

Digital Medical System

BY

Md. Ashraful Alam

Id: 172-15-10178

Md. Zakaria Ahmed

Id:171-15-9404

And

Maria Jannat

Id: 172-15-10189

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

Supervised By

Mr.Md.Mahade Hasan

Lecturer

Department of CSE

Daffodil International University

Co-Supervised By

Md. Zahid Hasan

Assistant Professor

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

MAY 2021

APPROVAL

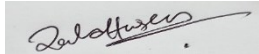
This Project titled “**Digital Medical System**”, submitted by * Md. Ashraful Alam, ID: 172-15-10178** Md. Zakaria Ahmed, ID: 171-15-9404 * and * Maria Jannat, ID: 172-15-10189 * to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory 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 *31-05-2021*.

BOARD OF EXAMINERS



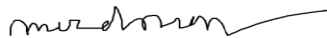
Prof. Dr. Touhid Bhuiyan
Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Chairman



Md Zahid Hasan
Assistant Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Md. Riazur Rahman
Assistant Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Dr. Md. Arshad Ali

Associate Professor

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Hajee Mohammad Danesh Science & Technology University

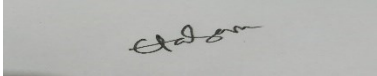
External Examiner

DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Mr. Md. Mahade Hasan, Lecture, Department of CSE** Daffodil International University.

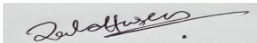
We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



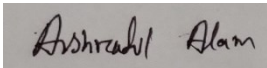
Mr.Md.Mahade Hasan
Lecture
Department of CSE
Daffodil International University

Co-Supervised by:

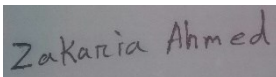


Md. Zahid Hasan
Assistant Professor
Department of CSE
Daffodil International University

Submitted by:



Md. Ashraful Alam
ID: -172-15-10178
Department of CSE
Daffodil International University



Md. Zakaria Ahmed
ID: -171-15-9404
Department of CSE
Daffodil International University

Maria Jannat.

Maria Jannat

ID: -172-15-10189

Department of CSE

Daffodil International University

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.

We really grateful and wish our profound our indebtedness to **Mr.Md.Mahade Hasan, Lecture**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “Machine Learning (ML), Android Application, Human Computer Interaction (HCI), Desktop Application” to carry out this project. His endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Prof. Dr. Touhid Bhuiyan**, Professor and Head, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

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

ABSTRACT

Nowadays people depend upon virtual creation through the phone and therefore the internet. This extensive use of mobile phones creates scope for various mobile applications. Mobile applications have started a revolution, therein they have completely changed the way we live. Actually, in the project, we are trying to build a website and mobile application that serves various purposes. Our application is mainly focused on digital medical management system. We build both a Website and Android versions of our application. The main stakeholders of our app are doctors, patients, diagnostic center, pharmaceutical, blood bank and ambulance etc. Any user can login, then they can make an appointment with the doctor, the doctor can approve the patient's appointment, the doctor can see all the details through the patient id, give any test to the patient id and write the prescription The Diagnostic Center will be able to view the patient's report with the patient's ID and name as all information will be stored correctly in the patient's ID and the Diagnostic Center will update the new report to the patient's ID. There is no possibility of a reported exchange because an updated report will be submitted on the patient's Id .In this project, a user can also give a doctor's appointment. In addition, for the benefit of patients, blood bank and ambulance area has been provided. With the hassle of report exchanges, the user will get proper treatment by using the application in less time, with less hassle, our application will make life easier and spontaneous.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of Examiners	ii
Declaration	iv
Acknowledgements	vi
Abstract	vii
CHAPTER	
CHAPTER 1: INTRODUCTION	1-3
1.1 Introduction	1
1.2 Motivation	1
1.3 Project Initiation Planning	1
1.4 Object of this Project	2
1.5 Expected Outcomes	2
1.6 Report Layout	3
CHAPTER 2: BACKGROUND	4-5
2.1 Introduction	4
2.2 Related Works	4
2.3 Comparative studies	4
2.4 Scope of the Problem	5
2.5 Challenges	5
<hr/>	
©Daffodil International University	viii

CHAPTER 3: REQUIREMENT SPECIFICATION	6-11
3.1 Introduction	6
3.2 Business Process Modeling	6
3.3 Use Case Modeling and Description	7-9
3.4 Logical Data Model	10
3.5 Design Requirement	11
CHAPTER 4: DESIGN SPECIFICATION	12-17
4.1 Front-End Design	12
4.2 Back-End Design	12
4.3 Interaction Design and User	13
4.4 Database Design	14-19
CHAPTER 5: IMPLEMENTATION AND TESTING	20-23
5.1 Introduction	20
5.2 Implementation of Database Design	20-24
5.3 Implementation of Front-End Testing	24 - 25
5.4 Testing Implementation	25-34

CHAPTER 6: IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY	35
6.1 Impact on Society	35
6.2 Impact on Environment	35
6.3 Ethical Aspects	35
CHAPTER 7: CONCLUSION & FUTURE SCOPE	36
7.1 Discussion and Conclusion	36
7.2 Scope for Further Developments	36
REFERENCES	37

LIST OF FIGURES

FIGURES	PAGE NO
Figure 3.2.1: Process Modeling	7
Figure 3.3.1: Use Case Diagram of the System	8
Figure 3.3.3: Data Flow Diagram	9
Figure 3.4.1: Logical Data Model	10
Figure 3.5.1: Design Requirements Diagram	11
Figure 4.1: Design of Front End	13
Figure 4.3: Basic Structure of User Experience	14
Figure 4.4.1: User Database	15
Figure 4.4.2: City Database	15
Figure 4.4.3: Patient Appointment Database	16
Figure 4.4.4: Diagnostic Report Database	16
Figure 4.4.5: Pharmaceutical Database	17
Figure 4.4.6: Prescription Database	17
Figure 4.4.7: Ambulance Database	18
Figure 4.4.8: Blood Bank Database	18
Figure 4.4.9: Area Database	19
Figure 5.3.1: Home Page	25

Figure 5.4.1: Patient Dashboard	26
Figure 5.4.2: Prescription	26
Figure 5.4.3: Test Report	27
Figure 5.4.4: Blood Bank	27
Figure 5.4.5: Ambulance	28
Figure 5.4.6: Doctor Schedule	28
Figure 5.4.7: Appointment	29
Figure 5.4.8: Write and Print Prescription	29
Figure 5.4.9: Doctor Search Medicine	30
Figure 5.4.10: Doctor Search Blood Bank	30
Figure 5.4.11: Suggest Test	31
Figure 5.4.12: Add Test Report	31
Figure 5.4.13: Diagnostics All Report	32
Figure 5.4.14: Add Medicine	32
Figure 5.4.15: My Medicine	33
Figure 5.4.16: Search Ambulance	33
Figure 5.4.17: Blood Bank	34

LIST OF TABLES

TABLES	PAGE NO
Table 5.2.1: User Data Set	21
Table 5.2.2: City Data Set	21
Table 5.2.3: Patients Appointment Data Set	22
Table 5.2.4: Diagnostic Center Data Set	22
Table 5.2.5: Pharmaceutical Data Set	22
Table 5.2.6: Prescription Data Set	23
Table 5.2.7: Ambulance Data Set	23
Table 5.2.8: Blood Bank Data Set	23
Table 5.2.9: Area Data Set	23

CHAPTER 1

INTRODUCTION

1.1 Introduction

A mobile application helps us to get news very quickly. People like to make their life comfortable through the internet and mobile. So we tried to make an application for our medical sector that will actually help the people for their every need. A mobile application helps us to get news very quickly. People like to make their life comfortable through the internet and mobile. So we tried to make an application for our medical sector that will actually help the people for their every need.

1.2 Motivation

Health issue is a very important and sensitive for a human. So, many village people come to the city for a proper diagnostic test report and proper treatment. All-time they bring their all reports and prescription. sometimes the patient lost many past and important reports and prescriptions. The diagnostic center cannot possible to store all the past reports for all the patients. So many times doctor cannot give proper treatment and doctors send the patient again for all the diagnostic tests. It is very costly for poor people, and it waste time for rich, old age and children patient. By thinking about all the problems, we want to make a completely connected system with doctor, patient, diagnostic center, pharmaceutical, blood bank and ambulance. In this system patient all the documents, reports and prescriptions will properly save in the patient id.

1.2 Project Initiation Planning

We are three members for this project. This project is a result of our thoughts and hard work. Very beginning we had several ideas for our final project. From those several ideas we choose medical management sector for our project. We wanted to create a complete Web and Android application system connected to doctors, patients, diagnostic centers, pharmaceuticals, blood bank and ambulance. After consulting with authority and

our supervisor we decided to do this particular project. Then we started our project. Our supervisor had given proper instruction.

1.3 Objective of this project

This project has several objectives. The most important objectives are given below:

Mainly any user can login and make an appointment with the doctor. If the doctor wants, he can approve and delete the patients' appointment. A doctor can search patients with id and see all patient documents. Doctors will be able to view all reports simultaneously as all data and updated reports will be together in a Patient Id. By having the reports together, the doctor will be able to see the previews and update reports and compare and understand the updated conditions of the patients. Patient harassment will be less because the Patient Report does not have to stand on the long line. There is no possibility of a reported exchange because an updated report will be submitted on the patient's Id. The report will be sent to the patient via online from the Diagnostic Center. Pharmaceuticals will send the name of their medicine online to the doctor. If emergency blood is needed for the patient, the patient can search for blood in any area. Blood bank information will already be updated. If emergency ambulance is needed for the patient, the patient can search for ambulance in any area. Patient's prescription is less likely to be inaccurate, so the patient will get the right treatment.

1.4 Expected Outcomes

- i. Patient Monitoring and Treatment: This application will ensure a medical ID and a profile for each patient and each patient profile will have a database. So the test report, Previous and current arrangements will be uploaded there. Therefore the doctor can easily monitor it by entering his/her profile and do proper treatment.
- ii. Time savior: This application, will save patient's time and help them to get rid of troubles. Patient has not to wait in the medical for get their reports, have not to come from far for getting their reports. The diagnostics center will update their reports on patient's id. So patient can get it from anywhere with the help of

- internet by accessing his profile. This application helps to less harassment and save time.
- iii. Exchanges reports: There is no possibility of report exchanges, as the report is saved directly in the patient's database. As a result, even if you go to a different doctor, you don't have to do a new test.
 - iv. Lost Documents: There is no possibility of losing any reports or data. As a result, it will act as a secure system. Anyone can use this system safely through the Internet and receive services from anywhere in the world.

