Health Tracker Appointment Manager

Zainab Mohammed Al-zubaidi and Shaima Lafi Al-zubaidi

October 25, 2024

1 Task Tabl

NAME	TASK TABLE
Shaima	Purpose of the program
Shaima	Why does this program exist
Zainab	Our App Survey Results
Shaima	Apple Health vs. Health Tracker Appointment Manager
Shaima	Functional Requirements
Shaima	Non-Functional Requirements
Zainab	Data Models
Zainab	Class Diagram
Zainab	User Case:
Shaima	HEALTH TRACKER APPOINTMENT MANAGER
Zainab	About the field
Zainab	Possible Structure of Health Tracker Appointment Manager
Zainab	Some of the use cases for Health Tracker Appointment Manager with graph support:
Shaima	Explanation of the tasks we did to develop the Health Tracker Appointment Manager application
SHAIMA	THE STRUCTURE OF THE SEHHATY SYSTEM IS SIMILAR TO OUR PROGRAM:
ALL OF US	LATEX
ZAINAB	**REFERENCES**

Figure 1:

Contents

1 Task Table 1

2 Introduction 3

2.1 Purpose of the program: 3

2.2 Why does this program exist? 4

2.3 Problems solved by the program: 4

2.4 Our App Survey Results: 5

2.5 Apple Health vs. Health Tracker Appointment Manager 9

2.6 Functional Requirements 9

2.7 Non-Functional Requirements 10

2.8 Data Models: 11

2.9 Class Diagram : 12

2.10 User Case: 14

2.11 HEALTH TRACKER APPOINTMENT MANAGER: 15

2.12 Sehhaty app interfaces similar to our app: 18

2.13 About the field: 21

2.14 Possible Structure of Health Tracker Appointment Manager: . . 21

2.15 Some of the use cases for Health Tracker Appointment Manager with graph support: 22

2.16 Explanation of the tasks we did to develop the Health Tracker Appointment Manager application: 23

2.17 The structure of the sehhaty system is similar to our program: . 23

2.18 References 29

2 Introduction

The Health Tracker Appointment Manager app is a digital tool designed to help users track their health and manage their medical appointments in an organized and efficient way. The app combines two key features: health monitoring and appointment management, allowing users to stay up-to-date on their health and medical procedures

2.1 Purpose of the program:

The main purpose of (Medical Appointments and Personal Health Management Application) is to help individuals organize their healthy lives in an effective and integrated manner. The application aims to facilitate the follow-up of medical appointments, taking medications regularly, and maintaining comprehensive health records that can be easily accessed. The program seeks to improve the quality of life of users by promoting healthy and preventive habits.

2.2 Why does this program exist?

This application comes in response to the challenges faced by individuals in organizing their personal and family health in their daily lives, especially with the increasing reliance on smart devices. With the increasing awareness of the importance of preventive health care and periodic follow-up, the need for an application that facilitates the management of health aspects has become essential. Moreover, people who deal with chronic diseases or need to take medications regularly or even families who need to organize their health appointments will find in this application a tool that helps them organize their healthy lives easily.

2.3 Problems solved by the program:

1. Forgetting medical appointments:

   Many people forget their medical appointments or miss doctor visits. The application provides organized reminder alerts to help users be present on time.

2. Forgetting to take medications:

   Forgetting to take medications on time is a common problem, especially for patients who need to take daily or more doses. The app sends daily or scheduled notifications to remind the user to take medications on time.

3. Difficulty managing health records:

It is sometimes difficult for individuals to keep track of all medical tests, analyses, and treatment history. The app provides a personal database for each user to save all health records.

4. Reminders for checkups:

   Users may forget to do routine preventive checkups (such as blood pressure or sugar checks). The app helps remind them of these important checkups at their appropriate times.

5. Family health management:

   In large families, it is difficult to keep track of doctors' appointments and medications for each individual. The app allows adding family members and organizing their appointments comprehensively.

6. Searching for the right doctors:

   The app provides the ability to search for specialized doctors based on location, making it easier to find the right healthcare placeins ...

