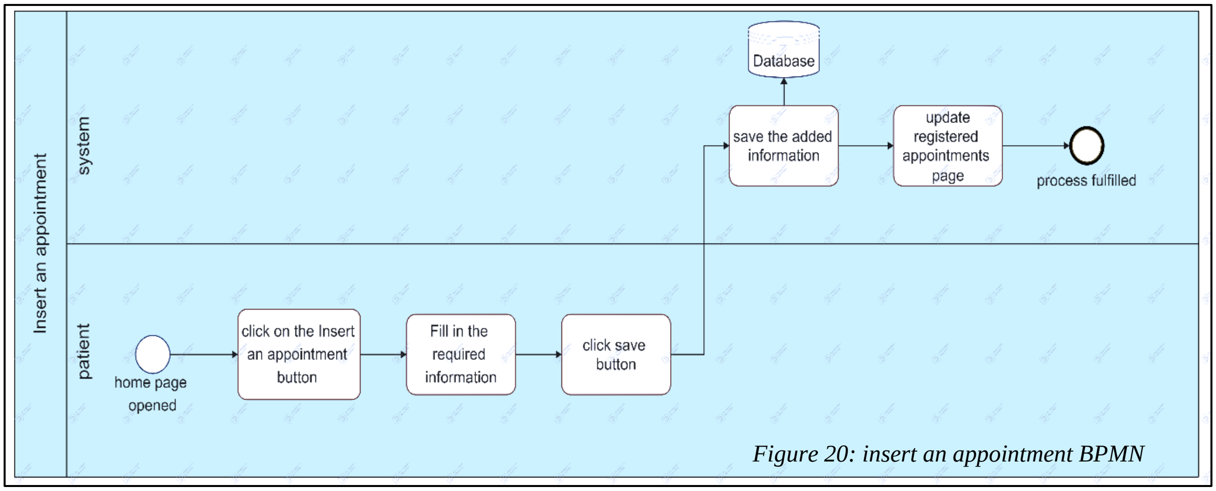

Insert an appointment
system
patient
Database
save the added information
update registered appointments page
process fulfilled
home page opened
click on the Insert an appointment button
Fill in the required information
click save button

Figure 20: insert an appointment BPMN

3.2.8.5 View and modify registered appointments BPMN diagram

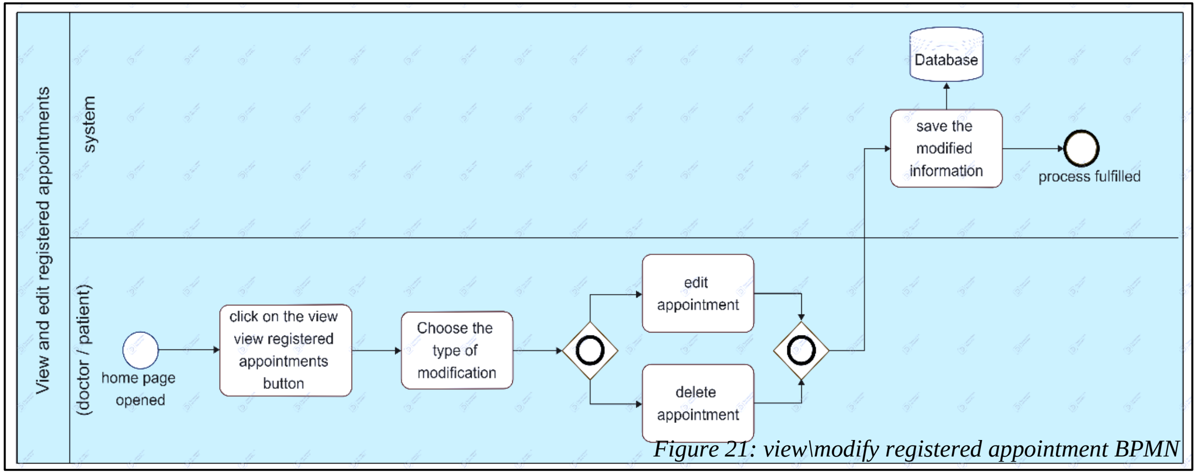

View and edit registered appointments
system
(doctor / patient)
Database
save the modified information
process fulfilled
home page opened
click on the view view registered appointments button
Choose the type of modification
edit appointment
delete appointment

Figure 21: view\modify registered appointment BPMN

3.3 External Interface Requirements

3.3.1 User Interfaces

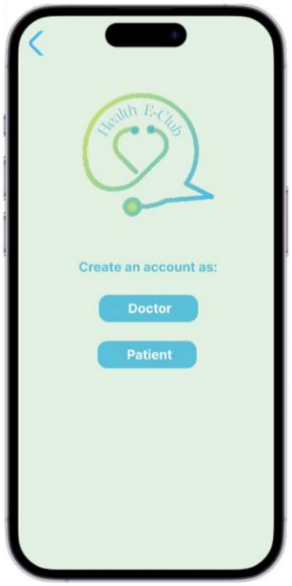


Figure 22:create account as

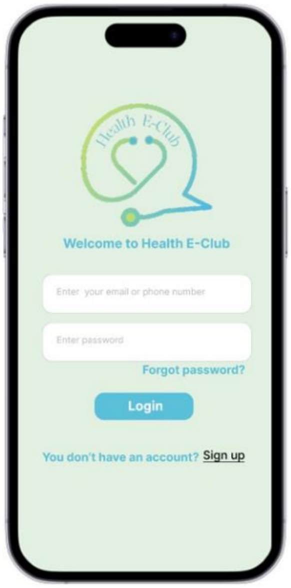


Figure 23:log in

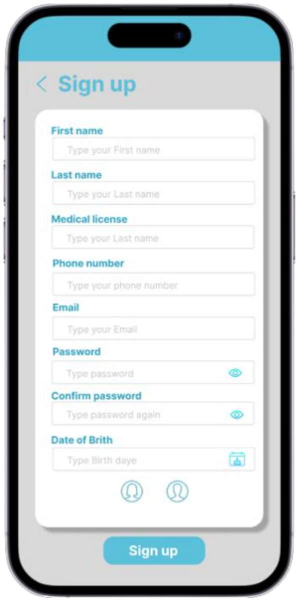


Figure 24:doctor sign up

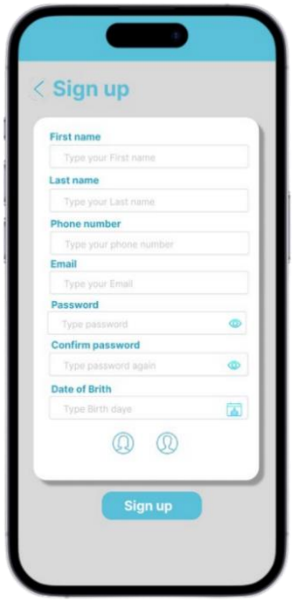
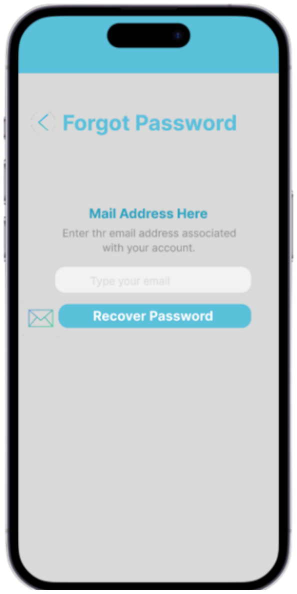


Figure 25:patient sign up



Forgot Password

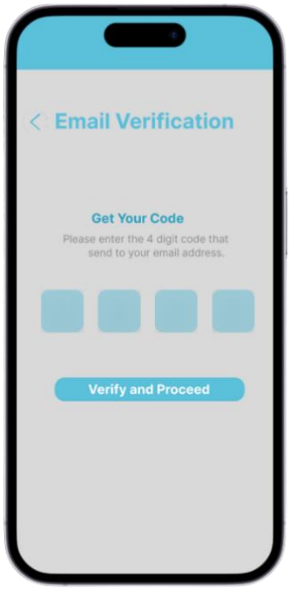
Mail Address Here

Enter thr email address associated with your account.

Type your email

Recover Password

Figure 26:forgot password



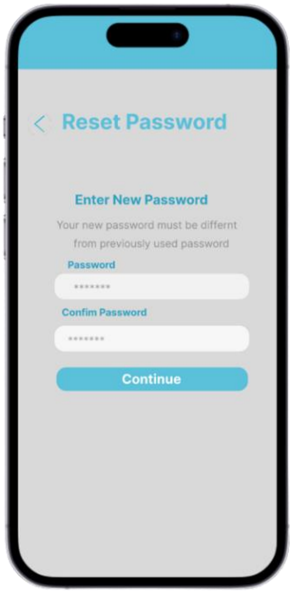
Email Verification

Get Your Code

Please enter the 4 digit code that send to your email address.

