DEVELOPMENT OF AN ANDROID APPLICATION SAVE LIVES

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled "**Save Lives**", submitted by Adil Mahmud and Aysha Akter Anjuman to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 23-01-23
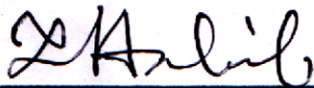
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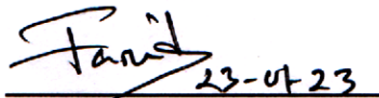Faculty of Science & Information Technology
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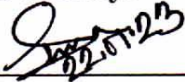United International University

DECLARATION

This is to declare that this project titled "Save Lives" has been done under the supervision and guidance of **Taslima Ferdaus Shuva, Assistant Professor, Department Of CSE,** Daffodil International University. This project is submitted for the requirements of Bachelor Science in the department Of Computer Science Engineering. This is also declare that the outcome result of this project has not submitted in somewhere else, not any other institute for the award of any kind of degree and diploma.

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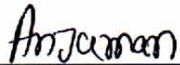
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ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project/internship successfully.

I would like to express my immense gratitude to our project supervisor **Taslima Ferdaus Shuva,** Assistant Professor, department of CSE, Daffodil International University for her guidance and immense support in completing of our project. Without her Proper guidance, immense contribution Impactful suggestions and her sincere effort throughout the project, This project wouldn't have been completed so well.

I would also like to grateful to our co-supervisor **Mohammad Jahangir Alam,** Senior Lecturer, department of CSE, Daffodil International University for his encouragement and guidance to complete out this project.

At lastly I'm indebted to the "Daffodil International University" and the department of Computer Science And Engineering without Which this project might not able to be an achievement.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

The project "Save Lives" is a healthcare application system which approach a service care system from doctors to patients. It's an android based application where patients can communicated with the doctors virtually where they have access to choose their doctors and book an appointment with the doctor for treatment. Doctor can also get connect with them and could see who has requested for an appointment. This application will also help people to search the nearest available doctor, medical healthcare center in their emergency purpose through GPS connection. This system also included more details on how to communicate with doctors. when someone needs medical services on an urgent basis our app is able to help people for one who thinks it's hard to find suitable hospitals, qualified doctor at their nearby places. Patient can use this app also as their medicine reminder or medicine checker as they can write here medicines what will doctor suggest or provided them. Basically "Save Lives" is a healthcare delivery system Android app that helps users find available hospitals in their vicinity and connect with doctors virtually through the app. The app also allows patients to book appointments with doctors. The main aim of the app is to make healthcare delivery more efficient and accessible. To achieve this goal, the app has been designed with a user-friendly interface and includes several key features such as a hospital locator, virtual consultation with doctors, and appointment booking. The app has been thoroughly tested and evaluated to ensure its quality and reliability. Overall, "Save Lives" is a valuable resource for anyone in need of healthcare services.

TABLE OF CONTENTS

CONTENTS	PAGE

CHAPTER

       3.6.1 Functional Requirement
       3.6.2 Non Functional Requirement
       3.6.3 Software Requirements

LIST OF FIGURES

LIST OF TABLES

TABLES	PAGE NO
Table 1: Software Test Plan	25
Table 2: Test Report & Result	26

CHAPTER 1

INTRODUCTION

1.1 Introduction

Now days internet facilities are continuously used for communication either it was virtually or physically. with the emerging purpose of healthcare service, hospital the virtual medical support android system provides transparency between the doctors and patients. The moto behind developing an android based medical support system is engage doctors, patients and telemedicine support system. In our project we proposed a service application system which is help individuals to get medical service through online by using our android app.

The aim of this project is solving difficulties in communication, updating available nearby healthcare services. whenever a patient become ill and he/she cannot able to go and get a checkup from the doctor they need to book an appointment with the doctors physically first. In this case they can use our app with some of our basic required log in information. after log in or sign up they have the access to check our registered doctor with their respective profile and can choose from which doctor they want to get treated and book an appointment to the doctors.

After choosing they can communicate with the doctor. The doctor would visit home and checkup the patient or the patient can consulted by the doctor through going at the hospital. Patient can write their health condition or problem through SMS which is implemented in the system. The fact is that the system is much more efficient to save times.

1.2 Motivation

Our project is android based application to developed a healthcare service for patients and doctors. people will able to get communicate to the doctors for any kind of medical problem using of this app. Also able find the nearest available and communicate with the doctor through online system. The aim of this project is to generate a system that will automate the process of delivering medical service from doctors to their patient in emergency condition.

Our proposed system can help those people who are new to an unknown area. So that they can easily find the nearest doctor service by looked up in this app and can communicate with the Doctor at any time in their located area. In future we will able to add more features to upgrading our service facilities so that people can get medical services fully virtually and the do not need to make physical appearance for treatment while they are in no condition of able to go hospital for treatment.

1.3 Objective

We know that, In today's technology-dependent era, people are becoming mechanized day by day. people like to do all the work from simply at home or through mobile. Through by using mobile they want to complete all their necessary task instantly which are difficult to perform physically. For example, you are sick ,you need to visit a doctor but because of the illness sometimes you are unable to do so or you are in emergency situation you need to visit the doctor instant but it is time consuming and you have no sufficient time what will you going to do in that time?

Our app is made for ready to help people in this situation. This will help people to connect to the doctor online through mobile or any android device, able to type patient heath condition, find out suitable doctors, booked an appointment with the doctor. Our aim of object is to help those people who need emergency medical service so that they can be at home and able to get doctor facilities in need emerging.

1.4 Expected Outcome

The goal of the "Save Lives" Android app project is to create a practical and user-friendly software that makes it easy for people to receive healthcare services.

The project may attempt to attain certain results, such as:

- Access to healthcare should be improved as a result of the app, especially in emergency situations, when users may struggle to locate and contact medical facilities.
- The app might be convenient appointment scheduling to make it simple for patients to make doctor appointments, eliminating the need for them to physically visit the hospital.
- The app is user-friendly interface & have an intuitive user interface that is simple to use and comprehend, especially for individuals with little experience with technology.
- This gives user provides proper visualization so that they can get the best service in their emergencies.

CHAPTER 2

BACKGROUND

2.1 Introduction

In this chapter we discussed a literature review of "Save Lives"(Health care delivery system android app).Benefits of using such a app, it's features, the intensity of using such a app at current time are explained. This chapter also gives a discussion about past works, programming features and programming language that are used in this project in order to developed the app.

2.2 Related Works

The use of mobile healthcare (m-Health) apps to support self-management of medical problems and increase access to healthcare has grown in popularity in recent years. Due to the wide availability of Android smartphones, Android-based m-Health apps in particular have the opportunity to reach a sizable and varied user base. Several main components were discovered after a review of the literature on Android-based healthcare delivery systems. First, especially for disadvantaged groups, these apps may enhance access to healthcare. For instance, healthcare apps can give patients remote access to medical professionals, reducing the need for in-person appointments. Second, healthcare systems for App devices can help in the self-management of medical problems by giving users the ability to maintain and regulate their own health, such as by keeping records of their symptoms. There has been some past relative work on this kind of health care delivery service system. Automated health care system is most demanding concept project now days. There have been many work to build up this concept some are greatly achieved some might not able to get success or still working. our application in our project is mainly a delivering healthcare service from doctor to patient with some helpful features.

HER (Heath Electronic Report) which related safety concerns about health care system. The system was analyzed by valuable data frame work. Which was approach from a number of 100 closed 11 investigations,344 reported incidents between August 2009 and May 2013 [1]. A systemic review that address the study of mobile apps for health emergencies. this paper also presented the available mobile apps the android and IOS operating system to identify common threads and gaps to support new challenging relevant research directions [2]. There have been proposed a medical service system by development a mobile app to help people to find near blood blank for the person who need blood for medical emergency purpose. their aim is to provide a better service of every person who is in search of blood. They collect all the data base from blood bank and fetch the given data as per request from recipient by using Raspberry pi 2 and GSM modem SIM900A [3].

There is a study in order to know the differences between electronic and manual healthcare delivery system of uses. The data was collected from the national health care delivery system of unite states. The result of the survey was manual record procedures and electronic record system varied impactful result from year to year [4]. From the study survey of an effective supportive system that provides emergency medical services with computers for the evaluation of a system installed in emergency vehicles to improve prehospital medical care and shorten service time. The main objective of the system is promoted an emergency transport system for sick patients and provides valuable epidemiological data [5]. EHR (electronic health record) deployments across the globe and reported on findings, including advantages and disadvantages of EHR implementation. Their data was gathered via a systematic literature review, which was carried out from publications in peer-reviewed scholarly journals and analysis of prior empirical studies on Health Electronic Record implementations [6]. There is also implemented a system to determine the relationship between the severity of the mental illness, the impairment of functional level, and the use of mental healthcare services among patients treated in outpatient clinics. Their data was gathered by examining various electronic health records. They found that patients in mental nursing homes and foster families tended to be older compared to those who resided in their own homes with ambulant housing help or in staffed apartments. The majority of the patients were single, and there were no statistically relevant variations between the various dwelling types in these fundamental factors [7].