2.4 Our App Survey Results:

placeins Results: float

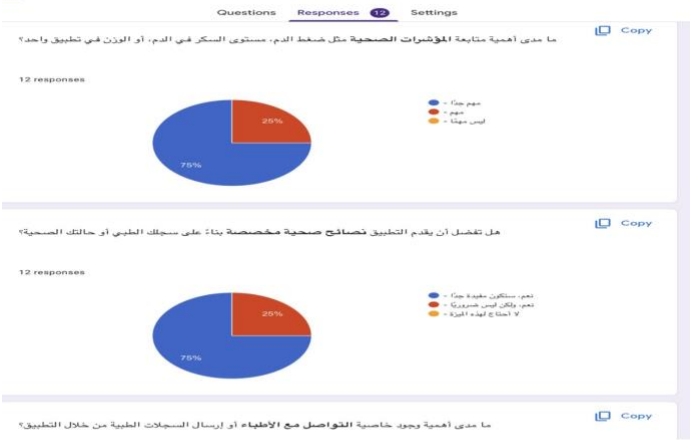


Figure 2:

Figure 3: Figure 2and Figure 3 - Most users seem to think that the application design is easy to use and has useful features. - The evaluation of the application registration process is very positive, indicating a good user experience.

Figure 4:

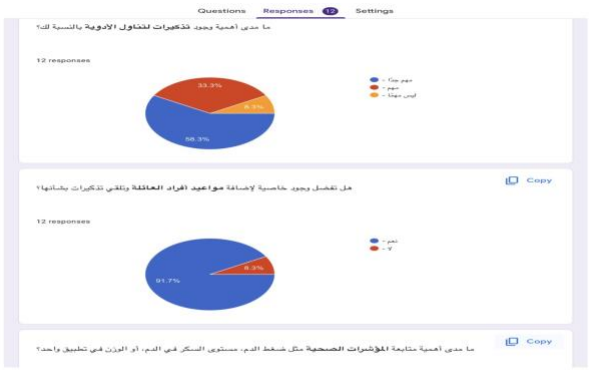


Figure 5: Figure 4 and Figure 5- Survey: It shows positive opinions about the application, as most users think that the design is easy to use. - There is a strong desire to improve the current service, and all participants would like to obtain more information.

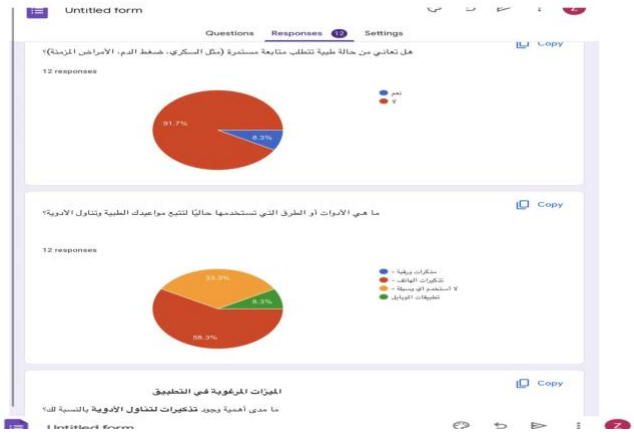


Figure 6:

Figure 7: Figure 6 and Figure 7 :- General satisfaction: Most participants are satisfied with the service, but there is a desire to improve it. - Usage: The application is used frequently, which reflects the importance of the service to users. - Suggestions: The presence of various suggestions indicates users' interest in continuous development.

2.5 Apple Health vs. Health Tracker Appointment Manager

1. Health Tracking: - Apple Health: - Collects data from a wide range ofdevices (such as Apple Watch) and other apps to provide a comprehensive picture of your health. - Includes step tracking, heart rate, sleep, physical activity, nutrition, and more. - Has an organized interface to display data in a comprehensive and easy way. - Supports integration with third-party apps.

   Health Tracker Appointment Manager: - Focuses more on tracking specific health data as needed. For example: medications, doctor visits, and managing chronic health conditions. - It may not have the same level of integration with smart devices, but it focuses on appointment reminders and treatment management.