1.5 Report Layout

In chapter one there's introduction, objective and expected outcome of the project work we've done is written here and therefore the report layout.

In chapter two that's approximately background. This following chapter is all about the background situation of our work that we've done. We additionally gave the writing audit of project related investigations and trial of the framework.

In chapter three well mention about requirement specification. This chapter will tell us about many types of model, use case diagram, logical data set etc.

In chapter four we'll talk approximately design specification. This bankruptcy is all about the mission design there could also be a couple of front layout work and back-end design.

In chapter five we'll mention implementation and testing. This chapter tells about how we implement that exact design and tested it and tested it successfully.

In chapter six we'll mention impact on society environment and sustainability. This chapter will tell us about online platform education impact on society hours after environment and sustainability.

This chapter seven is about Conclusion and future scope.

CHAPTER 2

BACKGROUND

2.1 Introduction

In this chapter, we try to give an overall idea and knowledge about the background of the full project. Before starting to make this project we did a deep studies about its background. Which sector will we work with, how will we start this project, how will we organize the database? After much thought, we came to a decision. We are thinking of creating an application that will make the current medical system more integrated, advanced, simple, affordable and reliable.

2.2 Related Works

There are some related works that has been done on this topic but none of them is totally similar to this project. There are applications named “Health sector”[1],” Medi-link”[2],” E-Medicare”[3] etc.

2.3 Comparative Studies

We need to do comparative studies to know whether the project we are thinking about or want to do has been done before, if so, what platform it is, how it has been done. Comparative studies are very important for a project. Although there are some projects similar to ours, there are comparative differences between them. Some of them may be web base related, some may be just android based, some may be medical, doctor or blood search. But "Digital Medical System" is a Web and Android application base project.

2.4 Scope of the Problem

Screen size of different smart devices is a big issue to develop this project. Sometimes we face this problem that for different screen size application cannot run properly. Some part of the application is not available to the user for different screen size.

2.5 Challenges

Data collection of medical, blood bank, ambulance service, pharmaceutical's store like address, phone number, e-mail etc. is a big issue. Data of medicine like generic name, company name, details etc. Another big factor is the authentication of data.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Introduction

For every project, there are some requirements for development. So, our project has also some requirement specifications. As we already know that DMS is an Android Application and Web Application, so we just need a smartphone, tab and a Website. We know that there are many Operating Systems available in the global market. Among them, Android, iOS, Windows, and blackberry are very popular. But in the initial stage, our project will work on Android Operating Systems and Web Application. The user must have an internet connection on the device to run the application. So the user must have all these requirements.

3.2 Business Process Modeling

The business process model represents the graphical representation of a business process. If a project wants to business then there are two possible ways for business process modeling. One is that the 'As-is' state which is employed for the state of the method because it is true now without making any change and therefore the other is that the 'To-be' state which is employed for future process[4].

The following figure 3.2.1 shows the system modeling of Business Process:

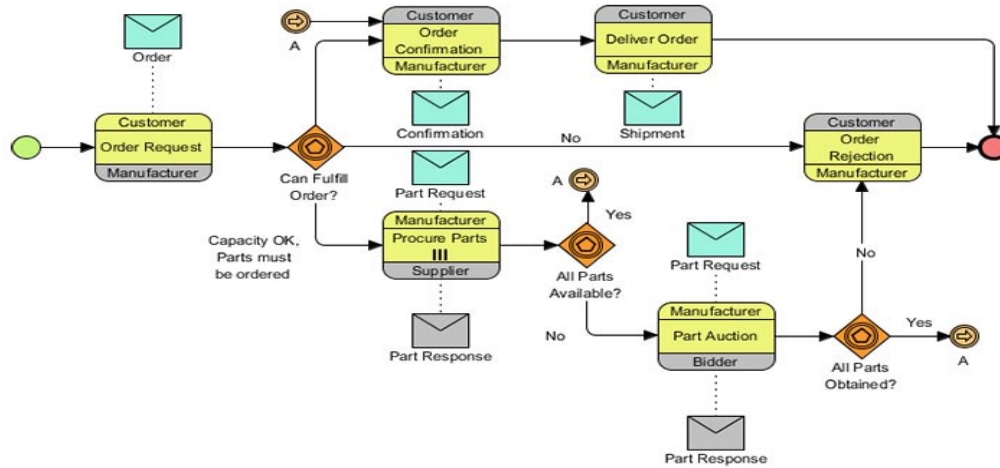


Figure 3.2.1: Process Modeling

3.3 Use Case Modeling and Description

A use case model is a model where many actors can interact with each other and can provide a complete functional and technical view of the system. In this project, there are some actors like users, doctors, patients, pharmaceutical, ambulance and blood. How they connected to each other and with the whole system that can be seen by the use case model[5].

3.3.1 Use Case Diagram

Actors

User: User can view all the information

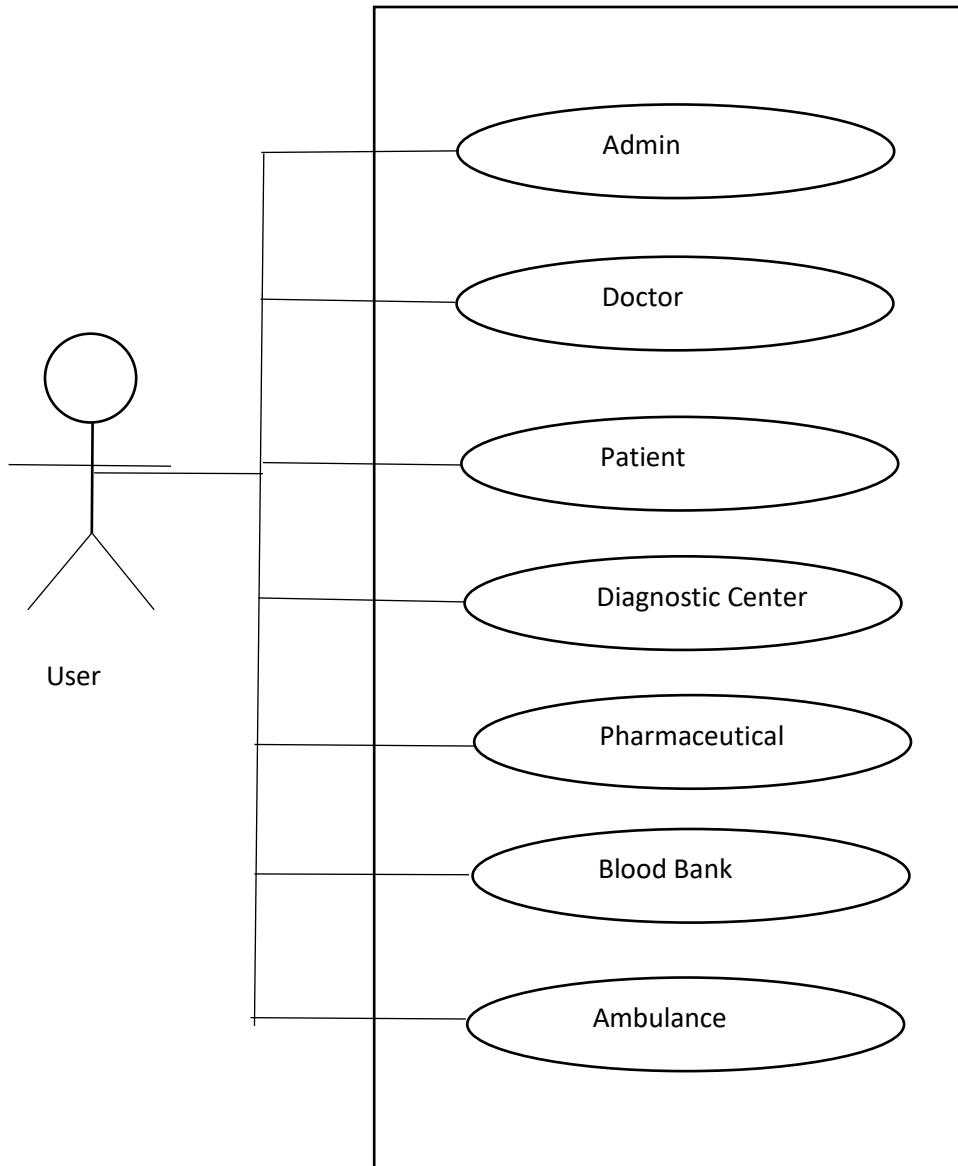


Figure 3.3.1: Use Case Diagram

3.3.2 Use Case List

User can view all information.

3.3.3 Data Flow Diagram

A data-flow diagram may be a way of representing a flow of knowledge through a process or a system. The DFD also provides information about the outputs and inputs of every entity and therefore the process itself. A data-flow diagram has no control flow, there are not any decision rules and no loops[6].

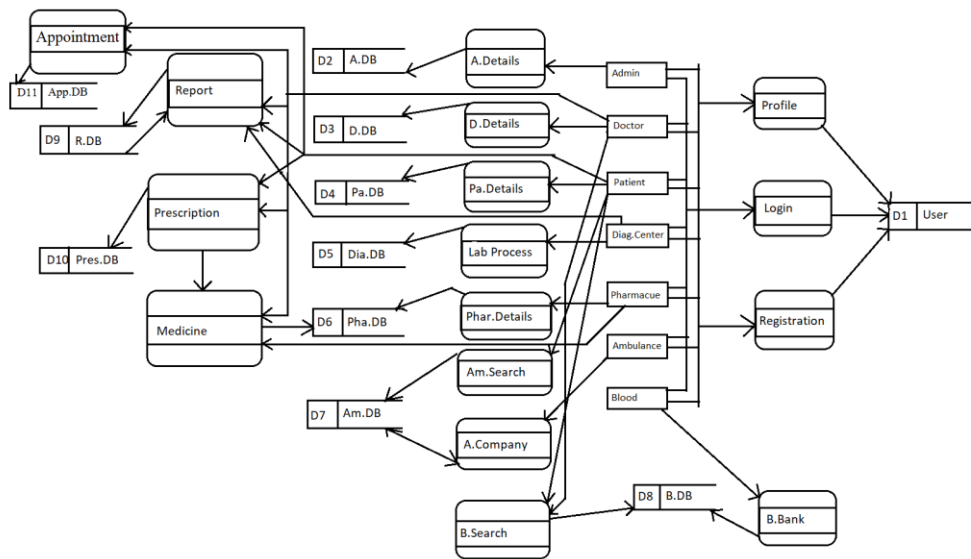


Figure 3.3.3: Data Flow Diagram

3.4 Logical Data Model

The logical data model is used to identify the structure of data elements and to set the relation between them. It is a logical data model that does not represent the physical structure[7].

