

**Design and Development of a Digital prescription and health care service
Application**

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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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DAFFODIL INTERNATIONAL UNIVERSITY

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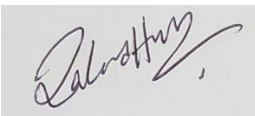
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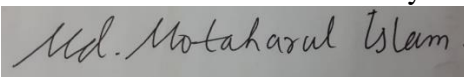
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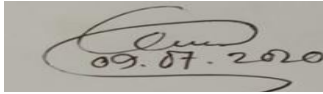
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DECLARATION

We hereby declare that, this internship report has been done by us under the supervision of **Sharmin Akter, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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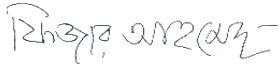
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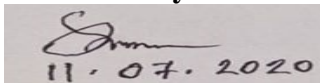
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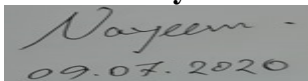
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ABSTRACT

This title of our project is "**Design and Development of a Digital prescription and health care service Application**". This is an android based application. In this application we tried to help people who need information. If people use this application then they will get information about some good diagnosis center's name and location, there will be a contact number of the desired health care center. He/she will be able to assign his/her serial throughout the phone call. Health tips also a good option for the user. In which people will also able to find some tips to get a healthy life. Nowadays sometimes we need blood for many causes. If user press the blood bank option, they will get bank information for blood bank and they will easily contact with them. People will also get information about some specialist doctors, hospitals also. Prescription is a very charming option in this app. USERS can upload their prescription in this application from there gallery. For use this app user has to use an android smartphone. To enter in this application users have to sign up. And after that they have to use their email and password to log in. If they do not register then they will not allow entry to the application. An admin has there to operate and he can insert or delete anything in this application information.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In this period, a large portion of us has a cell phone. It added another measurement to our daily life. It carries the entire world to our hands. Nearly everything in our daily task has been finished all through cell phones. Without a cell phone, we are unable to think of a solitary day. It has become the most basic piece of our life.

There are a great deal of utilizations for our cell phone. These applications introduced to our gadget. There are some application stores like Google Play Store, Apple application store, Amazon, App-droid, and so forth. From these stores we can download our ideal application. There are many sorts of applications. I discovered that there are no such applications in our country, which will give the best possible presentation of medication divisions.

As we previously referenced we have made an android based application. It will run on any sort of android stage, for example, android portable, tablet, and so on. Individuals can download it through Google Play Store. The UI of this application is very easy to understand. So all sorts of individuals can utilize it without any problem. As we previously referenced that in this application individuals can get some important data from this application, for example, blood donation center, master specialist, somewhere in the range of hardly any best social insurance focus of our nation. It will be simple for them than search in google.

1.2 Motivation

We are in the period of digitalization. These days, the greatest expert divisions are site or application-based. We are not able to remain behind. We looked into about Medicare parts of our nation. We discovered that there are no such applications, which will give us the best possible data of Medicare administration of our nation. There are some applications. In any case, they are brimming with bugs and giving wrong data. We chose to chip away at this task. It is hard for individuals to convey medicine constantly when I go to the specialist. This application will offer chances to transfer the solution to his/her profile. There will be no change, until he/she will erase it. It is somewhat of a computerized solution framework moreover.

1.2 Objectives

- User inviting UI: It will help with the goal that customers can work it without any problem.
- Secure information provider: We will endeavor our best to keep up the precision of information.
- Time effectiveness: Everything will be on the cell phone to it will spare our important time.
- Prescription framework: clients can transfer his/her remedy to his/her profile. So there is zero chance of lost their remedy.
- Information: Every potential subtleties of human services place, pro specialists, and blood donation center.
- Health Tips: Valuable wellbeing tips to get a sound life.

1.3 Expected Outcome

- Easy way to get information
- Better lifestyle
- Different health care center's details can be found
- Different blood bank's details can be found
- Users will get health tips to get a healthy and wealthy life.

CHAPTER 2

BACKGROUND

2.1 Introduction

Our fundamental aim was to make an application, which will give data about some medication parts. We made a decent attempt to make this application as the everyday driver of general individuals. Nothing in this world is great. There are a few sites and applications dependent on this point. Nevertheless, those are in a general sense inactive and joins of bugs and missteps. We chose to make one cautiously with the goal that it will help individuals. In further, we will depict in which part our application is not quite the same as different applications.

2.2 Related Works

- bdhealthsolution.com
- doctorsplease.com.bd
- cri.org.bd
- pharmacy.com.bd
- GoMedKit

2.3 Comparative Studies

As we gave in the related works segments, the entirety of the undertakings is electronic aside from the GoMedKit. These tasks are giving social insurance habitats data and any sort of wellbeing tips. Counting these, pharmacy.com.bd and GoMedkit are likewise giving medication conveyance offices. In any case, their applications are not easy to understand. These sites and applications are not for all sorts of individuals. Even they are not refreshing their information. Most of the goals preceded. Like GoMedKit is another application. We downloaded it and when I attempt to enlist, it needs to check my email address. It said that a connection has been sent to our email. Nevertheless, we could not find any association with our email. Essentially these activities depend on a solitary subject, for example, medication conveyance, wellbeing tips, and so on however we attempted to join all the offices into one application with the goal that individuals do not have to discover different applications. Moreover, our online cure structure is a unique idea. I did not see it anyplace. We have furthermore some plans to remember more features for this application in the

future, for instance, the medicine transport system, online put together arrangement structure thus concerning.

2.4 Scope of the Problem

The extent of the issue of this task is the wellspring of data. We accumulate information from various sources. Subsequently it is extremely difficult for us to gather proper data for the clients. Yet we attempted a ton to give as precise as possible. In any case, we could not make it national. In this venture, individuals will just get data dependent on Dhaka. In any case, in a not so distant future, we have plans to make it across the nation. We are dealing with that venture.

2.5 Challenges

During this endeavor, we stood up to a huge amount of issues with the new type of android studio. We knew about the more seasoned one. What's more, as I previously referenced that information assortment was additionally an extremely testing work done by us.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

The given model is called Data Flow Diagram. Datastream chart used in a dare to address the data stream of an errand. DFD clarifies the procedure of information stream in the business data framework from contribution to record stockpiling. DFD can be separated into two sections, sensible and physical. The sensible DFD depicts information stream all through a framework to play out the usefulness of business. The physical DFD portrays the usage of legitimate information stream.

We associated our DFD and business process model, which has given beneath.