Verify and Proceed

Figure 27:email verification



Reset Password

Enter New Password

Your new password must be differnt from previously used password

Password

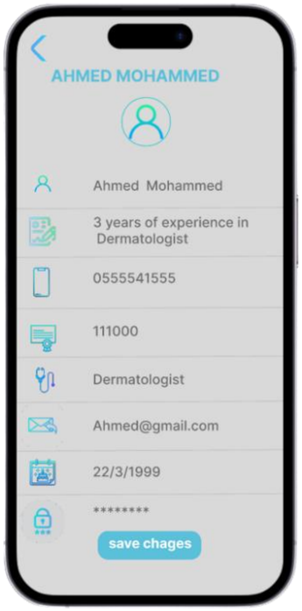
****

Confim Password

****

Continue

Figure 28:reset password



AHMED MOHAMMED

Ahmed Mohammed

3 years of experience in Dermatologist

0555541555

111000

Dermatologist

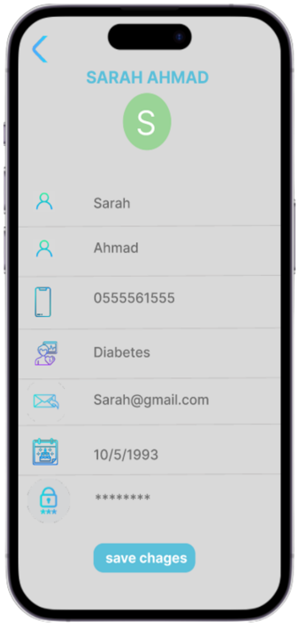
Ahmed@gmail.com

22/3/1999

****

save chages

Figure 29:doctor profile



Sarah

Ahmad

0555561555

Diabetes

Sarah@gmail.com

10/5/1993

****

Figure 30:patient profile

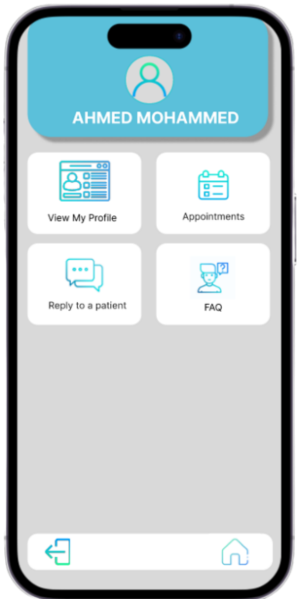


Figure 32:doctor home page

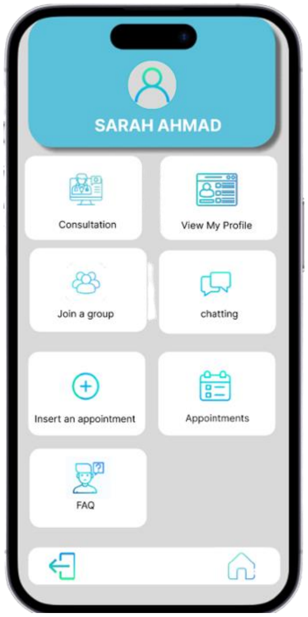


Figure 33:patient home page

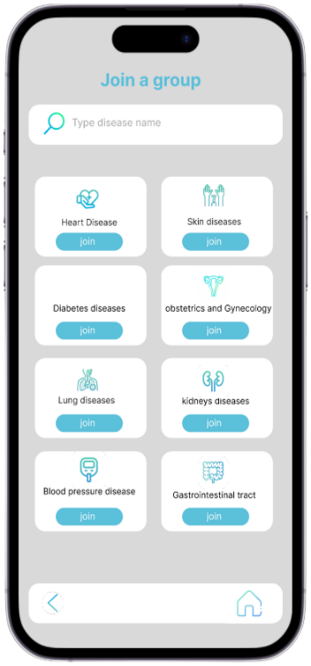
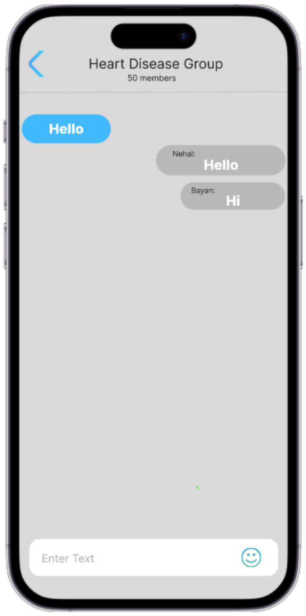


Figure 31:join a group



Heart Disease Group
50 members

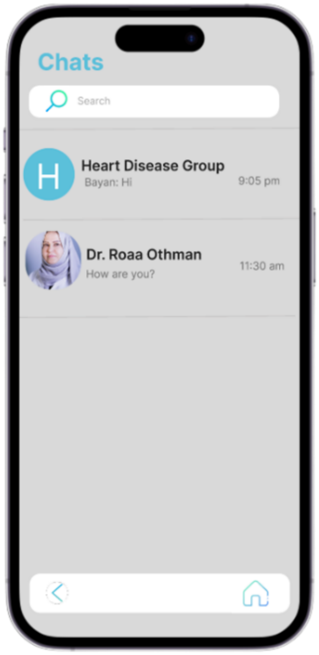
Hello

Nehal: Hello

Bayan: Hi

Enter Text

Figure 34:group chat



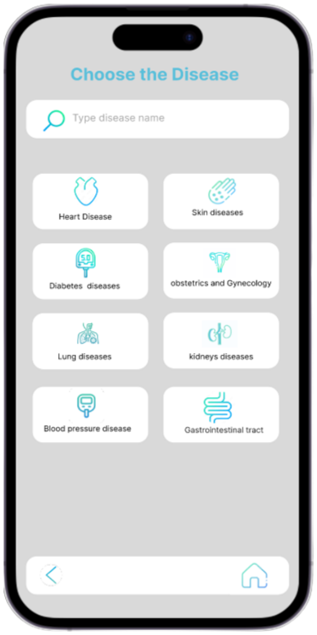
Chats

Search

Heart Disease Group
Bayan: Hi
9:05 pm

Dr. Roaa Othman
How are you?
11:30 am

Figure 37:chats



Choose the Disease

Type disease name

Heart Disease

Skin diseases

Diabetes diseases

obstetrics and Gynecology

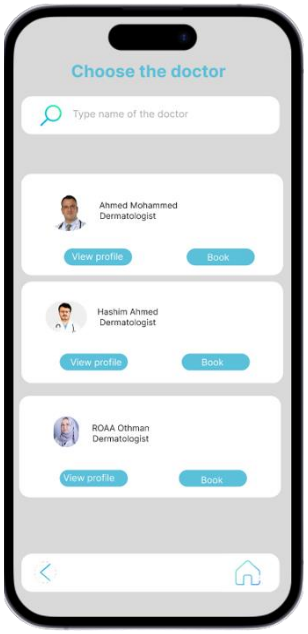
Lung diseases

kidneys diseases

Blood pressure disease

Gastrointestinal tract

Figure 36:choose the disease



Choose the doctor

Type name of the doctor

Ahmed Mohammed
Dermatologist
View profile
Book

Hashim Ahmed
Dermatologist
View profile
Book

ROAA Othman
Dermatologist
View profile
Book

Figure 35 : choose the doctor page

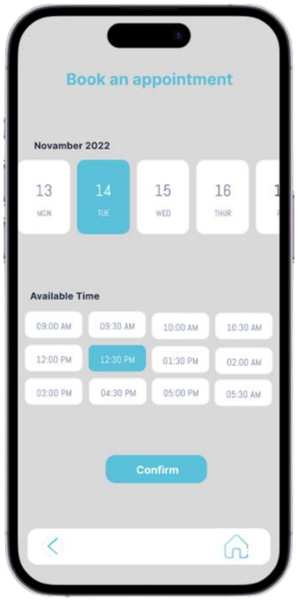


Figure 38 : book an appointment page

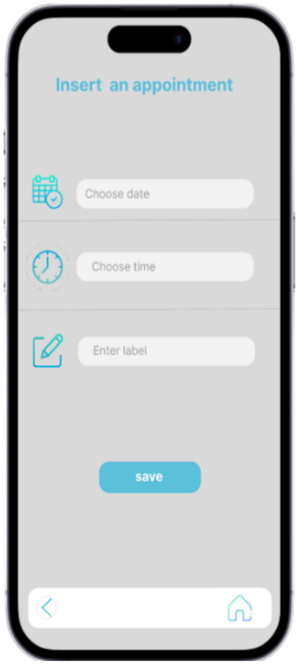
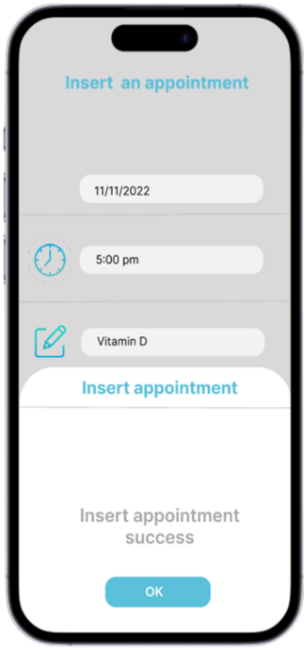


Figure 39 : insert appointment page



11/11/2022

5:00 pm

Vitamin D

Insert appointment success

Figure 41 : confirm insert appointment page

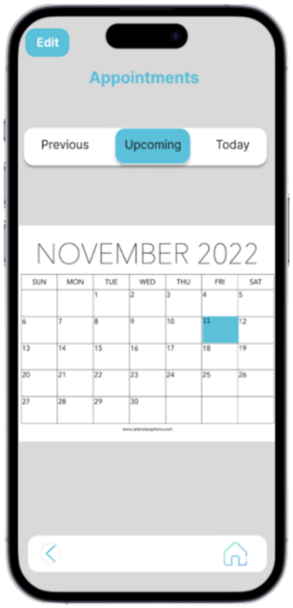
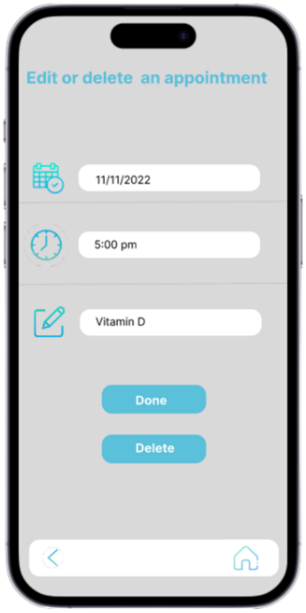


Figure 40 : patient appointments page



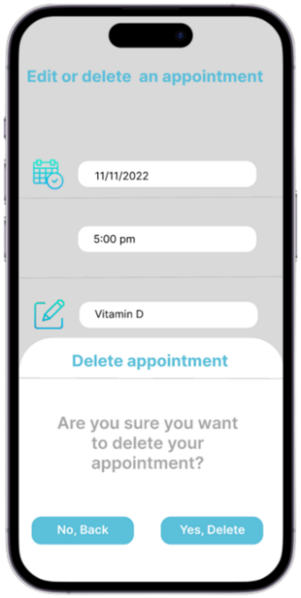
Edit or delete an appointment

11/11/2022

5:00 pm

Vitamin D

Figure 42 : edit\ delete appointment page



Edit or delete an appointment

11/11/2022

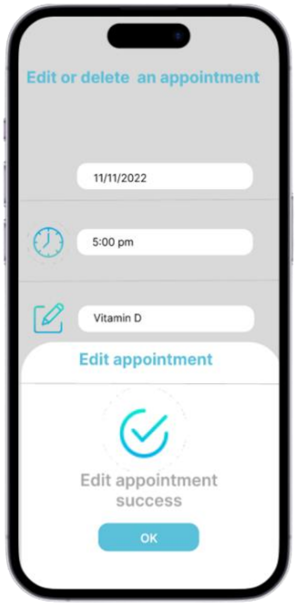
5:00 pm

Vitamin D

Delete appointment

Are you sure you want to delete your appointment?

Figure 43 : delete appointment page



Edit or delete an appointment

11/11/2022

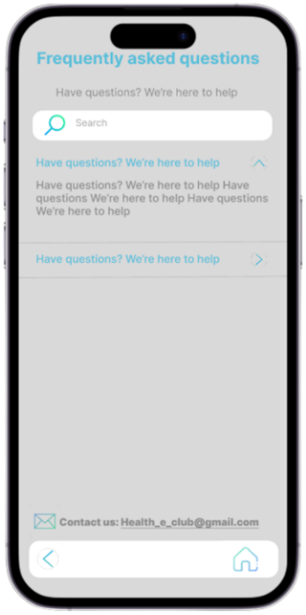
5:00 pm

Vitamin D

Edit appointment

Edit appointment success

Figure 44 : confirm delete appointment page



Frequently asked questions

Have questions? We're here to help

Search

Have questions? We're here to help

Have questions? We're here to help Have questions We're here to help Have questions We're here to help

Have questions? We're here to help

Contact us: Health_e_club@gmail.com

Figure 45 : frequently asked questions page

3.3.2 Hardware Interfaces

It is a network-based system that works on Android and IOS operating systems. No additional hardware is required.