2. Medical Appointment Management: - Apple Health: - It is not specializedin managing medical appointments. You can add some health information manually, but it does not provide an integrated mechanism for managing appointments or reminders. - Health Tracker Appointment Manager: - Designed specifically for managing medical appointments, sending reminders, and providing alerts about medications or periodic checkups. Provides options to store information about doctors and hospitals and link them to appointments.

3. Ease of use: - Apple Health: - Suitable for users who want a comprehensive view of their health status and deal with Apple devices. - Provides advanced graphics and details but may be complex for some. - Health Tracker

Appointment Manager: - Simpler to use, with a focus on providing accurate reminders about health appointments and treatment management

2.6 Functional Requirements

1. User Registration :
   1.1. The system shall allow users to create a new account using an emailaddress and a password.
   1.2. Registered users shall be able to log in using their credentials (emailand password).
   1.3. The system shall provide a password recovery option in case the userforgets their password.
2. Health Tracking :
   2.1. The system shall allow users to enter health data such as weight,blood pressure, and blood sugar levels.
   2.2. The system shall allow users to update previously entered health data.
   2.3. The system shall display health data in graphical formats to make iteasier to understand.
   2.4. The system shall allow users to view historical health data over aspecified time period (e.g., daily, weekly, monthly).
3. Appointment Management :
   3.1. The system shall allow users to add new appointments with detailssuch as doctor's name, specialty, date, and time.
   3.2. The system shall allow users to edit existing appointments.
   3.3. The system shall allow users to delete previously added appointments.
   3.4. The system shall send automatic reminders to users for upcomingappointments.
4. Medical History :
   4.1. The system shall allow users to document their medical visits, including diagnoses, prescribed medications, and treatment details.
   4.2. The system shall provide users with the ability to view their medicalrecords in a well-organized format.
5. Personal Settings :
   5.1. The system shall allow users to customize notification preferencesaccording to their needs (e.g., daily reminders, appointment alerts).

5.2. The system shall allow users to modify privacy settings, includingcontrolling who can view their health data.

6. Data Analysis :

6.1. The system shall allow users to generate analytical reports summarizing their health data (e.g., reports on blood sugar or blood pressure over a specified period).

6.2. The system shall allow users to generate reports on past appointments, including appointment dates and recurring visits.

2.7 Non-Functional Requirements

1. Performance

1.1. The system shall respond to user interactions within 2 seconds for 90

1.2. The system shall handle up to 1000 simultaneous users without noticeable performance degradation.

2. Security : 2.1. The system shall use HTTPS encryption for all data transmitted between the user and the server.

2.2. The system shall implement secure authentication mechanisms, suchas multi-factor authentication, to protect user accounts.

2.3. All personal data shall be stored securely and comply with industrysecurity standards, such as encryption at rest.

3. Usability:

3.1. The system shall have an intuitive and user-friendly interface, ensuring ease of use for users with varying levels of technical expertise.

3.2. The interface shall be responsive and adapt to different screen sizesand devices, including mobile phones, tablets, and desktops.

3.3. The system shall follow best practices in accessibility to ensure thatusers with disabilities can easily use the system.

4. Compatibility:

4.1. The system shall be compatible with the latest versions of major webbrowsers, including Google Chrome, Mozilla Firefox, and Safari.

4.2. The system shall be fully functional on both iOS and Android operating systems, providing a seamless experience across platforms.

5. Scalability:

5.1. The system shall be designed to scale horizontally to accommodatean increasing number of users without performance degradation.

5.2. The system architecture shall support scaling up the database andbackend services to handle growing data volumes.

6. Maintenance:

6.1. The system shall be easy to update, with minimal downtime duringscheduled maintenance.

6.2. Error handling mechanisms shall be in place to log and track systemfailures, allowing for prompt troubleshooting and resolution.

