

Online Diagnostic Lab Reporting System

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

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APPROVAL

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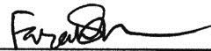
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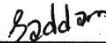
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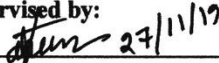
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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Ms. Tasnim Ahmed, 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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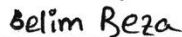
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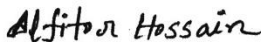
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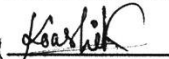
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ABSTRACT

Medical treatment is one of the human elemental settled. Govt. is trying to accomplish this right for human. By our proposed project, we have also tried to make system that can accomplish the right of the human. He proposed project is a digital system that provides users on patients an easy way to communicating with booking appointment. In our system patient and admin will have their own account. Our system store the information of patients name and phone number. And also be history of patients appointment. So, in that system admin approve to patients request and will informing the patient when to see a doctor.

This system contains list of all program and can be assigned by users concurrently from any where this place. But for users must be registered user. This system is two characters.

Client or users sends request, on receiving the request the server processes it and extracts the data from database and sends the result back to the client or users. This system provides separate interface and login for admin. And in this system admin can modify the database. And also admin can provide permissions for all users due to security issues.

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Chapter 1

Introduction

1.1 Introduction

We know that Bangladesh is a small country and there are many people living here. So everyone, big and small person face to traffic jam. So, which is to say, it is misery. And the worst of these are the patients or the sick people who are suffer.

In our country, there are lots of applications which provide in this solution but none of them are digitalized yet.

Innovation has encourages people in pretty much every field of life. They turn manual undertakings programmed to spares recourses. Programmed work is viewed as increasingly trustful, dependable, exact and so on. Innovation is the principle reason which effectively oversees numerous procedures and makes fruitful administration framework.

1.2 Motivation

The main motivation of our application is communication between admin and patient. We have individual application for admin and patient. This application will handle to show information of doctors. In many reason patient doesn't go to the hospital for appointment with doctor. So, in our app we have a system where admin can give the news to patient in online base system.

1.3 Objectives

The proposed framework is an "Online Diagnostic Lab Reporting System". Its primary point is to unite different demonstrative working, inquires about on one single stage that is additionally on the web.

Our goal is to make a system by which both admin and patients get benefited by using the application because of its extra features.

In this app, admin can keep the information of patients, gives his/her scheduled time and knows to his/her communicate with doctors.

We hope that, our application will cut down some problems in diagnostic center in future and make utility for both doctor and patient.

1.4 Expected Outcome

The points of interest of the proposed venture are that the online framework essentially computerizes determination framework.

It is quicker and solid, gives better administrations as contrast with manual framework.

The android form of the proposed application spare clients to visit site over and over, they can checks all subtleties on finger tips.

1.5 Report Layout

Chapter 1(Introduction): In Chapter 1, we describe about introduction, motivation, objectives, expected outcome and report layout.

Chapter 2(Background): In Chapter 2, we describe about introduction, related works, comparative studies, scope of the problem and challenges.

Chapter 3(Requirement Specification): In Chapter 3, we describe about requirement collection and analysis, use case modeling and description and design requirement.

Chapter 4(Design Specification): In Chapter 4, we describe about design of the app.

Chapter 5(Implementation and Testing): In Chapter 5, we describe about implementation of database and test results and reports.

Chapter 6(Conclusion and Discussion): In Chapter 6, we describe about conclusion and discussion and future development.

Chapter 2

Background

2.1 Introduction

A hospital is such a place where people go to for taking treatment. Sometimes people face same sort of problems. And we think that, our application will solve this situation.

2.2 Related Works

We looked through play store and found some apps that is similar to our application but there are some features missing which this type of application need to have. So we combined all the features in our app and added some new features and make it useful.

Some related works are mentioned below with a short detail:

Patient: The patient will talk to the admin to make doctor's appointment.

Admin: Admin will notify the patient with his/her serial number and time to see a doctor.

2.3 Comparative Studies

We considered some comparative application and found that they are not same which we are developing. They have some limitations. There is no application which contains all features. In some application, there is no login and information exchange application which is required for getting patient and specialist information. But in our application, we have both login and information exchange and furthermore administrator dashboard for observing the entire framework.

We assemble a straightforward and easy to understand application for an administrator and a patient. The fundamental objective of the task is to make the framework online based.

2.4 Scope of the problem

By studying the related works and after then comparing with existing applications, some lacking's of feature were found. It is totally a new application which brings admin and patients site by site by its features. We are facing problems in our day to day life. Similarly, we faced many problems while making the project.

The scopes of the problems are discussed below:

2.4.1 An attractive app for both side

The application is intended for making the framework online based. So it is essential to make the User Interface easy to use and proficient.