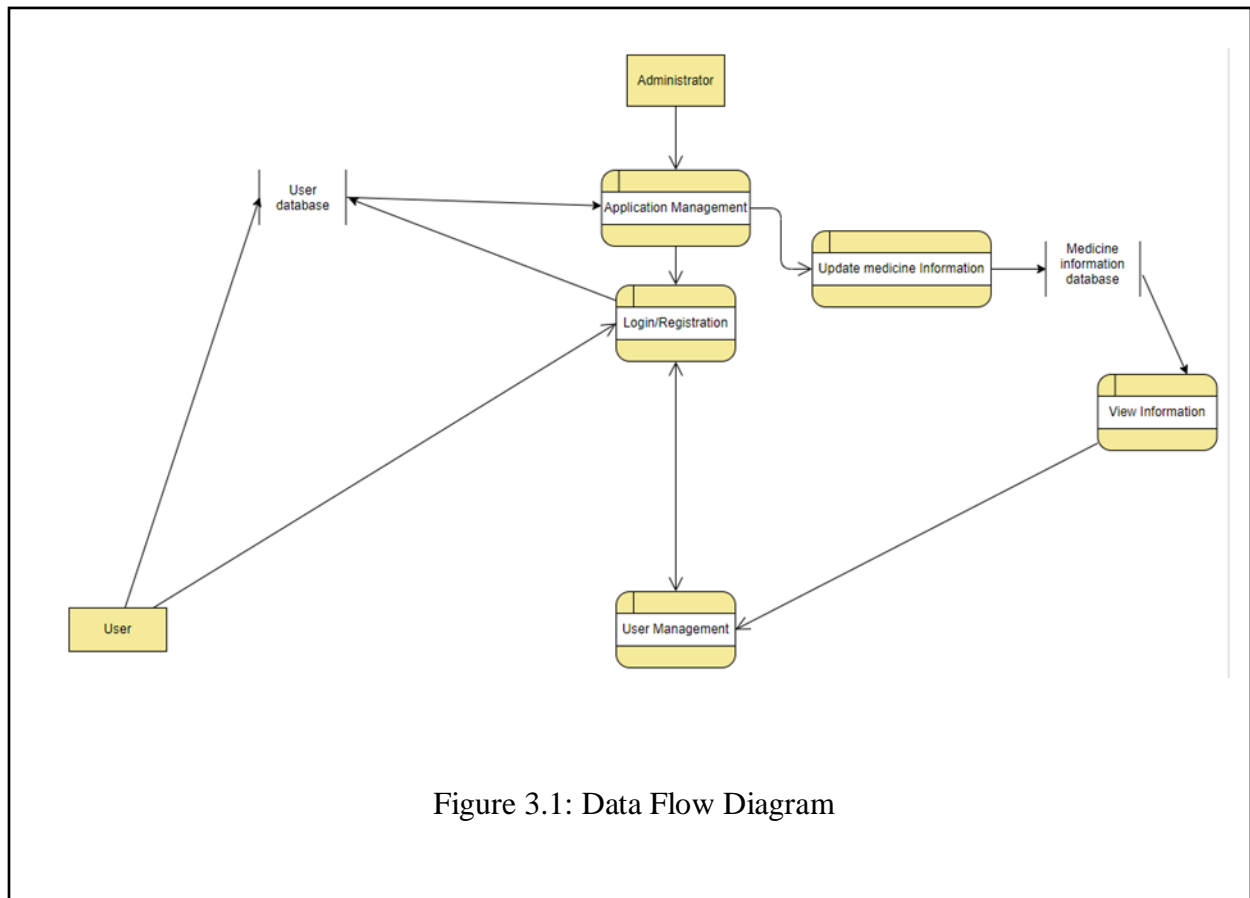


Figure 3.1: Data Flow Diagram

3.2 Requirement Collection and Analysis

Prerequisite assortment is one of the extremely essential conditions for application advancement. There are two sorts of require assortment practical assortment and non-useful assortment. Utilitarian assortment are those that the application can perform. What's more, the characters of an application named as non-practical necessity.

Functional requirement: Our task has loads of useful necessities. Transferring solution segment, an extraordinary login segment where just confirm individual can get to, these all are a piece of practical necessity.

Non-functional requirement: Non-functional requirements help the application to be more efficient.

3.3 Use Case Modeling and Description

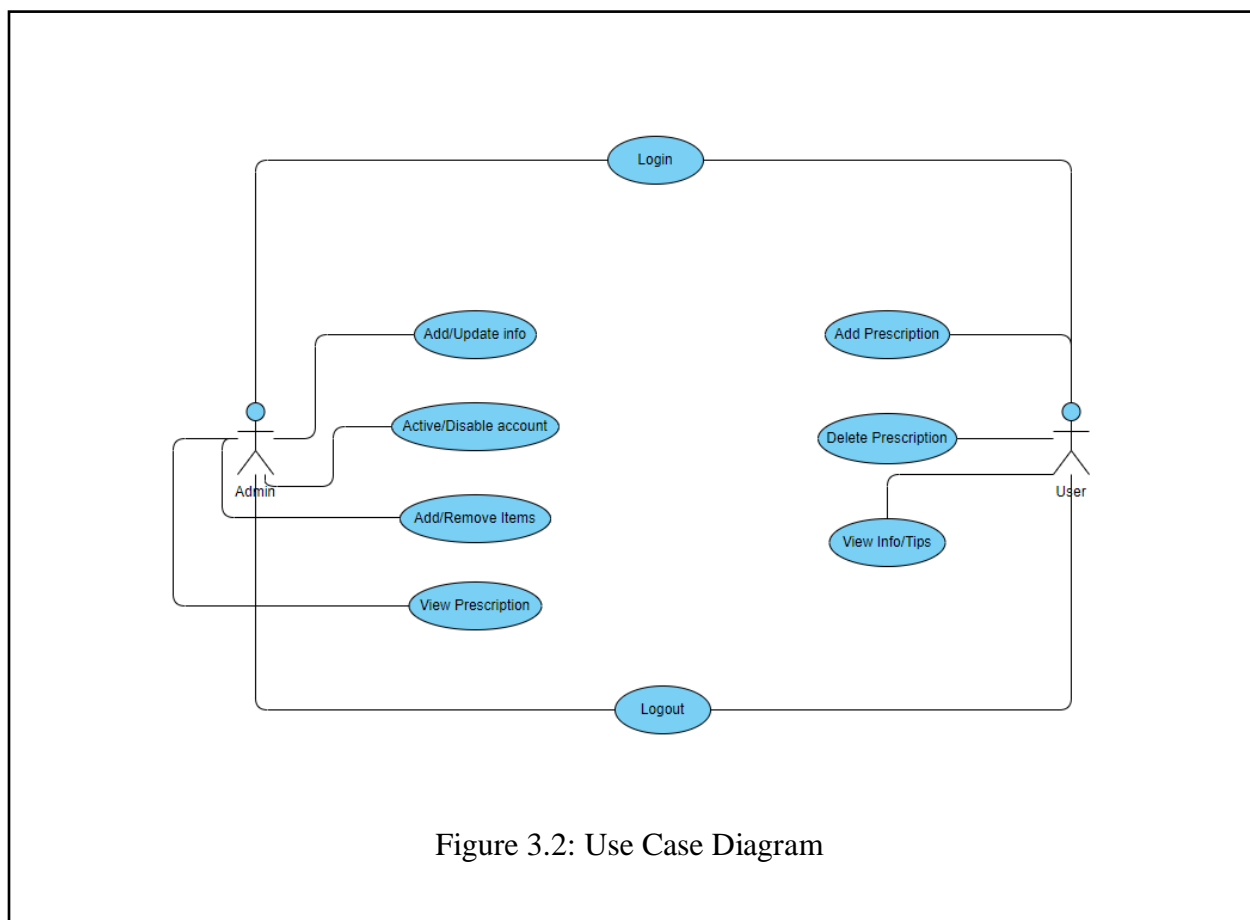


Figure 3.2: Use Case Diagram

Users can complete login and registration to use the application. Users can add a prescription by taking a picture of the prescription. Which will be saved to his/her account. User can also delete his prescription and add a new one. Users can also view some information about health care, blood bank, doctors, etc. and some important health tips. Admin can add/update the information. Admin can activate and disable account permanently. Admin can also add and remove items from the application. Admin can view the prescription provided by the user.

3.4 Logical Data Model

Entity-Relationship model is a graphical representation between entities. Entity is a data resource that holds a lot of data. The ERM of our project is given below-