The following figure 3.4.1 show the Logical Data Model:

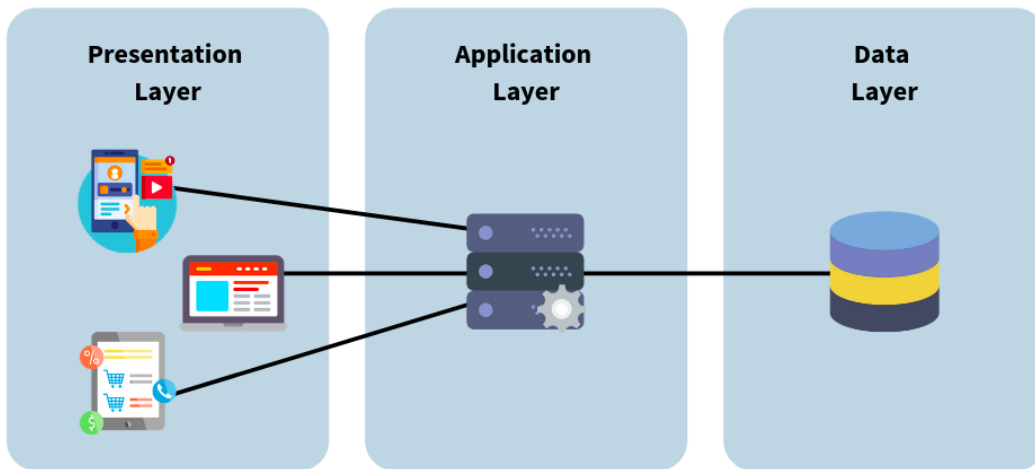


Figure: 3.4.1: Logical Data Model.

3.5 Design Requirement

The following figure 3.5.1 shows the Design Requirement:

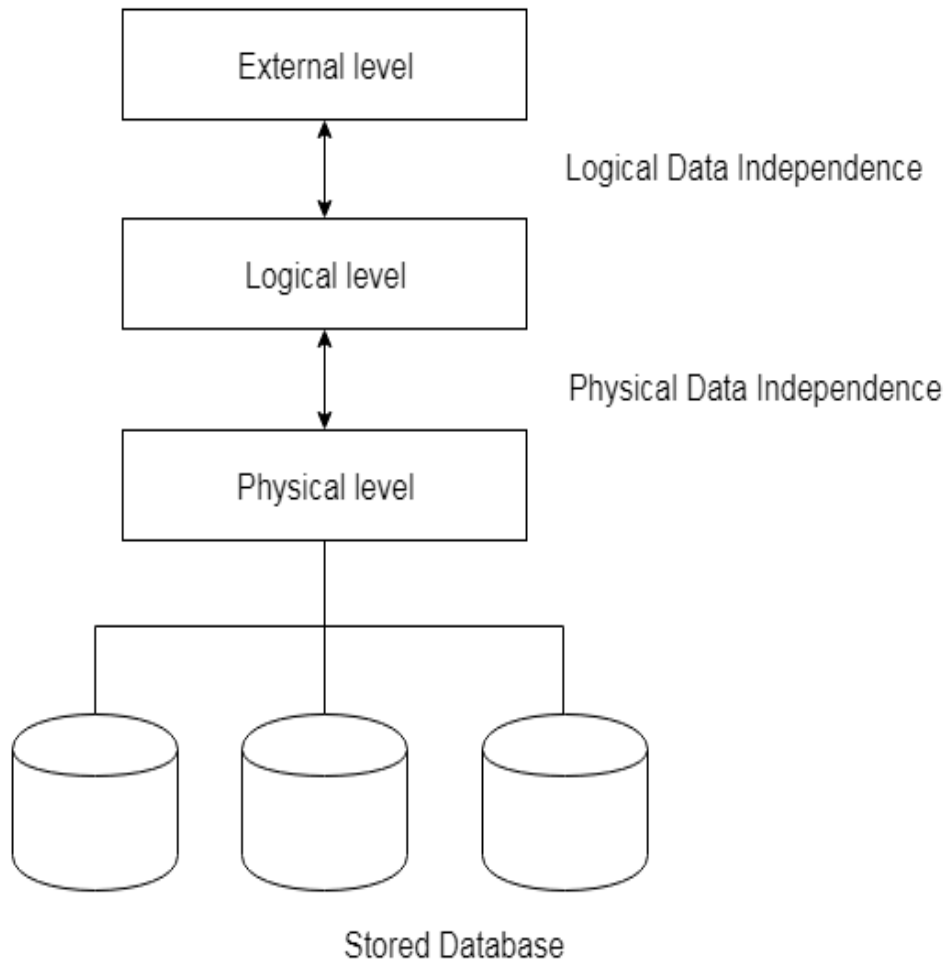


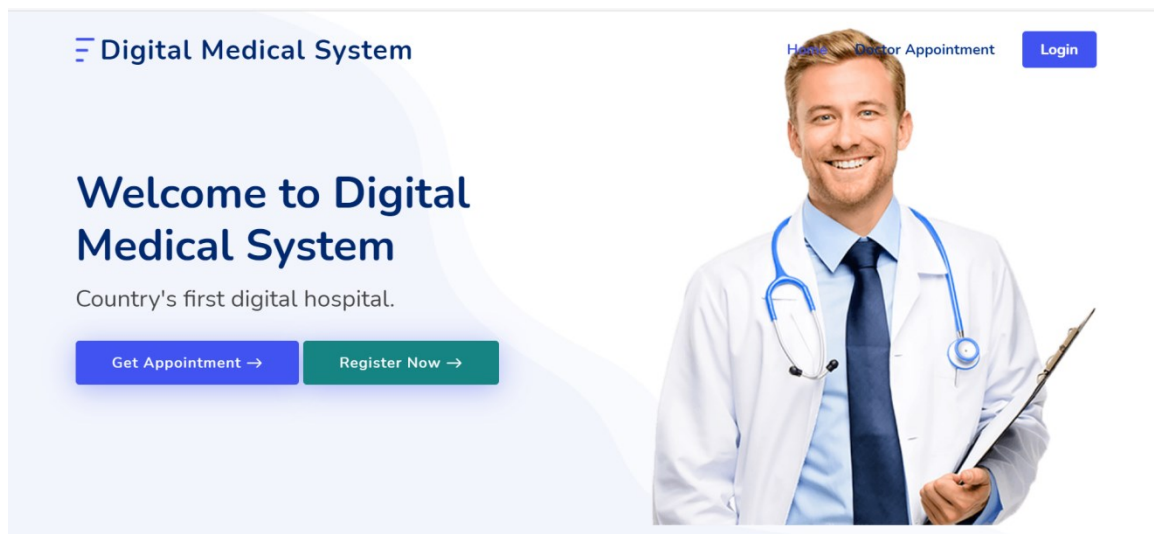
Figure 3.5.1: Design Requirements Diagram

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front –End Design

An Web and Android application has two parts: one is front end and the other is back end. The front is that the visual a part of the appliance. Through this part user interact with the appliance. Front helps user to know that what quite operation he or she has got to perform.



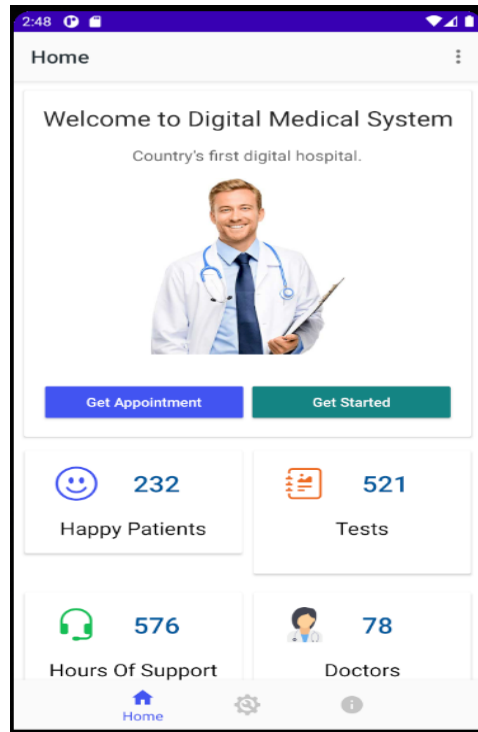


Figure 4.1: Design of Front End

4.2 Back-end Design

In this project we work with Web and Android application. For Web, the Back-end design, we use PHP and For Android, the Back-end design, we use JAVA. We all know PHP and JAVA is used for a lot of development work.

4.3 Interaction Design and User Experience (UX)

The following figure 4.3 shows the Basic Structure of User Experience.

