### YourDoctor: An Android Application for Healthcare

### BY

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This Report is Presented in some Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science & Engineering.

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#### APPROVAL

This Project/internship titled "YourDoctor: An Androld Application for Healthcare", submitted by Md. Shamim Raihan, ID No: 191-15-2536 and Md. Alimujjaman ID No: 191-15-2466 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 February 06, 2023.

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i

# DECLARATION

We hereby make a declaration that this project has been done by us under the supervision of Nadira Anjum Nipa, Lecturer, Department of CSE, Daffodil International University, Dhaka. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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### ABSTRACT

An app that has the potential to revolutionize our medical procedures. Our goal is to provide the greatest care to a patient in his or her immediate vicinity. As a result, we'll assemble a group of board-certified doctors who are experts in their disciplines. It will assist a patient in locating a certain doctor in his or her neighborhood, region, or division. This software will save them money and time by preventing them from having to travel to a large metropolis for treatment. Aside from that, our software can detect phony doctors. Our app will highlight the greatest doctors from across the country. We will provide people doctor's appointment. We'll add a news section with free blood and diabetes tests, blood donation, and free medical campaigns, among other things. The app will contain a significant number of up-to-date professional information resources on practically every sector of healthcare, which can be easily shared across physicians and clinics. It is a vital tool for healthcare providers because of its user-friendly interface and access to comprehensive information on every issue. We will do everything we can to make our app a global success. The app will feature doctors from around the world. Regardless, we will provide medical emergency services, emergency blood collection, emergency medical transport, exercise and health suggestions, and so forth. In a nutshell, we want people to live longer and be healthier.

# **TABLE OF CONTENTS**

CONTENTS	PAGE
Board of Examiner	Error! Bookmark not defined.
Declaration	Error! Bookmark not defined.
Acknowledgement	iii
Abstract	iv

# CHAPTER

CHAPTER 1: INTRODUCTION	1-2
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	1
1.4 Features	2
1.5 Problem Statement	2
CHAPTER 2: BACKGROUND	3-5
2.1 Existing System	3
2.2 Purpose of the system	3
2.3 Advantages	4
2.4 Disadvantages	4
2.5 Comparison	5
<b>CHAPTER 3: REQUIREMENT SPECIFICATION</b>	6-13
3.1 Business Process Modeling	6
3.2 Requirement Collection and Analysis	7
3.3 Use Case Modeling and Design	8

3.4 Flow Chart Diagram	9-12
3.5 Design Requirement	13
3.6 Database Design	13
CHAPTER 4: DESIGN SPECIFICATION	14-15
4.1 Admin	14
4.2 Doctor	14
4.3 Patient	14
4.4 Back-end Design	14-15
<b>CHAPTER 5: IMPLEMENTATION &amp; TESTING</b>	16-36
5.1 Implementation	16-31
5.2 Database Implementation	32-36
5.3 Unit Testing	36-37
5.4 Functional Testing	37
5.5 Integration Testing	38
CHAPTER 6: IMPACT ON SOCIETY, ASSURANCE & SUSTAINABILITY	39-40
6.1 Impact on Society	39
6.2 Assurance of Reliable Service	39
6.3 Ethical Aspect	40
6.4 Sustainability Plan	40
CHAPTER 07: CONCLUSION & FUTURE PLAN 7.1 Conclusion	<b>41</b> 41
7.2 Future Plan	41
REFERENCES	42

# LIST OF FIGURES

FIGURES	PAGE NO
Fig 3.1: Business Process Model	6
Fig 3.3: Use Case Diagram of YourDoc	8
Fig 3.4: Log in Flow Chart Diagram	10
Fig 3.4: Doctor Registration Flow Chart Diagram	11
Fig 3.4: Patient Registration Flow Chart Diagram	12
Fig 4.4: Class Diagram of YourDoc	15
Fig 5.1: Home Page	16
Fig 5.1: Patient Registration Page	17
Fig 5.1: Doctor Registration Page	18-19
Fig 5.1: Login Page	20
Fig 5.1: Doctor category page	21
Fig 5.1: Doctor List	22
Fig 5.1: Doctor Details page	23
Fig 5.1: Upcoming Events page	24
Fig 5.1: Daily Health tips	25
Fig 5.1: Health Tips Details Page	26
Fig 5.1: Home Page Navigation Drawer	27

Fig 5.1: Bookmark page	28
Fig 5.1: Chat page	29
Fig 5.1: Booking page	30
Fig 5.1: Edit page	31
Fig 5.2: Realtime Database	32
Fig 5.2: Users	32
Fig 5.2: Events	33
Fig 5.2: Daily Tips	34
Fig 5.2: Chat	35
Fig 5.2: Authentication	35
Fig 5.2: Storage	36

# CHAPTER 1 Introduction

#### **1.1 Introduction**

An app that can bring evolutionary change in our medical procedure. Our goal is to give the best treatment to a patient within his/her nearby area. So, we will gather a bunch of certified doctors who are best in their fields. It will help a patient to find out the specific doctor in his/her area, district, division. This app will save consumer's money and time by not going far way in a big city for treatment and get numerous health information's according to their needs. Besides these, fake doctors can be rooted out by our app.

#### **1.2 Motivation of this project**

The widespread adoption of smartphones creates an enormous potential to improve healthcare services. Numerous apps, sensors and devices are developed for health self-management purposes. The goal of this project is to give the best treatment to a patient within his/her nearby area. In short, we want people live longer and stay fit.