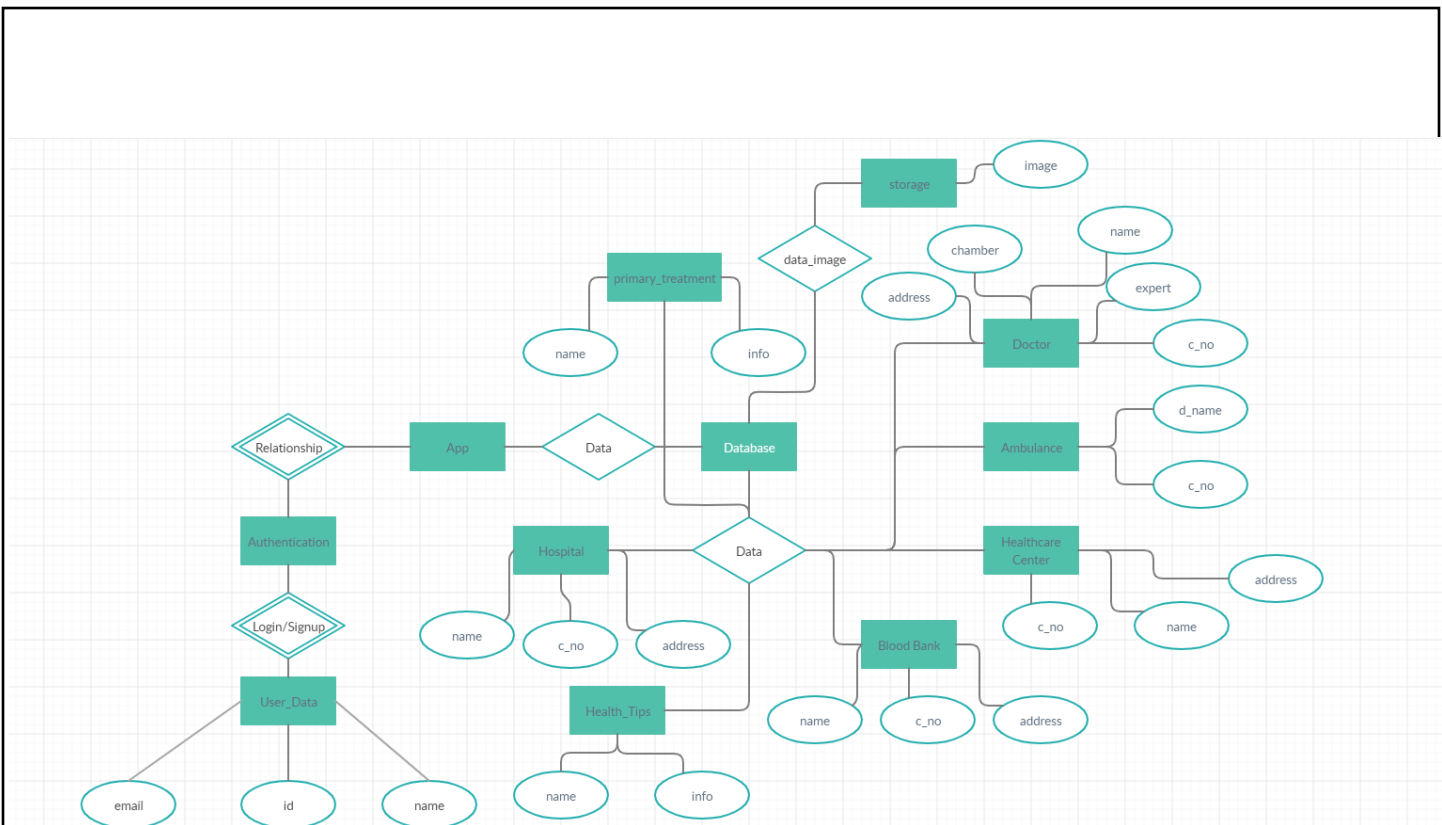


Figure 3.3: Entity Relationship Model

3.5 Design Requirements

When we design some systems or software, we need to consider the following issues to achieve our goal behind making it. The issues are given below by points.

User Friendly: The user interface must be user friendly so that everyone can use it easily.

Compatible to various devices: Compatibility was the main factor when we designed this project. We always kept in mind that this application should run on any version of android devices.

Efficient: We tried so hard to keep this project as light as possible so that it can run faster and smoother.

Some extra features

- Admin and general users are the two types of users of this project.
- Admin will add/update/delete the information.
- User can see everything provided by the admin
- Users can upload prescription as JPEG file.
- Admin can view the prescription provided by the user.
- Admin can active/disable accounts.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

Front-End design consists of two parts- XML file for the design and structure of the project and class for logical expression for that user interface.

In our XML files, we used various kinds of activity layout and labels such as text view, image view, edit text, button, etc. We also used some of the various XML files so that the user interface becomes user friendly and easy to the users. For that reason, the application turned out simple and attractive .

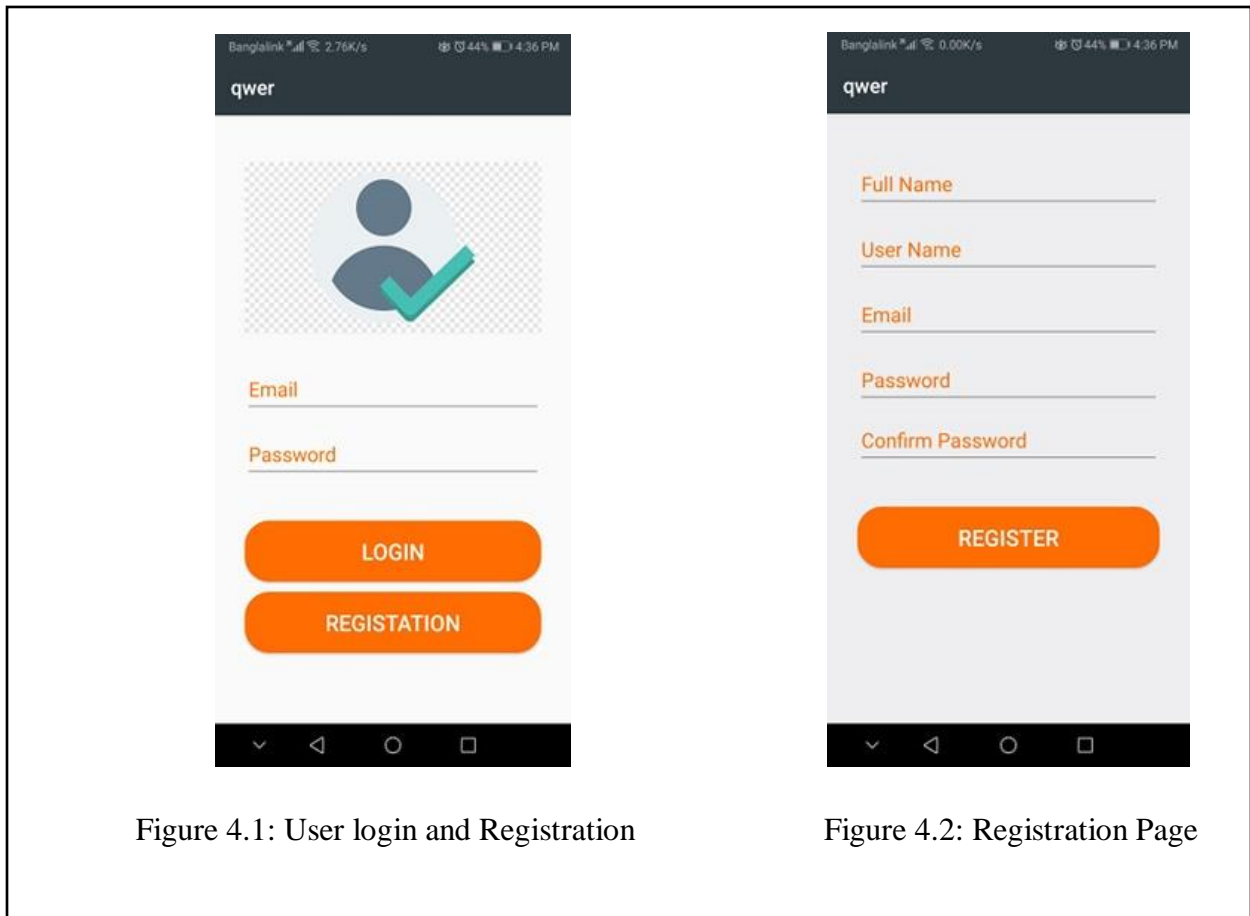


Figure 4.1: User login and Registration

Figure 4.2: Registration Page

Here is the first page of our application in **Figure 4.1**. Users can directly login to the application if he/she was

already registered. If not he/she can click the Register button which will take him/her to the register page. In **Figure 4.2** is named the register page. There are some text fields like full name, username, email, password. Users should fill up these text fields and touch to Register to complete the registration. After completing registration, the user must have a login to the application to access the feature of this application.