2.3 Comparative Studies

There are a number of systems in use that are comparable to our proposed android-based healthcare delivery system. These systems link patients with healthcare providers, like doctors and hospitals, in their immediate areas using mobile applications or websites.

These systems, as examples, including **Zocdoc** which is a medical service that enables users to look for and schedule appointments with physicians and other healthcare professionals nearby. Both a website and a mobile app are used to access the service. Using a mobile app or website, patients can interact with doctors and other healthcare professionals through video consultations through the telemedicine service known as **Doctor on Demand**. **Practo** in which patients may look for and schedule appointments with physicians and other healthcare professionals in their neighborhood. With the help of a smartphone app or website, patients can interact with doctors and other healthcare professionals through video consultations utilizing the telemedicine service **HealthTap. Practice Fusion** is a platform for the delivery of healthcare services created exclusively for medical practices. It offers a range of patient management capabilities, including as appointment scheduling, electronic health records, and prescription management. **Teladoc** is a platform for healthcare delivery that connects patients with physicians and other healthcare professionals for phone or video consultations. Patients who reside in rural areas or who find it challenging to physically travel to a clinician will find it very helpful.

If we compare these existing work with our proposed system, With the use of our proposed system patients will be able to look up and schedule appointments with doctors and other healthcare providers in their local region, similar to how **Zocdoc** enables users to do with doctors. But our system would also contain specialists like dentists and physiotherapists. Through **Doctor on Demand** users connected with physicians and other healthcare professionals for video consultations. Patients will be able to contact physicians and medical facilities via the app under your proposed system. But our system doesn't provide video consultations also we had limitations with other previous system too.

2.4 The proposed System

After examine the old previous proposed system I have come to the conclusion that docter and patients both might be facing difficulties by the process of previous delivery system.so developing the new process will be great beneficial.

therefore automating the process will be a tremendous accomplishment.

CHAPTER 3

SYSTEM ANALYSIS AND DESIGN

3.1 Introduction

In this part it's all about the system process and design of the project which will give the user a positive view into the proposed system. User can easily utilize the system without any kind of bothering of login or registration process. All kinds of required Step to analysis this system process are clearly described in detailed in the designing part of the system.

3.2 Process Model

The SDLC (Software Development Life Cycle) model is a procedure that entails a number of steps that are carried out in a logical order to create software.

For the designing part SDLC(The System Developments Life Cycle) is chosen for the process model. It is chosen because it can easily describes the stages and information of the system development. Give the clear view of the entire project to the user so that user can got clear overview of the system .SDLC model also defined the project with standard level of goals.

Here is a high-level summary of the SDLC model of this system:

Planning: Specify the project's goals and objectives at this phase..

Analysis: The requirements for the project will be gathered and analyzed during this phase.

Design: During this stage, we'll produce a thorough design for the system, which will include the user interface, database design, and system architecture.

Implementation: During this stage, the system's code using a programming language, such as Java for Android. In order to make sure the code is operating as planned, we will also test it.

Testing: In this stage, we will thoroughly test our system to make sure it is error-free and complies with the specifications.

Development: During this stage, we will set up your system in a live environment and make it accessible to users.

Maintenance: we'll give our system on-going assistance and maintenance, which includes upgrades and bug fixes.
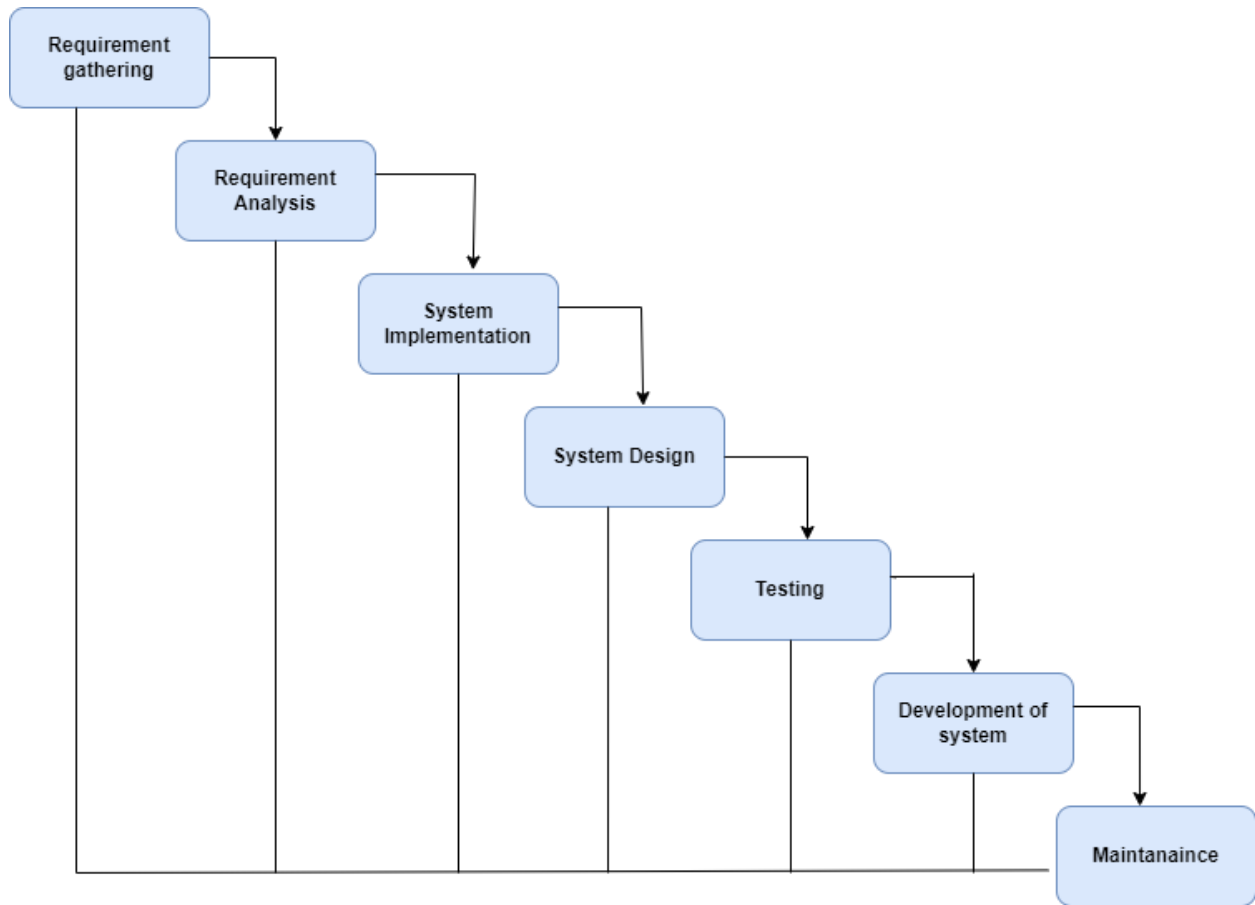
Figure 3.1 : SDLC Water Fall Model

3.3 System Analysis

System analysis is the procedure by which a proposed system can be analyzed. It is a problem solving activity which is use for the purpose of determine the system's structure or performance.

System analysis is a solving technique that build a communication between the system's developers and it's users. It is conducted for in order to identify system's objective, the goal and motive behind creating the system. It is important to study or analyzing a system to understand the logical structure, the components of the system that works efficiently to establish the purpose of the system.

3.4 Interpretation of How the Existing System Work

The current health care system is not fully up to date. Still people have to stand in a line and wait for hours to get medical treatment even it's a minor health case or serious one .People have to need physical presence to the doctor for the treatment Or regular check up.Either it was normal routine check up or just showing the report to the doctor or for a consultation patient have to visit the doctor physically in our regular existing system. This made up so many issues, new new challenges with this old method of medical service system. Moreover it's a huge time consuming and it's a bit troublesome for the patients who come from far away like transporting issues,f acing traffic, wastage of time etc.

The other disadvantages of the existing systems are no location transparency to get the exact location between the doctor and the patient, unable to find the nearest medical or doctor on emergency basis. Facing difficulties to get immediate ambulance service, booking appointment etc.

3.5 Interpretation of The Proposed System

After considering the problems exist in current system it concluded that there are many challenging issues in our manual healthcare system.so we proposed a user friendly healthcare system with more reliable facilities. The system would help to the doctors to connect with the patients easily. Both doctor and patients can easily simplify access to the system and can perform their task. The data record of the task easily save into the database for a long time. The system can also make sure the location of the user with the help of GPS for display the nearest available medical service center or hospital. With the help of the proposed system patient would able to direct communicate with the doctors and get consultation from them .There is no need for physical presence of patient to do their regular follow ups or check up the reports. They can directly consults, ask question, showing up the reports or book an appointment through up the system.