#### **1.3 Objectives**

Our app will feature best doctors from every district of our country. We will provide people doctor's appointment. We will add news corner where people will be found free blood and diabetics test, blood donation, medical campaign. We are also thinking of adding facility of emergency, emergency blood collection, emergency medical transport, exercise and health tips etc. The principal aims of the project are as follows:

- To provide certified doctor in your area.
- To provide emergency ambulance, blood and health tips.

### **1.4 Features**

These are the features for a Patient:

- Certified Doctors in Nearby Areas.
- Book Online and Offline Appointments.
- Video, Audio Consult and Chat with Doctors.
- Ratings for Doctors.
- Emergency Transport and Blood.
- Nearby Events Notifications.
- Daily Health Tips.
- Free Seminar and Tests.

## **1.5 Problem Statement**

Based on the problems might occur, this project will try to find the permanent solutions for the users to stay in the platform for better treatment. These are,

- Hospitals and Pharmacy information system
- Patient Record Management system
- Library of Medical books, Articles, Researches
- Consistent and Legit information flow

## **CHAPTER 2**

## Background

Android Studio was used to build the project. Since the project is a Native Android application, Java was utilized as the programming language. We used Firebase as our database. Maintaining our user data that we have gathered is made simpler via Firebase. The nicest part is that Firebase permits real-time database connections, allowing several users to view changes simultaneously. This benefit enables us to develop numerous features that call for real-time updates, such as the chat feature. Everything worked flawlessly, including updating profiles and posting events and tips.

#### 2.1 Existing System

The fact that so many people visit various types of doctors on a daily basis is a problem. There are numerous online platforms where people can receive treatment via video calls and online appointments, all of which are telemedicine platforms, but many people fail to receive the appropriate advice because there is no well-organized system for learning about the necessary categorization and nearby best doctors.

#### 2.2 Purpose of the System

The goal of this system was inspired by the resolution of a real-world issue. The majority of the systems currently in use are based on the idea of telemedicine, which allows patients to receive care via internet-based communications. However, people search for face-to-face advice and checkup from a certified best doctor, and it is not always possible to know about the nearby best doctor for getting appointment. The main goal of "YourDoc" is to suggest patients nearby doctors based on patient's live location, and from nearby doctors they can visit their profile and by checking the rating and reviews they can find out the best doctor. Then they can also book appointment here which will fix the appointment troubles for both Patient and Doctor.

# 2.3 Advantages

- Lessens suffering: When people are able to locate the best doctors in their area and are aware of how well they responded to previous treatments, they are relieved of the stress associated with finding the best doctor for their particular medical condition and the associated concerns about the doctor's competence.
- Reliable Service: Patients book appointments through individual doctors' profiles, and doctors' profiles are verified following a careful examination of the supporting documentation they have submitted.
- Reduce Quack: People seek medical advice from many bogus doctors in our nation, endangering their health. This kind of bogus doctors and quacks will be less common if they can locate appropriate certified nearby doctors.
- Easy to Track: Since it is a digital platform, users will be able to view a history of their previous medical examinations from previous appointments. Additionally, Doctors will be able to track each patient's history of medical advice.
- Greater cost is available: The online pharmacies offer a larger selection of pharmaceuticals to accommodate customers who live outside of their service area, giving them the ability to compare prices before placing an order.
- Promotes medical awareness: Two features of this app named "Events" and "Daily Tips", by planning more activities such as blood donation drives, diabetes checkups, and heart checkups. Health awareness will significantly increase if general public is exposed to these types of events frequently and receives daily medical advice.

# 2.4 Disadvantages

- Every doctor has a regular duty at their hospital or clinic; if they want to make more money, however, they may spend more time in private chambers rather than concentrating on their usual duty. Doctors may be disappointed by this app's ability to book appointments with them.
- There are several sensitive documents from patients and doctors, such as doctor's certifications and patient medical histories, and if any admin tries to utilize any of these documents improperly, major privacy concerns would arise.
- Some persons who are unfamiliar with those types of digital servicing platforms may find it difficult to use them because not everyone has the necessary competence to do so

## 2.5 Comparison:

DocTime: DocTime offers on-demand GP and specialist consultations on video call with verified and certified doctors, online prescriptions, medicine delivery, pathology/ diagnostics tests. DocTime is vertically integrated with pharmacies/ medicine delivery suppliers, labs/ diagnostics centers.

Daktarbhai: Daktarbhai offers an online based doctors' appointment service with the facility of an electronic personal health record system.

DoctorDekhao: Doctor Dekhao App enables you to connect with licensed doctors and, receive consultations through video calling 24/7 from anywhere.

Those are the apps that are popular in our country. However, YourDoc can offer more than those apps are providing. They are mostly focused on video call and medicine delivery. But YourDoc is offering physical check-ups, video calls, messages, daily tips, seminar notification etc. It's also offering emergency transportation and blood which are the most important ones. The app is a full package for a person's healthcare, everything and anything one may need in his/her entire life.

# **CHAPTER 3**

# **Requirement Specification**

#### 3.1 Business Process Modeling

Business process modeling (BPM) is a method used in systems engineering and business process management to investigate, improve, and automate the current process. System business analysts, who know a lot about the requirements for modeling, and subject matter experts, who know a lot about the processes being modeled, are the most important players in business process management (BPM).

#### **3.1.1 Business Process Model**

We are employing the agile methodology in our project to represent the business processes. The reasons why a working application is frequently provided are listed below.

- Face-to-face meetings are the most productive.
- The frequent and close cooperation between developers and businesspeople.
- Maintains focus on the technical circumstance.
- Regular adaptation to new policy guidelines.