3.3.3 Software Interfaces

- Software used
  Programming language editor:
  To develop the system, we shall use flutter and we need to use google Collab to write our code
- Database system:
  To develop the system, we shall use flutter and we need to use google Collab to write our code
- Database system :
  we shall use our application firebase database due it is a multiuser relational database management system and has ease of use.

3.3.4 Communications Interfaces

- The system shall use the FTTP protocol or WIFI of the user's device through network communications services regulated by the operating system.
- Our application is available on IOS and Android.

3.4 System Features

3.4.1 Sign up

- Description and Priority
  The system will allow the user to sign up by entering the needed data and will check if the entered data is correct.

- Stimulus/Response Sequences
  Stimulus: The user wants to sign up for for the app.
  Stimulus: The user wants to sign up to for the app.
  Response: The system has successfully created an account for the user.

- Functional Requirements
  REQ-1: the user should have a phone number.
  REQ-2: doctors must have medical licenses number.

3.4.2 View my profile

- Description and Priority
  The system provides this service to the user, allowing him to view a doctor's profile (first name, second name, last name, password, email, gender, and date of birth). Additional information in the profile (experience, medical license number, and choice of medical specialty).

- Stimulus/Response Sequences
  Stimulus: The user wants to view the profile
  Response: The system has successfully displayed the profile

- Functional Requirements
  REQ-1: The user must login.
  REQ-2: The system allows the user to be able to log in.
  REQ-3: Enables users to see their profile.

3.4.3 Modify my profile

- Description and Priority
  The system availability of this service for the patients will be adaptable to refashioning and recasting their profile information

- Stimulus/Response Sequences
  Stimulus: the user wants to edit the profile information
  Response: The updated information has been saved

- Functional Requirements
  REQ-1: The system displays categories of profile personal information
  REQ-2: The system shall allow the user to be able to edit the profile information
  REQ-3: The system validates data as required and updates the user profile.

3.4.4 Log-in

- Description and Priority
  The system will allow the user to log in to the app by entering the email or phone number and password, and the system will check if the data is correct for the app database. After that, the main page will appear.

- Stimulus/Response Sequences
  Stimulus: The user wants to login into the app.
  Response: The system will successfully log the user in.

- Functional Requirements
  REQ-1: the user must have an account first
  REQ-2: the app database will ensure the data entry.

3.4.5 Join the Group

- Description and Priority
  The system will display a list of groups according to the diseases and allow them to contact each other to share information.

- Stimulus/Response Sequences:
  Stimulus: The user wants to join a group.
  Response: The system will enable the patient to join the required group.

- Functional Requirements
  REQ-1:the user must log in to the app.
  REQ-2: the system will display a list of groups.

3.4.6 chatting with the doctor

- Description and Priority
  The system availability of this service for patients to chat with a doctor When a patient wants to consult a doctor

- Stimulus/Response Sequences
  Stimulus: The patient sent a request to consult a doctor
  Response: chat opens between doctor and patient

- Functional Requirements
  REQ-1-the system will the allow the user to be able to chat with the doctor
  REQ-2The system allows enables the patient to send and reply to the doctor
  REQ-3 The users can see all messages lists and can easily to find what prescription and instructions the doctor gave.

3.4.7 Insert an Appointment

- Description and Priority
  The system provides this service to allow a patient to add an appointment.

- Stimulus/Response Sequences
  Stimulus: the patient wants to insert an appointment.
  Response: appointment inserted.

- Functional Requirements
  REQ-1: The system allows the patient to insert an appointment.
  REQ-2: The system allows the patient to determine the date and time required for the appointment.
  REQ-3: The system will save the inserted appointment.

3.4.8 View Registered Appointments

- Description and Priority
  The system provides this service for the user to display the registered appointment.

- Stimulus/Response Sequences
  Stimulus: the patient wants to view the registered appointment.
  Response: registered appointments viewed.

- Functional Requirements
  REQ-1: The system allow the user to click on the view appointments button.
  REQ-2: The system will view the registered appointment.

3.4.9 Consultation of a Doctor

- Description and Priority
  The system provides this service to the patient, and this service allows him to book a medical consultation

- Stimulus/Response Sequences
  Stimulus: The patient wants a medical consultation
  Response: The appointment has been booked successfully

- Functional Requirements
  REQ-1: The system allows the patient to book a consultation appointment with the doctor
  REQ-2: System displays electronic clinics and doctors
  REQ-3: Consultation appointment is booked
  REQ-4: Consultation appointment has been booked successfully

3.4.10 Reply to a Patient

- Description and Priority
  The system provides this service to a doctor, and this service allows him to talk with the patient and respond to his advice. when the patient wants to consult the doctor

- Stimulus/Response Sequences
  Stimulus: the patient sends a request to consult a doctor
  Response: responding to the patient's consultation by opening a chat between the two parties

- Functional Requirements
  REQ-1: The system allows the doctor to be able to chat with the patient
  REQ-2: The system allows the doctor to respond to the patient
  REQ-3: The system enables users to see the response

3.4.11 Log-out

- Description and Priority
  The system availability this service to the user, and this service allows them to log out from the application

- Stimulus/Response Sequences
  Stimulus: The user wants to log out from the application
  Response: The user successfully logs out.

- Functional Requirements
  REQ-1: the user must sign in.
  REQ-2: the system will allow the user to log out.
  REQ-3: the system will redirect the user to the home page.

3.4.12 Delete / Modify the appointment

- Description and Priority
  The system provides this service for the user to modify or delete an appointment.

- Stimulus/Response Sequences
  Stimulus: the patient wants to modify or delete an appointment.
  Response: registered appointments viewed.

- Functional Requirements
  REQ-1: The system allows a patient to modify or delete an appointment
  REQ-2: The system allows a patient to determine the information he want to modify or delete.
  REQ-3: The system will save the changes.

3.4.13Forgot password

- Description and Priority
  The system provides this service for users to change their password.

- Stimulus/Response Sequences
  Stimulus: The user wants to change his password.
  Response: Password changed.

- Functional Requirements
  REQ-1: The system allows the user to change his password.
  REQ-2: The system allows the user to enter his email.
  REQ-3: The system will send a code to the user email.
  REQ-4: The system will allow the user to enter the new password.
  REQ-5: The system will save the new password in the database.

3.4.14 Frequently asked Questions

- Description and Priority
  The system provides this service to users to answer their queries.

- Stimulus/Response Sequences
  Stimulus: The user has a query.
  Response: Answer the user's query.

- Functional Requirements
  REQ-1: The system allows the user to view frequently asked questions.
  REQ-2: The system will allow the user to send his inquiry to the e-mail at the bottom of the page if this query is not on the Frequently Asked Questions page.

3.4.15 Search

- Description and Priority
  The system provides this service to users to answer their queries.

- Stimulus/Response Sequences
  Stimulus: The user has a query.
  Response: Answer the user's query.

- Functional Requirements
  REQ-1: The system allows the user to write in the search bar.
  REQ-2: The system will display results matching the user's search.

3.5 Other Non-functional Requirements

3.5.1 Performance Requirements

- The system should have a fast response time.

- The user will not have difficulty dealing with the application.

3.5.2 Safety Requirements

- The system has high security.

- The sensitive data will be headend.

3.5.3 Security Requirements

- The user should sign up and sign in to use the application services.

- The system will allow viewing of the needed information.

- the system should have high security and privacy for the users.

3.5.4 Software Quality Attributes

- The system should be tested many times.

- The system will be available 24 hours a day.

- The app data must be up to date.

- The system should be errors free.

- The system will send a notification and be easy to use.

3.5.5 Business Rules

- The app users should respect the confirmed appointment between them.

- The app provides many suggestions according to the user's preference.

CHAPTER 4

SOFTWARE DESIGN

4.1 Design Overview

4.1.1 Introduction

In this chapter, we will discuss an overview of the environment in which the Health e-club application runs, the system architecture of our application, constraints, assumptions, the data store, and project design diagrams such as Class, Sequence, ER, and Scheme diagrams.

4.1.2 Environment Overview

The Health e-club app is one of the projects of Umm Al-Qura University and will be implemented by a group of students as a graduation project. It will operate in both Android and IOS environments.

4.1.3 System Architecture

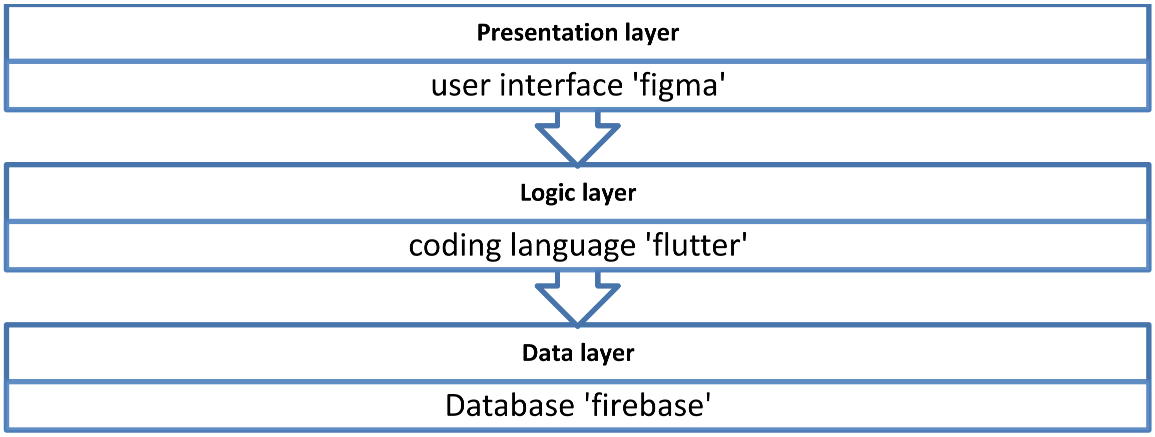


Figure 46 : System Architecture

4.1.4 Constraints and Assumptions

- The device must be connected to the Internet so the user can benefit from app services.
- The application interfaces must be user-friendly.
- The application database must suites the use of big data.
- The application must provide high security and performance to the users' information.

4.2 Interfaces and Data Stores

The following points can be formulated in this section: Interfaces inside and outside the system. The data stores that we will include in the system.