2.4.2 Online Payment

The patient can pay through an application. The exchange data will be kept avoided outside of the world.

2.4.3 Privacy

Privacy of all clients ought to be kept up carefully. It will just record the client name and his/her offered secret word to be distinguish him/her next time. Those information will be likewise remained careful by admin.

2.5 Challenges

In every sphere of life there are challenges but we are to overcome the challenges to make something good. The challenges we have faced are given below:

2.5.1 User Friendly UI

It was perhaps the most serious issue for us that we invested a gigantic energy to make the UI.

2.5.2 Problem finding

As some related applications have just been made, we attempted to discover the bugs and missing highlights that ought to be in our applications.

2.5.3 Real time database

We confronted a few issues to pick which database the board framework we will use to fabricate the application. As we need constant database, so we chose to utilize firebase.

2.5.4 Time Management

It was one of the troublesome parts to keep up. We constantly kept in our psyche about the cutoff time. On the off chance that we couldn't do in it time, it would be generally excellent for us. In this manner we needed to isolate our opportunity to build up the site part by part.

2.5.5 Dealing with different screen devices

Our clients may have gadgets with various screens. So it is additionally a test to deal with the screen size of our application.

2.5.6 Keeping application simple and clean

In the event that the application is perplexing and client can't see how it functions, at that point the client will uninstall the application and give a negative audit. So the elements of the application ought to be clear and simple.

Chapter 3

Requirement Specification

3.1 Requirement Collection and Analysis

Requirement collection is main part to make a successful application. Requirements for a new system should be gathered from end users of the system. The requirements are mentioned below:

1. Patients have to sign up and login system.
2. Patients can contact to the admin panel.
3. Patient and admin can communicate with each other in online system.
4. Admin knows to the patients communicate with doctors and schedule time.
5. Patient needs to pay money in online system.
6. Patient can make appointment with doctor.

3.1.1 Functional Requirements

Admin

The system should allow the admin to see list of patients.

The system should allow the admin to see the list of doctors.

The system should allow the admin to check the schedule time.

The system should allow the admin to accept or reject the requested.

The system should allow the admin to view the profile of patients.

The system should allow the admin to view the profile of doctors.

Patient

The system should allow the patient to check them own location and these areas diagnostic center.

The system should allow the patient to make an appointment.

The system should allow the patient to contact with admin in online system.

The system should allow the patient to own his/her edit profile.

3.1.2 Non-Functional Requirements

Non-Functional prerequisites characterize the necessities as far as execution, legitimate database necessities, structure imperatives, dependability, accessibility, security, practicality and movability.

3.1.3 Performance Requirements

1. Performance requirements characterize satisfactory reaction times for framework usefulness.
2. The heap time for UI screens will take no longer than a lot of time.
3. The login framework will be checked inside couple of moments.
4. The framework must help numerous clients one after another.
5. The framework must accessible day in and day out.
6. The correspondence among framework and server must be scrambled.

3.1.4 Requirement for System

1. The following requirements are needed to our web site:
 - Browser: Google Chrome, Mozilla Firefox, Opera Mini or any browser.
 - Operating System: Windows, Linux.
2. The following requirements are needed to use the app:
 - Operating System: Android.
 - Internet: Must be need to internet connection.

3.1.5 Analysis

We contemplated a heaps of android application and site which are identified with our application and even this framework has not turned out yet. In here we are utilizing a continuous so we chose to utilize firebase as our constant database.