The following Figure 3.1 shows the Business Process Model

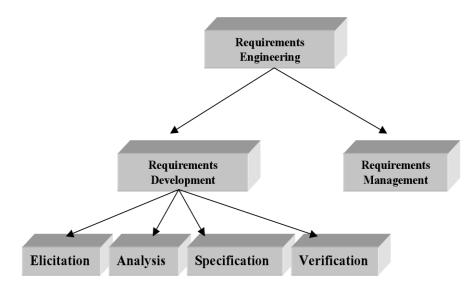


Figure 3.1: Business Process Model

#### **3.2 Requirement Collection and Analysis**

Analysis is a crucial component of every undertaking. Without sufficient analysis and preparation, a project cannot be performed correctly. While we are designing the project, the delivery date has already been set. As a result, project work needs to be organized and completed by the deadline. Our proposal is an Android-based online management solution for pharmaceutical goods ordering and delivery. When we first started thinking about this project, analysis was a major hurdle. We discover several crucial traits that will help our project when we begin the investigation.

#### **Users Requirements**

- User can get appointment easily.
- User can find specific category doctors fast.
- Payment methods should be easy and user-friendly.
- Doctor's and Patient's profile can be easily customized.
- User's data must be secured with encryption.
- Video and Audio call must be smooth and frequent.
- User can get notification in time.
- Admin get all the access to operate properly.

#### **Software Requirements**

- Android Studio [1]
- Windows Operating System
- JDK
- SDK

#### 3.3 Use Case Modeling and Design

In system analysis, a use case can be used to identify, outline, and arrange system needs. The utilization case is comprised of various conceivable correspondence designs that individuals and frameworks in a specific setting could use to accomplish a specific goal. It is made up of a few parts that, taken together, have more of an effect than their own effects do. The use case ought to include all of the client-relevant framework processes. To put it another way, a utilization case is an assortment of potential situations that could happen to accomplish a specific goal.

a) The line isolating the area of interest from the remainder of the world.

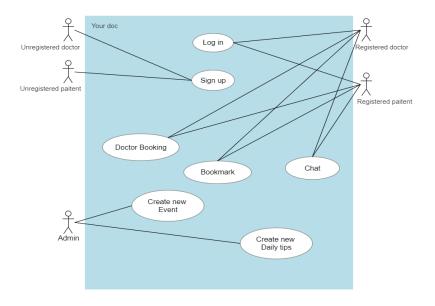
b) Actors are the people who take part in the framework and are appointed jobs as per those obligations.

c) It's the line that isolates an interest framework from all the other things on the planet.

d) Participants, who are frequently people who are connected to the system and are categorized based on the responsibilities they carry out.

e) Describes the use scenarios and the specific roles played by players inside and outside the system.

f) The use cases, as well as the connections and interactions among the participants.



The following Figure 3.3 shows the Use Case Diagram of the project

Fig 3.3: Use Case Diagram of YourDoc

## **3.4 Flow Chart Diagram**

A flow chart diagram is a graphical representation of a process or system that shows the steps or tasks involved, their sequence, and the decision points. It is often used to document and communicate the steps in a process, to analyze and improve the efficiency of a process, or to design a new process.

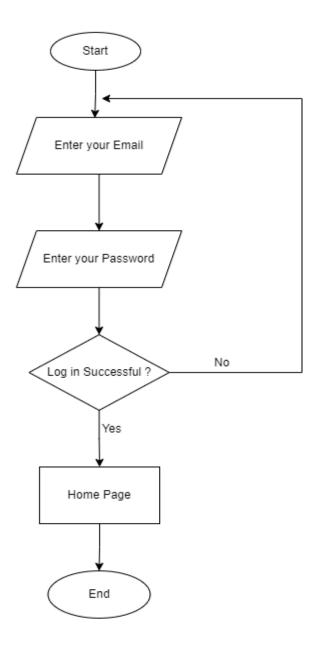
Flow chart diagrams typically use standardized symbols to represent different types of actions or steps in a process. For example, a rectangle may represent a process or task, an arrow may represent the flow of the process, and a diamond may represent a decision point. The flow of the process is shown by connecting the symbols with lines.

Flow chart diagrams can be used in a variety of fields, including business, engineering, and software development. They are particularly useful for visualizing and documenting complex processes, as they provide a clear and structured overview of the steps involved.

# Login:

Log on is a frequent computer usage approach for gaining access to a functional framework or program, usually on an inaccessible machine. For the most part, logging in necessitates the user having both a user ID and a password. The following figure 3.4.1 shows the flowchart of login page.

The following Figure 3.4 shows Log in Flow Chart Diagram



**Figure 3.4: Log in Flow Chart Diagram** 

#### **Doctor Registration:**

A doctor must provide their first and last names, age, gender, qualification, specialist, profile picture, experience, organization, visiting hours, phone number, email address, and password to complete the registration. After that, the email address must be verified. The user will then be taken to the login page and the registration will be successful.

The doctor Registration page's flowchart can be seen in Figure 3.4.

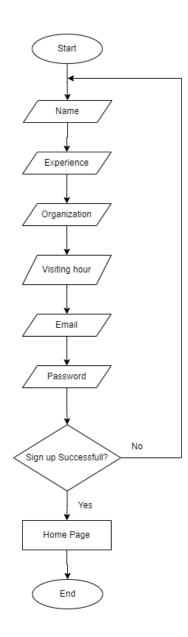


Figure 3.4: Doctor Registration Flow Chart Diagram

#### **Patient Registration:**

A patient must provide his or her first and last names, age, gender, height, weight, area, profile picture, phone number, email address, and password to complete the registration. After that, the

email address must be verified. The user will then be taken to the login page and the registration will be successful.