3.6 Requirement Analysis

Requirement analysis is the procedure of determine users expectations in the development process. This feature should be detailed, relevant, documented or modified to the system design.

3.6.1 Functional Requirements

Functional requirements are helpful to understand the system operations. It ensures that the system will meet user's requirements.

- We are creating an android application for which user need android based device with full support of internet.

- Full time availability of the internet is mandatory while using the app and also for update the information.
- Doctor authentication is must needed to choose the suitable doctor for the patient.
- The app should allow the user for registration/login using by email, password and view functionality it.
- The app should allow the doctor to view appointment list, problem of patients and also allow the doctor to consult the patients.
- For the database panel real time database is needed for the app.
- The system should allow both the user to update their profile information.
- Invalid login errors should be handled manually.

3.6.2 Non Functional Requirements

Non-functional requirements are explain how the system performs and also ensures the system will meet user expectations.

- Application should be designed for user friendly.
- Security system is needed to full protected to handle any kind of illegal access to the system.
- Create a reliable environment both for the doctor and patients .
- The system should able to handle or avoid the huge number of search data which users may search at the certain time.

3.6.2 Software Requirements
- Android as operating system
- PHP for the server
- My SQL for backend
- MS-office for documentation
- Android studio for android development
- Java as programming language
- Google map android API for tracking location

3.6 Diagram And Description

To define our android based the project system we use several types of model diagram such as Use case, Activity and sequence diagram.

3.6.1 Use Case Diagram

This type of diagram displays how the system and its users interact.
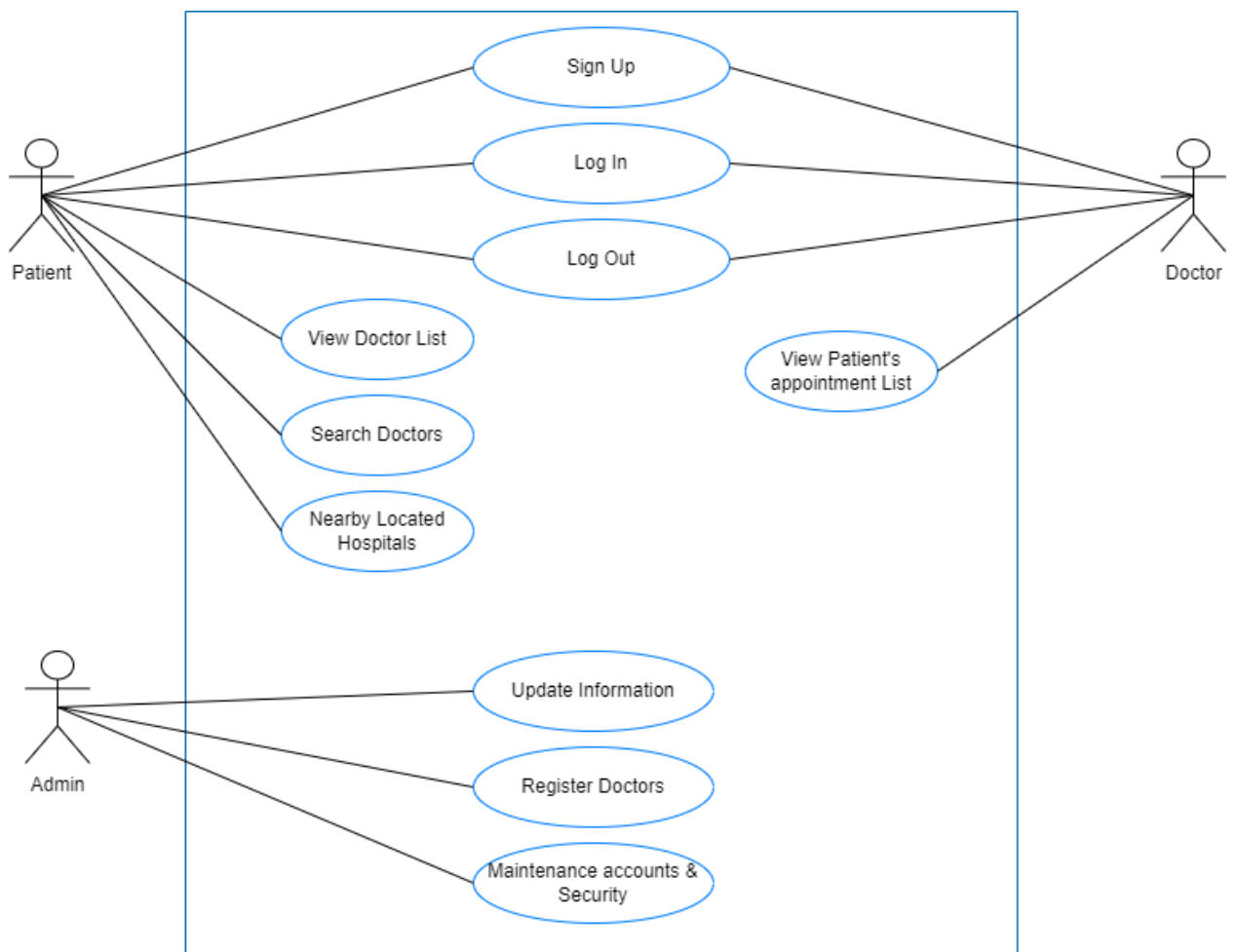It can be used to depict the many features and capabilities of the system and how the users will make use of them.

Figure 3.2 Use Case Diagram

Diagram Description

- **User Sign Up**: The procedure for adding a new user to the system is represented by this use case. It entails the actions of supplying login information (such as name, email address, and password) and of having the user's email address verified. The user will be able to log into the system with their login information once they have finished the registration process.

- **User login:** The process of logging into the system is represented by this use case.It involves checking the user's login information (such as username and password).The system's features and functions can be accessed by the user once they have logged in.

- **Nearby available doctors**: The process of looking for hospitals or doctors in the user's immediate area is represented by this use case. It involves entering the location and the category of medical service (such as dentist or general practitioner) and presenting the search results.

- **Updating Information & Account security:** This use case illustrates the procedure for user's account for changing any details or updating profile and managed the accounts privacy.

- **Appointment list:** Doctor get a notification when someone book an appointment with him .User can see the appointment schedule and also the patients details what patient write in up on the appointment system.

3.7.2 Sequence Diagram

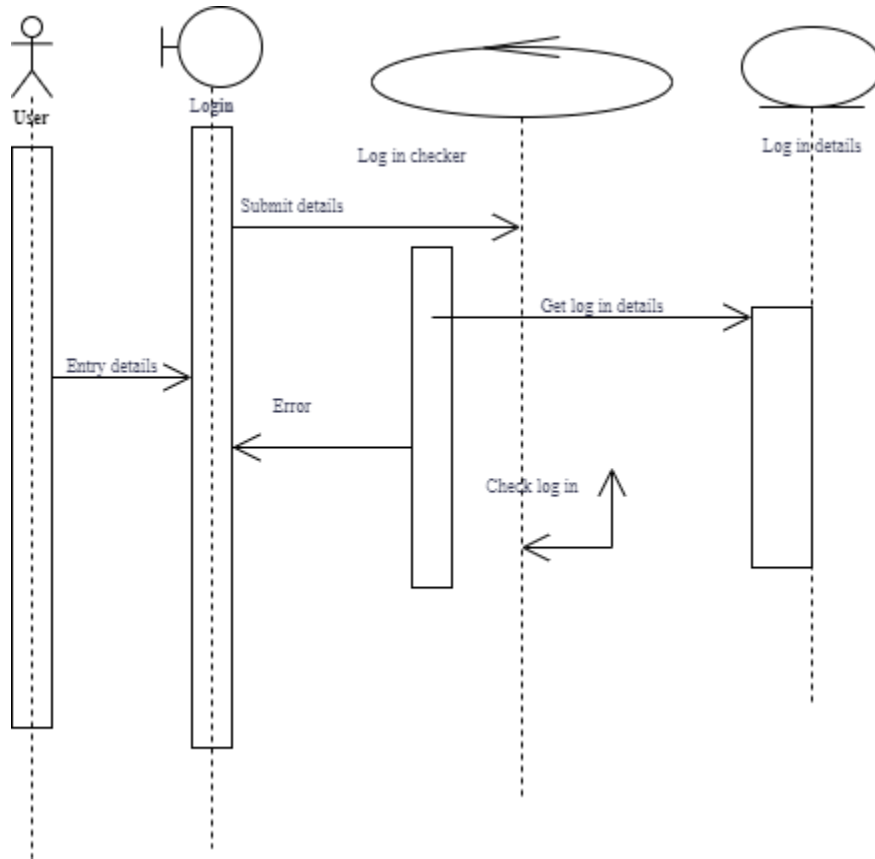This diagram shows the sequence of users sign up or log in activities

Figure 3.3: Sequence Diagram For User Log in

3.7.3 Activity Diagram

An activity diagram is a particular kind of diagram that depicts the progression of actions or activities within a system. It can be used to model both the flow of control within the app and the flow of user interactions with the app in the context of an Android project.