3.2 Use Case Modeling and Description

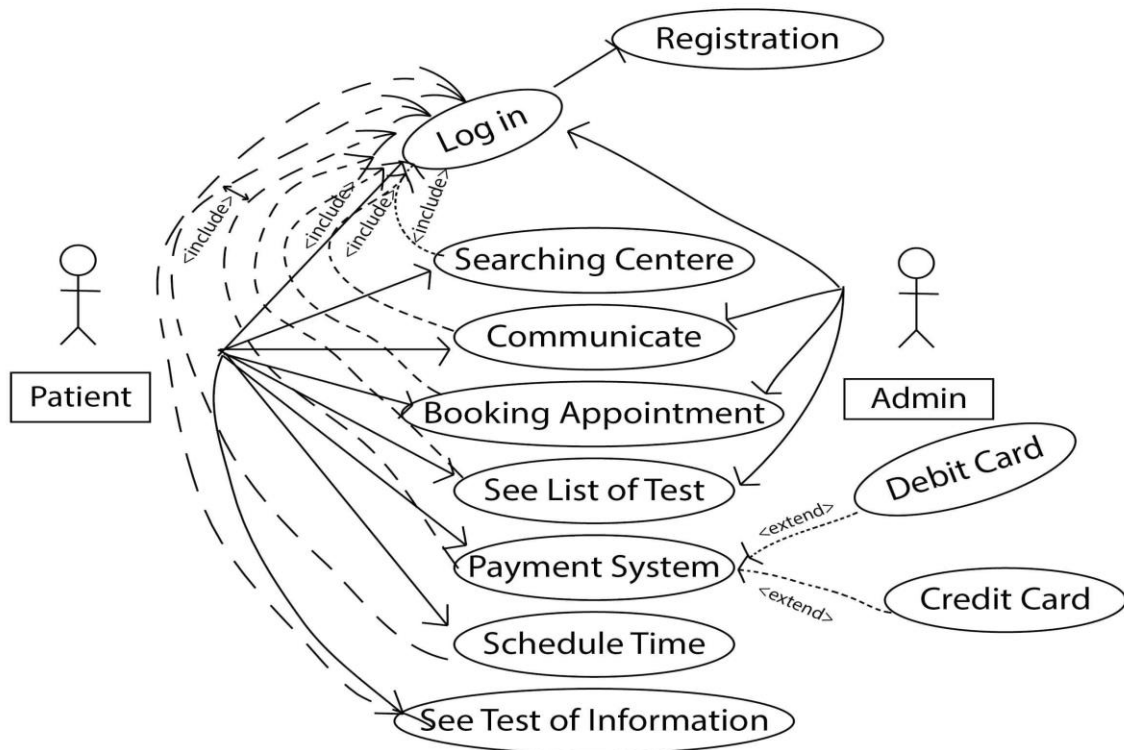


Figure 3.1: Use Case Diagram

Table 3.1: Use Case Description of Patient Registration

Use Case Name	Registration
Precondition	None
Actor	Patient
Primary Path	1) Enter Name 2) Enter Mobile Number 3) Enter Password 4) Click Registration 'Button'
Exceptional Path	1.1) Mobile Number is required 1.2) Password is required

Table 3.2: Use Case Description of Patient Sign in

Use Case Name	Sign in
Precondition	Registration
Actor	Patient
Primary Path	1) Enter Mobile Number 2) Enter Password 3) Click Sign in 'Button'
Exceptional Path	1.1) Mobile Number is required 1.2) Password is required

Table 3.3: Use Case Description of Admin Sign in

Use Case Name	Sign in
Precondition	Registration
Actor	Admin
Primary Path	1) Enter Name 2) Enter Password
Exceptional Path	1.1) Name is required 1.2) Password is required

Table 3.4: Use Case Description of Communicate

Use Case Name	Communicate
Precondition	Sign in
Actor	Patient, Admin
Primary Path	1) Enter Message 2) Click Send 'Button'
Exceptional Path	1.1) Message body is required

Table 3.5: Use Case Description of admin's patient request

Use Case Name	Handle Patient Request
Precondition	Sign in
Actor	Admin
Primary Path	1) List of request from patients 2) Click Accept 'Button' or 3) Click Reject 'Button'
Exceptional Path	None

Table 3.6: Use Case Description of Patient Appointment

Use Case Name	Appointment
Precondition	Sign in
Actor	Patient
Primary Path	1) Click Appointment 'Button'
Exceptional Path	None

3.3 Design Requirement

Android Studio

Android Studio is the official Integrated Development Environment (IDE) for Google's Android Operating System, it is a software and designed specially for Android development. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

Android users expect in this app to look and behave in a way that's consistent with the platform. Not only it should follow material design guidelines for visual and navigation patterns, but it should also follow quality guidelines for compatibility, performance, security and more.

Android studio is an IDE to assemble an android application. It is a lot of proficient than others Android IDE. It has some form in highlights and supports extraordinary library instruments which help anybody to manufacture application effectively and successfully.

Chapter 4

Design Specification

4.1 Design

Design is one of the fundamental part for building up any unique web application. It's great practice to make any application easy to use with interface. The following is our application UI:

The figure 4.1 is given below is opening an application page.



BD Lab Reporting System

Figure 4.1: Opening an Application

The figure 4.2 is given below is Registration page for Patient interface. So, it's have patients name, mobile number and password for registration.

4:04 PM

Admin

Welcome,

This is very usefull for booking a diagnosis apointment in your favourite diagnostic centre.

Name

Mobile No

0 / 11

Password

Sign Up

Already have account? [Sign In](#)

Figure 4.2: Registration for Patient

The figure 4.3 is given below Sign in for Patient interface. Patient must be enter mobile number and password for Sign in.