The patient Registration page's flowchart can be seen in Figure 3.4.

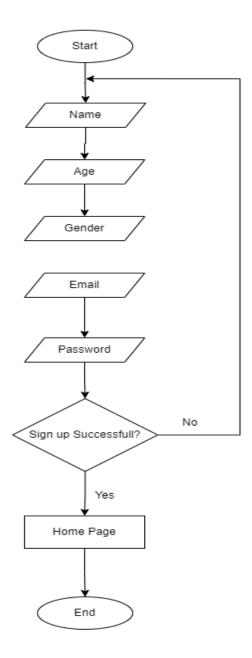


Figure 3.4: Patient Registration Flow Chart Diagram

## **3.5 Design Requirement**

- 1. Login Page
- 2. Patient Registration Page
- 3. Doctor Registration Page
- 4. Dashboard
- 5. Admin Dashboard

## 3.6 Database Design

The Android app is based on Google's Firebase database. Firebase is the name of Google's Backend-as-a-Service (BAAS) solution for building mobile apps. Firebase has cross-platform SDKs and extensive documentation to help you create and distribute Android apps. Firebase is a fast, dependable database with usage tracking and user authentication. We stored and deleted product data on this platform. We also have access to our user data and the ability to remove users from the database if necessary.

# **CHAPTER 4**

# **Design Specification**

#### 4.1 Admin

There are additional features or options available to the admins. The admin can add events and daily tips; however, the doctor and patient accounts can only view the daily tips and events. If the admin receives a request via email to arrange an event, the admin can then create that event.

#### 4.2 Doctor

By submitting their name, email, password, chamber address, age, gender, experience, scheduled slot, organization, Doctor's image and degree, doctors can create a primary account. The admins will verify their profile once their certificate and other details have been examined. A doctor's profile can create time slots, add or edit appointment fees, and change chamber addresses, among other things. In order to communicate with patients, they have a chat feature.

#### 4.3 Patient

A patient's account can be created by providing their name, age, gender, height, weight, area, patient image, phone number, email address, and password. After creating a patient account and logging in, users can access features like categorizing doctors, finding a nearby doctor, accessing emergency care like an ambulance, viewing and participating in events, and viewing daily advice. Patients can look up any doctor's profile, and from there they can schedule an appointment and also communicate with the doctor via chat.

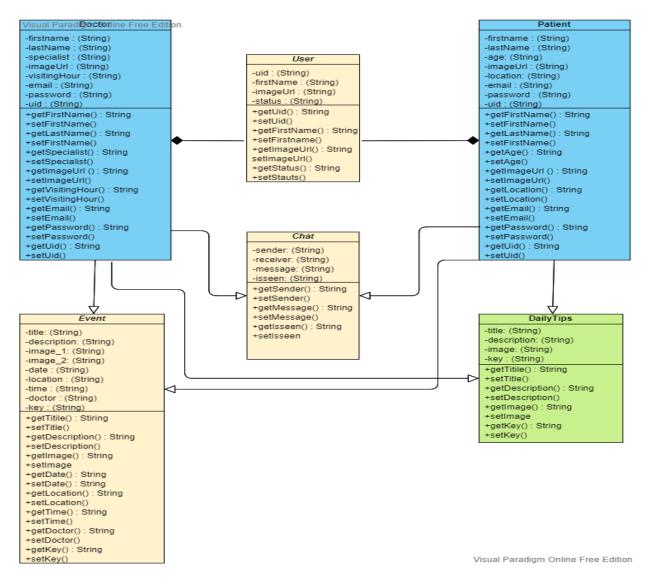
#### 4.4 Back-end Design

We use the logic data model for the back-end design. In spite of the fact that it meticulously describes the information, it could think often less about how it will be utilized in the data set. The characteristics of a logical data model are as follows:

• Covers everything that exists, including how things interact with one another.

- The virtues of each entity are outlined in detail.
- A list of foreign keys is included.
- At this point, individuals begin to comprehend.

The following Figure 4.4 shows the class diagram of our project.





# **CHAPTER 5**

# **Implementation & Testing**

## **5.1 Implementation**

We have added some sample of our project to show implementation and testing.

## **Home Page**

In this page user can operate some basic operation. User can see doctor list, emergency services, events and daily tips. From home page user can login using navigation drawer. Also, user can search doctor from home page.

The following Figure 5.1 shows the welcome page of our app.



Figure 5.1: Home page

# **Patient Registration Page**

Figure 5.1 demonstrates that you can either sign up as a patient by entering the information below. By pressing the login button at the bottom of the page.

2:30 🖪 🖻 🎮	🍯 👷 🎘 🗐 💷 📧
Patient	s Sign Up
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Last Name	
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Sex	
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meigin(kg)	
Area	
Select Area	•
Select Inage 宜	
Phone Number	
Email	
Password	
SIC	NITTD

**Figure 5.1: Patient Registration Page** 

# **Doctor Registration Page**

The following Figure 5.1 shows that you can register as doctor by submitting the information. By pressing the login button at the end of the page.