4.2.1 System Interfaces

It was mentioned in the third chapter.

4.2.2 Data Stores

The data is filled in by the user and saved in the database

- Patient: First name, second name, last name, email, gender, date of birth, password, confirm password.
- Doctor: First name, second name, last name, e-mail, gender, experience, specialty, medical license number
- Chat: Doctor ID, Consultation Request ID, Chat text, Attached files, patient Id
- Enter appointments: consultation time, consultation day, medication time reminder.

4.3 Structural Design

4.3.1 Class Diagram

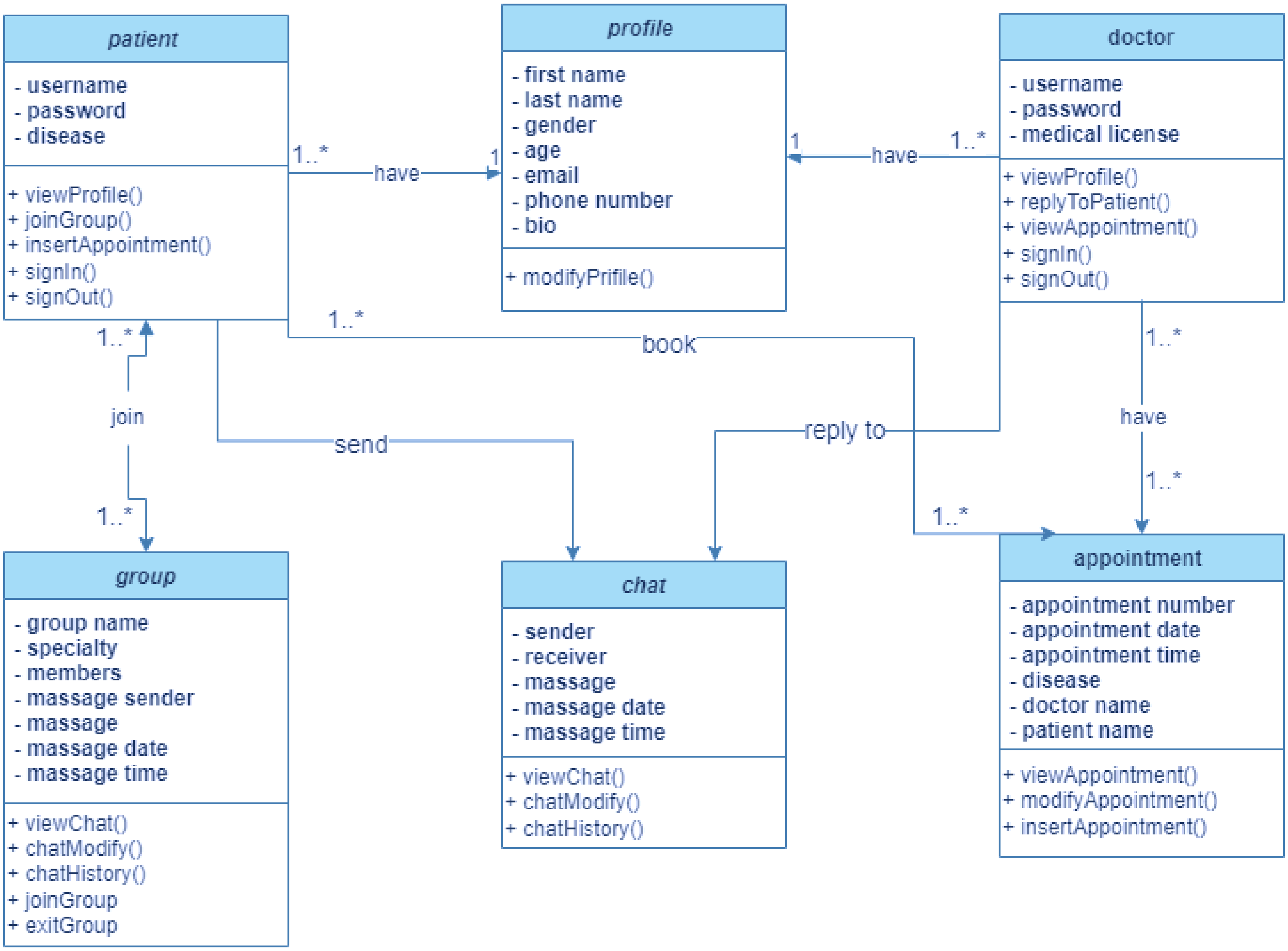


Figure 47 : Class Diagram

4.3.2 Class Descriptions

4.3.2.1 patient class

Patient class		

Class Description:	**viewProfile()**
	joinGroup()
	insertAppointment()
	signIn()
	signOut()
		The patient can sign in by entering the username and password that have been saved previously in the app database and can view the profile and use the app services and sign out after finishing using the app.

Table 18:patient class

4.3.2.2 doctor class

Doctor class		

Class Description:	**View Profile()**
	replyToPatient()
	viewAppointment()
	signIn()
	signOut()
		The patient can sign in by entering the username and password that have been saved previously in the app database and can view the profile and appointment and reply to patient queries and sign out after finishing using the app.

Table 19:doctor class

4.3.2.3 profile class

profile class		
Class Description:	**modifyPrifile()**	***The users can view their profiles and modify the information.***

Table 20:profile class

4.3.2.4 appointment class

Appointment class		

Class Description:	**viewAppointment()**
	modifyAppointment()
	insertAppointment()
		The doctors have appointments with their patients, so both doctor and the patient can insert appointments, viewView, and modify them.

Table 21:appointment class

4.3.2.5 chat class

chat class		

Class Description:	**viewChat()**
	chatModify()
	chatHistory()
		Both doctor and patient can have private chatting between them to answer any queries, and they can view the chat, modify the chat messages, and see the chat history to know the message information like the date and time.

Table 22:chat class

4.3.2.6 group class

Group class		

Class Description:	**viewChat()**
	chatModify()
	chatHistory()
	joinGroup
	exitGroup
		The patient can join a group according to their disease and talk to each other to learn more and share experiences, and when can exit the group anytime.