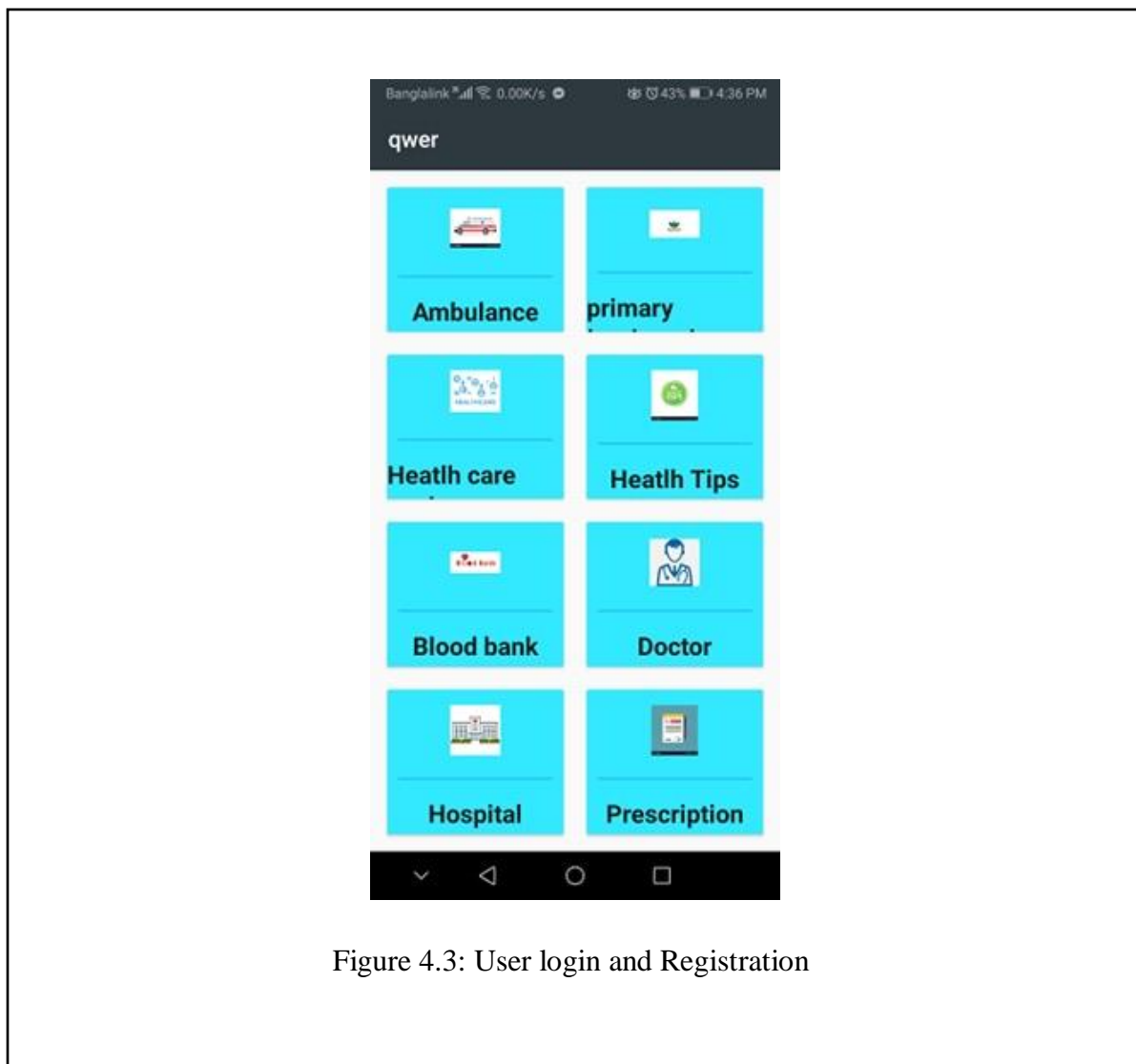


Figure 4.3: User login and Registration

This is the main menu of our application. After login, the user will come to this page. Here user will find some valuable information about ambulance service, primary treatment, health care

center, blood bank, doctor's, hospital etc. there will also an option of prescription will be there. All will describe later.

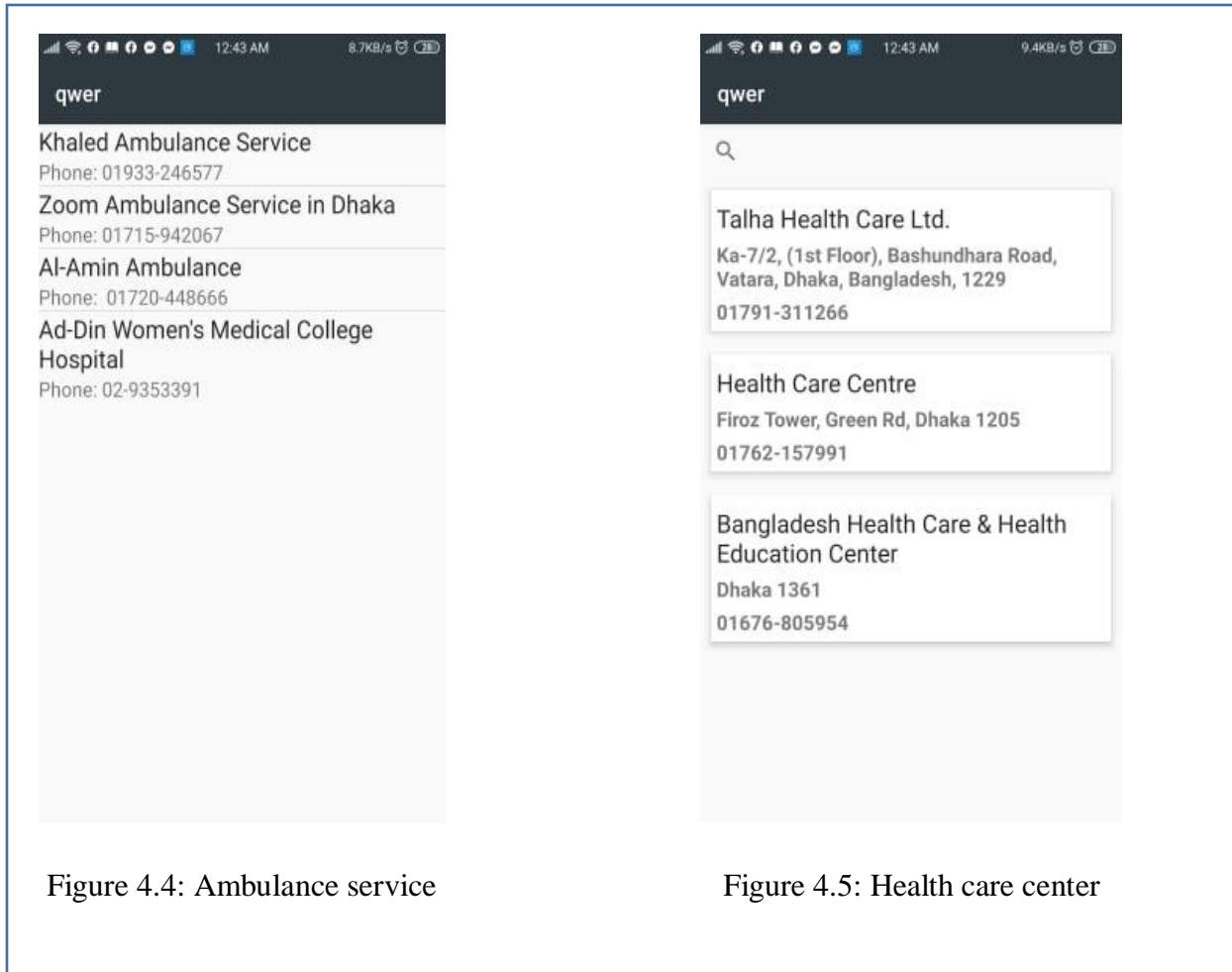


Figure 4.4: Ambulance service

Figure 4.5: Health care center

In **Figure 4.4** we can see that there are some names and contact numbers of the emergency ambulance center. Anytime there maybe be an accident. Sometimes it is very hard to get the ambulance to go to the hospital. This app will help people to get some emergency ambulance service. In **Figure 4.5** there are some health care centers. Their addresses and contact numbers also provided. It will be very easy for people to find all in one. People can easily get their contact numbers and contact with them throughout the mobile phone and get some healthy tips.