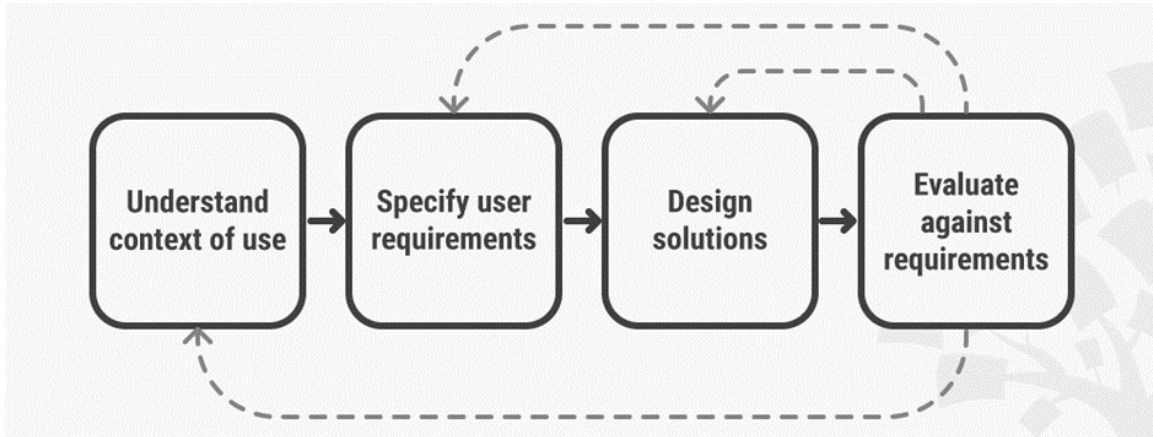


Figure 4.3: Basic Structure of User Experience

4.4 Database Design

Database design is the organization of information in accordance to a database model. The designer determines what data should be saved and how the facts elements interrelate. With this information, they can begin to fit the records to the database model. Database management gadget manages the data accordingly.

The following figure 4.4.1 shows the Database of User Information.

Showing rows 0 - 25 (25 total, Query took 0.0003 seconds.)

Options	USER_ID	USER_NAME	USER_EMAIL	USER_TYPE	USER_REG_ID_NUM	CITY_NO	AREA_NO	ADDRESS	USER_DETAILS	USER_IMG
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	1	1910091225	11ashrafu1@ashrafu1hospital.com	administrator	1	1	0	0	Super Admin	no.png
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2	0104040105	11ashrafu1@ashrafu1hospital.com	user	2	1	1		user	1010110002.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	3	45887584	11ashrafu1@ashrafu1hospital.com	patient	2	3	1	amshahid	amshahid details	1010110010.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	23439747	11ashrafu1@ashrafu1hospital.com	Dr Namea	3	1	1	alghafis	alghafis details	1010110020.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	5	224099979871	11ashrafu1@ashrafu1hospital.com	Liaqat Hossain	4	1	1	shaka	shaka	1010110030.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	6	495716	11ashrafu1@ashrafu1hospital.com	Shreya Dasgupta	5	1	2	asad	asad	no.png
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	7	67860834423	11ashrafu1@ashrafu1hospital.com	K Transport	6	1	5	Sukreah	no details	no.png
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	8	43573750	11ashrafu1@ashrafu1hospital.com	Rafiqy Blood Bank	7	1	5			no.png
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	9	34247878713	11ashrafu1@ashrafu1hospital.com	Nat Admin	1	1	1	l_ahmed		no.png
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	11	348878816	11ashrafu1@ashrafu1hospital.com	pt	2	1	1	selfstud	selfstud	1010110040.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	12	953487816	11ashrafu1@ashrafu1hospital.com	Dr. Shabnam	3	1	2	Poduka	Intern Doctor	1010110050.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13	469178887	11ashrafu1@ashrafu1hospital.com	Dr. Enis	3	1	2	Enis		1010110060.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	14	344378887	11ashrafu1@ashrafu1hospital.com	Dr. Enis	4	1	2	selfstud	selfstud	1010110070.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	15	01717434883	11ashrafu1@ashrafu1hospital.com	ashrafu1	2	1	5	Dharmendra 32	Shuani	1010110080.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	16	01912121268	11ashrafu1@ashrafu1hospital.com	Maria	3	1	2	Shujan	MBBS BC&M&H	1010110090.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	18	00764069955	11ashrafu1@ashrafu1hospital.com	Shreya	4	1	2	Shujan		1010110100.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	19	08784377784	11ashrafu1@ashrafu1hospital.com	Popular	5	1	1	Mirpur		1010110110.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	20	00078939775	11ashrafu1@ashrafu1hospital.com	Duronto	6	1	1	Mirpur		1010110120.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	21	001887744	11ashrafu1@ashrafu1hospital.com	Abir	7	1	2	Durban		1010110130.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	22	01711440368	11ashrafu1@ashrafu1hospital.com	Janara Ahmed	3	1	4	6		1021000110.jpg
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	23	0189483147	11ashrafu1@ashrafu1hospital.com	Janara Ahmed	2	1	1			1021000120.jpg

Figure 4.4.1: User Database

The following figure 4.4.2 shows the Database of City Information.

Showing rows 0 - 3 (4 total, Query took 0.0002 seconds.)

SELECT * FROM `cities`

Options	CITY_NO	CITY_NAME	CREATED_BY	CREATED_ON	IS_DELETED	DELETED_BY	DELETED_ON	IS_UPDATED
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	1	Dhaka	1	2018-05-23 20:52:10	0	0	0	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2	Cumilla	1	2021-03-08 17:17:44	0	0	0	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	3	Jessore	1	2021-03-08 17:17:48	0	0	0	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	Kurigram	1	2021-05-01 19:45:33	0	0	0	0

Figure 4.4.2 : City Database

The following figure 4.4.3 shows the Database of Patient Appointment Information.

APPOINTMENT_NO	PATIENT_NO	DOCTOR_NO	APPOINTMENT_DATE	APPOINTMENT_SCHEDULE	IS_APPROVED	CREATED_AT
1	2	4	2021-03-11		1	2021-03-29 00:29:36
5	2	13	2021-03-29	Sunday- (2pm - 5pm)	1	2021-03-29 00:54:09
9	2	4	2021-05-01	Saturday- (3pm- 7pm)	1	2021-05-01 17:36:33
10	15	16	2021-05-01	Saturday- (12Am to 10PM)	1	2021-05-01 23:12:32
11	15	16	2021-05-02	Saturday- (12Am to 10PM)	1	2021-05-01 23:50:27
12	15	16	2021-05-03	Sunday- (10AM - 12 AM)	1	2021-05-02 00:01:04
13	15	16	2021-05-04	Saturday- (12Am to 10PM)	1	2021-05-02 00:31:43
14	15	16	2021-05-05	Saturday- (12 AM to 02PM)	1	2021-05-02 00:49:29
15	15	16	2021-05-13	Sunday- (12AM - 08PM)	1	2021-05-02 01:01:06
16	15	16	2021-05-07	Sunday- (10AM - 12 AM)	1	2021-05-02 01:24:20

Figure 4.4.3 : Patient Appointment Database

The following figure 4.4.4 shows the Database of Diagnostic Report Information.

REPORT_NO	PATIENT_NO	DIAGONOSTIC_NO	REPORT_IMG	IS_DELETED	REPORT_TIME
1	2	6	A4-Copy.pdf	0	2021-03-04 00:00:00
2	2	0	1615376789back-issue.mp4	0	2021-03-05 00:00:00
7	2	6	1615377096back-issue.mp4	0	2021-03-10 00:00:00
8	3	6	161574583020210312_104704.jpg	0	2021-03-14 19:17:10
9	15	19	1619889456download (7).jff	0	2021-05-01 19:17:36
10	15	19	1619891681download (8).jff	0	2021-05-01 19:54:41
11	15	19	1619892336download (9).jff	0	2021-05-01 20:05:36
12	15	19	1619894200_Digital Medical System_.pdf	0	2021-05-01 20:36:40
13	15	19	1619895234download (9).jff	0	2021-05-01 20:53:54
14	15	19	1619895887download (8).jff	0	2021-05-01 21:04:47
15	15	19	1619897417180515189_470486974203619_14719999030704...	0	2021-05-01 21:30:17
16	15	19	1621974593181574851_276992154143219_2211177225786...	0	2021-05-25 20:29:53

Figure 4.4.4: Diagnostic Report Database

The following figure 4.4.5 shows the Database of Pharmaceutical Information.