The screenshot displays a mobile application interface for a patient sign-in. At the top, there is a blue header bar with the time '3:36 PM' on the left and status icons (alarm, signal strength, Wi-Fi, and battery at 69%) on the right. Below the header, a white card contains a blue circular profile icon on the left and the text 'Admin' on the right. The main heading is 'Welcome' in bold black font, followed by a sub-heading: 'This is very usefull for booking a diagnosis apointment in your favourite diagnostic centre.' Below this is a white rounded rectangle containing the sign-in form. The form has two input fields: 'Mobile No' with a mobile phone icon and a character count '0 / 11'; and 'Password' with a lock icon and a toggle icon. Below the password field is a link 'Forget Password?'. At the bottom of the form is a blue rounded button labeled 'Sign In'. Below the button is a link: 'Don't have account? Sign Up'.

Figure 4.3: Sign in for Patient

The figure 4.4 is given below when patient sign in for his/her account, then the app shows his/her own locations diagnostic centre.

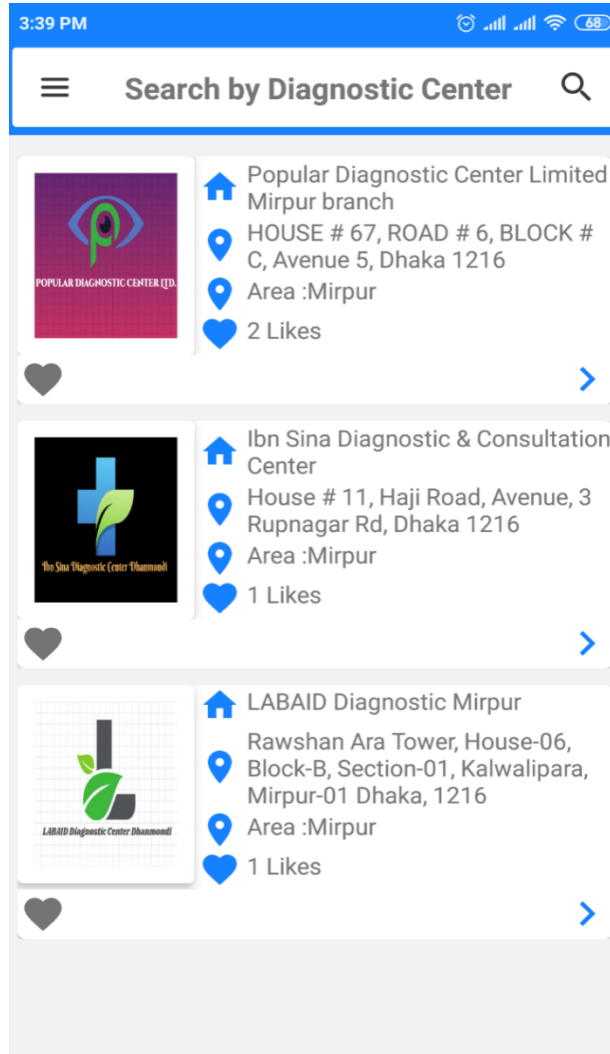


Figure 4.4: Patients Own Locations Diagnostic Centre

The figure 4.5 is given below patients click the Explore All Diagnostic Centre 'Button'.

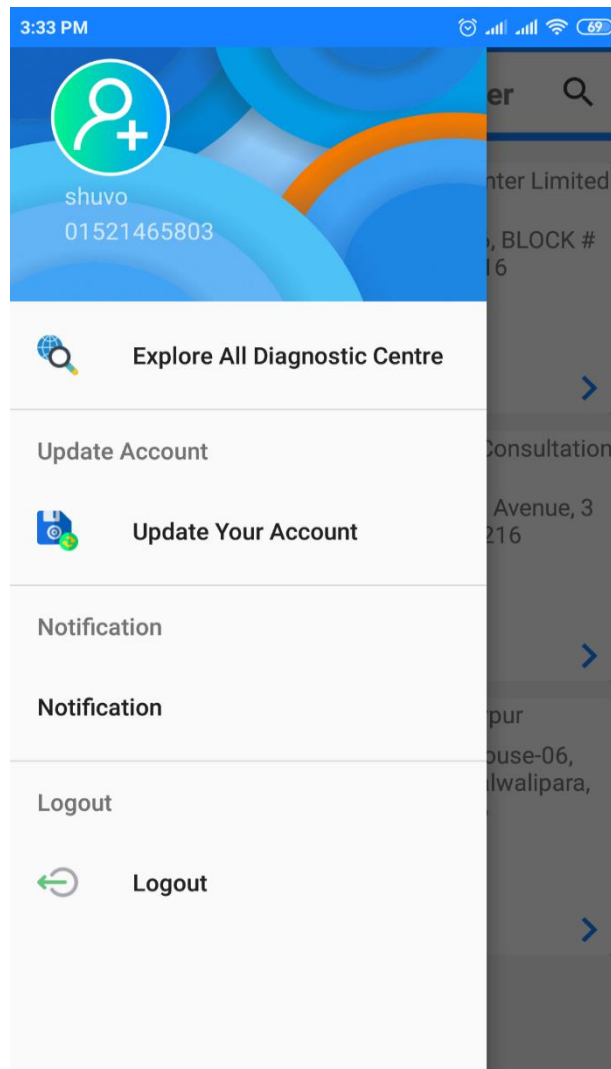


Figure 4.5: Option Panel

The figure 4.6 is given below is when patients click the Explore All Diagnostic Centre 'Button', the app shows All Diagnostic Centre.