Table 23:group class

4.3.3 Sequence diagram

4.3.3.1 sequence diagram for a doctor

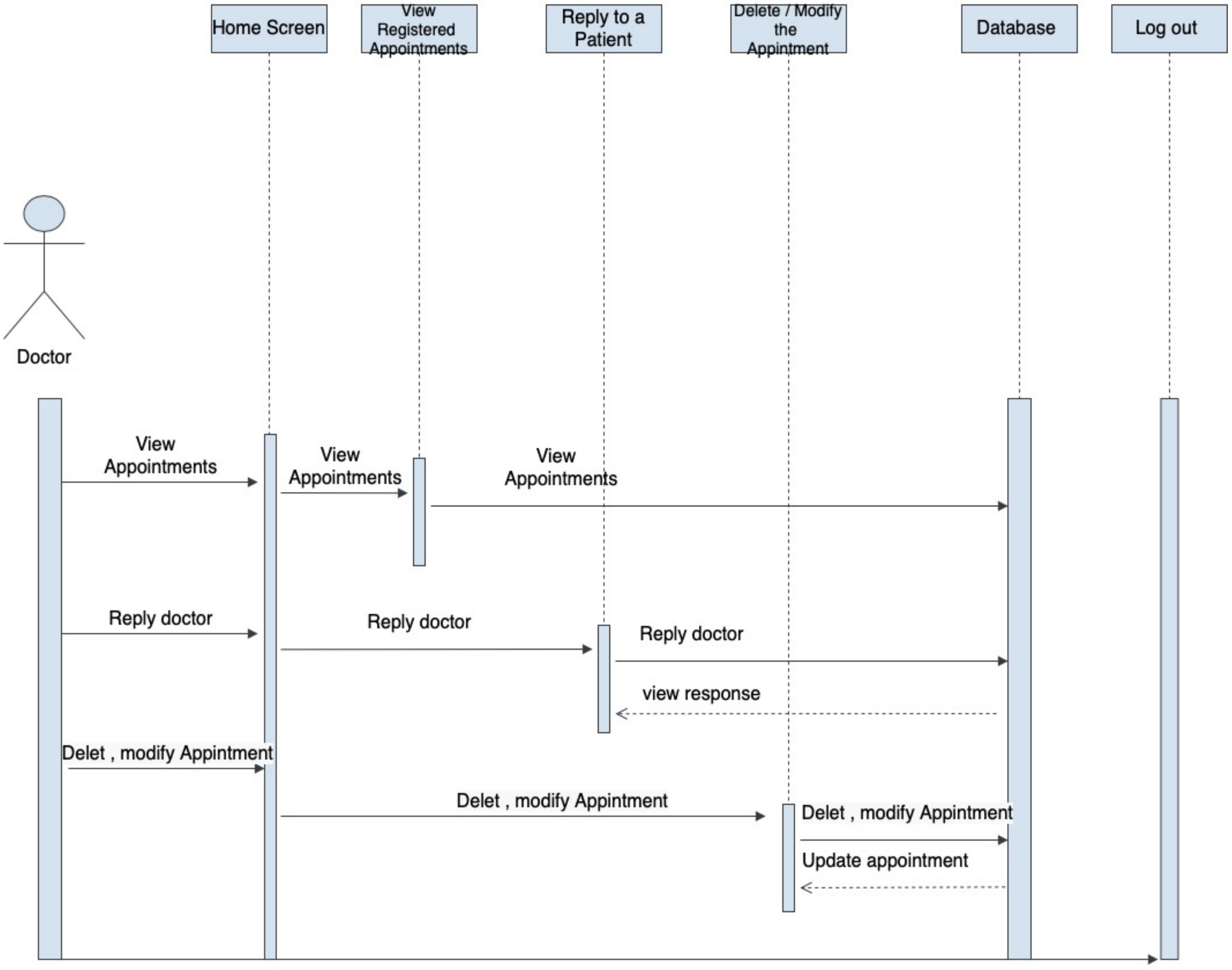


Figure 48 : Sequence diagram for doctor

4.3.3.2 sequence diagram for a doctor

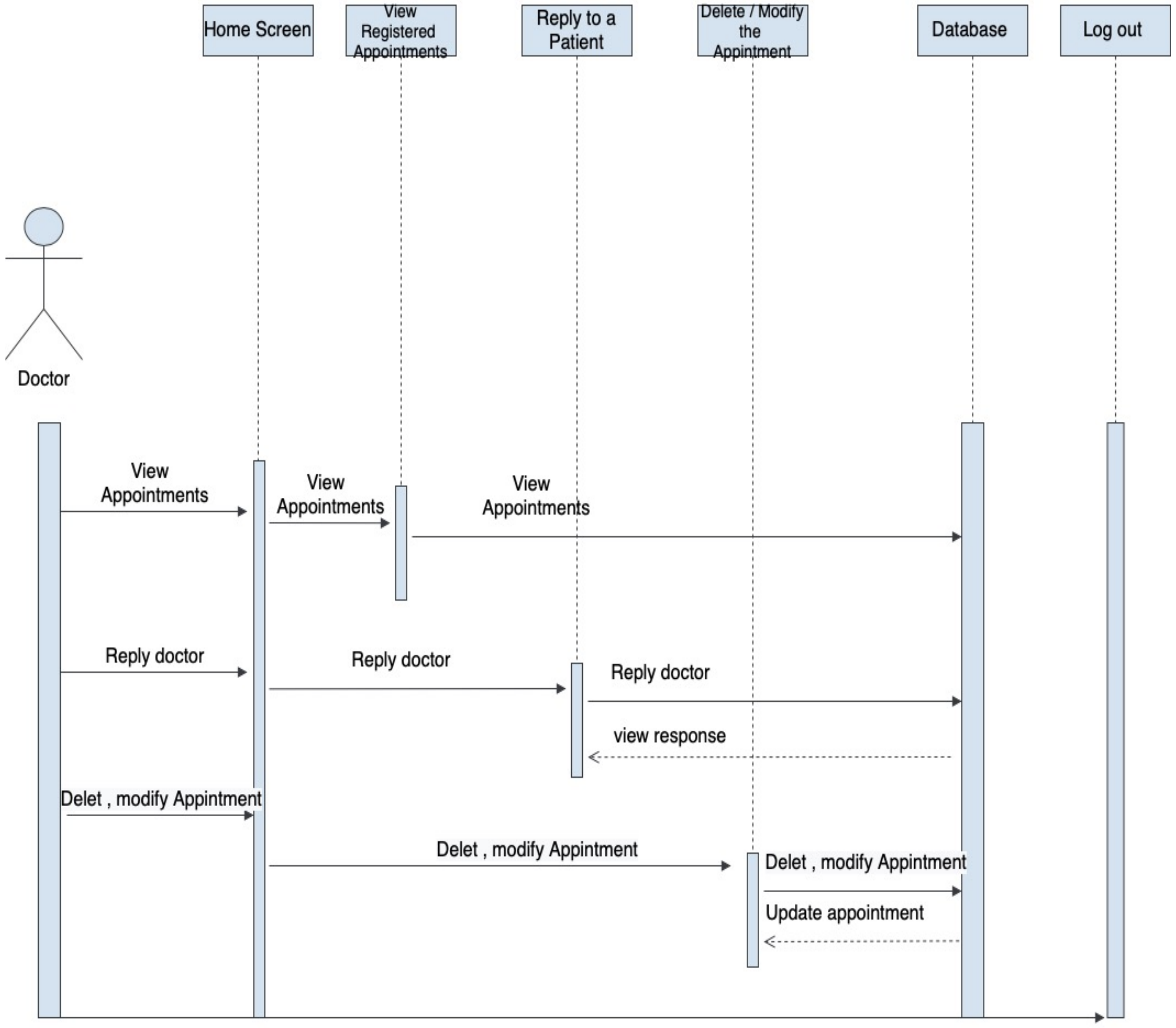


Figure 49 : Sequence diagram for doctor

4.3.3.3 Sequence diagram for a patient

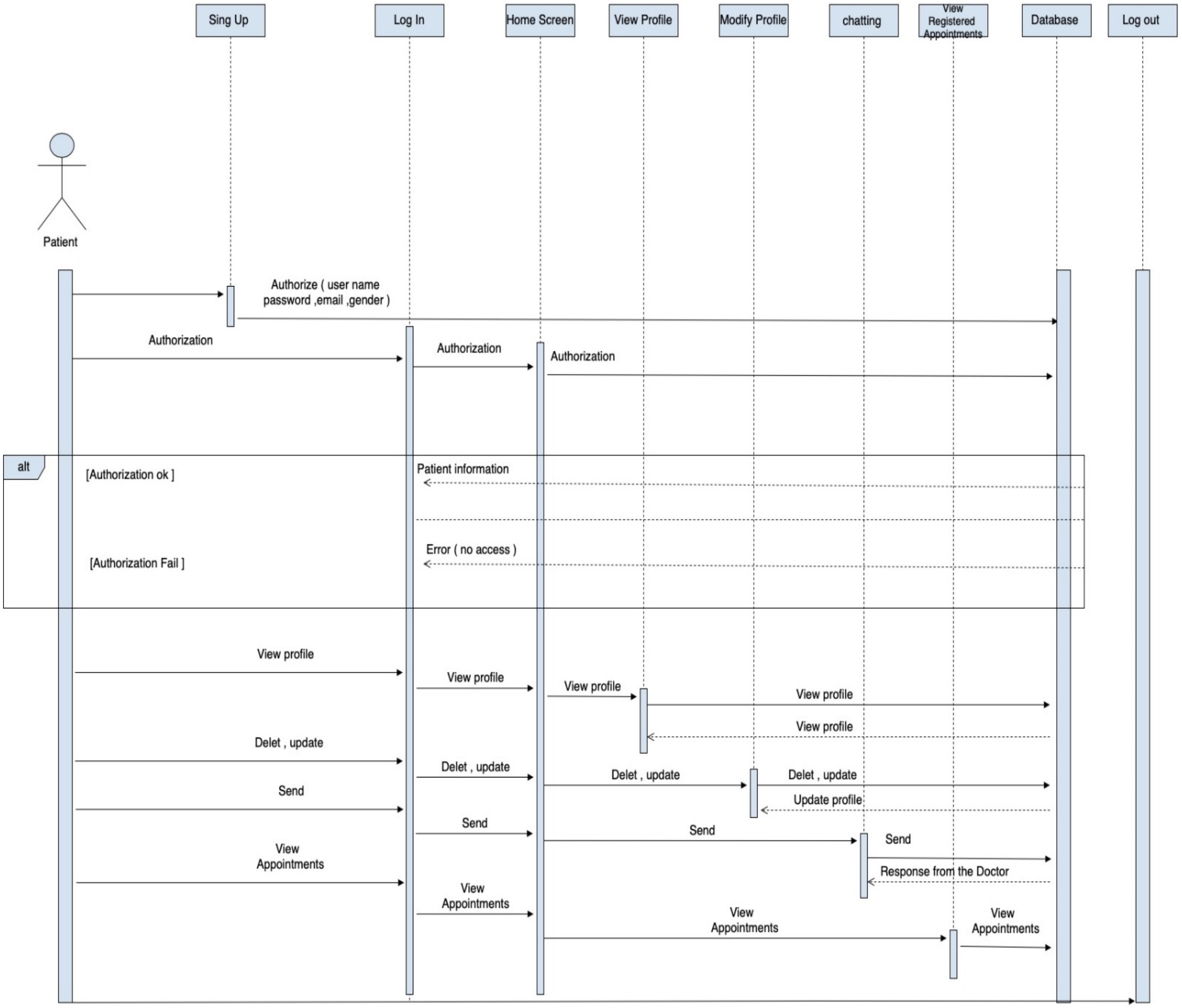


Figure 50 : Sequence diagram for a patient

4.3.3.4 Sequence diagram for a patient

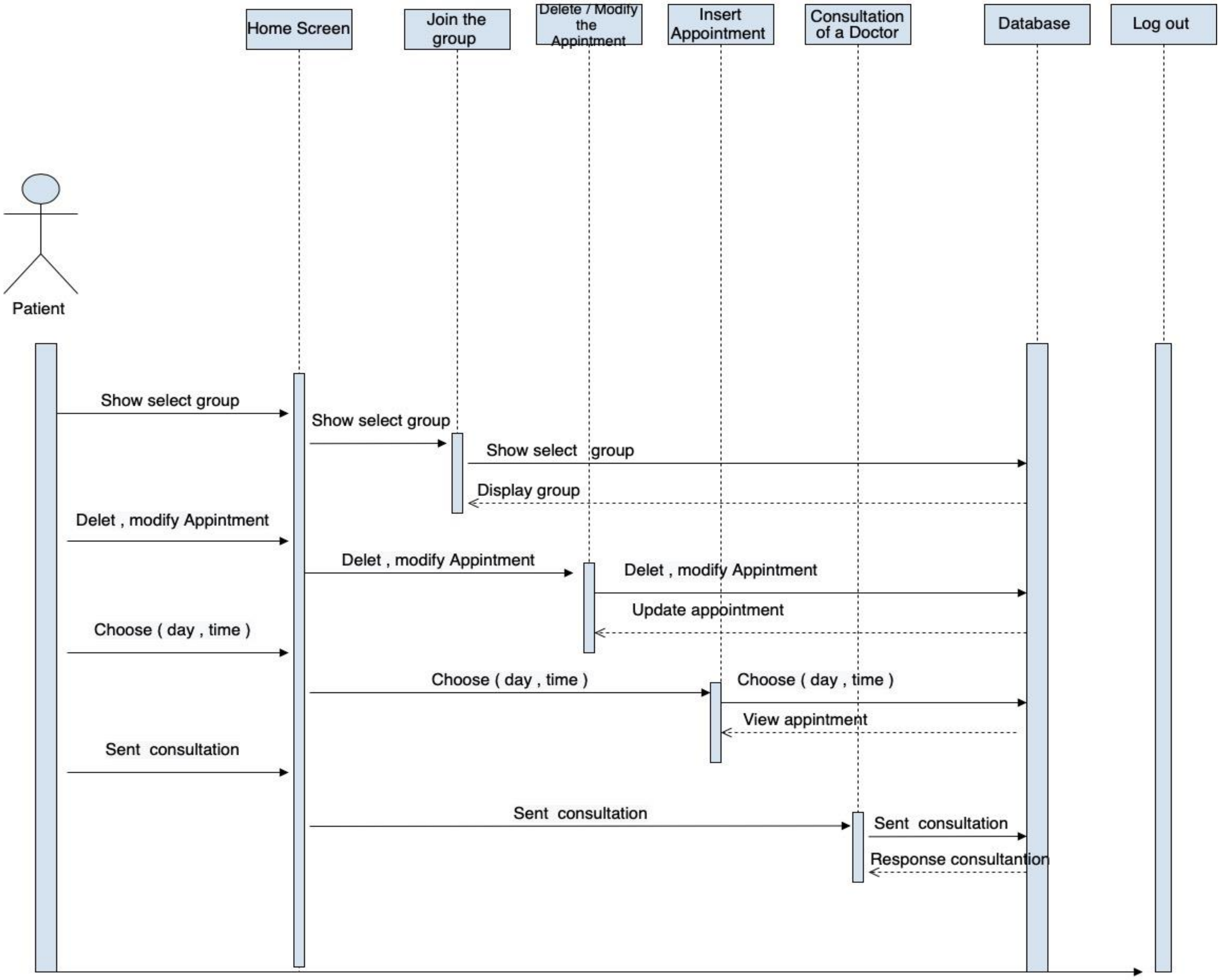


Figure 51 : Sequence diagram for a patient

4.3.4 Sequences diagrams descriptions

Sequences Diagrams	
process	Description
Sing Up	The system shows the registration types (doctor /patient) when the user signs up. The user chooses types, gets the registration form, and fills in all the required information. Then, the system will check the entered information. If the data is entered incorrectly, a message will appear to the user that the data has been entered incorrectly. If the information is entered correctly, the system will save the data on the database and redirect the new user to the sign-in page.
Log In	The user's login into the system shows a user sign in form, the user fills in all the required information, and the system checks the entered data with the data in the database. If the data is entered incorrectly, a message will appear to the user that the data has been entered incorrectly. The system will redirect the user to his profile page if the information is entered correctly.
View profile	The system will display the user (doctor, patient) after logging in correctly to the profile page to display the information that was filled out by the user (name, email, password, gender, date of birth, experience, clinic selection, a medical record number (of a doctor).
Modify Profile	The user opens the personal profile page; the system will request the user information from the database and then display it to the user. The user will click on the edit icon to edit any personal data. Then the system will allow the user to write the new information; the user then will click save edits, and the system will modify and update the personal information and save the new modified information in the database.
Join the Group	The user (the patient) logs in correctly, and from the main screen, he chooses to join a group, then a list of electronic clinics appears for him. He selects the clinic he wants to join and then is added to the clinic group for a chat.
Chatting with the doctor	It is shown to the user (the patient) from the main screen; after choosing the e-clinic and joining the selected group, the chats that he joined will appear in which information and experiences are exchanged between patients.
Insert Appointments	The user (the patient) clicks on a medical consultation, and a list of electronic clinics opens for him. He chooses the clinic, where the system shows him a list of doctors; he chooses the right doctor and then sets the date that suits him.
View Registered Appointments	First case: The system displays to the user (the patient), after booking his consultation appointment, the recorded appointments (previous, current, and future). The second case: The system (the doctor) displays the appointments registered with him for medical consultations with patients and reminds him of them by sending a notification.
Consultation of a Doctor	The system allows the user registered in the application to book a medical consultation with the doctor at any time by displaying a list of electronic clinics and selecting the desired doctor to book with. The system will store the information in the database.