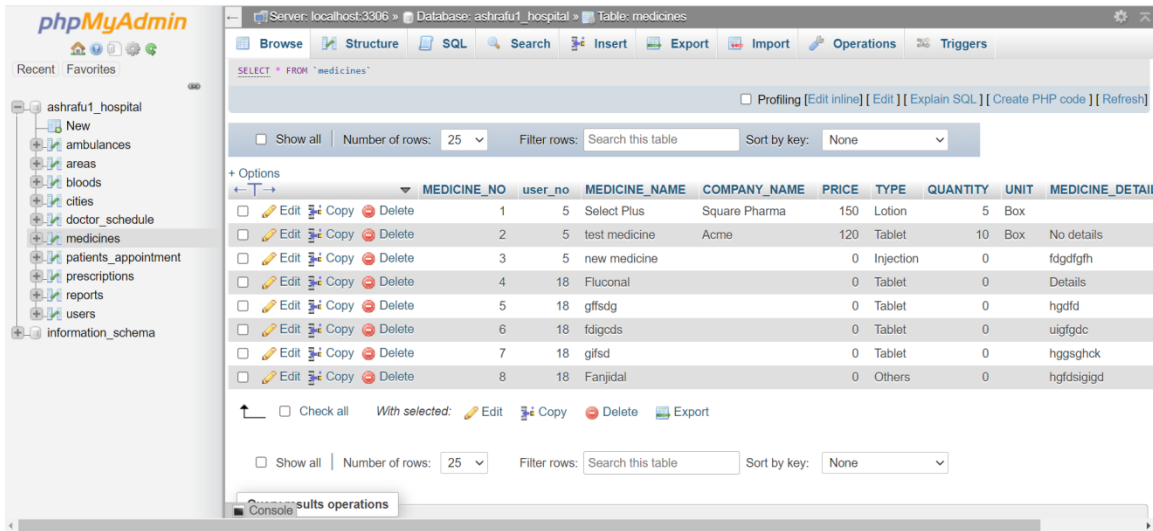


Figure 4.4.5: Pharmaceutical Database

The following figure 4.4.6 shows the of Prescription Information

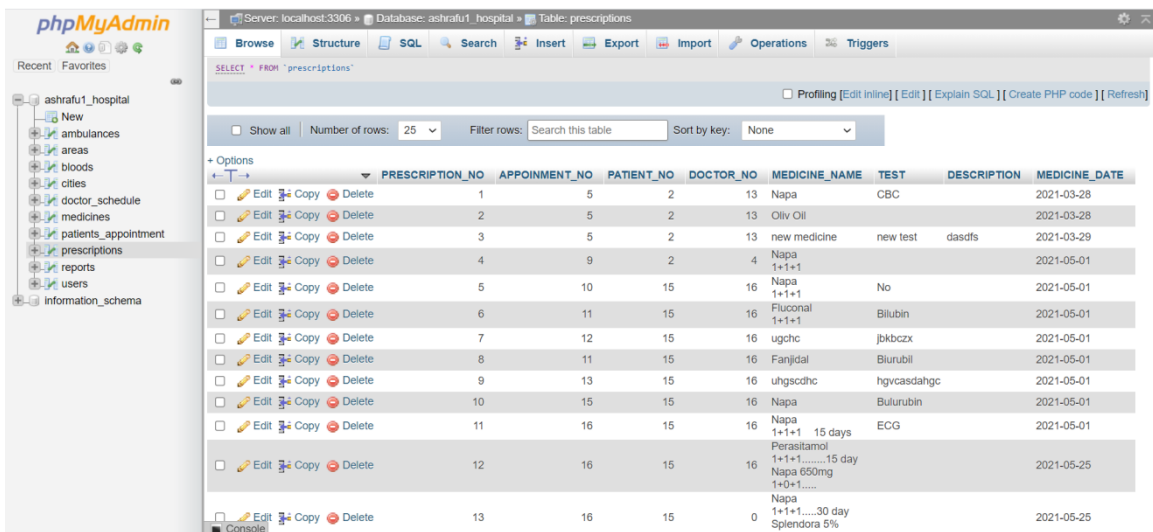


Figure 4.4.6: Prescription Database

The following figure 4.4.7 shows the Database of Ambulance Information.

AMBULANCE_NO	user_no	AMBULANCE_NAME	AMB_NUM	AMB_FAIR	DRIVE_NAME	DRIVER_CONTACT
1	7	New Ambulance	x467-6784	3000	Amin	7867966454
3	7	sd	6546	0	543543	rtyty
4	7	Telt	34353	0	sfsfd	7876856756
5	20	hgd	7645643	6	jhgcsd	87347843
6	20	jhdjdjhs	65326	8762	jhsd	672345763
7	20	ygfweeiyfg	7634764	56632	gfwed	7632764
8	20	jhscvhc	673267	5645	hgvcxhc	6532625
9	20	hsdvv	76435973	4235	jhbvcvjh	653673247
10	20	Ambulance	12345	123333	Rahim	8776855645

Figure 4.4.7 Ambulance Database

The following figure 4.4.8 shows the Database of Blood Bank Information.

BLOOD_NO	user_no	BLOOD_GROUP	PRICE	QUANTITY	IS_DELETED
1	8	AB+	1500	5	0
2	8	B+	1200	3	0
3	21	AB+	78823	1	0
4	21	AB-	6556	1	0
5	21	A-	1233	1	0
6	21	AB+	1200	2	0
7	21	A-	563652	2	0
8	21	B+	1234	1	0

Figure 4.4.8: Blood Bank Database

The following figure 4.4.9 shows the Database of Ambulance and Blood Bank Area Information.

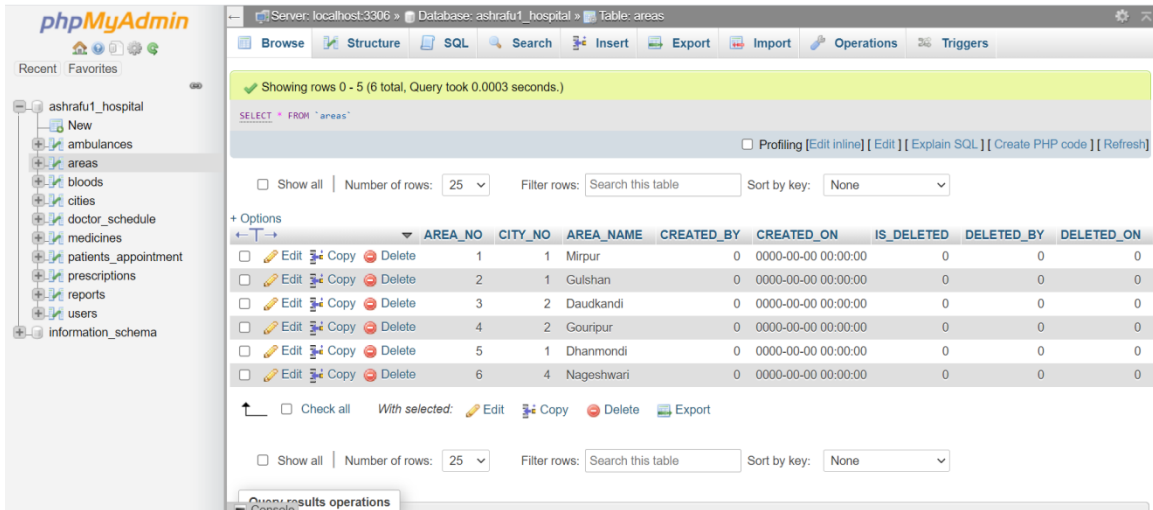


Figure 4.4.9: Area Database

CHAPTER 5

IMPLEMENTATION & TESTING

5.1 Introduction

Implementation is a very necessary thing for a project. Implementation is the action that must follow any preliminary thinking for something to happen. For an implementation process to be successful many tasks need to be done in sequence. When a project is completed then there must be some scope of implementation. Today we tried hard to build up the application and partially we succeeded. But in the future, we also have a plan to build the app more extensively. Testing also plays a vital role in application development. If we don't test the things then we cannot get real-life problems. So for developing our application both sectors are needed.

5.2 Implementation of database design

The following Figures 5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.2.5 5.2.6, 5.2.7, 5.2.8 and 5.2.9 show the Data Set.

5.2.1 Database

user_no	user_contact	pass	user_full_name	user_email	is_active	type = 1 = admin, 2 = patient, 3 = doctor, 4 = pharmacy	USER_ID	USER_REG_ID_NUM	CITY_NO	AREA_NO	ADDRESS	USER_DETAILS	USER_IMG
4	234365767	81dc9bdb52d04dc20036dbd8313e0055	Dr Naima	doctor@gmail.com	1	3	1000004	4553432657	1	1	sfdfdfs	frjfdsmflk sdfsdf	1615316022007.jpg
5	324365678671	81dc9bdb52d04dc20036dbd8313e0055	Laz Pharma	pharmacy@gmail.com	1	4	1000005		1	1	dhaka	okk	1615319479008.jpg
6	456768	81dc9bdb52d04dc20036dbd8313e0055	Sheba Diagnostic	diagnostic@gmail.com	1	5	1000006		1	2	ssd	ghfg	no png
7	67690934423	81dc9bdb52d04dc20036dbd8313e0055	X Transport	ambulance@gmail.com	1	6	1000007		1	5	Sukrabad	no details	no png
8	435767899	81dc9bdb52d04dc20036dbd8313e0055	Rotary Blood Bank	blood@gmail.com	1	7	1000008		2	4			no png
9	342447867867878	81dc9bdb52d04dc20036dbd8313e0055	Test Admin	t_admin@gmail.com	1	1	1000009		0	0			no png
12	5634576876	81dc9bdb52d04dc20036dbd8313e0055	Dr. Shraboni	shraboni@gmail.com	1	3	1000012		2	3	Poduya	Intern Doctor	1615749469d.jpg
13	4556788987	81dc9bdb52d04dc20036dbd8313e0055	Dr. Ema	ema@gmail.com	1	3	1000013		2	4			1615749590d.jpg
15	01304734334	4003cfeae667df17898d9d0dae27b273	Incepta	incepta10178@gmail.com	1	4	1000015		1	1			1615793242ab.jpg
16	01521309856	3e9b758d9d69b6717d737629198c41d	Beximco Pharmaceuticals	beximco10178@gmail.com	1	4	1000016		1	5	Type Limited 58/b/2 West Raja Bazar Dhaka-1215	Traded as DSE: BXPHERMA LSE: BXP I...	1615794035abc.jpg
18	01751405799	517ba140d5d182479b26d789996661b9	Desh	desh10178@gmail.com	1	5	1000018		3	6	jessore		1615805243OIP.jpg
19	01945214758	900150983cd24fb0d69637f428e17f72	Abc	abc@gmail.com	1	6	1000019		1	1	Sukhrabad Dhaka-1207		1615805770OI.jpg
20	01777064821	e2fc714c4727ee9395f324cd2e7f331f	Abcd	abcd@gmail.com	1	6	1000020		1	1			1615805878ab.jpg
21	01751448099	f9423589cd1179e9f0364f36b2283c5	Amj	amj@gmail.com	1	7	1000021		1	5	Tallagagh		1615807671th.jpg
22	01751448099	85cfe72b466edd3487a6253650c8bbc0	Md. Jakaria Ahmed	Jakaria9404@gmail.com	1	3	1000022		1	5	hvdhbc	hgdxhbc	161600526031059475_18
23	01312701206	263bce650e68ab4e3f28263760b9fa5	Maria Jannat	maria10189@gmail.com	1	3	1000023		1	5	hbdcx ccz	hdcbjhcbxz	1616005896132431588_71
24	01717078044	1490a605cdcbeca1d419d4a0fc8e5a3e	Md. Ashrafal Alam	ashrafal10178@gmail.com	1	2	1000024		1	5	58/b/2 west raja bazar Dhaka-1215	gvxcxc	1616007057161221166_10
25	01312341345	5fa3852b08951fcdcd42e60f89a856fe	Popular	popular10178@gmail.com	1	5	1000025		1	5	hgdcvjh	hbcjajxc	1616009142OIP.jpg
26	+8801843844189	5b242e397626fcb7ac26cd88ee0bb2db	Sorno	sorno10189@gmail.com	1	1	1000026		0	0	hgchgy		1616011025126853415_18

Table 5.2.1: User Data Set.