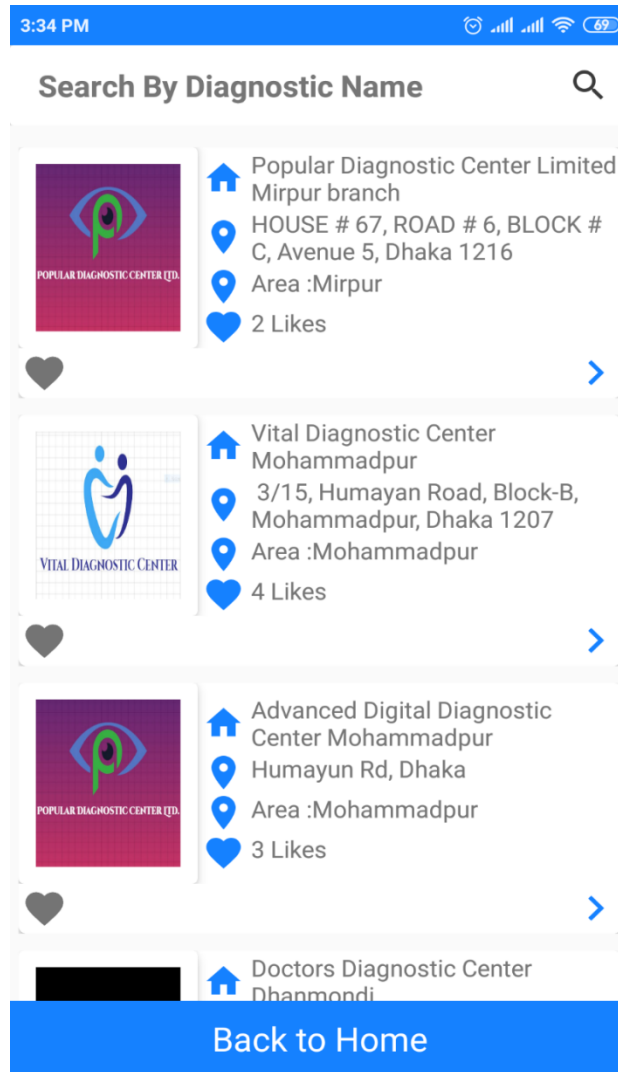


Figure 4.6: Shows All Diagnostic Centre

The figure 4.7 is given below is Searching Diagnostic Centre.

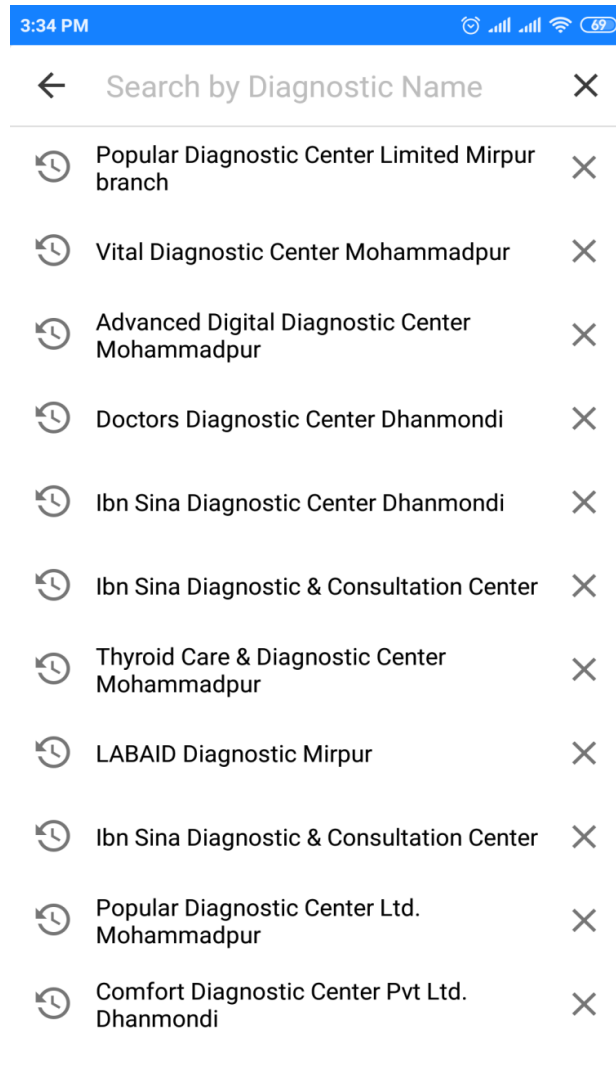


Figure 4.7: Searching Diagnostic Centre

The figure 4.8 is given below is every Diagnostic Centre's List of Test.