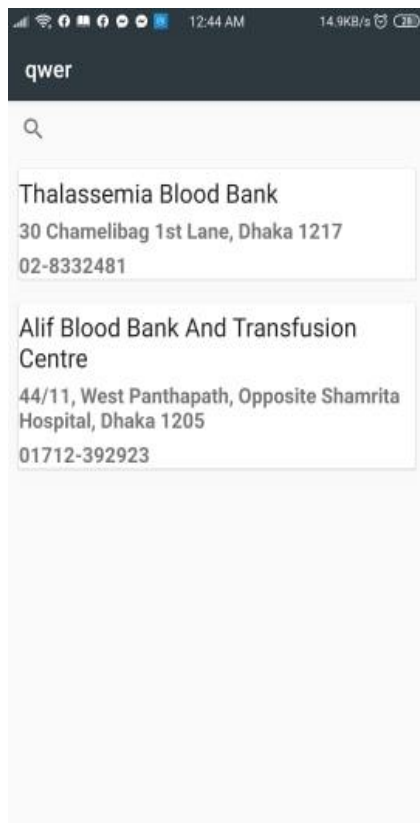


Figure 4.6: Blood Bank

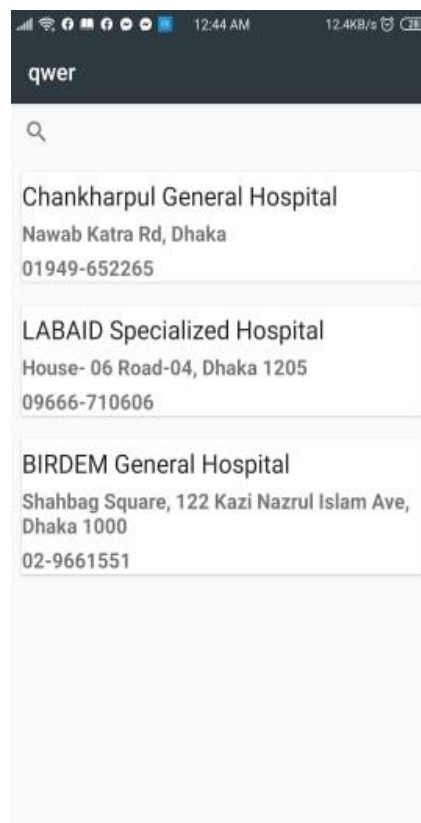


Figure 4.7: Hospital

In **Figure 4.6** there are some renowned blood bank addresses and contact numbers. All of them are situated in Dhaka. In **Figure 4.7** there are the addresses and contact numbers of some of the famous hospitals of Dhaka. User can easily book their appointment by calling to the number.



Figure 4.8: Health Tips

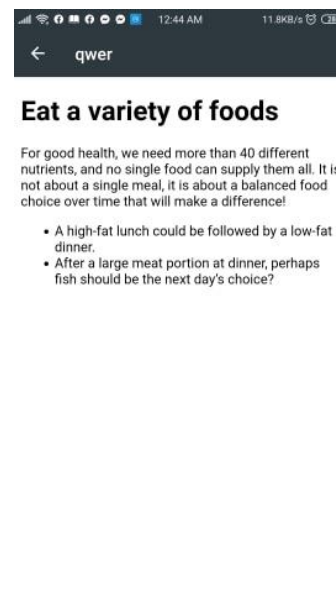


Figure 4.9: Health Tips (2)

As we previously mentioned there are some of the very important health tips in our application. In **Figure 4.8** there are some of the important health tips. In **Figure 4.8** there are the headlines of the health tips. By clicking on the headlines, there will open another activity we've shown in Figure 4.8. In **Figure 4.9** there are some brief health tips. And by following them, we can lead a healthy and wealthy life.

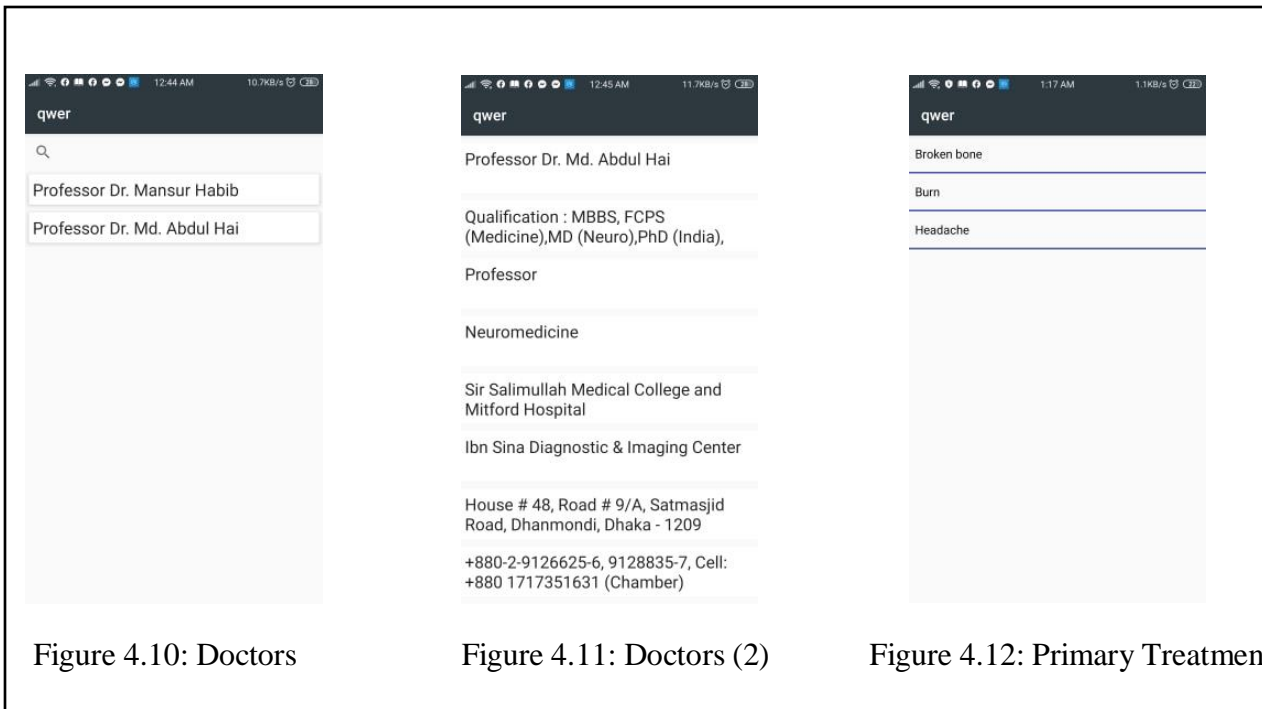


Figure 4.10: Doctors

Figure 4.11: Doctors (2)

Figure 4.12: Primary Treatment

In **Figure 4.10** we can see the list of some famous doctors of Dhaka. By clicking on the doctor name, a new activity will open which we can see in **Figure 4.11**. In **Figure 4.11** some of the details of doctors such as qualification, designation, visiting place, and contact number will be given. So user can easily book their appointment by contacting to the given contact number. Some of the primary treatment has been given in **Figure 4.12**. By clicking on any of that, some detailed treatment will be shown to a new activity.



Figure 4.13: Prescription System

Nowadays everything in our daily life has been digitalized by the blessing of technology. Once we visit a doctor, the give us a prescription that is written to a paper. It is very tough for us to keep it safe and carry all the time we visit to the hospital. We kept an option called a digital prescription system where a user can upload their prescription. They can take pictures of their prescription and upload as a JPEG file. The prescription will be saved to our database. It will remove their hassle.

4.2 Back-End Operations

As we are developing an android based application so we had to use a database to store our valuable data. So we used a firebase database system to store our data. Back-End operations of our project are consist of three parts of the firebase connection. Those are Firebase authentication, real-time, storage, and Java Classes.

Firebase authentication has been used to authenticate the user's information. It has been used to register user to our application. Admin can easily view information and he can disable/delete any user if he/she wants to. We used real-time firebase to store personal information of the user. And we used firebase storage to keep any picture provided by the user.

The connection between our application and firebase authentication has been done by java classes, libraries and dependencies. We used many ways to retrieve data, register users by firebase authentication to execute our application with the help of firebase. There is another reason behind we used firebase that is firebase uses unique id(Uid) so that it is very easy to find any specific user's information or pictures by searching by their Uid.