CITY_NO	CITY_NAME	CREATED_BY	CREATED_ON	IS_DELETED	DELETED_BY	DELETED_ON	IS_UPDATED
1	Dhaka	1	2018-05-23 20:52:10	0	0	0	0
2	Cumilla	1	2021-03-08 17:17:44	0	0	0	1
3	Jessore	1	2021-03-08 17:17:48	0	0	0	1

Table 5.2.2: City Data Set

APPOINTMENT_NO	PATIENT_NO	DOCTOR_NO	APPOINTMENT_DATE	APPOINTMENT_TIME	IS_APPROVED
1	2	4	2021-03-11	01:10:26	1
2	11	4	2021-03-11	01:38:00	1
3	14	4	2021-03-15	13:30:00	1
4	14	4	2021-03-15	20:30:00	1
5	14	17	2021-03-15	13:30:00	1
6	14	17	2021-03-17	19:50:00	1
7	14	4	2021-03-17	12:30:00	1
8	14	23	2021-03-18	12:30:00	1
9	24	23	2021-03-18	13:30:00	1
10	24	22	2021-03-18	14:30:00	1
11	24	4	2021-03-18	14:45:00	1
12	24	23	2021-03-22	12:30:00	1
13	24	23	2021-03-22	12:40:00	1
14	24	22	2021-03-23	12:30:00	0

Table 5.2.3: Patients Appointment Data Set.

REPORT_NO	PATIENT_NO	DIAGONOSTIC_NO	REPORT_IMG	IS_DELETED	REPORT_TIME
1	2	6	A4-Copy.pdf	0	2021-03-04 00:00:00
2	2	0	1615376789back-issue.mp4	0	2021-03-05 00:00:00
7	2	6	1615377096back-issue.mp4	0	2021-03-10 00:00:00
8	3	6	161574583020210312_104704.jpg	0	2021-03-14 19:17:10
9	14	6	1615801115Cyber.PNG	0	2021-03-15 10:38:35
10	14	18	1615808062155982344_1426096957726159_4909014119204...	0	2021-03-15 12:34:22
11	14	18	1615998682Md Ashrafal Alam.pdf	0	2021-03-17 17:31:22
12	24	18	1616007571ticketsSHOHOZ.COM_TICKET2021031000401110...	0	2021-03-17 19:59:31
13	24	25	16160092561.-Question-Template-for-Midterm-Exam.pd...	0	2021-03-17 20:27:36

Table 5.2.4: Diagnostic Center Data Set.

MEDICINE_NO	user_no	MEDICINE_NAME	COMPANY_NAME	PRICE	TYPE	QUANTITY	UNIT	MEDICINE_DETAIL
1	5	Select Plus	Square Pharma	150	Lotion	5	Box	
2	5	test medicine	Acme	120	Tablet	10	Box	No details
3	5	new medicine		0	Injection	0		fdgdfgh
6	16	Filmet		0	Tablet	0		Tablet and Suspensi Trichomoniasis (Adu & C...
7	15	Artemet		0	Tablet	0		Dosage & Administration The treatment shoul be a...

Table 5.2.5: Pharmaceutical Data Set.

PRESCRIPTION_NO	PATIENT_NO	DOCTOR_NO	MEDICINE_NAME	TEST	DESCRIPTION	MEDICINE_DATE
1	2	0	Medicine 1	test	Details	0000-00-00 00:00:00
2	2	0	Medicine 2	test2	Medicine details	0000-00-00 00:00:00
3	11	4	m1	t1	okkk	0000-00-00 00:00:00
4	11	4	m2	t2	okkk2	0000-00-00 00:00:00
13	11	4	test medicine	test	details	0000-00-00 00:00:00
14	2	4	new medicine	new test	description	0000-00-00 00:00:00
15	2	4	Olive oil	dfsd		2021-03-14 08:01:09
16	2	4	napa extra	corona		2021-03-14 08:01:09
17	14	0	Napa Extend 1+1+1-----15 days	Biliurubin		2021-03-15 08:14:09
18	14	0	Napa Extend 1+1+1-----15 days	Biliurubin		2021-03-15 08:14:13
19	14	0	Napa Extend 1+1+1-----15 days	Biliurubin		2021-03-15 08:14:14
20	14	0	Napa Extend 1+1+1-----15 days	Biliurubin		2021-03-15 08:14:14
21	14	0	Napa Extend 1+1+1-----15 days	Biliurubin		2021-03-15 08:14:15

Table 5.2.6: Prescription Data Set.

AMBULANCE_NO	user_no	AMBULANCE_NAME	AMB_NUM	AMB_FAIR	DRIVE_NAME	DRIVER_CONTACT
1	7	New Ambulance	x467-6784	3000	Amin	7867966454
3	7	sd	6546	0	543543	rtyty
4	7	Tett	34353	0	sfsfsd	7876856756
5	19	Abcd	76567676	1500	Jack	01777568523

Table 5.2.7: Ambulance Data Set

BLOOD_NO	user_no	BLOOD_GROUP	PRICE	QUANTITY	IS_DELETED
4	21	AB+	1000	1	0
5	21	A+	1000	2	0

Table 5.2.8: Blood Bank Data Set

AREA_NO	CITY_NO	AREA_NAME	CREATED_BY	CREATED_ON	IS_DELETED	DELETED_BY	DELETED_ON
1	1	Mirpur	0	0000-00-00 00:00:00	0	0	0
2	1	Gulshan	0	0000-00-00 00:00:00	0	0	0
3	2	Daudkandi	0	0000-00-00 00:00:00	0	0	0
4	2	Gouripur	0	0000-00-00 00:00:00	0	0	0
5	1	Dhanmondi	0	0000-00-00 00:00:00	0	0	0
6	3	Manirampur	0	0000-00-00 00:00:00	0	0	0

Table 5.2.9: Area Data Set

5.2.2 Security Testing

Security is the most concerning topic in the project. As there are admin, doctor, patient, diagnostic center, pharmaceutical, ambulance and blood bank they all have some personal information and their safety is very important. If something goes wrong then all the information will vanish. So we have to be very careful about the security system. We use flutter and farewell for our project and for that each and every data is secured here. If anyone tries to decompile it even he will not get any chance to destroy this.

5.2.3 System Testing

System testing is a kind of testing that validates a complete and fully integrated system. So system testing is very important for every project. System testing checks how components are interacting with one another and with the whole system. Like we are getting the exact output what we expected but it's not working for android and Web Application. On the other hand, it may seem different when we try to install it. By system testing, we try to solve them.

5.3 Implementation of Front-end Testing

To be honest when we get the idea about “DMS” we think we will not face any hard problems while developing that. After that, we started our project, and step by step we were developing it with different types of testing. That was a plus point for us actually. At every point of any error, we tried to fix it. We asked for help from experts, on the internet and also from our teachers. As testing and implementation depend on each other so for an accurate result we tried our best. When we thought that a specific part of our application is giving the exact out what is expected then we moved on to the next part.

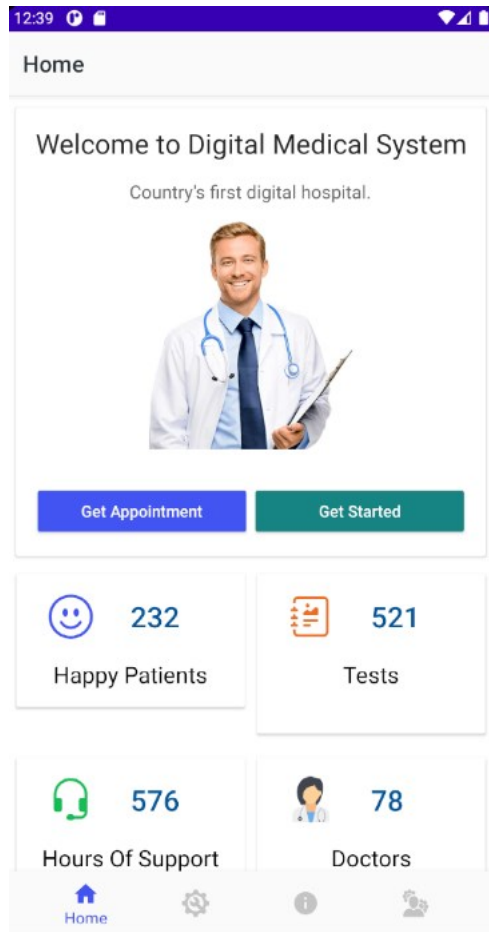


Figure 5.3.1: Home page

5.4 Testing Implementation

Actually, software testing is a kind of method whether the output is matching our expectations and to ensure that the application is error-free. So testing plays a vital role in the project to get the desired result. There are many kinds of testing for different purposes but in our project verification and validation testing is focused. Verification testing helps us to build the application according to the requirements and design. Validation testing helps us to ensure things about our users. We also have to check every data for the accuracy and satisfaction of the users.