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Doctor's Sign Up		
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Last Name		
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Sex O Male O Fen	nale	
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Summention		
Select Specialist	Select	
	Area	
Select Image 🚹 Registration Number		
Registration Number		
Experience(year)		
(		
Organization		
Chamber Address		
Visiting Hours		
Violenig nours		

**Figure 5.1: Patient Registration Page** 

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Doctor	r's Sign Up
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Registration Number	
Experience(year)	
Organization	
Chamber Address	
Visiting Hours	
Visiting Hours	
START TIME	END TIME
	END TIME
	END TIME
Phone Number	END TIME
Phone Number	END TIME
Phone Number Email	END TIME
START TIME Phone Number Email Password	END TIME
Phone Number Email	END TIME

Figure 5.1: Doctor Registration Page

# Login Page

Figure 5.1 demonstrates that you can log in as a patient or doctor by entering your registered email address and password. From this page, you can also log in as Admin.

2:30 ◀ 😪 🕅	© 0,01 奈. ul ul 38
R	
	P
Vor	ur V
Doctor/Patients Email	
📔 Enter your H	Email
Password	
Enter your p	bassword
Remember The Log	
Kentenber The Log.	
LOG	IN
Forget your	password
Don't have an account?	
SIGN	I UP

Figure 5.1: Login Page

# **Doctor category page**

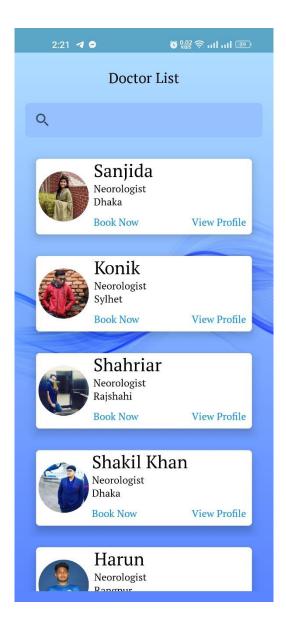
In the following Figure 5.1, user can see all categories for doctor.



Figure 5.1: Doctor category List

## **Doctor list**

In the following Figure 5.1, user can see categories doctors. Also, user can search doctor form doctor list from here.



**Figure 5.1: Doctor List** 

# **Doctor Details page**

In the following Figure 5.1, user can see the doctor details. From this page user can book a doctor and can message.



Figure 5.1: Doctor Details page

# Upcoming events page

Upcoming Events         Image: Spectrum of the spectr	Blood Test 25/4/2021BookmarkJoin rCorona Test 1/5/2021BookmarkJoin rDiabetic Test 27/4/2021Diabetic Test 27/4/2021Diabetic Test 27/4/2021HIV Test 24/4/2021	Blood Test 25/4/2021BookmarkJoin TCorona Test 1/5/2021BookmarkJoin TDiabetic Test 27/4/2021Diabetic Test 27/4/2021Diabetic Test 2/4/2021HIV Test 24/4/2021	Blood Test 25/4/2021BookmarkJoin rCorona Test 1/5/2021BookmarkJoin rDiabetic Test 27/4/2021Diabetic Test 27/4/2021Diabetic Test 27/4/2021HIV Test 24/4/2021	2:27 ◀ 오		ad ad 38
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					24/4/2021	Join
						-

The following Figure 5.1 shows that, user can see all upcoming events and can bookmark.

Figure 5.1: Upcoming Events page

# **Daily Health Tips**

The following Figure 5.1 shows that, user can see health tips post list and as well as user can bookmark.

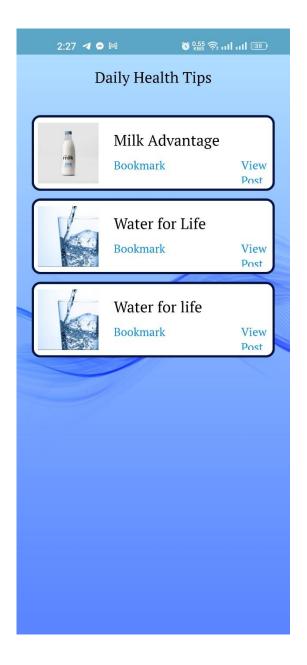


Figure 5.1: Daily Health Tips

# Health Tips details page

The following Figure 5.1 shows that, user can read health tips post.

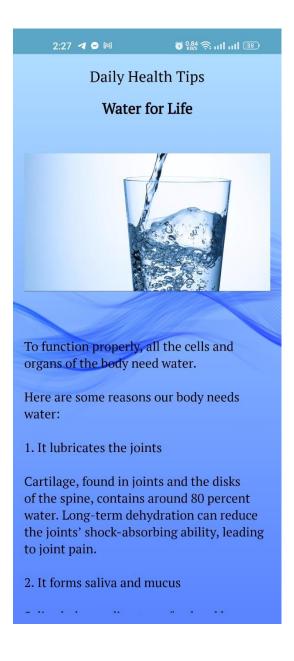


Figure 5.1: Health Tips Details Page

# Home page navigation drawer

The following Figure 5.1, from navigation drawer user can navigate in different page, can login, can logout.