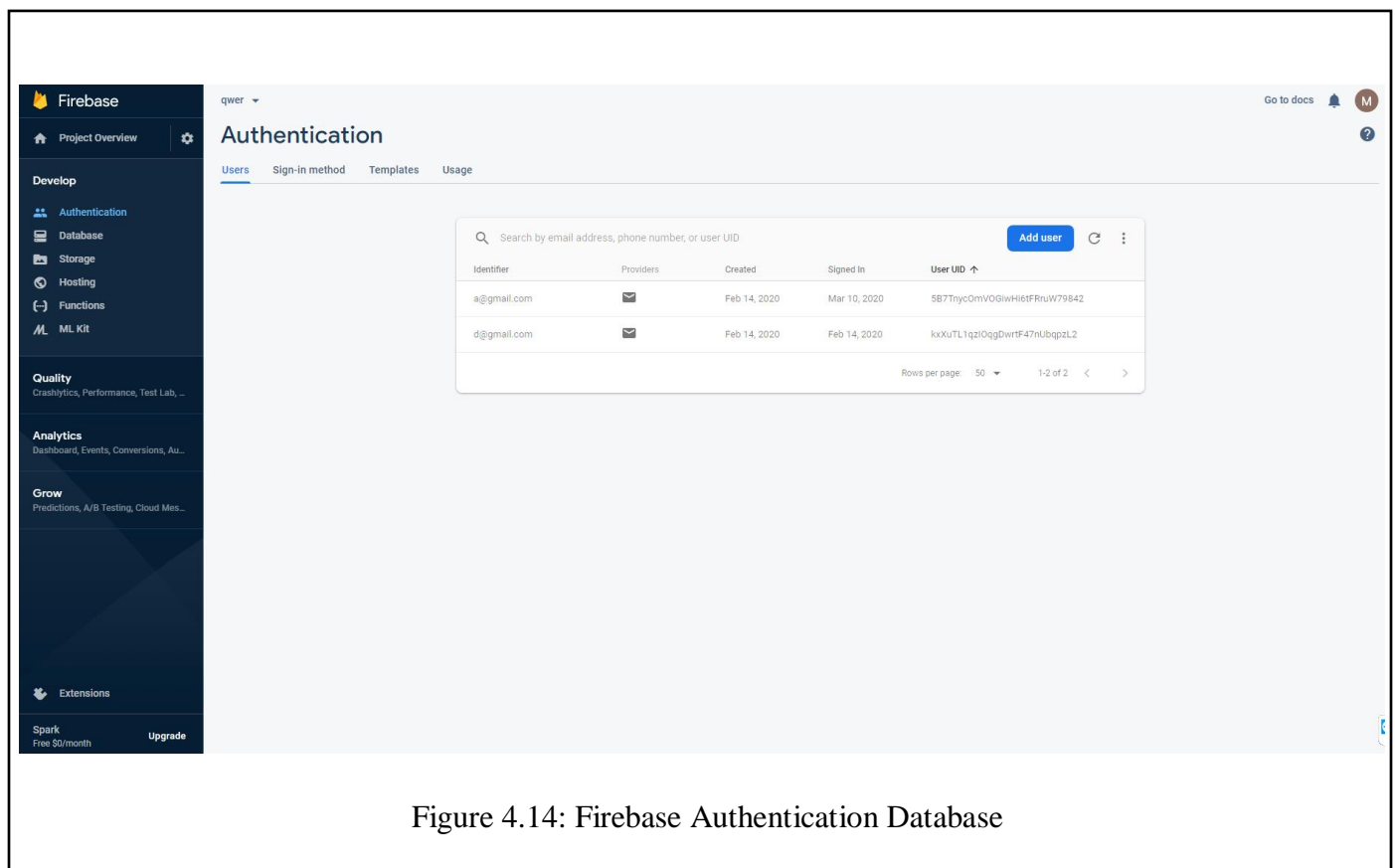


Figure 4.14: Firebase Authentication Database

4.3 Interaction Design and UX

It is the structure of the association among clients and items. Frequently when individuals talk about collaboration plan, the items will in general be programming items like applications or sites. The objective of connection configuration is to make items that empower the client to accomplish their objective(s) in the most ideal way imaginable. Association configuration is the correct way that watches the communication between a framework and its client.

Then again, client experience centers around the general experience plan between a client and an application.

4.4 Implementation Requirements

To understand this undertaking we required Android Studio to structure and build up the entire undertaking, web program to control database, android emulator which is inside introduced in the android studio for testing the task and we in like way expected to introduce JDK and SDK records, web to make android studio work fittingly and to make the database alliance stable to test the undertaking. Without web connection this application can't have endeavored.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

In this stage, DBMS is introduced on the necessary equipment and advanced to run splendidly on the equipment and application. The primary assignment is to make a database and tables and burden the information. This is the execution of DBMS.

We utilized a database for putting away and recovering information in our application. Firebase Database was utilized for this assignment. Three pieces of Firebase Database were utilized in the back-end activity of our application. We likewise utilized Firebase Authentication, Real-Time Database, Firebase Storage, and Java Classes. Java classes were utilized for the entirety of our intelligent activities.

Firestore Authentication: Firestore Authentication was used to register users in our application. It provides privacy to a user so that the admin won't be able to see the password user is using to log in. But admin can disable any account if the user doesn't follow our policies.

Firestore Real-Time Database: We utilized Firestore continuous database to store the client's very own data and recover information of our application to the client.

Firestore Storage: Firestore stockpiling was utilized to store the photos which are transferred by the clients and administrator.

We associated the entirety of the offices of Firestore Database to our application by java classes, different libraries, and conditions. To execute our application with the association of the database we utilized numerous strategies to transfer information, recover information, and register clients by means of Firestore Authentication. Also, another explanation behind utilizing Firestore Authentication is it gives each client a Uid(Unique Id). By this Uid, administrators can without much of a stretch discover the data of the clients and pictures which are transferred by the client appeared in the figure underneath.

5.2 Implementation of Front-end Design

In front-end plan there are two sections. XML documents and Java classes. XML documents are utilized for the plan and structure of the UI. We included content and fastens which will take to different exercises by tapping on them. Java classes were utilized to create sensible activities of the UI. The landing page of our application is actualized by utilizing XML documents. We used to make our landing page appealing and easy to use. The login and sign up area is under the java classes of that XML document. These classes are utilized to play out the consistent tasks.

5.3 Implementation of Interactions

We asked our companions and different tutors including our boss and employees about their assessment. We shared our dreams. We tuned in to what they need to state and took their proposals. For an amicable UI, we utilized pictures and fastens with enough data so the client will know how he/she needs to utilize this application. It is exceptionally simple to arrange, learn and speak with the administrators.

5.4 Testing Implementation

Framework Testing is the trying of a total and completely coordinated programming item. Typically, programming is just a single component of a bigger PC based framework. Eventually, programming is interfaced with other programming/equipment frameworks. Framework Testing is a progression of various tests whose sole reason for existing is to practice the full PC based framework.

Table 01: Test case for the system

Test case	Test Input	Expected Outcome	Obtained Outcome	Pass/Fail	Tested date
1. Sign-up	Sign-up with vital info	Create account successfully	Account created	pass	20.04.2020
2. Sign-up	Sign-up with not vital info	Create account unsuccessfully	Unsuccessful Account creates	pass	20.04.2020
3. Login	Login with correct Email and password	Login Successfully	Successfully logged in	pass	20.04.2020
4. Login	Login with incorrect Email and password	Login failed	Login failed	pass	20.04.2020
5. Select option	Select option	Select successfully	Successfully selected	pass	20.04.2020
6. Upload Prescription	Upload prescription	Upload Successfully	Successfully uploaded	pass	20.04.2020
7. Upload Prescription	No prescription upload	Upload failed	Upload failed	pass	20.04.2020
8. Logout	Click on logout button	Successfully logout	Successfully logout	pass	20.04.2020

5.5 Test Results and Reports

Test report is expected to reflect testing brings about a conventional way, which offers a chance to assess testing result rapidly. It is an archive that records information got from an assessment analyze in an association way, depict the earth or working conditions. What's more, it shows the examination of the test results with destinations.

- Login System
- Registration System
- Selecting Options
- Uploading Images
- Getting Information
- View Information
- Logout

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

We attempted to make an application which will end up being an integral part of a sound way of life. Our aspiration is high. We trust individuals will get an advantage from our application. We will have the option to help them in their crisis. We trust our application will be utilized to make a more secure condition. At this moment we don't have any expectation to make it a business application. We are not anticipating make a benefit out of it. In any case, we have some enormous designs to make it greater. We additionally trust that our application will turn into an association one day and we will give occupations to the jobless individuals.

6.2 Scope for Further Developments

This application will be refreshed consistently. We additionally have an arrangement to make an update area by which clients can set their modified update for making sure to take as much time as necessary. At present our UI language is in English. We are wanting to include the Bengali too with the goal that it very well may be anything but difficult to use for the general individuals. Likewise, we have a plan for an application for an administrator to get simple access to client data and requested medication.