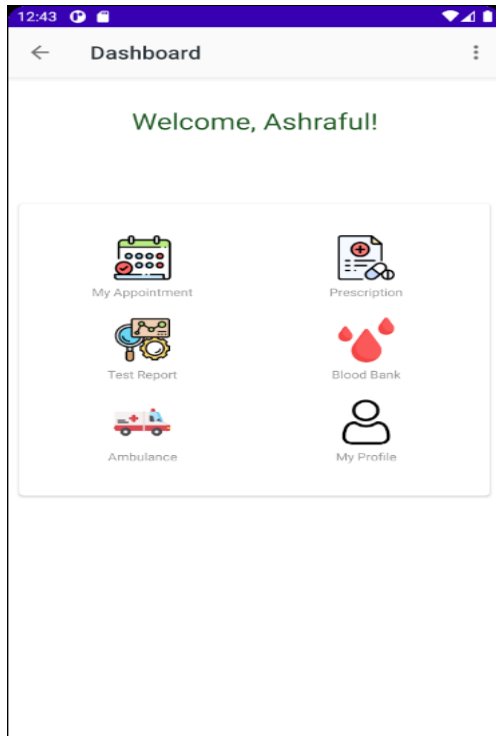


Figure 5.4.1: Patient Dashboard

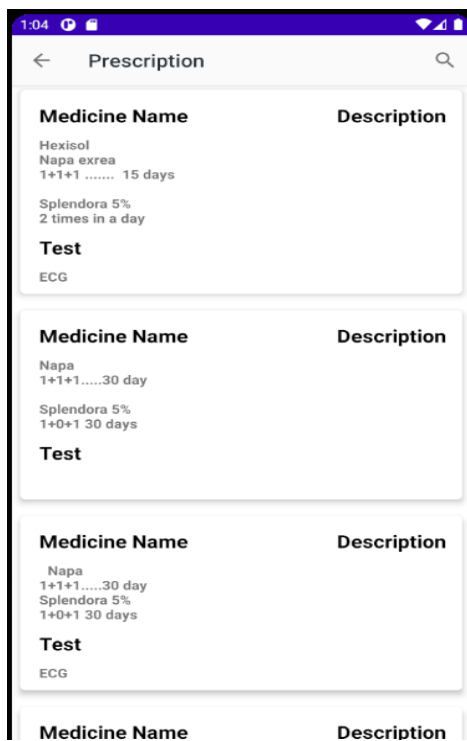


Figure 5.4.2: Prescription

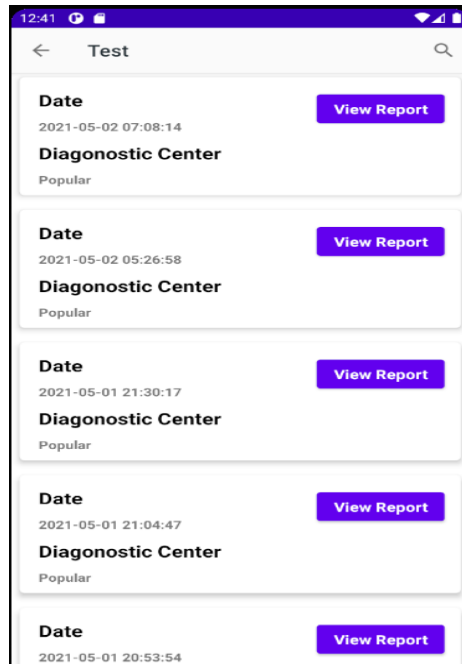


Figure 5.4.3: Test Report

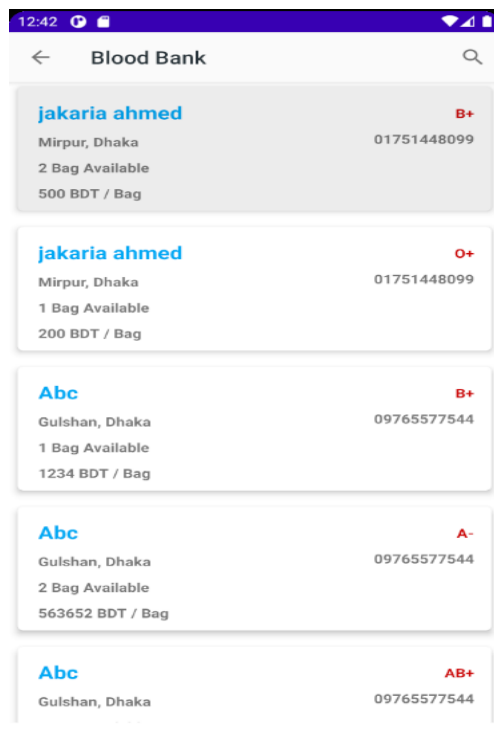


Figure 5.4.4: Blood Bank



Figure 5.4.5: Ambulance

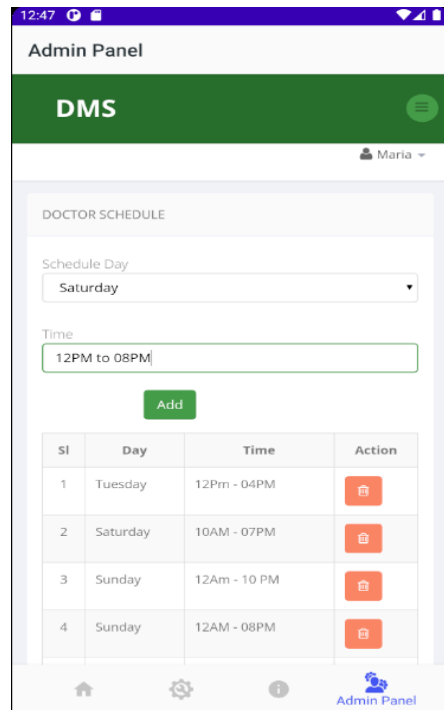


Figure 5.4.6: Doctor Schedule

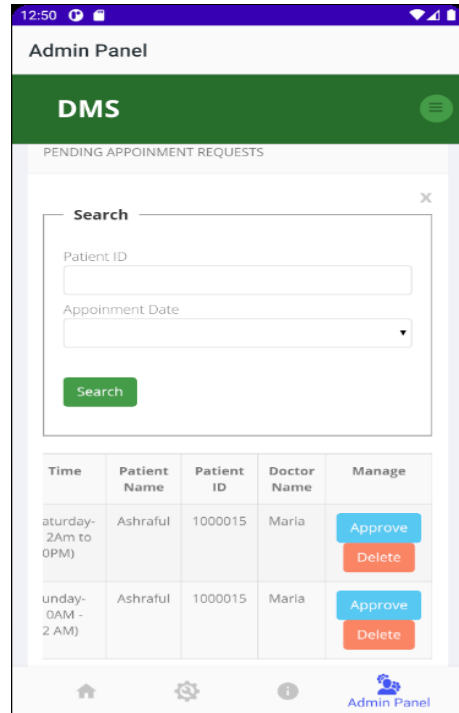


Figure 5.4.7: Appointment

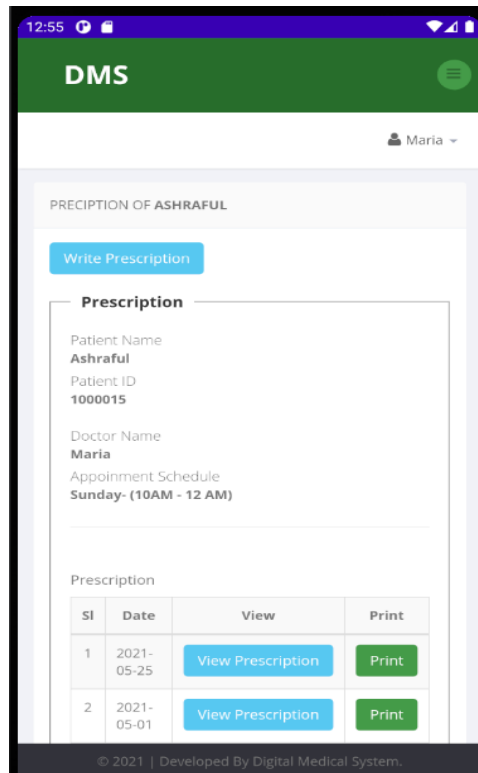


Figure 5.4.8: Write and Print Prescription

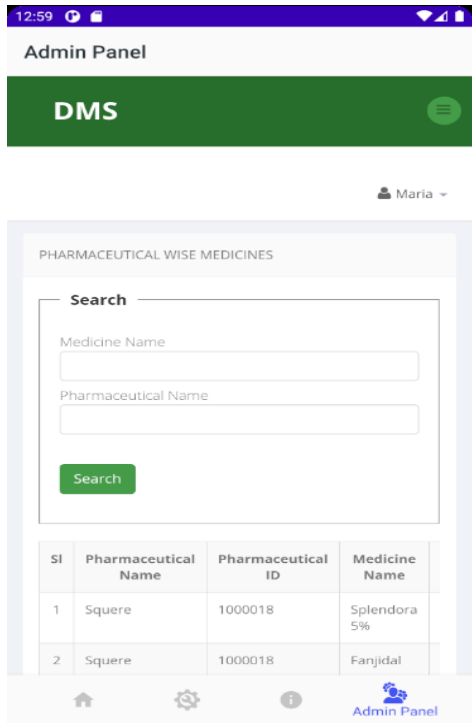


Figure 5.4.9: Doctor Search Medicine

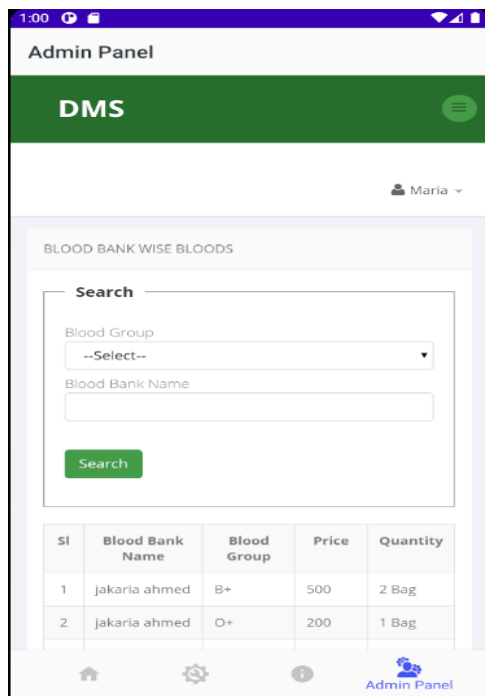


Figure 5.4.10: Doctor Search Blood Bank

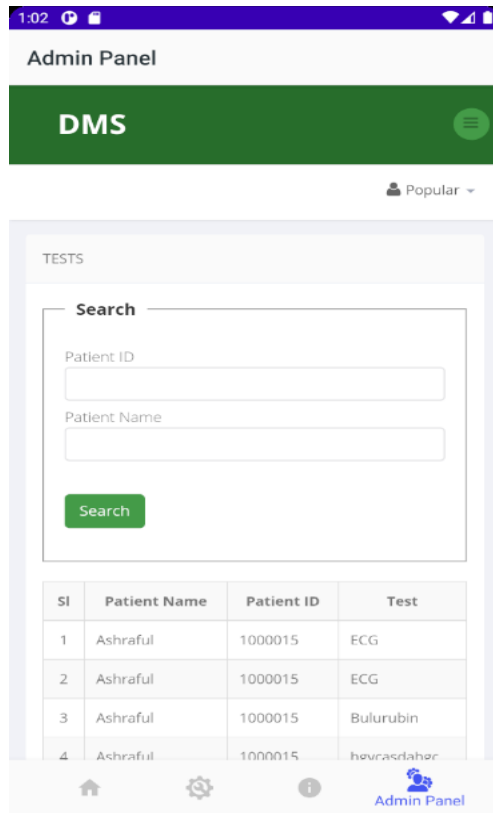


Figure 5.4.11: Suggest Test

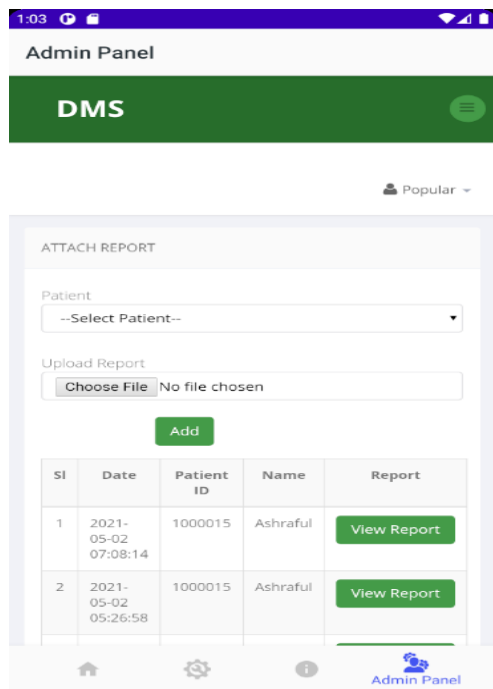


Figure 5.4.12: Add Test Report

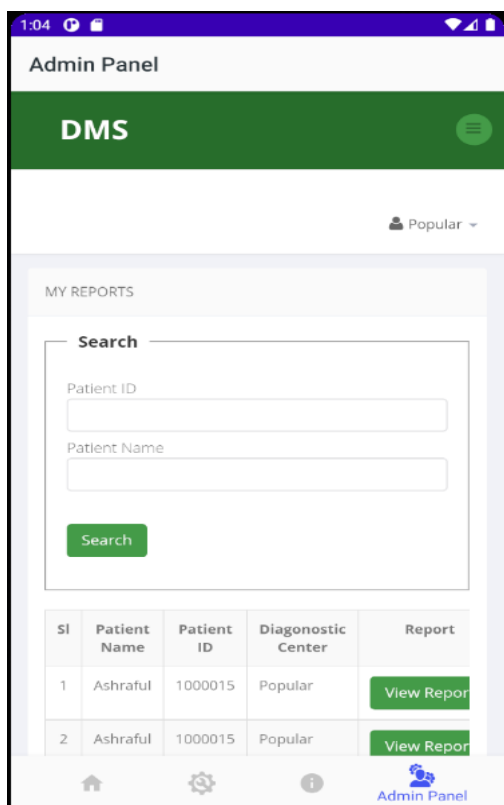


Figure 5.4.13: Diagnostics all Report

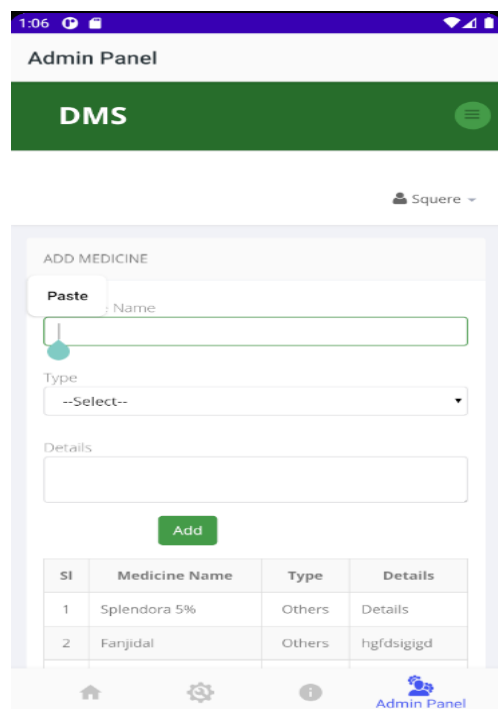


Figure 5.4.14: Add Medicine

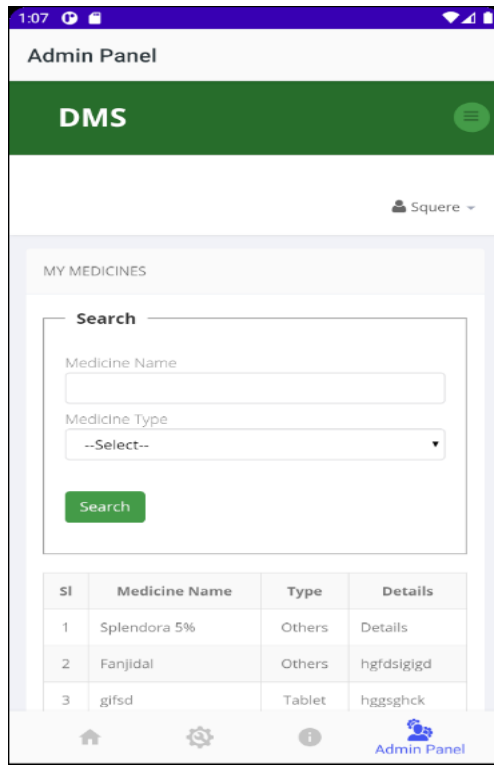


Figure 5.4.15: My Medicine

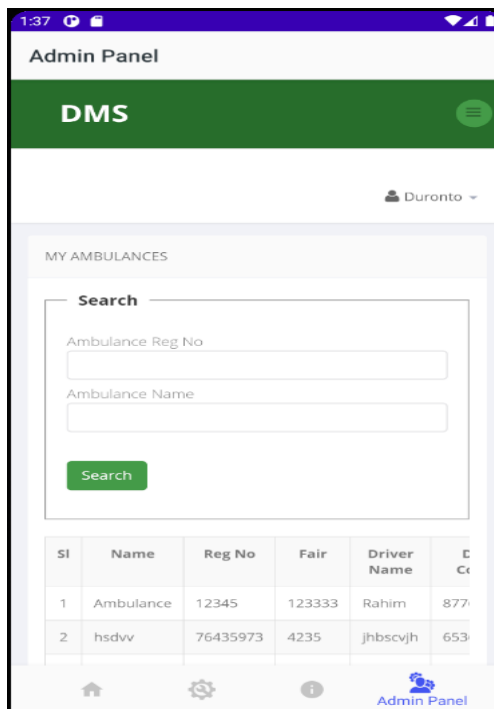


Figure 5.4.16: Search Ambulance

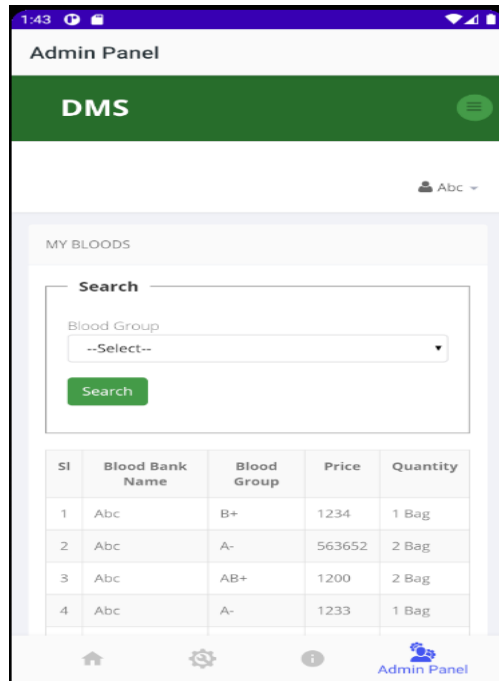


Figure 5.4.17: Blood Bank

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

Now a days everything around us is upgrading. Day by day the use of technology is increasing rapidly. People want to handle their problems and works with the help of technology. People life will be more easier. By using the app everyone can get the medical updates in their hand.

6.2 Impact on Environment

The impact of this project in environment will be good because this project will reduce the use of paper. Usually we use paper to write down information. Through this application we can store information in database and people get information through smart devices. As a result pressure on paper will reduce. We know that paper made from tree. If use of paper will be decreased then deforestation rate will be low.

6.3 Ethical Aspects