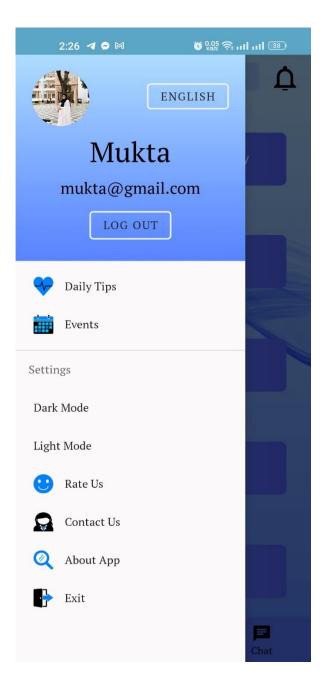
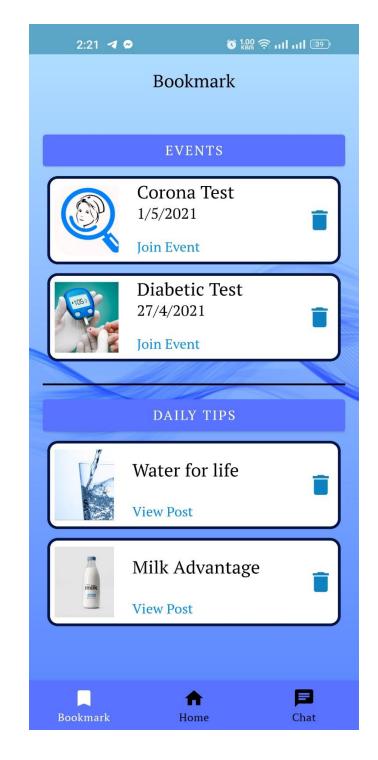


Figure 5.1: Home page navigation drawer

### **Bookmark page**



The following Figure 5.1, user can see booked item for events and daily tips.

Figure 5.1: Bookmark page

## Chat page

The following Figure 5.1, user can chat with doctor.



Figure 5.1: Chat Page

## **Booking page**

The following Figure 5.1, user can book doctor.

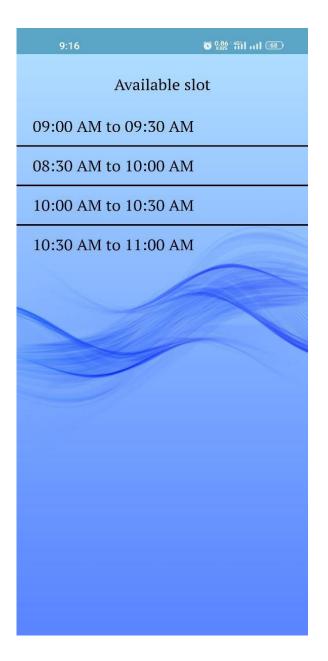


Figure 5.1: Booking Page

## Edit page

The following Figure 5.1, user can edit his/her information. For doctor, doctor can upload slot by week day.

2:26 ◀ 오 🕅	© ‱ 奈II 38	2:26 🖪 오 🕅	S 🐯 泠III 38
Edit you	r profile	Edit	Profile
First Name		First Name	
Mukta		Alimujjaman	
Last Name		Last Name	
Nahar		bappy	
Select Area	(-	Qualification MBBS(DMC), ME	O(DMC), MRCP(UK)
Phone 01793153613		Select Specialist	-
Age		Select Area	-
34		Select Image	
		Experience(year)	
EDIT PI	ROFILE		
		Organization DMC	
		Chamber Address Banani, Road 2, I	Jourse 5 Floor 3
		Phone Number	10030 5, 11001 5
		01820642667	
		Your Charge(TK)	
		iour charge(TK)	
		Visiting Hours	

Figure 5.1: Edit Page

# 5.2 Database Implementation

The following Figure 5.2 shows Realtime Database.

AJhdsajkf 🔻
Realtime Database
Data Rules Backups Usage
CD https://ajhdsajkf.firebaseio.com
https://ajhdsajkf.firebaseio.com/
) - Chats
) — DailyTips
) – Events
) – Tokens
) users
4
4



The following Figure 5.2 shows User.

AJhds	Jhdsajkf 🔻					
Re	Realtime Database					
Data	Rules Backups Usage					
œ	https://ajhdsajkf.firebaseio.com > users					
us	ers					
	- 1q4AZOnEVIZIPEVhGvlRTCBrsmR2					
	age: <b>"30</b> "					
	—— dailytips:""					
	email: "salma1@gmail.com"					
	events:""					
	— firstname: "salma"					
	fullName: "salma akter"					
	imageUri: "https://firebasestorage.googleapis.com/v0/b/ajhdsajkf.appspot.com/o/Image%2FImage%2Fstorage%2Femulated%2F0%2FDCI№					
	lastname: "Akter"					
	location: "Rangpur"					
	password: "123456"					

The following Figure 5.2 shows Events.

Re	ealtime Database				
ata	Rules Backups Usage				
G	https://ajhdsajkf.firebaseio.com > Events				
Ev	ents				
•	- Blood Test				
	date: "25/4/2021"				
	description: "Blood Test"				
	doctor: "Dr. Shamim Raihan"				
	image_1: "https://firebasestorage.googleapis.com/v0/b/ajhdsajkf.appspot.com/o/EventImage%2FImageimage%3A112127.jpg?alt=media				
	image_2: "https://firebasestorage.googleapis.com/v0/b/ajhdsajkf.appspot.com/o/EventImage%2FImageimage%3A112127.jpg?alt=medi				
	key: "event-list"				
	location: "Dhaka"				
	time: "12:00 PM to 05:00 PM"				
	title: "Blood Test"				
<b>)</b> -	- Corona Test				

Figure 5.2: Events

The following Figure 5.2 shows Daily Tips.