Reference

- [1] “Android” Available at: [https://en.wikipedia.org/wiki/Android \(operating system\)](https://en.wikipedia.org/wiki/Android_(operating_system)) [last accessed on 31.09.19 at 03:00 AM]
- [2] “Android Studio” Available at: <https://developer.android.com/studio> [last accessed on 30.10.19 at 11:00 PM]
- [3] “Functional and non-functional requirements” Available at: <https://www.guru99.com/functional-vs-non-functional-requirements.html> [last accessed on 19.03.2020 at 02:00 AM]
- [4] “Data Flow Diagram” Available at: <https://online.visual-paradigm.com/diagrams/features/dfd-maker/> [last accessed on 20.04.2020 at 4:19 PM]
- [5] “Entity-Relationship Model” Available at: <https://creately.com/lp/er-diagram-tool-online/> [last accessed on 20.04.2020 at 04:21 PM]
- [6] “Use Case Diagram” Available at: <https://creately.com/diagram-type/use-case> [last accessed on 20.04.2020 at 04:24 PM]

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Design and Development of a Digital prescription and health care service Application i CHAPTER 1

INTRODUCTION 1.1 Introduction In this period, a large portion of us has a cell phone. It added another measurement to our daily life. It carries the entire world to our hands. Nearly everything in our daily task has been finished all through cell phones. Without a cell phone, we are unable to think of a solitary day. It has become the most basic piece of our life. There are a great deal of utilizations for our cell phone. These applications introduced to our gadget. There are some application stores like Google Play Store, Apple application store, Amazon, App-droid, and so forth. From these stores we can download our ideal application. There are many sorts of applications. I discovered that there are no such applications in our country, which will give the best possible presentation of medication divisions. As we previously referenced we have made an android based application. It will run on any sort of android stage, for example, android portable, tablet, and so on. Individuals can download it through Google Play Store. The UI of this application is very easy to understand. So all sorts of individuals can utilize it without any problem. As we previously referenced that in this application individuals can get some important data from this application, for example, blood donation center, master specialist, somewhere in the range of hardly any best social insurance focus of our nation. It will be simple for them than search in google. 1.2 Motivation We are in the period of digitalization. These days, the greatest expert divisions are site or application-based. We are not able to remain behind. We looked into about Medicare parts of our nation. We discovered that there are no such applications, which will give us the best possible data of Medicare administration of our nation. There are some applications. In any case, they are brimming with bugs and giving wrong data. We chose to chip away at this task. It is hard for individuals to convey medicine constantly when I go to the specialist. This application will offer chances to transfer the solution to his/her profile. There will be no change, until he/she will erase it. It is somewhat of a computerized solution framework moreover. 1.2 Objectives

- User inviting UI: It will help with the goal that customers can work it without any problem.
- Secure information provider: We will endeavor our best to keep up the precision of information.
- Time effectiveness: Everything will be on the cell phone to it will spare our important time.
- Prescription framework: clients can transfer his/her remedy to his/her profile. So there is zero chance of lost their remedy.
- Information: Every potential subtleties of human services place, pro specialists, and blood donation center.
- Health Tips: Valuable wellbeing tips to get a sound life.

1.3 Expected Outcome

- Easy way to get information
- Better lifestyle
- Different health care center's details can be found
- Different blood bank's details can be found
- Users will get health tips to get a healthy and wealthy life.

CHAPTER 2 BACKGROUND 2.1 Introduction Our fundamental aim was to make an application, which will give data about some medication parts. We made a decent attempt to make this application as the everyday driver of general individuals. Nothing in this world is great. There are a few sites and applications dependent on this point. Nevertheless, those are in a general sense inactive and joins of bugs and missteps. We chose to make one cautiously with the goal that it will help individuals. In further, we will depict in which part our application is not quite the same as different applications. 2.2 Related Works

- bdhealthsolution.com?
- doctorsplease.com.bd?
- cri.org.bd?
- pharmacy.com.bd?
- GoMedKit?

2.3 Comparative Studies As we gave in the related works segments, the entirety of the undertakings is electronic aside from the GoMedKit. These tasks are giving social insurance habitats data and any sort of wellbeing tips. Counting these, pharmacy.com.bd

and GoMedkit are likewise giving medication conveyance offices. In any case, their applications are not easy to understand. These sites and applications are not for all sorts of individuals. Even they are not refreshing their information. Most of the goals preceded. Like GoMedKit is another application. We downloaded it and when I attempt to enlist, it needs to check my email address. It said that a connection has been sent to our email. Nevertheless, we could not find any association with our email. Essentially these activities depend on a solitary subject, for example, medication conveyance, wellbeing tips, and so on however we attempted to join all the offices into one application with the goal that individuals do not have to discover different applications. Moreover, our online cure structure is a unique idea. I did not see it anyplace. We have furthermore some plans to remember more features for this application in the future, for instance, the medicine transport system, online put together arrangement structure thus concerning.

2.4 Scope of the Problem The extent of the issue of this task is the wellspring of data. We accumulate information from various sources. Subsequently it is extremely difficult for us to gather proper data for the clients. Yet we attempted a ton to give as precise as possible. In any case, we could not make it national. In this venture, individuals will just get data dependent on Dhaka. In any case, in a not so distant future, we have plans to make it across the nation. We are dealing with that venture.

2.5 Challenges During this endeavor, we stood up to a huge amount of issues with the new type of android studio. We knew about the more seasoned one. What's more, as I previously referenced that information assortment was additionally an extremely testing work done by us.

CHAPTER 3 REQUIRMENT SPECIFICATION 3.1 Business Process Modeling The given model is called Data Flow Diagram. Datastream chart used in a dare to address the data stream of an errand. DFD clarifies the procedure of information stream in the business data framework from contribution to record stockpiling. DFD can be separated into two sections, sensible and physical. The sensible DFD depicts information stream all through a framework to play out the usefulness of business. The physical DFD portrays the usage of legitimate information stream. We associated our DFD and business process model, which has given beneath. Figure 3.1: Data Flow Diagram

3.2 Requirement Collection and Analysis Prerequisite assortment is one of the extremely essential conditions for application advancement. There are two sorts of require assortment practical assortment and non-useful assortment. Utilitarian assortment are those that the application can perform. What's more, the characters of an application named as non-practical necessity. Functional requirement: Our task has loads of useful necessities. Transferring solution segment, an extraordinary login segment where just confirm individual can get to, these all are a piece of practical necessity. Nonfunctional requirement: Non-functional requirements help the application to be more efficient.

3.3 Use Case Modeling and Description Figure 3.2: Use Case Diagram Users can complete login and registration to use the application. Users can add a prescription by taking a picture of the prescription. Which will be saved to his/her account. User can also delete his prescription and add a new one. Users can also view some information about health care, blood bank, doctors, etc. and some important health tips. Admin can add/update the information. Admin can activate and disable account permanently. Admin can also add and remove items from the application. Admin can view the prescription provided by the user.

3.4 Logical Data Model Entity-Relationship model is a graphical representation between entities. Entity is a data resource that holds a lot of data. The ERM of our project is given below- Figure 3.3: Entity Relationship Model

3.5 Design Requirements When we design some systems or software, we need to consider the following issues to achieve our goal behind making it. The issues are given below by points. User Friendly: The user interface must be user friendly

so that everyone can use it easily. Compatible to various devices: Compatibility was the main factor when we designed this project. We always kept in mind that this application should run on any version of android devices. Efficient: We tried so hard to keep this project as light as possible so that it can run faster and smoother. Some extra features ▶ Admin and general users are the two types of users of this project. ▶ Admin will add/update/delete the information. ▶ User can see everything provided by the admin ▶ Users can upload prescription as JPEG file. ▶ Admin can view the prescription provided by the user. ▶ Admin can active/disable accounts. [CHAPTER 4 DESIGN](#)