6.3. The system shall be built with modular code to facilitate easy updatesand the addition of new features.

2.8 Data Models:

1. User:

- Basic Information:
- UserID: User ID (distinctive number)
- FullName: Full Name
- Email: Email
- Password: Password (encrypted)
- PhoneNumber: Phone Number
- Age: Age
- Gender: Sex
- Weight: Weight
- Height: Height

2. Appointment:

- Basic Information:
- AppointmentID: Appointment ID (distinctive number)
- UserID: User ID
- DoctorName: Doctor’s Name
- ClinicLocation: Clinic Location
- Date: Appointment Date
- Time: Appointment Time
- Notes: Additional Notes (e.g. Symptoms, Instructions)

3. Health Reports:

- Basic Information:

- ReportID: Report ID
- UserID: User ID
- ReportDate: Report Date
- HealthMetrics: Health Metrics (Blood Pressure, Heart Rate, Blood Sugar, etc.)
  - Notes: Medical Notes (From Doctor or User)

4. Reminders: - Basic Information:
   - ReminderID: Reminder ID
   - UserID: User ID
   - Title: Reminder Title
   - Description: Reminder Description
   - ReminderDateTime: Reminder Date and Time
   - RepeatFrequency: Reminder Frequency (Daily, Weekly, Monthly

2.9 Class Diagram :

1. User
   - Attributes:
   - userID: String
   - name: String
   - email: String
   - password: String
   - dateOfBirth: Date
   - gender: String
   - weight: Float
   - height: Float
   - Operations (Methods):
   - login()
   - logout() - updateProfile()
2. HealthTracker:
   - properties:
   - trackerID: String
   - userID: String (link to User)
   - date: Date

- steps: Int
- heartRate: Float
- sleepHours: Float
- caloriesBurned: Float - operations:
- logActivity ()
- getHealthData() - updateHealthData()

3. Appointment:
   - Properties:
   - appointmentID: String
   - userID: String (Link to User)
   - doctorName: String
   - appointmentDate: Date
   - appointmentTime: Time
   - notes: String - Operations:
   - scheduleAppointment()
   - updateAppointment ()
   - cancelAppointment()
   - getAppointmentDetails()
4. Notification:
   Properties:
   - notificationID: String
   - userID: String (Link to User)
   - notificationMessage: String
   - date: Date
   - Operations:
   - sendNotification ()
   - markAsRead()
5. Reminder:
   - Properties:
   - reminderID: String
   - userID: String (Link to User)

- reminderMessage: String

- reminderDate: Date - Operations:

- scheduleReminder()

- updateReminder()

- cancelReminder()

2.10 User Case:

1. Create a New Account:

   - Objective: Enable health tracking and appointment management. - Steps:

   1. Select ”Create a new account”.
   2. Enter personal information.
   3. Verify data.
   4. Store data.
   5. Display success message.
   6. Automatic login. - Alternative: Display error message in case of incomplete or incorrect data.

2. Log In:

   - Objective: Access appointments and health reports. - Steps:

   1. Select ”Log in”.
   2. Enter email and password.
   3. Verify login data.
   4. Direct user to home screen.
   5. View appointments and reports.

   - Alternative: Display error message in case of incorrect login data.

3. Add a New Medical Appointment:

   - Objective: Remind user of upcoming appointments.

   - Steps:

   1. Select ”Add new appointment”.
   2. Enter appointment details.
   3. Save appointment.
   4. Store data and send reminder.
   5. Display success message. - Alternative: Display message for missingdata.

4. Track Health Data:

   - Objective: Track health indicators such as blood pressure and heart rate.

   - Step:

   1. Select ”Enter health data”.
   2. Enter health indicators.
   3. Save data.
   4. Store data and view graph.

   - Alternative: Display error message in case of incomplete or incorrect data.