Reply to a Patient	The system allows the user (the doctor) to reply to the patients who have booked an appointment for a consultation with the doctor by chatting, showing him all the chatting.
Delete / Modify the appointment	he user (doctor, patient) opens the page to view the recorded appointment; then the system displays it by clicking on the modify or delete the appointment button. Either (delete, or modify) the appointment, then the system allows the option that has been chosen. The user presses to save modifications, and the system adjusts and updates information for the appointment. The system will save the new appointment information in the database and then update the appointment.
Log-out	The system allows the user (doctor, patient), after completing the services provided in the application, to exit from the application and the ability to log in again.

Table 24: sequences diagram description

4.4 ER diagram and relation schema

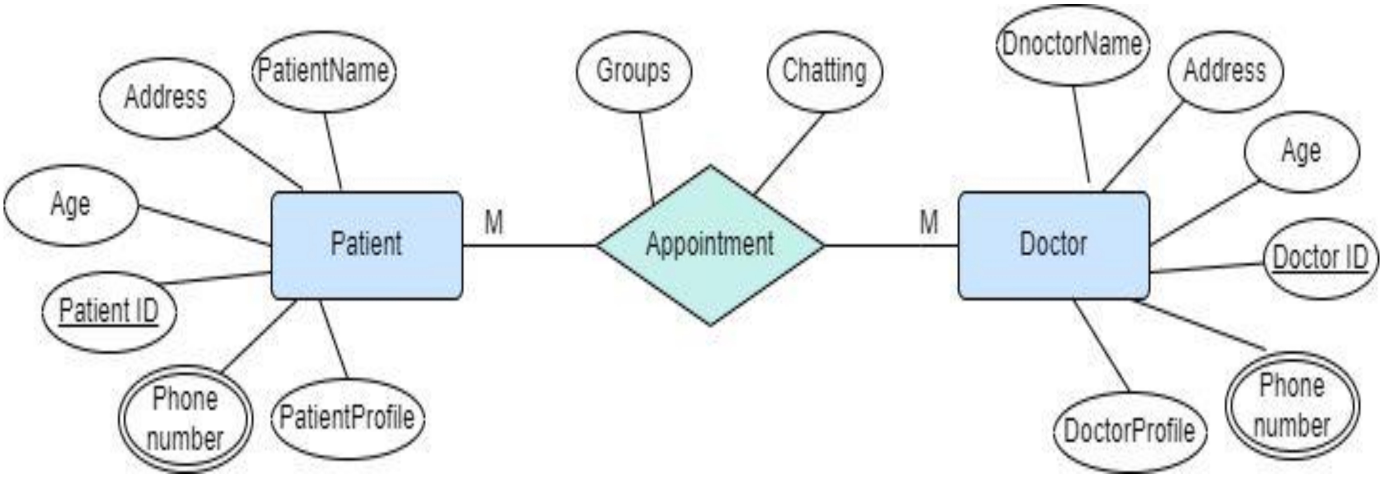
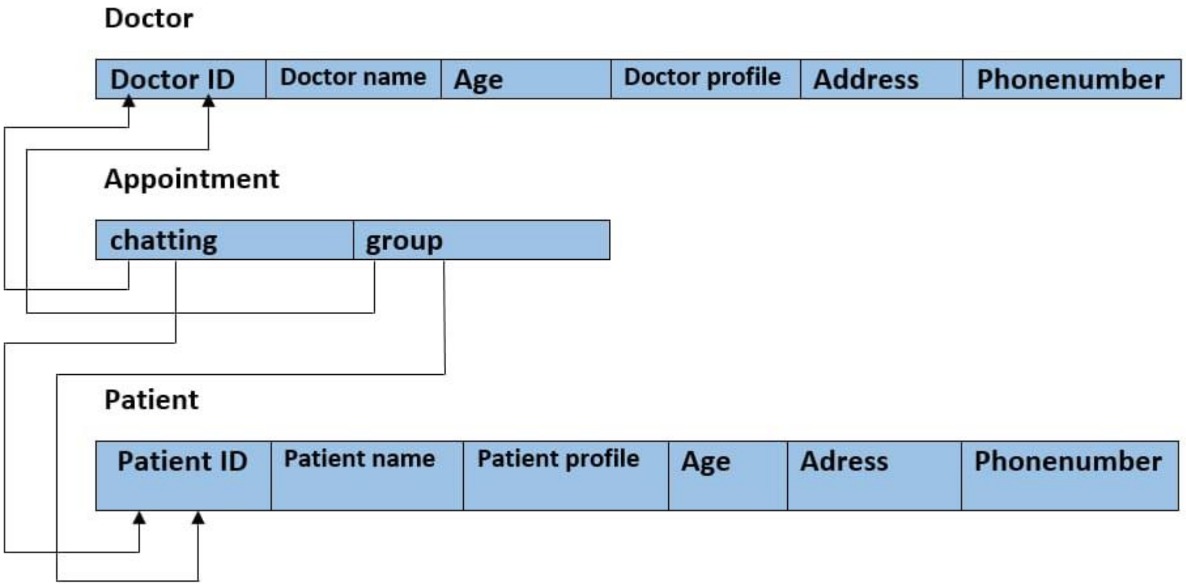


Figure 52 : ER diagram



Doctor

Doctor ID	Doctor name	Age	Doctor profile	Address	Phonenumber

Appointment

chatting	group

Patient

Patient ID	Patient name	Patient profile	Age	Adress	Phonenumber

Figure 53 : relation schema

CHAPTER 5

SYSTEM IMPLEMENTATION & VALIDATION

5.1 introduction

In this chapter, we have completed work on our project, beginning with the implementation, which includes the final form of the program interfaces, coding and testing and we will discuss the tools that we use in this phase.

5.2 Used Hardware and Software

5.2.1. Hardware Environment

We divided the project to make it easier for us to work on it, so each member worked on her laptop, and then all the work was collected on one device.

5.2.2. Software Environment

Diagrams.net : It does not need to connect to the Internet and is easy to use and save in several formats.

Edraw Max : Where the program contains a huge library of symbols, graphics, and templates, and the program contains saving graphics designed in different formats (pdf, JPG, BMP).

Figma : User interface design , Its ease of use allows multiple designers to work on a project at the same time.

Flutter: it combines all kinds of smart operating systems without the need to write different codes.

Visual studio code: provide just the tools a developer needs for a quick code-build-debug cycle.

Android studio: Offers many excellent features that enhance productivity when creating applications and has a fast and feature-rich emulator.

Firebase: provides the best back-end server, great database and analytics solution, and useful integrations with other Google products.

google Collab: Because it is free and only requires a Google account, and it does not require high connection speeds. It comes with pre-installed and ready-to-use packages, so the user does not need to set up the environment and our supervisor can see and edit our work easily.

Xcode : It is the only officially supported tool for creating and publishing apps in the Apple App Store and includes all the tools needed to create an app.

5.3 Testing Methodology & Results

Testing methodology that is used to test our project

Black box testing is a powerful technique for checking the application under test from the user's perspective. Black box testing is used to test the system against external factors responsible for software failures. This test approach

It focuses on the inputs that go into the program, and the outputs that are produced.