After developing any application there are some ethical aspects. DMS has also some ethical aspects like respect for autonomy, non-maleficence, beneficence, and justice. It is based on a set of values that professional can refer to in the case of any confusion and conflict.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

In this era of modern technology world is in our hand. In this modern life everything has been digitalized. Android application is getting popular day by day. Now a day people want information through technology devices.

We are trying to help people to make their life easier through this project. We apply our Ideas and knowledge to complete this project.

Technology is a very smart way to get desire information. Day by day human requirements of information is getting increased. With the help of technology it is possible to meet the quest desire information of human. So we developed our application in demand of tomorrow's world.

7.2 Scope for Further Developments

In future we are going to develop this project. Also we will try to add more features, try to cover a large area, some extra facilities for the regular user, More security options etc. in this application according to demand. In future development we will provide location base service.

REFERENCES

[1].Health sector

[2].Medi-link-<https://play.google.com/store/apps/details?id=com.codiles.medlink1>

[3].E-Medicare

[4]. <https://tallyfy.com/business-process-modeling>

[5]. https://en.wikipedia.org/wiki/Use_case_diagram

[6]https://en.wikipedia.org/wiki/Data-flow_diagram

[7].<https://www.sciencedirect.com/topics/computer-science/logical-data-model>

ORIGINALITY REPORT

13%

SIMILARITY INDEX

4%

INTERNET SOURCES

0%

PUBLICATIONS

11%

STUDENT PAPERS

PRIMARY SOURCES

1

Submitted to Daffodil International University

Student Paper

8%

2

dspace.daffodilvarsity.edu.bd:8080

Internet Source

2%

3

Submitted to Texas A&M University - Commerce

Student Paper

1%

4

Submitted to Colorado Technical University
Online

Student Paper

1%

5

Submitted to University of Ulster

Student Paper

<1%

6

dspace.library.daffodilvarsity.edu.bd:8080

Internet Source

<1%

Exclude quotes Off

Exclude matches Off

Exclude bibliography Off