The most important activities or acts that we need to be depicted in the diagram when creating an our application system.

For instance, some of the actions in our app include be:

- Creating an account or logging in.
- Viewing a directory of doctors in nearby area.
- User able to search doctors from the doctor list.
- Viewing and modifying individual health data.
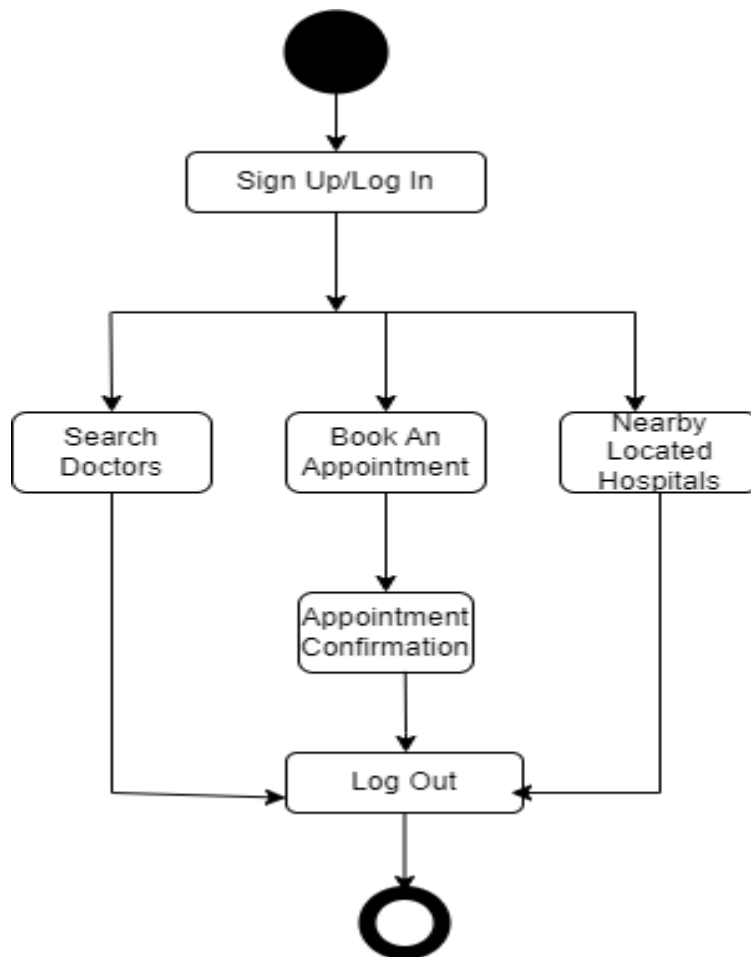- Receiving appointment list notifications or alerts.
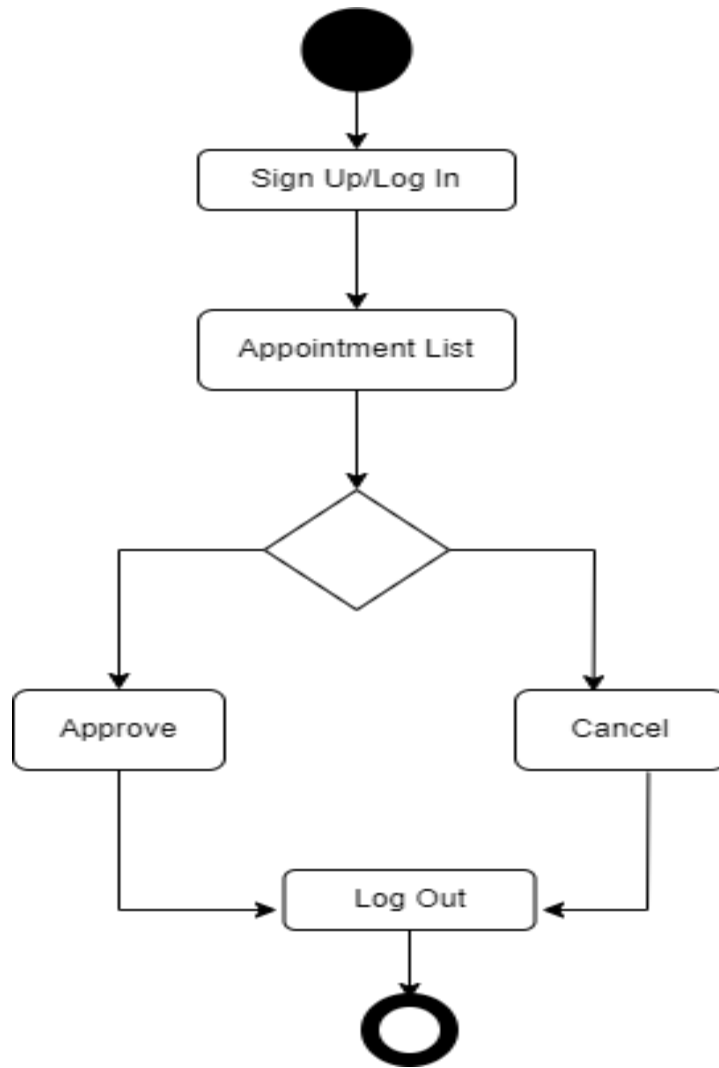

Figure 3.4: Activity Diagram for Patient

Figure 3.5: Activity Diagram For Doctor

CHAPTER 4

SYSTEM IMPLEMENTION

4.1 Introduction

System implementation is the method that define how the system should be design, how the system works. It's ensure that the information of the system meets with the users expected standard level. The purpose of this process to create a system element that conforming the system's requirements.

4.2 Modules

In this part we utilize the different modules of the system.

4.2.1User Registration

Here we developed a user module where both doctor and   patient can create an user account of them by giving their personal   information   such as email, password,age, gender, mobile number etc.

4.2.2 View Nearest Hospital

After entering in the system user can easily find the nearest available hospital or doctor with the help of GPS. In this part the system can track the location of the user and display all the available hospital, medical services which is nearby the user's place.

4.2.3 Appointment

This module is for both user patient and doctor .After searching or chosen suitable doctor Patient can make or book an appointment schedule with the doctor for regular checkup and consultation. On the other site doctor get a notification message of the appointment that patient has made

4.2.4 Online Consultation

Patients can talk about their problems or share their medical history, result of report to the doctors through a SMS service. Doctor can also provide a typed prescription, suggest medicine through the SMS services through connecting with the doctors manually.

4.2.5 Medicine reminder

Patient can use this app also as their medicine reminder or medicine checker as they can write here medicines what will doctor suggest or provided them.

4.2.6 Setting

Both user can update their personal information such as user ID, email, user name, password etc. whenever they needed.

4.3 Database Implementation

For this project, we decided to use Google Firebase as our back end. We also selected Firebase Real Time Database as our storage engine for basic data storage and Firebase File Store as our storage engine for basic files. Since Firebase offers authentication, we decided to use Firebase Email/Password Authentication for users' authentication. The majority of our database's design is shown below, however it will change after implementation is complete.

Here is a high-level overview of a database implementation:

Users: This table will contain data on system users, including login information and personal information like name, contact information, and address (such as username and password).

Doctors: This table will contain information about the Doctors who have registered with the system, including both personal (such as name, contact information, and specialization) and professional (such as qualifications) information (such as qualifications and experience).

Hospitals: This table will contain details on the hospitals that are located at users nearby places.