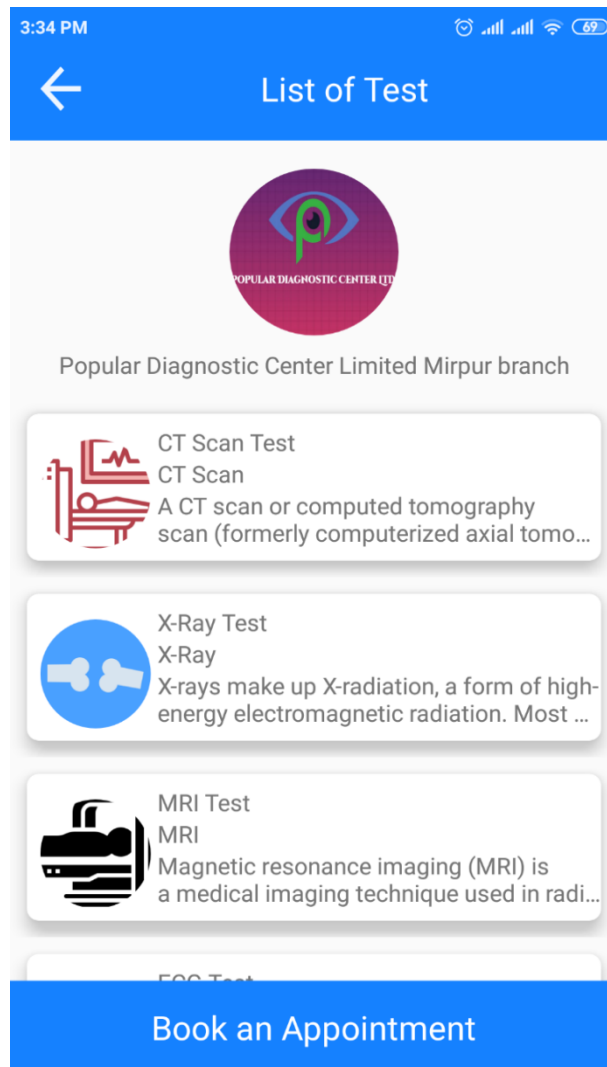


Figure 4.8: List of Test

The figure 4.9 is given below is each and every Diagnostic Centre's list of tests information.

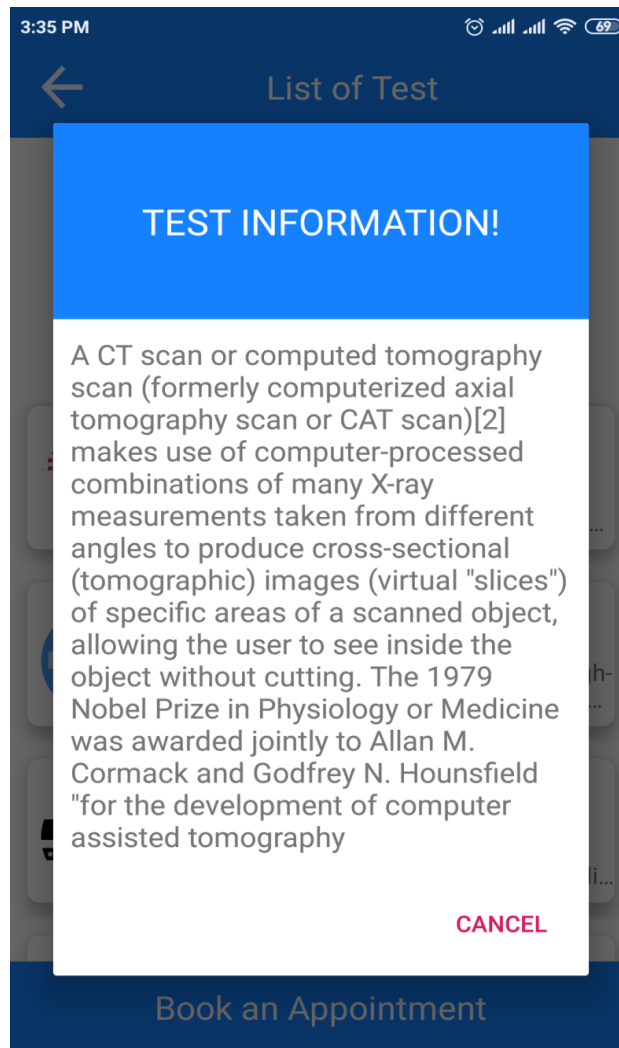


Figure 4.9: List of Test's Information

The figure 4.10 is given below is shows in the Create Account with Code for Admin.