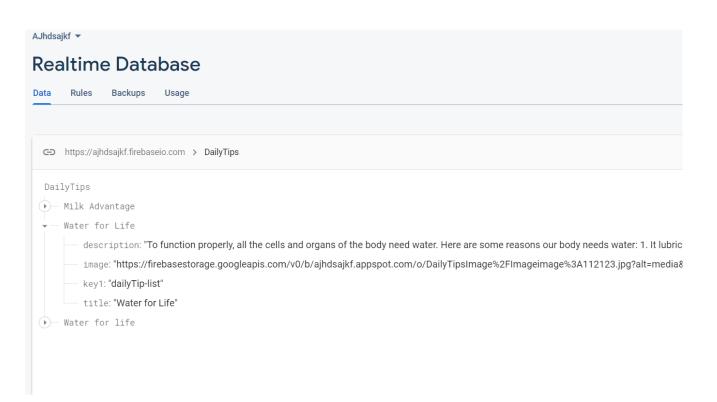


Figure 5.2: Daily Tips

The following Figure 5.2 shows Chat.

AJhdsa	AJhdsajkf 🔻						
Rea	Realtime Database						
Data	Data Rules Backups Usage						
Ð	https://ajhdsajkf.firebaseio.com > Chats						
<b>)</b> -	-MnEDg9fYim4fUNBJ0JG						
•	-MouDMN5xfQ3hZbc2aII						
	isseen: true						
	message: " <b>hello</b> "						
	receiver: "vwlBvePZKLROPoF5OuXaDKp3Foy1"						
	sender: "ImftgkCqa6gt3byNhuk8kM6Wqwl2"						
•-	-MouIGLKgvQvWIzydXTK						
•-	-MouIIxo0FAPU4ldP4eG						
•-	-MouIKiyEHeH18zLrsaM						
•-	-MouINV7JfPsCBUZaEu0						
1 <u>+</u> -	-MouIQ5vykPgE_8bkcbv						
	isseen: true						

### Figure 5.2: Chat

## The following Figure 5.2 shows Authentication.

AJhdsajkf 👻 Auth	entication				
	saheda@gmail.com	Y	Dec 24, 2021	Dec 24, 2021	dgeb1rlDDWVwQqzsmcsD11bjA6
	salma1@gmail.com	Y	Dec 24, 2021	Dec 24, 2021	1q4AZOnEViZIPEVhGvIRTCBrsmR2
	keya@gmail.com	У	Dec 24, 2021	Dec 24, 2021	sux6aTcKEhVPaVITdwQv4zZM0JK2
	mahin@gmail.com	M	Dec 24, 2021	Nov 30, 2022	TpLEPRnaGgV6imetrcZPgpv0Pjg2
	konik@gmail.com		Dec 24, 2021	Dec 24, 2021	S81pNU07vcMcYPMa42g2yXIM7F
	mukta@gmail.com	У	Dec 24, 2021	Dec 29, 2022	i7PLIfJEOWRWNTpE3CjkPwiS3fl1
	khan@gmail.com	$\mathbf{\Sigma}$	Dec 24, 2021	Dec 24, 2021	znjwgloCFZbTTvUfiu9e37yg2Ac2
	shahriar@gmail.com	$\mathbf{\Sigma}$	Dec 24, 2021	Dec 24, 2021	UNakugEL7CaXG0jyW2YbJDrLJlp1
	masum@gamil.com	Y	Dec 24, 2021	Dec 24, 2021	ZNJbYz2gnnX3A1U4YqDBuv29bQ
	harun@gmail.com		Dec 24, 2021	Dec 24, 2021	e38GhyaicaZNnvb1tDveljLSkPC3
	chaity@gmail.com		Dec 24, 2021	Dec 24, 2021	Nb2UrMSsWmVChWS1xG2KB7rr9
	sayma@gmail.com	У	Dec 24, 2021	Dec 24, 2021	Z8FynILACjedbvgZ7DOLd3slJnq2
	sakib@gmail.com		Dec 24, 2021	Dec 24, 2021	8hcsOqFCDvVBTkOafMIpMGsJM
	inam@amail.com	$\mathbf{>}$	Dec 24. 2021	Dec 24. 2021	vWv9Aii8YIWfuIGaKORiwoozFwv2

Figure 5.2: Authentication

The following Figure 5.2 shows Storage.

es	Rules Usage		
Ð	gs://ajhdsajkf.appspot.com		
	Name	Size	Туре
	DailyTipsImage/	-	Folder
	EventImage/	-	Folder
	Image/		Folde

Figure 5.2: Storage

### 5.3 Unit Testing

Unit testing for YourDoc mobile application should include the following:

1. Test individual functions or modules: Test each function or module of the app separately to identify any bugs or issues early on.

2. Verify accuracy of data processing: Ensure that the app correctly processes and displays patient data, such as medical records and test results.

3. Ensure compliance with regulations: Healthcare applications are subject to strict regulations, such as HIPAA. Ensure that unit tests cover these regulations to ensure compliance.

4. Test user interactions: Test user interactions with the app, such as navigating between screens and accessing patient data.

5. Test for security: Test the app's security features to ensure patient data is protected from unauthorized access.

6. Automate testing: Automate unit testing to save time and reduce the chances of human error.

7. Test on multiple platforms: Test the app on multiple platforms, including iOS and Android, to ensure compatibility and usability across devices.

### **5.4 Functional Testing**

Functional testing is a method of testing the functionality of a software application to ensure it meets the specified requirements. In the context of a healthcare mobile application, the following key points should be considered for functional testing:

1. Test end-to-end functionality: Test the complete flow of the application, including user interactions and data processing, to ensure it works as intended.

2. Verify accuracy of data display: Ensure that the app correctly displays patient data, such as medical records and test results, and that it is up to date.