Appointments: The details of the appointments scheduled via the system will be kept in this table, including the patient and doctor who will be attending, as well as the date, time, and place of the appointment.
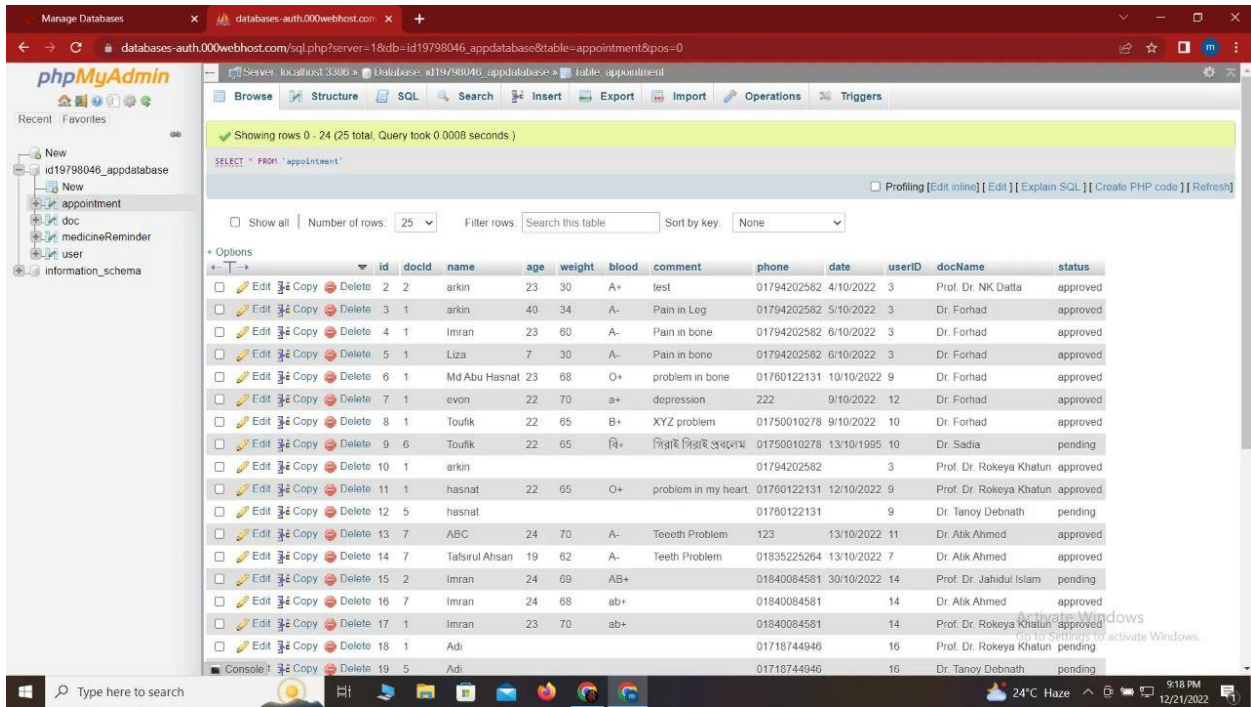
4.3.1 Database Design

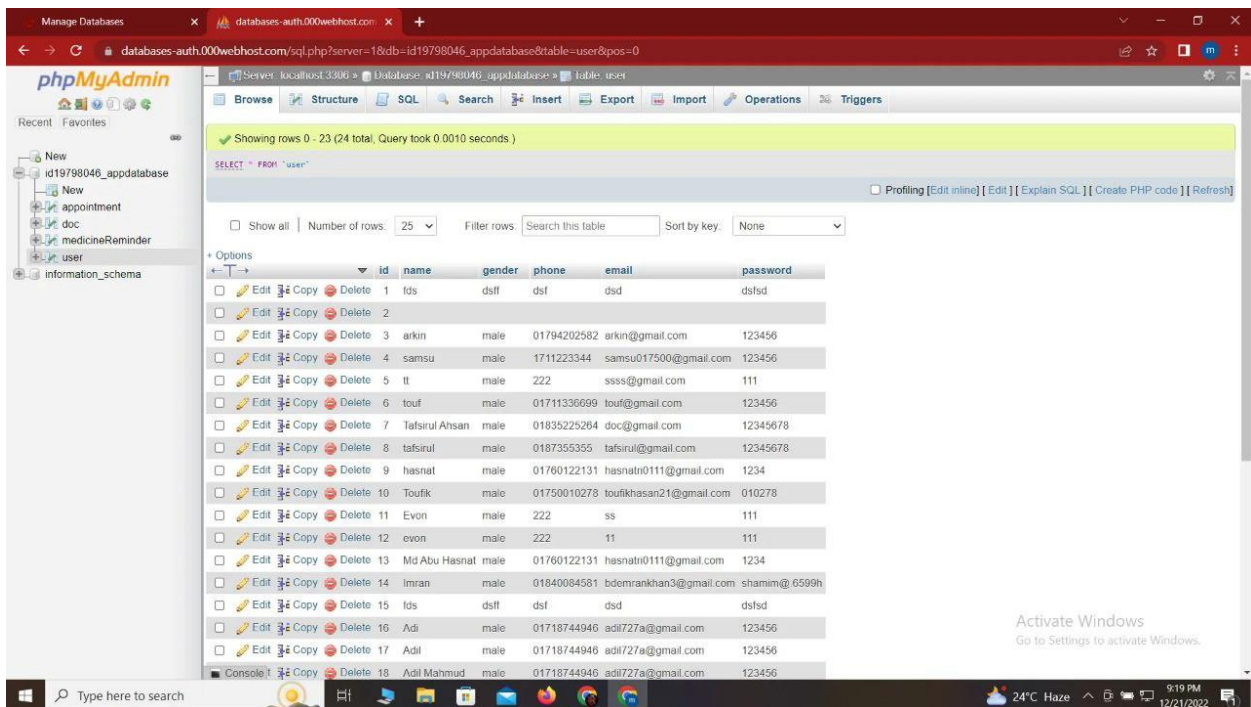Fig 4.1: Database store for Patient

Fig 4.2: Database store for Doctor

4.4 System Implementation

As I already mentioned, the project is an Android application, thus I need to choose programming languages that are appropriate for mobile applications.

As a result, I decided to utilize XML for the interface design, Java for the main application development, Firebase for the backend, and Android Studio IDE as an environment for the development of mobile applications due to numerous factors and capabilities that it provides.

User registration and login: Both users will be able to register on the system by providing their personal and login details. They will then be able to log in to the system using their email and password.

Search and book appointments: Users who are patient will be able to search for doctors or hospitals in their nearby locations based on their location and the type of healthcare services they require. They will then be able to book appointments with the healthcare providers they chose.

Communication with healthcare providers: Users will be able to communicate with the healthcare providers they have booked appointments with through the system
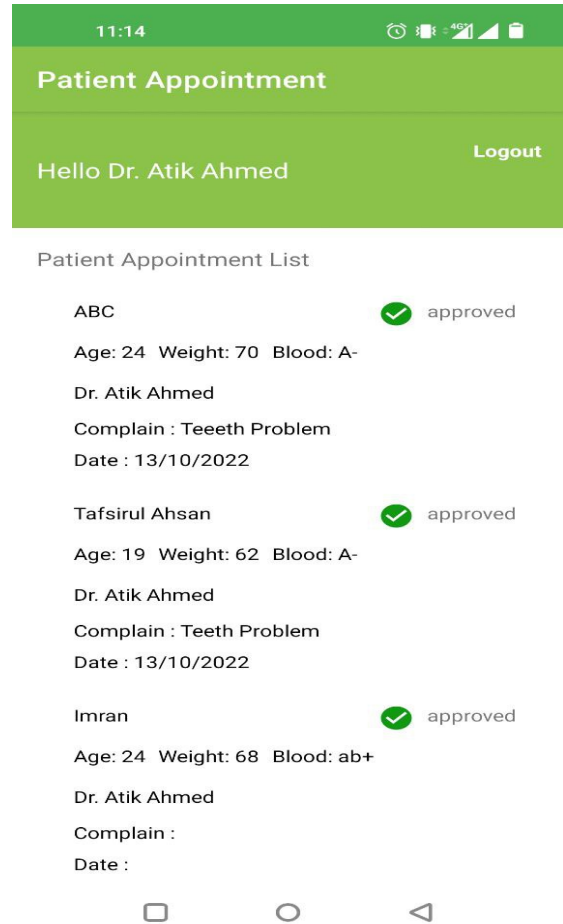
Review and rating: Users will be able to review and rate the healthcare providers they have visited through the system, which will help other users make informed decisions about which providers to choose.