2.11 HEALTH TRACKER APPOINTMENT MANAGER:

Timeline:

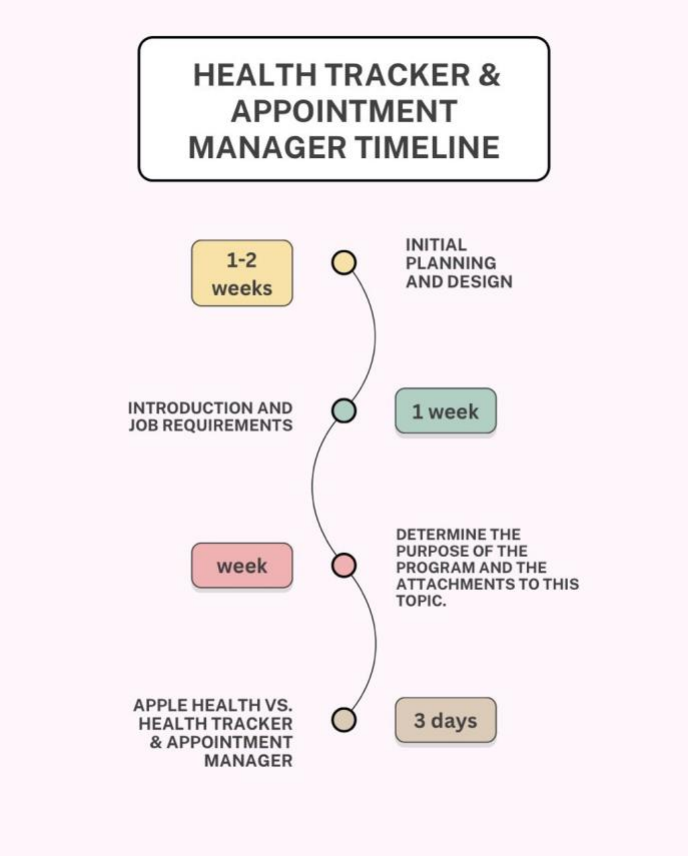


Figure 8:


HEALTH TRACKER & APPOINTMENT MANAGER TIMELINE
2 days
REVIEW WRITING TECHNIQUES
DESIGN AND SYSTEM STRUCTURES
Week
2 days
CONCLUSION AND SUMMARIES
REFERENCES AND INDEX
day

Figure 9:

2.12 Sehhaty app interfaces similar to our app:

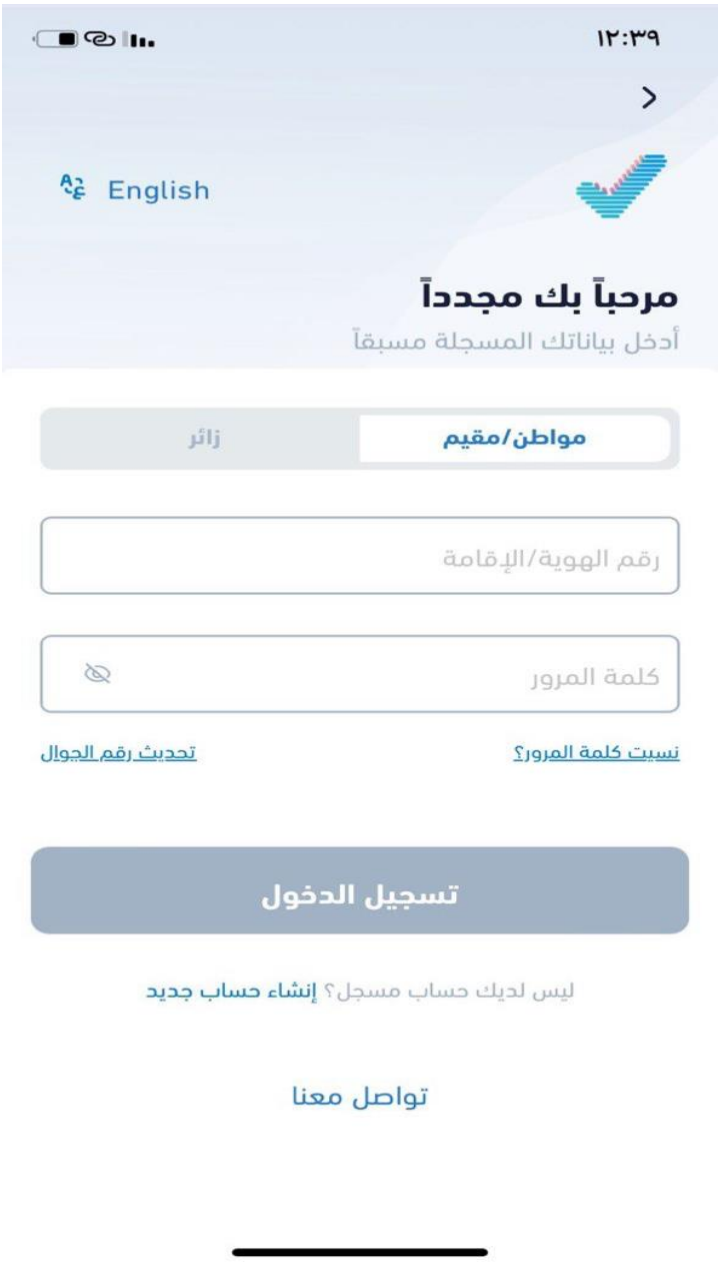
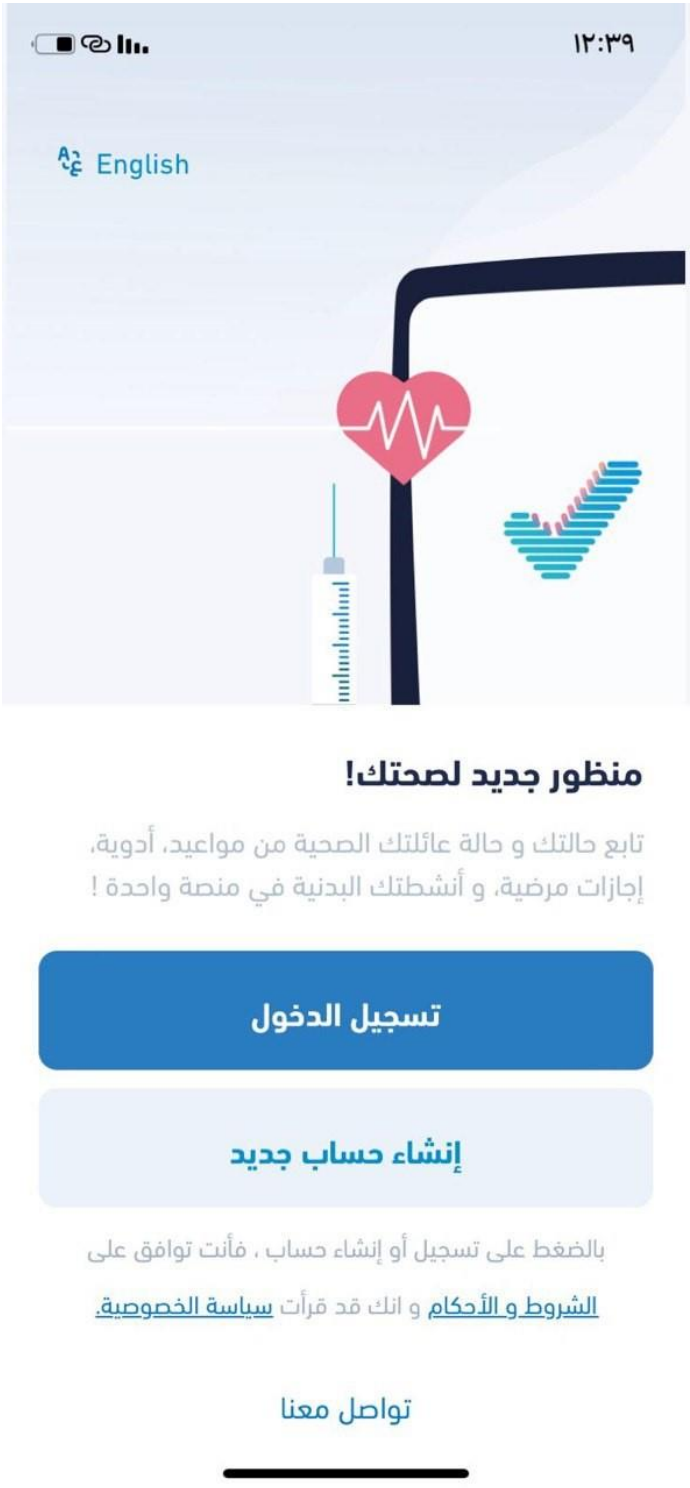