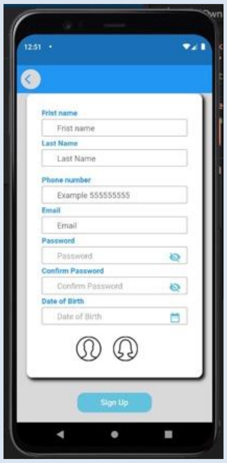
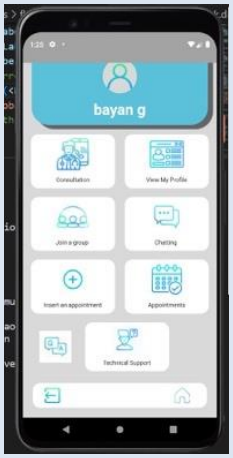
Name	**sign up**
Actor	The users as Doctor and Patient
Test Description	Register by filling in the required fields from users
Test Execution	1.Select the type of user 2.It fills in the fields required by the user. 3.The system will send a verification message to the mobile phone . 4.The user enters the verification number in the field. 5.The home page will appear
Expected Result	1-. If the user sign up the system shall be able to view his home page
Actual Result	1-. If the user sign up the system shall be able to view his home page  12:51 Frist name Frist name Last Name Last Name Phone number Example 555555555 Email Email Password Password Confirm Password Confirm Password Date of Birth Date of Birth Sign Up  bayan g Consultation View My Profile Join a group Chatting Insert an appointment Appointments Technical Support

Table 25:create account(sign up)

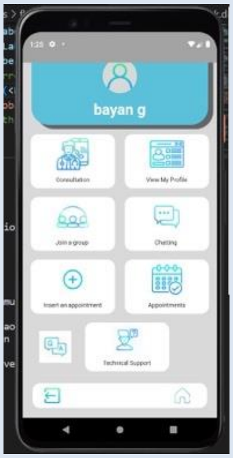
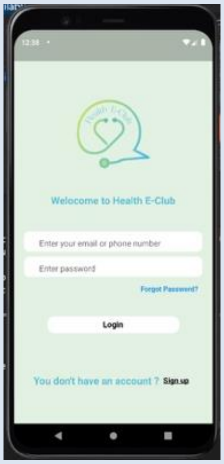
Name	Log in
Actor	Users doctor and patient.
Test Description	Login has fields should be. filled out with input by Users doctor and patient.
Test Execution	1- If the user information is correct, the system will direct it to the main page. 2- If the user's information is wrong, he will be directed to the login page 3- In case the user forgets the password, he resets it on the login page. 4- If the password is set, the user goes to the verification page by entering the previously registered email. 5- The user will receive an email message. The entrance is a link to reset the password.
Expected Result	1-. If the user login the system shall be able to view his main page
Actual Result	When the user enters the correct system, the system will allow him to enter the main page  bayan g Consultation View My Profile Join a group Chatting Insert an appointment Appointments Technical Support  Health E-Club Welcome to Health E-Club Enter your email or phone number Enter password Forgot Password? Login You don't have an account ? Sign up

Table 26:log in

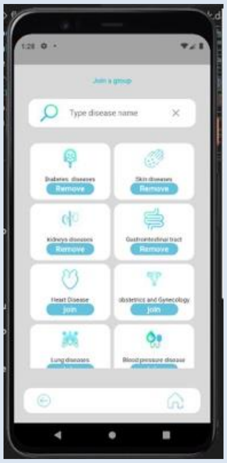
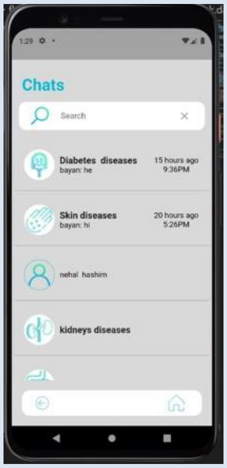
Name	**join a group**
Actor	User patient.
Test Description	The patient joins a chat group, which includes people with the same disease to share experiences.
Test Execution	1- The user chooses the electronic clinic. 2- A message appears to him to join the chat group based on the option of the electronic clinic 3- The group appears in the chat list 4- When the user wants to remove the group, a message will appear to him to remove 5- The group will be removed from the chat list
Expected Result	1- When the user wants to join a chat group, the system will allow him to choose the electronic clinic ٢-The system allows him to join a chat group
Actual Result	The system allows the user to join the chat group based on the choice of the electronic clinic and the chat will appear to him in the chat list.  1:28 Join a group Type disease name Diabetes diseases Remove Skin diseases Remove kidneys diseases Remove Gastrointestinal tract Remove Heart Disease Join obstetrics and Gynecology Join Lung diseases Blood pressure disease  1:29 Chats Search Diabetes diseases bayan: he 15 hours ago 9:36PM Skin diseases bayan: hi 20 hours ago 5:26PM nehal hashim kidneys diseases

Table 27:join group

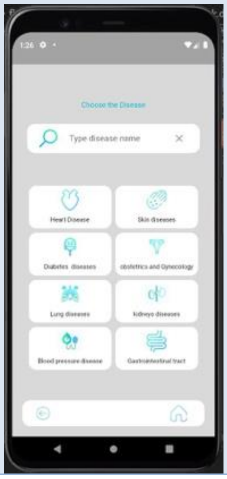
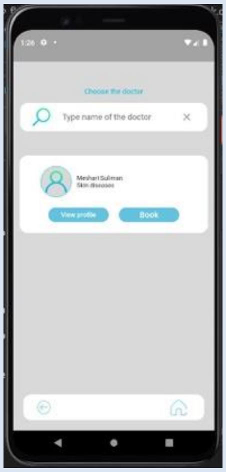
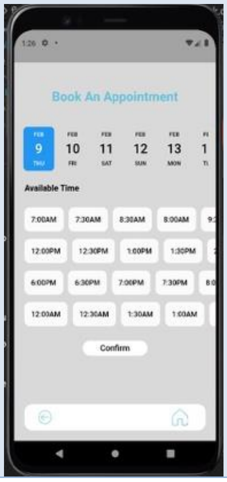
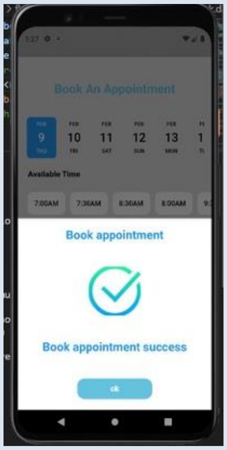
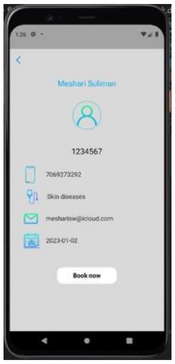
Name	**consultation**
Actor	Patient
Test Description	The patient should book an appointment for a consultation with the doctor
Test Execution	1- Choose the electronic clinic 2- search for the doctor 3- Shows the user the available appointments for the doctor 4- Show him a confirmation message Navigates to the Appointments page
Expected Result	The user chooses the electronic clinic. 2- He searches for a doctor 3- Book an appointment
Actual Result	Consultation appointment has been booked successfully  1:26 Choose the Disease Type disease name Heart Disease Skin diseases Diabetes diseases obstetrics and Gynecology Lung diseases kidneys diseases Blood pressure disease Gastrointestinal tract 1:26 Choose the doctor Type name of the doctor Meshari Suliman Skin diseases View profile Book 1:26 Book An Appointment FEB 9 THU FEB 10 FRI FEB 11 SAT FEB 12 SUN FEB 13 MON Available Time 7:00AM 7:30AM 8:30AM 8:00AM 12:00PM 12:30PM 1:00PM 1:30PM 6:00PM 6:30PM 7:00PM 7:30PM 12:00AM 12:30AM 1:30AM 1:00AM Confirm 1:27 Book An Appointment Available Time Book appointment Book appointment success ok

Table 28:consultation

5.4 Implemented software


Meshari Suliman

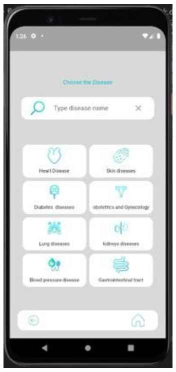
1234567

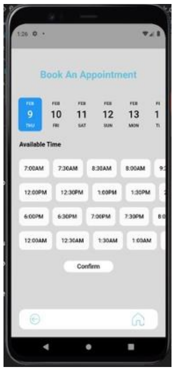
7069273292

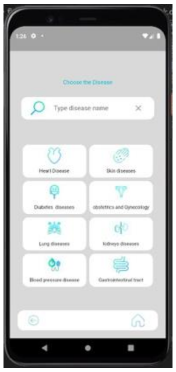
Skin diseases

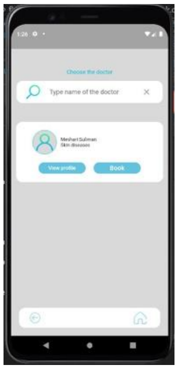
mesharisw@icloud.com

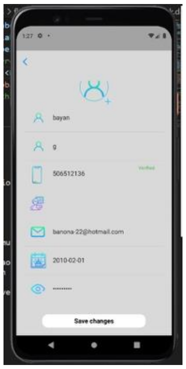
2023-01-02








Meshari Suliman
Skin diseases


bayan

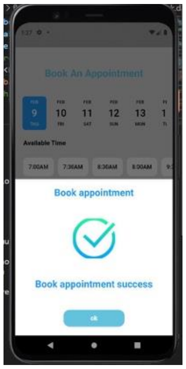
g

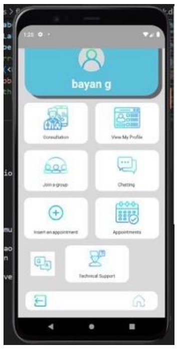
506512136

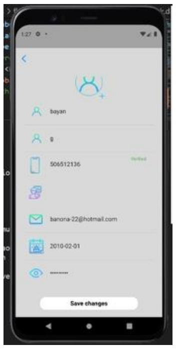
banona-22@hotmail.com

2010-02-01

****







bayan

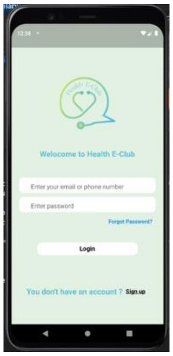
g

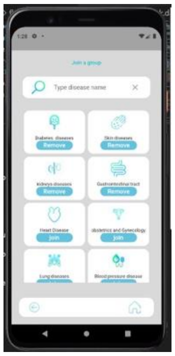
506512136 Verified

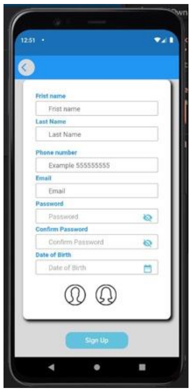
banona-22@hotmail.com

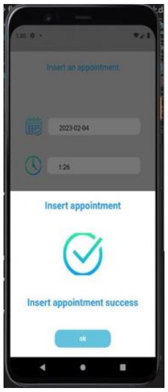
2010-02-01

****


Health E-Club
Welocome to Health E-Club
Enter your email or phone number
Enter password
Forgot Password?
Login
You don't have an account ? Sign up







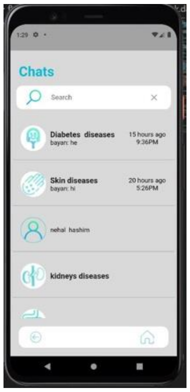
Insert an appointment

2023-02-04

1:26

Insert appointment

Insert appointment success



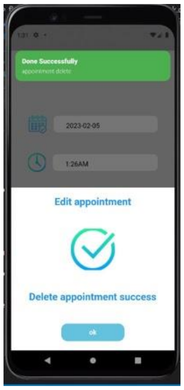
Chats

Diabetes diseases 15 hours ago 9:36PM
bayan: he

Skin diseases 20 hours ago 5:26PM
bayan: hi

nehal hashim

kidneys diseases



Done Successfully
appointment delete

2023-02-05

1:26AM

Edit appointment

Delete appointment success

CHAPTER 6

CONCLUSION AND FUTUURE WORK

6.1 Conclusion

In conclusion, the built application throughout this project helps patients adapt to the diseases they suffer. They can exchange experiences about a specific disease, organize and schedule appointments for the patient, and facilitate patient follow-up. Furthermore, they can consult a doctor at any time convenient for them and from anywhere without waiting in the hospital. It is a very handful and convivial tool that supports patients to easily and efficiently manage their diseases.