4.4.1 User Interfaces Design

Here we showing up some figure design of both user doctor and patient activity while they using this app.
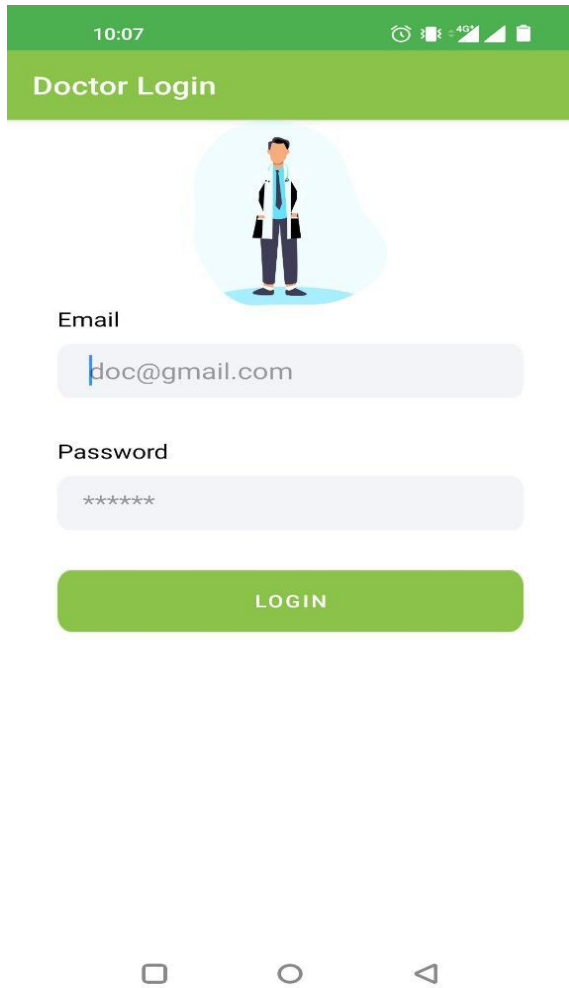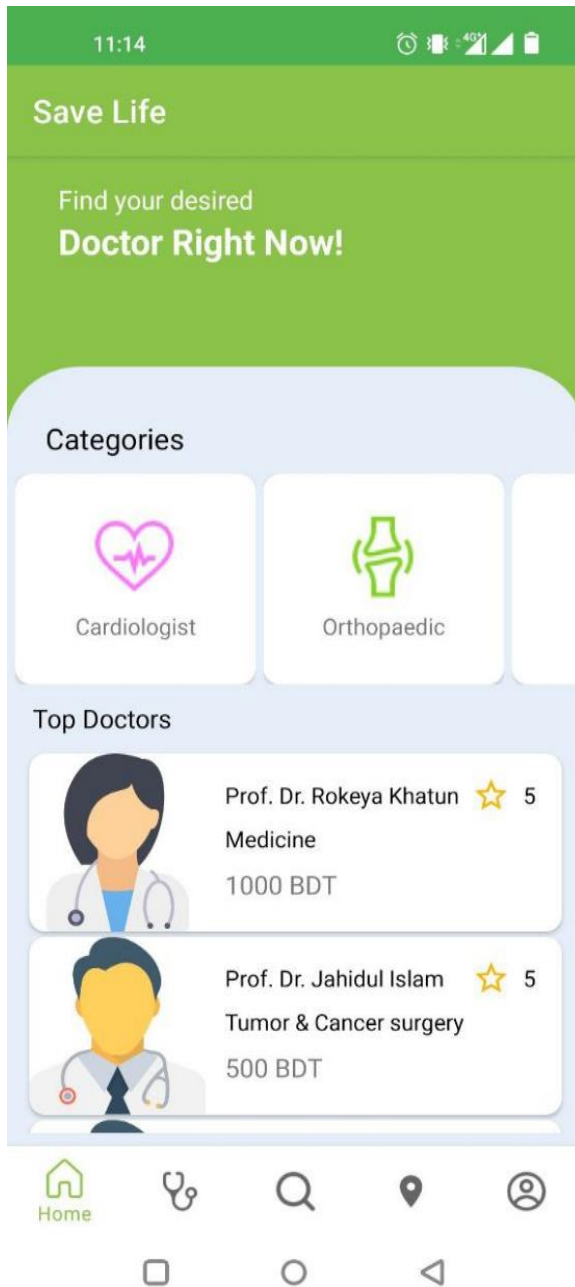

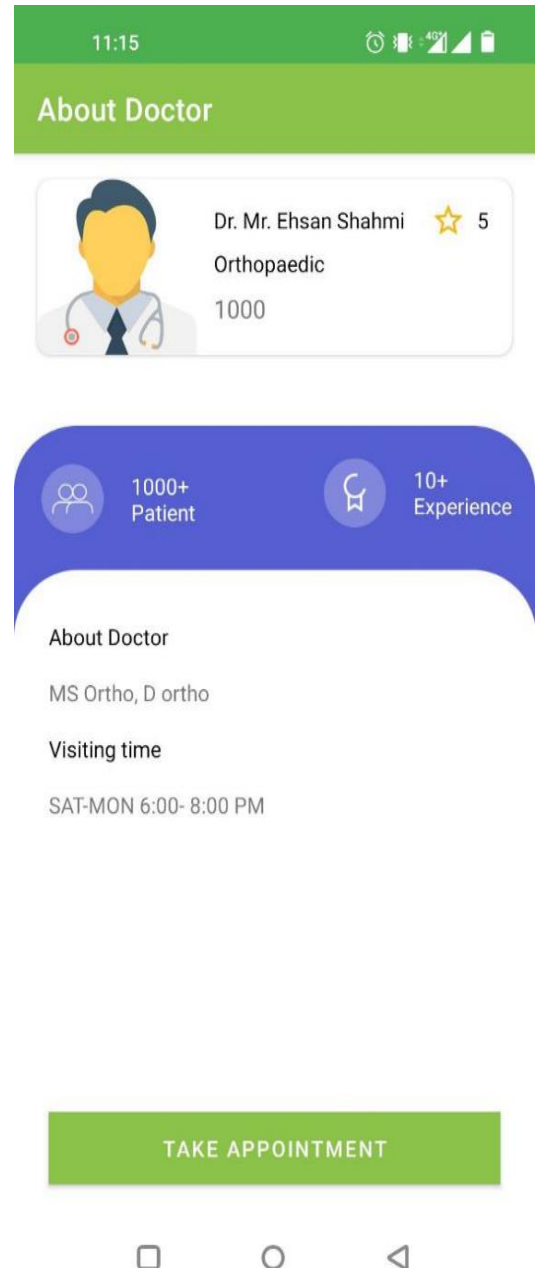Log in interface   viewing patient appointment list
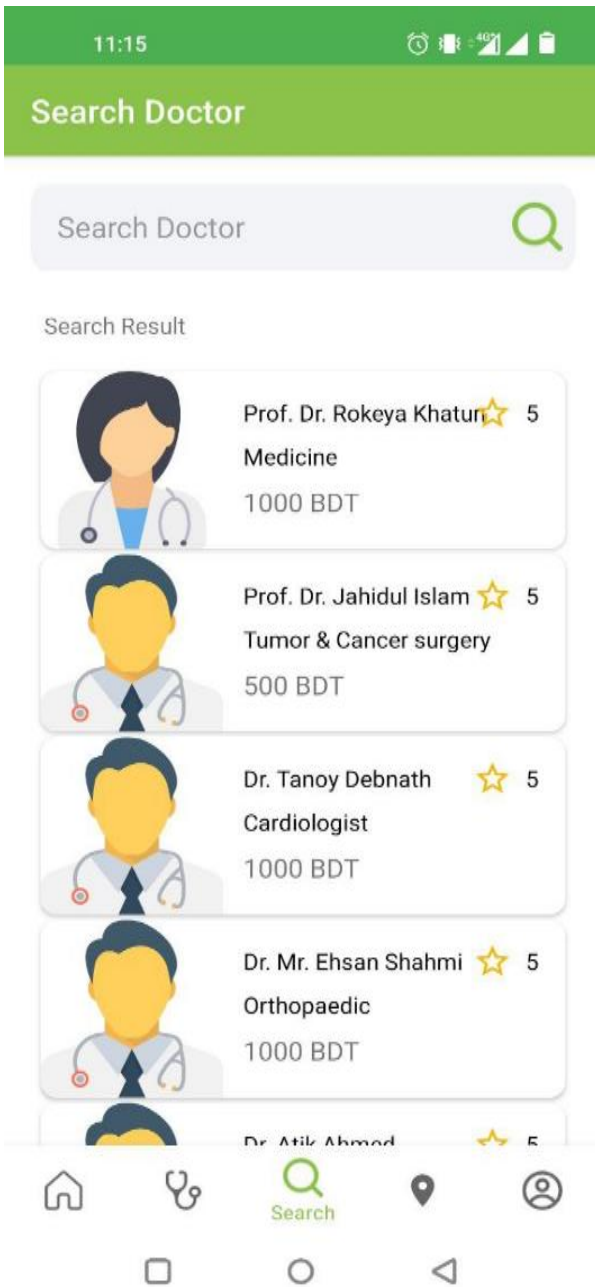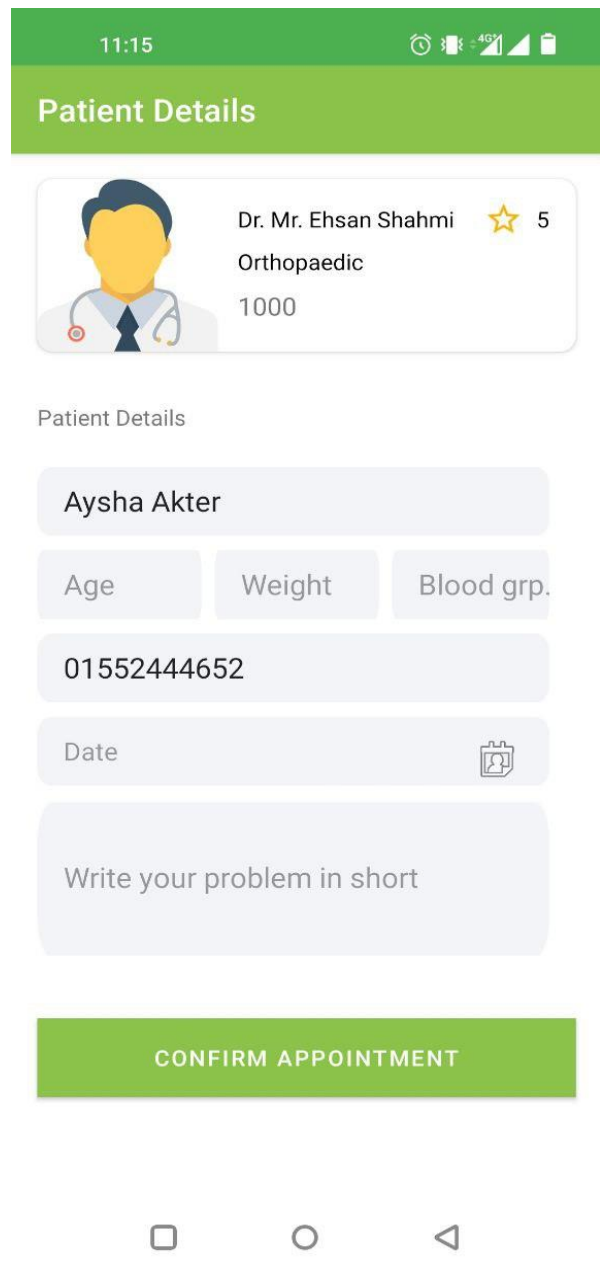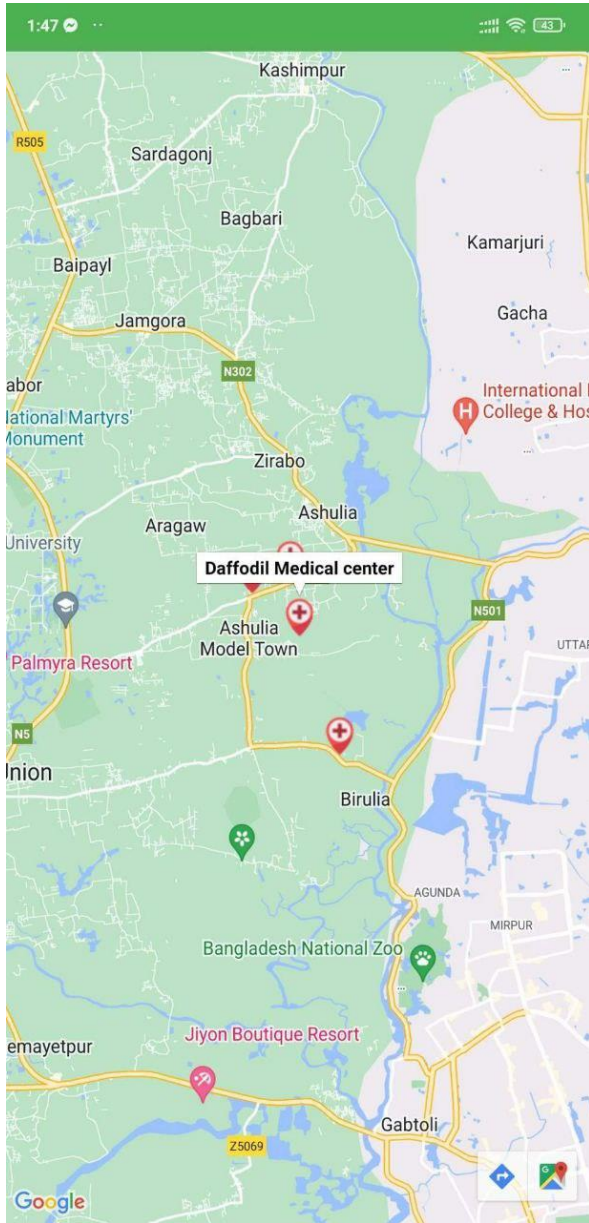
Fig 4.3: design of Doctor interfaces