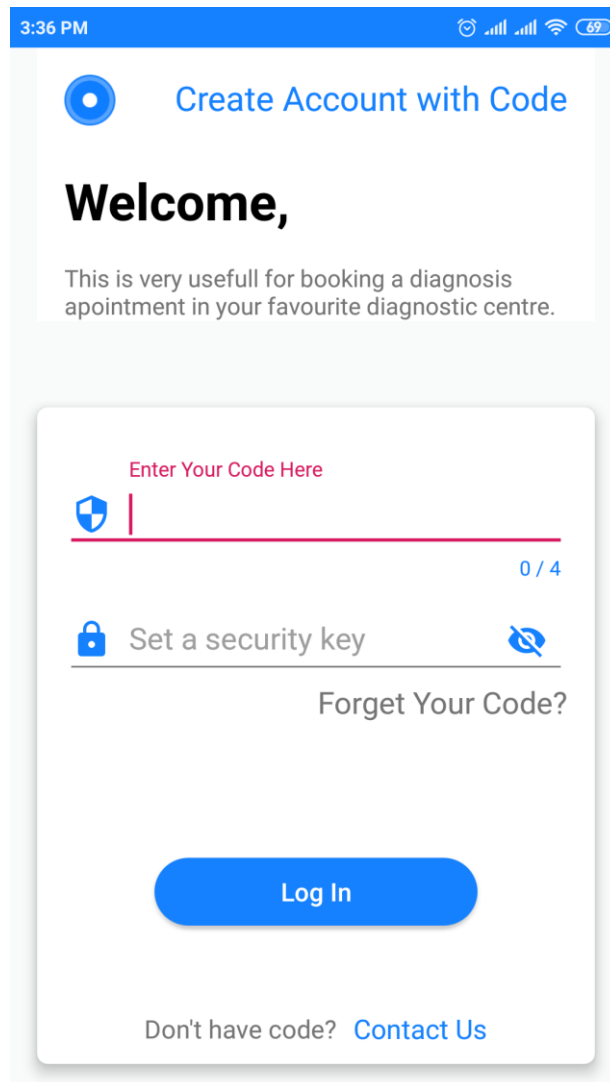


Figure 4.10: Create an Account for Admin

The figure 4.11 is given below is shown in the Admin Registration Panel.

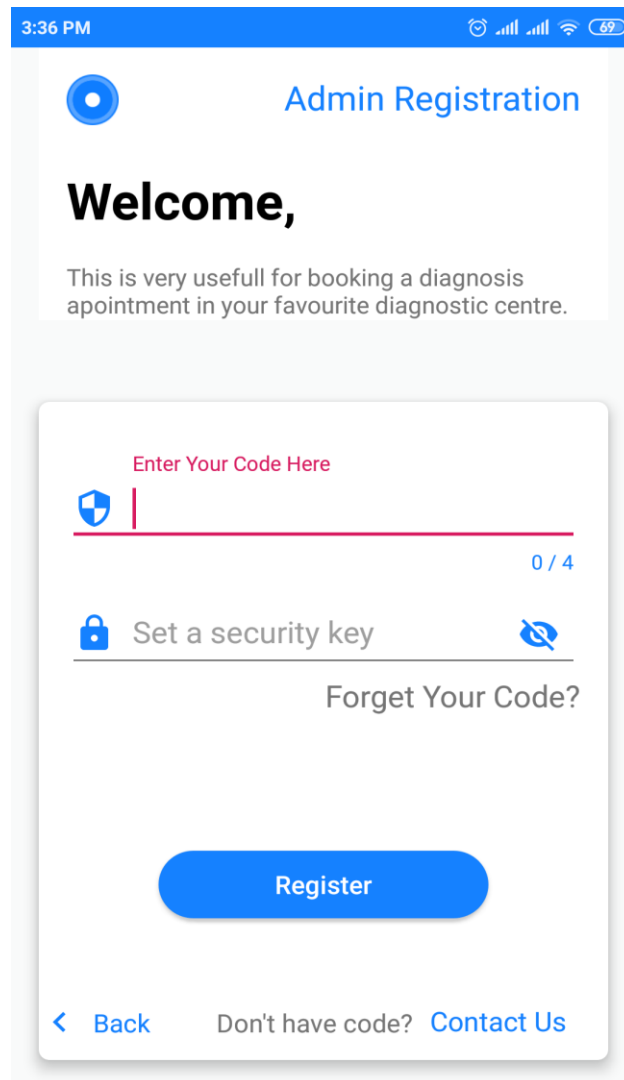


Figure 4.11: Admin Registration Panel

The figure 4.12 is given below is shown in make an appointment.