Figure 10:19


١٢:٣٩
English
منظور جديد لصحتك!
تابع حالتك و حالة عائلتك الصحية من مواعيد، أدوية،
إجازات مرضية، و أنشطتك البدنية في منصة واحدة !
تسجيل الدخول
إنشاء حساب جديد
بالضغط على تسجيل أو إنشاء حساب ، فأنت توافق على
الشروط و الأحكام و انك قد قرأت سياسة الخصوصية.
تواصل معنا

2.13 About the field:

Personal health management is a rapidly evolving field in the era of modern technology, as monitoring health and managing medical appointments has become very important in light of the daily busyness, as individuals seek to achieve a better balance between their personal lives and their health. Health applications facilitate access to information and provide useful tools to monitor health status, which helps users make informed decisions about their health. In this context, the Health Tracker Appointment Manager program stands out as an effective tool to support individuals in managing their health and medical appointments efficiently.

2.14 Possible Structure of Health Tracker Appointment Manager:

1. User Interface
   - Simple and user-friendly design.
   - User customization options.
2. Health Tracking• Add health data:
   - Weight.
   - Blood pressure.
   - Sugar levels.
   - Any other metrics.
   - Analysis Graph:
   - Display data in graphs.
3. Appointment Management
   - Appointment Scheduling:
   - Add new appointments.
   - Edit or delete appointments.
   - Reminders:
   - Send notifications before appointments.
4. Medical History
   - Comprehensive Health Record:
   - Details of medical visits.
   - Prescribed medications.
   - Family medical history.

5. Notes and Reports• Add notes:
   - Record symptoms or health changes.
   - Generate reports:
   - Print or share data with healthcare providers.
6. App Settings
   - Alert customization options.
   - Security and privacy settings.
7. User Support
   - FAQs.
   - Contact information for technical support.

2.15 Some of the use cases for Health Tracker Appointment Manager with graph support:

1. Recording health data• Case description: The user enters health data such as weight and blood pressure. • Chart:
   - Line graph showing weight changes over time.
2. Appointment management
   - Case description: The user schedules an appointment with a doctor.
   - Chart: • Appointment schedule showing upcoming appointments with their dates and times.
3. Viewing medical history• Case description: The user reviews records of previous medical visits. • Chart:
   - Pie chart showing the percentage of different diagnoses recorded.
4. Medication tracking
   - Case description: The user records the prescribed medications.
   - Chart:
   - Bar chart showing the number of medications prescribed by date.
5. Health data analysis• Case description: The user analyzes health data over a specific period of time.

- Chart: • Mixed graph showing the relationship between blood pressure and weight over time.

6. Notification Settings• Status Description: User customizes alert settings for appointments and health recordings.
   - Chart:
   - A vertical chart that shows user preferences (e.g. daily, weekly reminders).

   Summary We can use these charts to improve users' understanding of their health data, and enhance their experience with the app. Charts can also be integrated into the app interface to provide visual and easy-to-understand information.

2.16 Explanation of the tasks we did to develop the Health Tracker Appointment Manager application:

In the first phase, analysis: The purpose of the program and what problem we seek to solve and gathering requirements: We communicated with the target users to understand their needs and expectations from the application, which helped in identifying the basic features. We also studied competing applications, such as Apple Health, to identify gaps and opportunities, which helped in improving the idea of the application.

In the design phase, we brought the user interface (UI): We brought a user interface similar to our application and several interfaces that help in clarifying the application and the required functions, and database design: I identified the necessary data models (such as users, appointments, health records) and planned how to store and retrieve them effectively. We also included a possible structure and TIMELINE

Through these stages, we contributed to the development of the Health Tracker Appointment Manager application, which aims to improve the management of personal health and medical appointments, making it easier for users to maintain their health.