Dashboard for patient
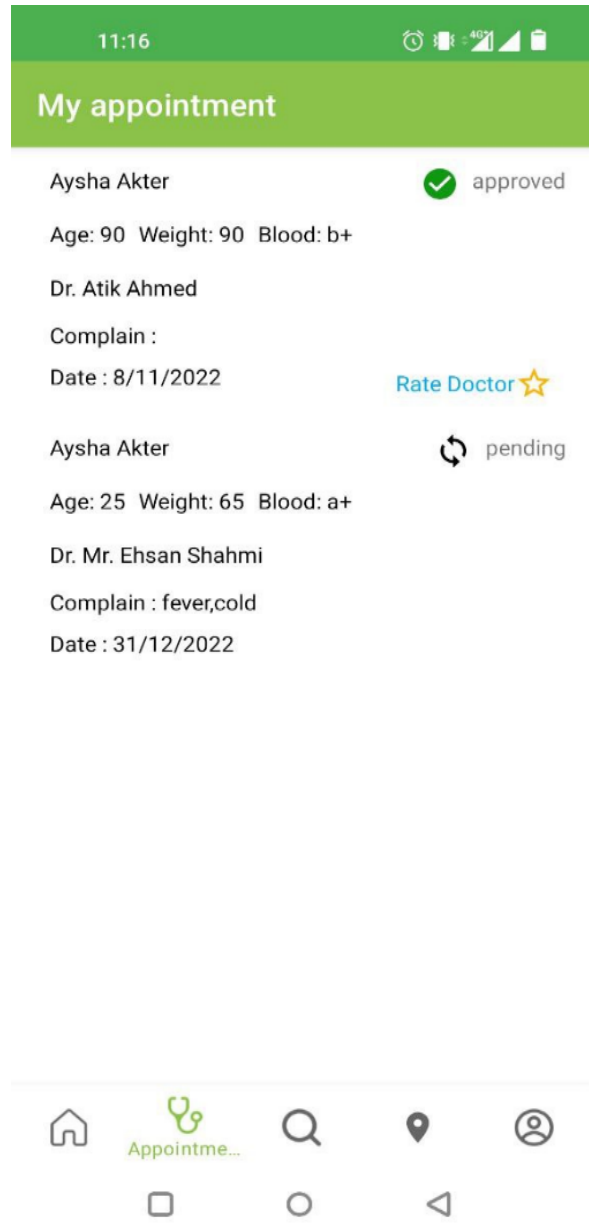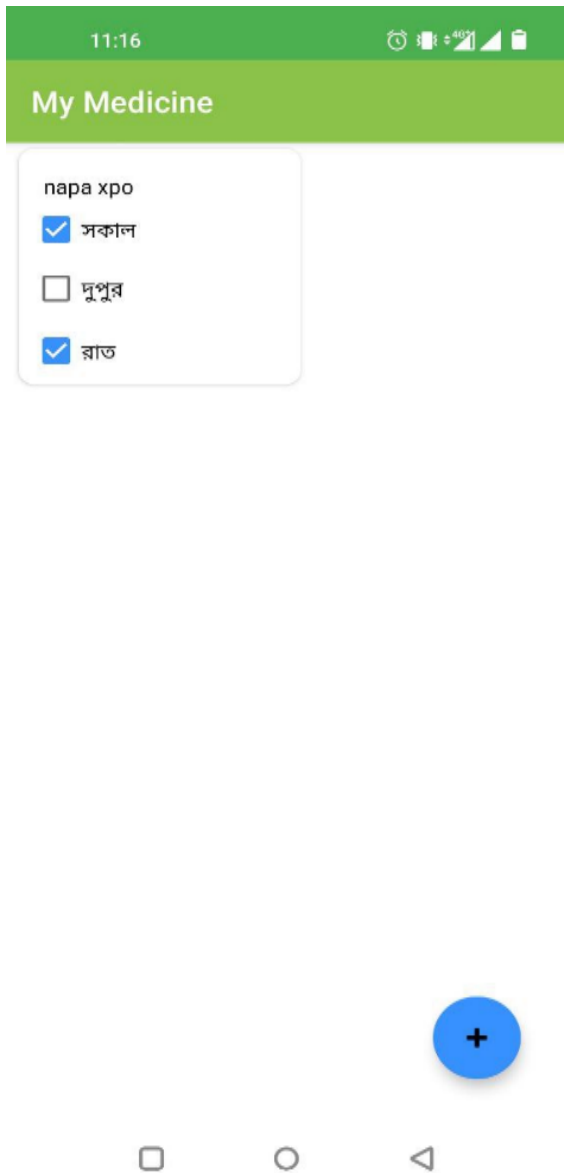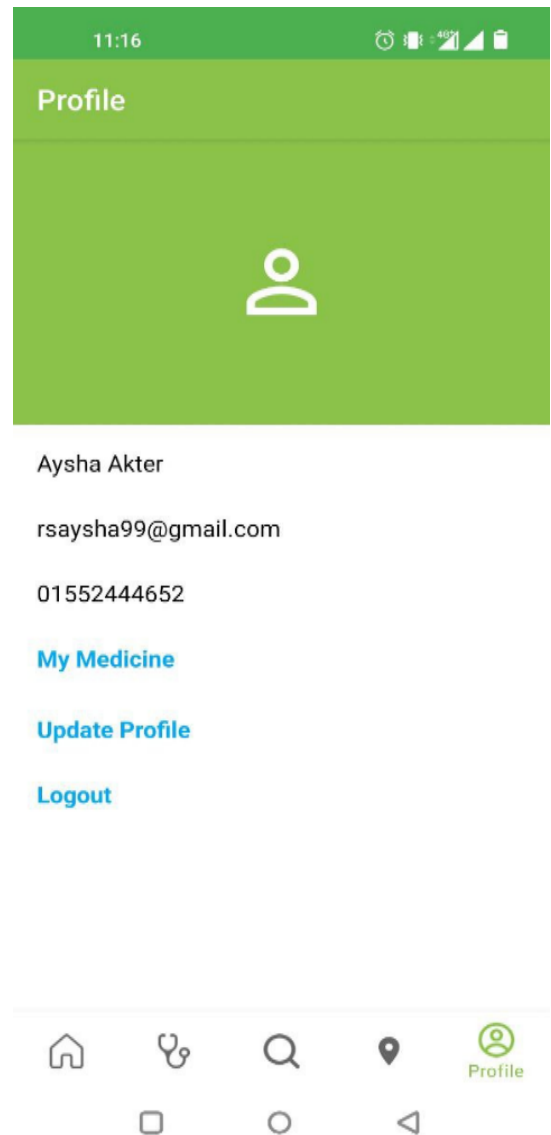