[SPECIFICATION 4.1 Front-End Design](#) [Front-End design](#) consists of two parts XML file for the design and structure of the project and class for logical expression for that user interface. In our XML files, we used various kinds of activity layout and labels such as text view, image view, edit text, button, etc. We also used some of the various XML files so that the user interface becomes user friendly and easy to the users. For that reason, the application turned out simple and attractive . [Figure 4.1: User login](#) and [Registration Figure 4.2: Registration Page](#) Here is the first [page of](#) our [application](#) in [Figure 4.1](#). Users can directly login to the application if he/she was already registered. If not he/she can click the Register button which will take him/her to the register page. In Figure 4.2 is named the register page. There are some text fields like full name, username, email, password. Users should fill up these text fields and touch to Register to complete the registration. After completing registration, the user must have a login to the application to access the feature of this application. [Figure 4.3: User login and Registration](#) This is the main menu of our application. After login, the user will come to this page. Here user will find some valuable information about ambulance service, primary treatment, health care center, blood bank, doctor's, hospital etc. there will also an option of prescription will be there. All will describe later. [Figure 4.4: Ambulance service](#) [Figure 4.5: Health care center](#) In [Figure 4.4](#) we can see that there are some names and contact numbers of the emergency ambulance center. Anytime there maybe be an accident. Sometimes it is very hard to get the ambulance to go to the hospital. This app will help people to get some emergency ambulance service. In [Figure 4.5](#) there are some health care centers. Their addresses and contact numbers also provided. It will be very easy for people to find all in one. People can easily get their contact numbers and contact with them throughout the mobile phone and get some healthy tips. [Figure 4.6: Blood Bank](#) [Figure 4.7: Hospital](#) In [Figure 4.6](#) there are some renowned blood bank addresses and contact numbers. All of them are situated in Dhaka. In [Figure 4.7](#) there are the addresses and contact numbers of some of the famous hospitals of Dhaka. User can easily book their appointment by calling to the number. [Figure 4.8: Health Tips](#) [Figure 4.9: Health Tips \(2\)](#) As we previously mentioned there are some of the very important health tips in our application. In [Figure 4.8](#) there are some of the important health tips. In [Figure 4.8](#) there are the headlines of the health tips. By clicking on the headlines, there will open another activity we've shown in [Figure 4.8](#). In [Figure 4.9](#) there are some brief health tips. And by following them, we can lead a healthy and wealthy life. [Figure 4.10: Doctors](#) [Figure 4.11: Doctors \(2\)](#) [Figure 4.12: Primary Treatment](#) In [Figure 4.10](#) we can see the list of some famous doctors of Dhaka. By clicking on the doctor name, a new activity will open which we can see in [Figure 4.11](#). In [Figure 4.11](#) some of the details of doctors such as qualification, designation, visiting place, and contact number will be given. So user can easily book their appointment by contacting to the given contact number. Some of the primary treatment has been given in [Figure 4.12](#). By clicking on any of that,

some detailed treatment will be shown to a new activity. Figure 4.13: Prescription System Nowadays everything in our daily life has been digitalized by the blessing of technology. Once we visit a doctor, they give us a prescription that is written on a paper. It is very tough for us to keep it safe and carry all the time we visit to the hospital. We kept an option called a digital prescription system where a user can upload their prescription. They can take pictures of their prescription and upload as a JPEG file. The prescription will be saved to our database. It will remove their hassle.

4.2 Back-End Operations

As we are developing an android based application so we had to use a database to store our valuable data. So we used a firebase database system to store our data. Back-End operations of our project consist of three parts of the firebase connection. Those are Firebase authentication, real-time, storage, and Java Classes.

Firebase authentication has been used to authenticate the user's information. It has been used to register user to our application. Admin can easily view information and he can disable/delete any user if he/she wants to. We used real-time firebase to store personal information of the user. And we used firebase storage to keep any picture provided by the user. The connection between our application and firebase authentication has been done by java classes, libraries and dependencies. We used many ways to retrieve data, register users by firebase authentication to execute our application with the help of firebase. There is another reason behind we used firebase that is firebase uses unique id(Uid) so that it is very easy to find any specific user's information or pictures by searching by their Uid. Figure 4.14: Firebase Authentication Database

4.3 Interaction Design and UX

It is the structure of [the association among clients and items](#). Frequently [when individuals talk about collaboration plan, the items will in general be programming items like applications or sites](#). The objective of connection [configuration is to make items that empower the client to accomplish their objective\(s\) in the most ideal way imaginable](#). Association configuration is the correct way that watches the communication between a framework and its client. Then again, client experience centers around the general experience plan between a client and an application.

4.4 Implementation Requirements

To understand this undertaking we required Android Studio to structure and build up the entire undertaking, web program to control database, android emulator which is inside introduced in the android studio for testing the task and we in like way expected to introduce JDK and SDK records, web to make android studio work fittingly and to make the database alliance stable to test the undertaking. Without web connection this application can't have endeavored.

CHAPTER 5 IMPLEMENTATION AND TESTING

5.1 Implementation of Database

In this stage, DBMS is introduced on the necessary equipment and advanced to run splendidly on the equipment and application. The primary assignment is to make a [database and tables](#) and burden [the information](#). This is the execution of DBMS. We utilized a database for putting away and recovering information in our application. Firebase Database was utilized for this assignment. Three pieces of Firebase Database were utilized in the back-end activity of our application. We likewise utilized Firebase Authentication, RealTime Database, Firebase Storage, and Java Classes. Java classes were utilized for the entirety of our intelligent activities.

Firebase Authentication: Firebase Authentication was used to register users in our application. It provides privacy to a user so that the admin won't be able to see the password user is using to log in. But admin can disable any account if the user doesn't follow our policies.

Firebase Real-Time Database: We utilized Firebase continuous database to store the client's very own

data and recover information of our application to the client. Firebase Storage: Firebase stockpiling was utilized to store the photos which are transferred by the clients and administrator. We associated the entirety of the offices of Firebase Database to our application by java classes, different libraries, and conditions. To execute our application with the association of the database we utilized numerous strategies to transfer information, recover information, and register clients by means of Firebase Authentication. Also, another explanation behind utilizing Firebase Authentication is it gives each client a Uid(Unique Id). By this Uid, administrators can without much of a stretch discover the data of the clients and pictures which are transferred by the client appeared in the figure underneath. [5.2 Implementation of Front-end Design](#) In [front-end](#) plan there are two sections. XML documents and Java classes. XML documents are utilized for the plan and structure of the UI. We included content and fastens which will take to different exercises by tapping on them. Java classes were utilized to create sensible activities of the UI. The landing page of our application is actualized by utilizing XML documents. We used to make our landing page appealing and easy to use. The login and sign up area is under the java classes of that XML document. These classes are utilized to play out the consistent tasks. [5.3 Implementation of Interactions](#) We asked our companions and different tutors including our boss and employees about their assessment. We shared our dreams. We tuned in to what they need to state and took their proposals. For an amicable UI, we utilized pictures and fastens with enough data so the client will know how he/she needs to utilize this application. It is exceptionally simple to arrange, learn and speak with the administrators. [5.4 Testing Implementation Framework](#) [Testing is the trying of a total and completely coordinated programming item.](#) Typically, [programming is just a single component of a bigger PC based framework.](#) Eventually, [programming is interfaced with other programming/equipment frameworks.](#) Framework [Testing is a progression of various tests whose sole reason for existing is to practice the full PC based framework.](#) Table 01: Test case for the system [Test case Test Input Expected Outcome Obtained Outcome Pass/Fail Tested](#) date [1.](#) Sign-up Sign-up with vital info Create account successfully Account created pass 20.04.2020 2. Sign-up Sign-up with not vital info Create account unsuccessfully

Unsuccessful Account creates pass 20.04.2020 3. Login Login with correct

Email and password Login Successfully Successfully logged in pass

20.04.2020 4. Login Login with incorrect Email and password Login failed

Login failed pass 20.04.2020 5. Select option Select option Select successfully

Successfully selected pass 20.04.2020 6. Upload Prescription Upload

prescription Upload Successfully Successfully uploaded pass 20.04.2020 7. Upload Prescription No prescription upload Upload failed Upload failed pass 20.04.2020 8. [Logout Click](#) on [logout button](#) Successfully [logout](#) Successfully [logout pass](#) 20.04.2020 [5.5 Test Results and Reports Test report is](#) expected

[to](#) reflect [testing](#) brings about [a](#) conventional [way](#), which offers [a chance to](#) assess [testing result rapidly](#). [It is](#) an archive [that records information got from an assessment](#) analyze [in](#) an association [way, depict the earth or working conditions](#). What's more, it shows [the examination of the test results with destinations](#). ▶ Login System ▶ Registration System ▶ Selecting Options ▶

Uploading Images ▶ Getting Information ▶ View Information ▶ Logout [CHAPTER 6 CONCLUSION AND FUTURE SCOPE 6.1 Discussion and Conclusion We](#) attempted [to](#) make an application which will end up being an integral part of a sound way of life. Our aspiration is high. We trust individuals will get an advantage from our application. We will have the option to help them in their crisis. We trust our application will be utilized to make a more secure condition. At this moment we don't have any expectation to make it a business application. We are not anticipating make a benefit out of it. In any case, we have some enormous designs to make it greater. We additionally trust that our application will turn into an association one day and we will give occupations to the jobless individuals. 6.2 Scope for Further Developments This application will be refreshed consistently. We additionally have an arrangement to make an update area by which clients can set their modified update for making sure to take as much time as necessary. At present our UI language is in English. We are wanting to include the Bengali too with the goal that it very well may be anything but difficult to use for the general individuals. Likewise, we have a plan for an application for an administrator to get simple access to client data and requested medication.

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