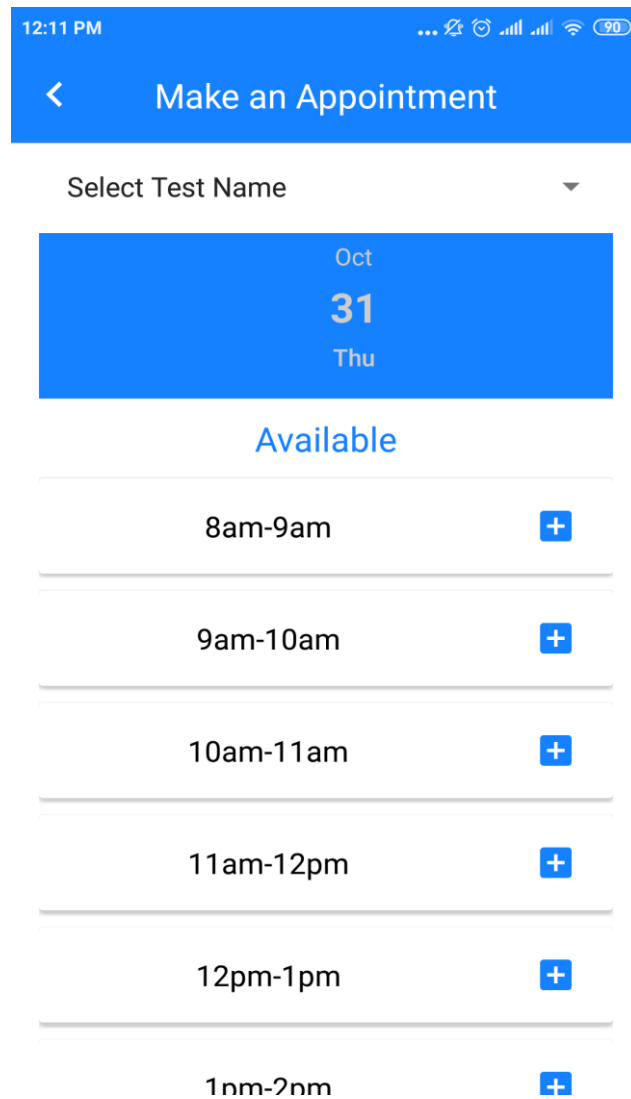


Figure 4.12: Make an Appointment

The figure 4.13 is given below is shown in the Google Map.



Figure 4.13: Google Map

Chapter 5

Implementation and Testing

5.1 Implementation of Database

We utilized firebase validate administration to verify our clients. Firebase Authentic incorporates a framework where engineers can empower client confirmation with versatile number and secret phrase. It underpins login too.

5.2 Test Results and Reports

Our Test Case result shown to the following table:

Table 5.1: Test Case of Login

Test Case ID: Login	Test Designed By: Selim, Shuvo, Kowshik
Module Name: Login Screen	Test Executed By: Kowshik, Shuvo, Selim
Test Title: Verify login with valid mobile number and password	
Description: Test to the Login System	

Condition: User must have valid mobile number and password.
--

Table 5.2: Test Case of Booking Appointment

Test Case ID: Appointment	Test Designed By: Selim, Shuvo, Kowshik
Module Name: Login Screen	Test Executed By: Kowshik, Shuvo, Selim
Test Title: Appointment Place	
Description: Test the Appointment System	

Condition: Patient must be logged in.

Table 5.3: Test Case of Conversation

Test Case ID: Conversation	Test Designed By: Selim, Shuvo, Kowshik
Module Name: Conversation	Test Executed By: Kowshik, Shuvo, Selim
Test Title: Sending Message Procedure	
Description: Test the Conversation System	

Condition: Patient must be logged in.

Now, it's shown to the following Test Case of Result Unit:

Table 5.4: Test Case of Result Unit

Test Case	Expected Result	Actual Result	Status
1. Correct Mobile Number 2. Correct Password	Login	Login	Right
1. Correct Mobile Number 2. Incorrect Password	Login	Not Login	Wrong
1. Incorrect Mobile Number 2. Correct Password	Login	Not Login	Wrong

Chapter 6

Conclusion and Future

6.1 Conclusion and Discussion

"Online Diagnostic Lab Reporting System" is a versatile based application and its admin board is online based which has a delightful UI. We built up this application for the better of correspondence among admin and patient. This application stores and gives data about admin and patients.

6.2 Future Development

Presently in our application we secured practically all highlights, yet in future we will include some more highlights like as Video Calling correspondence among doctor and patients, mobile number or email check when patient register in our framework in lovely UI.

References

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(4)The “Appointment” available at:

https://en.wikipedia.org/wiki/Appointment_scheduling_software [Last accessed on 16 October 2019]

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