Details of doctor

Search doctors

Book an appointment

Nearby Located hospitals

Confirmation of appointment

Medicine reminder list   Profile visit

Fig 4.4: Design of patient interface

CHAPTER 5

SOFTARE TESTING

5.1 Application of Testing:

Software testing is the knowledge or process which is used as check points to determine whether application of objectives are being meet its required desire. It is the method of verifying and calculating that an application does what and what it will supposed to do.

Basically application testing is an activity for detailing the plan of a system. A software analyzer can easily easily evaluating the result and executing the procedure of the project by seeing the details of testing implementation.

We have generated our source code and tested it as many as errors would have been occurred .After tested it is ready for deliver to the user. The main goal of this part to design possible cases of the testing part to finding out the error of the System.

5.2 Objective of Testing

To make sure the Android app is dependable, simple to use, and offers the features and functionality required for a successful and seamless communication between doctors and patients, the main goal of testing an Android app for an online healthcare system that connects doctors and patients is to make sure the app is reliable.

Testing an Android app for an online healthcare system may include the following specific objectives:

1. To find out or discovering an error in a process while executing the program.
2. Uncovering all the error to implement a successful test case.
3. Test planning should be designed before program testing started.
4. Tests should be executable to the user's requirement.
5. A third party should conducted for the testing so that it would more effective.

5.3Test Plan

01	Confirming that various Android devices, such as smartphones and tablets, can quickly and conveniently install and launch the software.
02	Making sure the program is reliable and works properly in a range of scenarios, such as various network connections, device setups, and user behaviors.
03	Testing the app's security and privacy to make sure that private patient data is secured and that it conforms with all relevant rules and guidelines
04	Evaluating the app's usability to make sure both doctors and patients would find it simple to use and intuitive.
05	Confirming that the app has the basic features and functionality, such as video and audio calling, texting, and appointment scheduling, to support effective interaction and consultation between doctors and patients.

5.4 Test Report And Result

Case	1
Objectives	In order to effectively construct a user authentication
Test data	To create a new user, click the Create Account button
Expected Result	Activity to set the user's profile will start.
Conclusion	Finished the task

Case	2
Objectives	Confirming that the app can be readily downloaded, installed, and run on a range of Android devices, such as smartphones and tablets. ensuring that the program operates steadily and effectively in a variety of circumstances, such as various network configurations, device settings, and user behaviors.
Test data	To open the dashboard activity or the first interface activity by clicking on the application's Android icon.
Expected Result	Dashboard activity or for clients or doctors
Conclusion	Finished the task

Case	3
Objectives	To have a consulting unit that supports push notifications for instant acceptance
Test data	One user clicking an appointment
Expected Result	The appointment notification will be displayed on the screen for the targeted user.
Conclusion	Finished the task

CHAPTER 6

CONCLUSION

6.1 Introduction

In this part of the report we have tried to give a brief knowledge about the whole concept of the project. Here also included some other recommendation what based on the analysis of the literature review. In the chapter we talk about the benefits of our proposed system, its future applications, It's limitations and also the development of future scopes.

6.2 Summary of The Proposed System

Our proposed android application system will manage to help the people to get interact with the doctors virtually.

The entire project has been divided into a total seven parts .In each part of the paper we discussed about the project, background methodology of the project, analyze the system, system implementation design part etc.

In the first chapter we tried to introduce our project system, how it will work, the motivation and objective our proposed system. Expected outcome from the project.

In second part here explained some related works review of our project, create a comparison between to the current and existing system and also give a prediction result of the limitation of our project. Data source, Implementation of database, the limitation and weakness or weakness of current existing system and how the new developed system will more effective that is explained in the third chapter.

On the fourth chapter system designing part is presented .Explaining here the application of work station through use case and activity sequence diagram. Also user interfaces design, implementation of system modules are discussed in this part.

At fifth part software testing, test cases, test objectives and how the software is tested explained.

Finally at the sixth chapter (this part) we have tried to give a brief summary, conclusion of our work.

The seventh and Eight chapter of the report is all about references of our work and appendix.

6.3 Limitations

There are several potential limitations can occur as it's an android based healthcare service system with the feature of booking appointments and finding the nearest available doctors or hospitals through the app:

1. **Limited availability of healthcare providers:** The app may only be available in certain areas or countries, limiting its accessibility to users in other regions. Providers may not all be available for online booking through the app due to a limited number of healthcare providers. Users' alternatives may be reduced as a result, which may make it harder for them to choose a supplier who meets their needs.

2. **Dependency on online connectivity:** The software relies on internet connectivity to work properly, however it might not always be available. The app's utility in particular places or circumstances might be constrained as a result.

3. **Security and privacy issues:** Because the app will need to handle sensitive personal and medical information, security and privacy issues may arise. To protect user data, it could be necessary to put additional safety measures in place, such cryptography and secure login procedures.

4. **Limited appointment availability:** The app might only enable users to schedule appointments during specific times or might not have any availability at all, forcing consumers to get care elsewhere.

5. **Adoption by users:** The success of the app will depend on its capacity to draw in and hold on to users .This could be difficult if the app is difficult to use or doesn't have useful features.

6. **Potential for technical issues:** The app could face faults or difficulties that would interfere with service or add delays.

7. **Legal and regulatory concerns:** If you're creating an app that handles private medical data, you may need to take legal and regulatory concerns into account.

6.4 Future Scopes

Our project's precise future focus will rely on a number of variables, including user input, market developments, and your personal aims and ambitions.

However, the following are some potential future growth opportunities for your healthcare delivery system:

1. **Integration with other healthcare systems**: If we want to give users a more complete experience, we might think about integrating your system with other healthcare systems like electronic health records (EHR) or insurance companies.

2. **Personalization and customization:** W might integrate features into your system that let users personalize and customize their interactions, including setting appointment reminders or selecting their favorite medical facilities.

3. **Adding new markets:** We might think about adding new markets, especially in areas with inadequate access to healthcare.

4. **Including new features:** Depending on user feedback or market need, we might think about including new features in your system. For instance, we may include a function that enables customers to consult with doctors virtually.

5. **Enhancing user experience**: By making the system more user-friendly and intuitive, we can concentrate on enhancing the user experience. To assist consumers in making knowledgeable decisions regarding their healthcare, you may also think about introducing features like interactive tools or personalized recommendations.

6. **Increasing security:** Security is a major problem for any system that deals with highly sensitive personal and medical data. To strengthen system security and shield user data, we might think about taking further steps.

6.5 Conclusion

An organization of institutions, assets, and people is referred to as a health care application when it offers health care facilities to satisfy the population's needs for good health.

Therefore, in order to address all the shortcomings of the current systems, we have developed and put into operation an online health care application that will efficiently offer, schedule doctor appointments online, and keep track of users' health checkup reports. We have created a healthcare application that is user-friendly and effective in communicating with and interacting with people. The application created has achieved every goal described as a consequence of the suggested system.

We were able to put the healthcare app on everyone's hands by releasing the program on mobile devices

Users of this program will be able to quickly find nearest doctors locations and hospitals in their area .The amount of time needed to complete each step of the hospital's such as booking and appointment, interact with the doctors, finding suitable doctors for the occur problem. This type of process will be decreased.

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