6.2 Future Work

We have some future ideas to improve our application, such as:

1- Make the application support more languages , such as Arabic.
2- Adding a feature to evaluate the course by patients.
3- Adding services to facilitate the use of the application by people of determination
4- Adding the service of attaching the patient's health file.
5- Allowing the patient to book a direct appointment with the doctor in any clinic.
6- Parents can add their children's information and book appointments through their personal accounts in the application.

6.3 Learned lessons

This project was a wonderful experience through which we learned a lot, such as learning a new programming language and understanding many problems. We gained the skill of time management and teamwork. It also helped us eliminate non-positive habits, delays in handing over work, and wasting time.

Our recommendations for any student who may view the report:

1- Try to practice a new programming language or develop yourself in a language you know previously
2- Good selection of team members with various skills.
3- The graduation project is not limited to your knowledge of technical skills but also helps you improve your social skills.
4- During the summer training period, you can create an idea for your graduation project.
5 - Do not be shy about asking your supervisor about anything difficult for you to understand. Take advantage of being a student as much as possible and learn from your mistakes.

APPENDICES

1. System Design : https://2u.pw/yHPqj
2. Presentation of graduation project (1) 2022: canva - https://2u.pw/rNSAK

Main code :

```
class loginPage extends GetView<loginController> {
  final registerController _controller = Get.put(registerController());


  @override
  Widget build(BuildContext context) {
    return Scaffold(
      backgroundColor: Color(0xFFE2F1E1),
      body: Center(child: Obx(() {
        if (_controller.omni.isTrue) {
          return Container(
            child: SingleChildScrollView(
                child: Container(
                    padding: const EdgeInsets.all(20),
                    width: double.infinity,
                    child: Column(children: [
                      SizedBox(height: 25),
                      Center(
                          child: Container(
constraints: const BoxConstraints(
  maxWidth: 400,
),
child: Column(children: [
  Image.asset(
    Assets.shared.Logo,
    fit: BoxFit.cover,
    height: MediaQuery.of(context).size.height *
        (250 / 812),
  ),
  Form(
    key: controller.formKey,
    autovalidateMode: AutovalidateMode.always,
    onChanged: () {
      Form.of(primaryFocus!.context!)!.save();
    },
    child: Column(
      children: [
        const Text(
          "Welocome to Health E-Club",
          style: TextStyle(
            color: Color(0xFF5Bc0DA),
            fontSize: 20,
            fontWeight: FontWeight.bold,
          ),
),
const SizedBox(
 height: 50,
),
Container(
 height: 40,
 decoration: BoxDecoration(
   color: Colors.white,
   borderRadius: BorderRadius.circular(10)),
 child: TextFormField(
  initialValue: controller.email ?? "",
  keyboardType: TextInputType.text,
  onSaved: (value) =>
    controller.email = value!.trim(),
  style: const TextStyle(color: Colors.black),
  decoration: const InputDecoration(
   border: InputBorder.none,
   contentPadding: EdgeInsets.only(
     top: 10,
     bottom: 10,
     right: 30,
     left: 30),
  ).copyWith(
    hintText:
      "Enter your email or phone number"),
  ),
),
const SizedBox(
  height: 10,
),
Container(
  height: 40,
  decoration: BoxDecoration(
      color: Colors.white,
      borderRadius: BorderRadius.circular(10)),
  child: TextFormField(
    keyboardType: TextInputType.text,
    initialValue: controller.password ?? "",
    obscureText: true,
    onSaved: (value) =>
        controller.password = value!.trim(),
    style: const TextStyle(color: Colors.black),
    decoration: const InputDecoration(
      border: InputBorder.none,
      contentPadding: EdgeInsets.only(
          top: 10,
          bottom: 10,
          right: 30,
          left: 30),
    ).copyWith(hintText: "Enter password"),
  ),
),
Row(
  mainAxisAlignment: MainAxisAlignment.end,
  children: [
    TextButton(
      child: Text(
        "Forgot Password?",
        style: TextStyle(
          color: Theme.of(context).primaryColor,
          fontWeight: FontWeight.bold,
          fontSize: 14,
        ),
      ),
      onPressed: () {
        Get.toNamed(Routes.ForgetPassword);
      },
    ),
  ],
),
const SizedBox(
  height: 30,
),
customButton(
  style: const TextStyle(
    color: Colors.black,
    fontWeight: FontWeight.bold,
    fontSize: 16,
  ),
  backgroundColor: ColorHelper.white,
  width: MediaQuery.of(context).size.width *
      (200 / 300),
  height: MediaQuery.of(context).size.height *
      (35 / 812),
  context,
  title: 'Login',
  onPressed: controller.loading.value
      ? null
      : () {
          if (controller.password != null ||
              controller.email != null) {
            controller.login();
          } else {
            Get.customSnackbar(
              title: "Error",
              message:
                  "please enter email or password",
              isError: true,
            );
          }
          },
  ),
  const SizedBox(
    height: 70,
  ),
  Row(
    mainAxisAlignment: MainAxisAlignment.center,
    children: [
      const Text(
        "You don't have an account ?",
        style: TextStyle(
          color: Color(0xFF5Bc0DA),
          fontSize: 20,
          fontWeight: FontWeight.bold,
        ),
      ),
      TextButton(
          onPressed: () {
            _controller.omni.value = false;
          },
          child: const Text(
            "Sign up",
            style: TextStyle(
              decoration:
                  TextDecoration.underline,
                        color: Colors.black,
                        fontSize: 15,
                        fontWeight: FontWeight.bold,
                       ),
                      ))
                   ],
                  ),
                 ],
                ),
               )
              ]),
             ))
            ]))),
       );
      } else {
       return Container(
        padding: const EdgeInsets.all(20),
        width: double.infinity,
        child: Column(
         crossAxisAlignment: CrossAxisAlignment.center,
         children: [
          SizedBox(height: 50),
          Image.asset(
           Assets.shared.Logo,
           fit: BoxFit.cover,
                    height: MediaQuery.of(context).size.height * (250 / 812),
                  ),
                  const Text(
                    "Create an account as",
                    style: TextStyle(
                      color: Color(0xFF5Bc0DA),
                      fontSize: 32,
                      fontWeight: FontWeight.w500,
                    ),
                  ),
                  const SizedBox(
                    height: 50,
                  ),
                  _controller.item(context, userType: UserType.doctor),
                  _controller.item(context, userType: UserType.Patient),
                ],
              ),
            );
          }
        })),
      );
    }
  }
  class ForgetPassword extends GetView<ForgetPassword_Controller> {
    Widget build(BuildContext context) {
```

```
return Scaffold(
  backgroundColor: const Color(0xffD9D9D9),
  appBar: AppBar(
   backgroundColor: Colors.blue,
   automaticallyImplyLeading: false,
   elevation: 0,
   leading: IconButton(
    isSelected: true,
    icon: CircleAvatar(
     radius: 30,
     backgroundColor: const Color(0xffD9D9D9),
     child: Icon(Icons.arrow_back_ios, color: Get.theme.primaryColor),
    ),
    onPressed: () {
     Get.back();
    },
   ),
  ),
  body: Obx(() {
   if (controller.loading.isTrue) {
    return Center(child: const CircularProgressIndicator());
   } else {
    return Form(
     key: controller.formKey,
     autovalidateMode: AutovalidateMode.always,
child: Column(
  children: <Widget>[
    const SizedBox(
      height: 30,
    ),
    Text('Forget Password',
        style: TextStyle(
            color: Color(0xFF5BC0DA),
            fontSize: 30,
            fontWeight: FontWeight.bold)),
    const SizedBox(
      height: 200,
    ),
    Text(
      "Mail Address Here",
      style: TextStyle(
          color: Colors.blue, fontWeight: FontWeight.bold),
    ),
    const SizedBox(
      height: 20,
    ),
    Text(
      "Enter the email address associated with your account",
      textAlign: TextAlign.center,
        style: TextStyle(
        color: Colors.grey)),
const SizedBox(
  height: 40,
),
ListTile(
  leading: Image.asset(Assets.shared.email),
  title:Container(
    height: 40,
    decoration: BoxDecoration(
        color: Colors.white,
        borderRadius: BorderRadius.circular(10)),
    child: TextFormField(
      controller: controller.ForgetPassword.value,
      keyboardType: TextInputType.text,
      style: const TextStyle(color: Colors.black),
      decoration: const InputDecoration(
        border: InputBorder.none,
        contentPadding: EdgeInsets.only(
            top: 10, bottom: 10, right: 30, left: 30),
      ).copyWith(hintText: "Enter your email"),
    ),
  ),
),
SizedBox(height: 70),
customButton(
style: const TextStyle(
  color: Colors.white,
  fontWeight: FontWeight.bold,
  fontSize: 16,
),
backgroundColor: ColorHelper.blue,
width: MediaQuery.of(context).size.width * (200 / 300),
height: MediaQuery.of(context).size.height * (35 / 812),
context,
title: 'Send',
onPressed: controller.loading.value
    ? null
    : () async {
  if (controller.ForgetPassword.value.text
      .isValidEmail()) {
    bool success =
    await controller.forgotPassword();
    if (success) {
      controller.ForgetPassword.value.text = "";
      const snackBar = SnackBar(
        backgroundColor: Colors.green,
        content: Text(
            'The link has been sent to your email'),
      );
      ScaffoldMessenger.of(context)
```

```
                            .showSnackBar(snackBar);
                      } else {
                        const snackBar = SnackBar(
                          backgroundColor: Colors.red,
                          content: Text('Email not Register'),
                        );
                        ScaffoldMessenger.of(context)
                            .showSnackBar(snackBar);
                      }
                    } else {
                      const snackBar = SnackBar(
                        backgroundColor: Colors.red,
                        content: Text('The email is wrong'),
                      );
                      ScaffoldMessenger.of(context)
                          .showSnackBar(snackBar);
                    }
                  },
                )
              ],
            ),
          );
        }
      }));
}
```

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7. Diagrams.net : https://www.diagrams.net
   Reason for use: The program is easy to use and has many good features .

8. Figma : https://www.figma.com
   Reason for use : Use the program to design interfaces and ease of sharing and teamwork .

9. Edraw Max : https://2u.pw/4IWpJ
   Reason for use : Integrated diagramming software that contains templates and various Organizational charts and exports drawings to a variety of familiar file formats.