3. Test connectivity with external systems: Verify that the app can connect to external systems, such as electronic health record (EHR) systems, and that data is transferred and stored securely.

4. Test the app's performance: Ensure that the app performs well in terms of speed, responsiveness, and stability under different conditions, such as network connectivity and device performance.

5. Test accessibility: Verify that the app is accessible to users with disabilities and meets accessibility standards.

6. Test for compatibility: Test the app on different devices and operating systems to ensure compatibility and optimal user experience.

7. Test for security: Ensure that the app is secure against hacking and data breaches and that user data is protected.

### **5.5 Integration Testing**

Integration testing is a method of testing the integration of multiple software components to ensure they work together as intended. In the context of a healthcare mobile application, the following key points should be considered for integration testing:

1. Test integration with external systems: Verify that the app integrates with external systems, such as electronic health record (EHR) systems, and that data is transferred and stored correctly.

2. Test integration with other devices: Ensure that the app integrates with other devices, such as wearable devices, and that data is transmitted accurately and securely.

3. Test the integration of different modules: Verify that different modules of the app integrate correctly, such as the user interface and data processing components.

4. Test for interoperability: Ensure that the app is interoperable with other healthcare applications and systems, such as telemedicine platforms.

5. Test for data consistency: Ensure that data is consistent across all systems and that there are no discrepancies or duplications.

6. Test for security: Ensure that the app integrates securely with external systems and that data is protected against hacking and breaches.

# **CHAPTER 6**

# Impact on Society, Environment & Sustainability

### 6.1 Impact on Society

Many people in our countries still have trouble finding doctors, but since "Yourdoc" helps individuals find the finest nearby doctors by category, it will make things simpler for them. More people than ever are educated and becoming technically proficient, and the medical industry is drastically changing internet-based platforms. Additionally, there are numerous national preferences for online pharmacy, particularly in terms of advertising and subsequent sales.

- As a nation, Bangladesh is currently expanding and adding to its population.
- The digital apps that have replaced traditional ones present a variety of opportunities for both corporations and individual clients.
- While older systems take longer to complete tasks, even in an emergency, modern digital platforms are meant to do it rapidly.
- When most of the controls are in each user's hands, getting assistance is fairly simple.

#### 6.2 Assurance of Reliable Service

As we all know, there are many fake doctors and quacks in our nation. Every year, a large number of people receive subpar care from them, losing both money and health when they could have received the right care from a nearby authorized doctor. If there was a reliable resource for locating authorized medical specialists, this type of subpar care would be reduced and a sizable portion of our society would be protected from serious loss of wealth and life. This software can't always guarantee complete purity, but there will be a proper justification and a grading system by the general public so that nobody can claim to be a good doctor here like typical false individuals can. While some physicians have a bad reputation for being careless with their patients, others have a great reputation. When the public can see how well-liked a doctor is by using a rating system, doctors will work harder to uphold their excellent reputations.

#### **6.3 Ethical Aspect**

The term "ethics" refers to something that can violate another person's rights, and in this case, that right is related to the privacy of personal information. As "YourDoc" is a platform for finding the best specialized doctors in your area and scheduling appointments, both the doctor and the patient must provide a lot of information for analysis and suggestion purposes, and patients may not be aware of who will be responding to and sharing their medical information. We are making sure that proper privacy is based on the rules of policy and privacy about public information so that no one's privacy can be interfered with. Patients can be concerned about their medical history and other private data, and doctors can be concerned about their certification data and appointment history.

#### **6.4 Sustainability Plan**

Sustainability entails achieving our goals without jeopardizing future generations' ability to do the same. We require social and economic resources in addition to natural resources.

Environmentalism is one aspect of sustainability. Most definitions of sustainability also consider economic development and social equality. Its goal is to achieve economic, social, and environmental balance. We must acquire the public's trust by offering the greatest service, authenticity, and usability. In addition, we must expand the platform by acquiring more benefits without sacrificing service quality and by refraining from acting in a way that harms the environment.

# **CHAPTER 7**

# **Conclusion & Future plan**

### 7.1 Conclusion

We live in a time where nearly everything will be based on digital platforms, yet Bangladeshi people are not developing at the same rate as other nations in these internet-based platforms, despite most other countries being able to. There are several Bangladeshi telemedicine-related applications currently active, as though telemedicine will be a part of our future. Due to conventional systems, our people continue to experience difficulties in accessing various services. By using data analysis tools, many previously unthinkable tasks are now achievable. It's not very difficult to suggest a person see their closest, best doctor in this situation. However, many still struggle to find specialists. They move from city to city looking for a reputable good doctor, even though many of these professionals visit their local clinics without their knowledge. It is a time and money waster and worsens the patient's physical state.

We think that this app will end the suffering that comes with people having to look for the right doctors. We learned a lot about new technologies while creating it, and we hope to learn even more in the future. The application has surpassed all of the requirements that were gathered throughout the development process. We shall take appropriate measures to monitor doctors' appointment scheduling so that they cannot neglect the responsibilities of their normal jobs in order to book more appointments through this app. Additionally, all additional authenticity procedures will be protected and rigorously followed. Throughout the entire process of developing, I increased my self-assurance and experience, both of which will be highly beneficial to my future talent growth.

### 7.2 Future Plan

This program will make life easier for regular individuals and doctors. It may be improved in a variety of ways.

- Develop an IOS version.
- Add more useful feature like AI base disease detection.
- Develop a Bangla version of the app for Bangladeshi peoples.
- Improve UI.

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