2.17 The structure of the sehhaty system is similar to our program:

Figure 12:

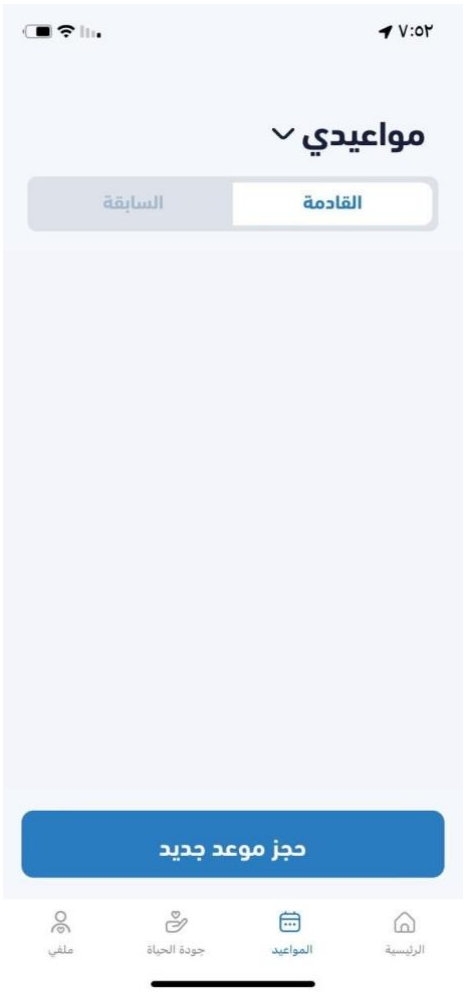

٧:٥٢
مواعيدي
القادمة
السابقة
حجز موعد جديد
الرئيسية
المواعيد
جودة الحياة
ملفي

Figure 13:


٧:٥٣
ملفي
الملف الصحي
فريقي الطبي
طبيب لكل أسرة
السجل الصحي
الأدوية
صحة المرأة
الفحوصات المخبرية
الوصفات
الزيارات
العمليات والاجراءات
التطعيمات
الأجهزة الطبية
ملفي
جودة الحياة
المواعيد
الرئيسية

Figure 14:


٧:٥٢
مرحباً، شيماء
ابحث عن أي شيء مثال: فحص
طبيب لكل أسرة
فريقي الطبي
عرض الفريق
JUNAID AHMAD SIDDIQUI AFTAB AHMAD
طبيب (مشرف الفريق) طب الأسرة
بدء المحادثة
حجز موعد
المواعيد القادمة
عرض المزيد
المواعيد
لم تقم بحجز أي موعد بعد، قم بحجز موعد حضوري أو افتراضي مع الطبيب المناسب.
حجز موعد جديد
الرئيسية
المواعيد
جودة الحياة
ملفي

Figure 15:


٧:٥٢
جودة الحياة
المحتوى التثقيفي
عرض الكل
التهاب الجيوب الأنفية
زيادة الوزن
نشاطك اليومي
عرض المزيد
1457 خطوة
6543 للوصول لهدفك
تحديث الهدف
الوقت
0 دقيقة
المسافة
0 متر
السعرات
0 سعرة
حملة امش 30
شارك في تحدي المشي
الرئيسية
المواعيد
جودة الحياة
ملفي

Figure 16:

2.18 References

1. Research and Articles: Review research and articles related to health management and health applications.

   - Example: [Article about health applications and medical appointment management](https://www.example.com).

2. Technical References:

   - Apple Health: A comparative study of the Apple Health application and its use in tracking health indicators.

   - Application Programming Interfaces (APIs): Document any programming interfaces used, such as APIs for health services.

3. Consultations:

   - Consulting health or technology specialists during application development.

4. Frameworks and Libraries:

   - List and libraries used to develop the application (such as React Native, or Swift).

5. Academic books and reference.

6. Existing applications apple health