AN ANDROID BASED APP FOR "After Care Drug Rehab Monitoring 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

This Project titled **"After Care Drug Rehab Monitoring System"**, submitted by Imtiyaz Uddin, ID No: 172-15-9917 and Anisur Rahman, ID No: 172-15-9916 and Emu Hossain, ID No: 172-15-9992 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 08/07/2020.

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Declaration

We hereby declare that, this project has been done by us under the supervision of **Dr. Sheak Rashed Haider Noori, Associate Professor & Associate Head, Department of Computer Science and Engineering** 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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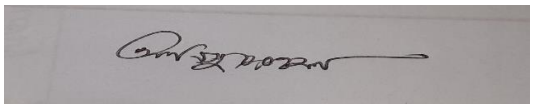

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Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Our project title is “Aftercare Drug Rehab Monitoring System”. It is an Android and Web Application for Prediction of drug addicted patient and. Our apps has some features like login, registration, ratting, Answer, comment pass, discipline and Patient information etc. there are two kind of user, first one is patient guardian and second one is doctor. Many drug addicted patients goes home from the Rehabilitation center after he feel better. After going to home many patient again started taking the drug again. Then the patient was brought back to rehabilitation again. This app to help doctors prescribe the daily behavior of the patient. In this application, the patient's daily behavior can be rated above. Based on the daily behavior of patient. Guardian give some question answer and give ratting everyday. There are separate features for adhering to the rules and regulations. The doctor can see the rating and see daily question answer and predict the condition of the patient.

Through our app Patient also see some discipline rule which will help the patient stay healthy. So it is very helpful for Doctor and patient guardian.

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CHAPTER-01

INTRODUCTION

1.1 Introduction

At present Drugs are a major problem in Bangladesh. Drugs are spread everywhere in cities or villages. Awareness is needed to solve drug problems. There are many drug rehabilitation centers in our country. Rehabilitation Centers Strive to Return Drug Addicts to a Healthy Life. After returning to normal life many times, due to lack of awareness, they go back to the drug. We have to get out of this problem. That's why we need modern awareness.

1.2 Motivation of this project

Many drug addicts are currently being admitted to rehabilitation center. And they are also returning to normal life. After going home they need proper care. When Use this application Patient's guardian will be able to rate the patient behavior and give some daily question answer. The rating will be determined by the behavior of the patient. If the Patient behaves very well and he/she doesn't take the drug then he/she will get good ratting and good feedback. If he/she does not maintain doctor advices and he/she takes drug then he/she will get low ratting and get bad feedback. During the follow-up with the doctor, the doctor can predict the current state of the patient based on the rating and feedback.

1.3 Objectives

When patient back to the normal life then he go to the home from rehabilitation center, then doctor can't know about the patient information regularly. So we want to make an application where using these apps, the doctor will know about the patient's daily information. As a result, it will be much easier for the doctor to predict the current state of the patient.

1.4 Expected Outcome

After all work, we will get the application which will be useable for Patient's Guardian and Doctor. It will help the doctors to predict patient present status and can monitor the patient easily and the patient's guardian may be notified of the patient's daily behavior to doctor by ratting and answering some question. If use this application patient will be aware of his discipline.

1.5 Project Management and Finance

All project defends on management and financial status. Every member engage in various tasks in any project. This project we shared the work. Like someone did analysis and someone did design and someone did developed. We have visited different rehab center. So need for a financial budget. We've incurred financial costs.

1.6 Report Layout

In this Chapter 1: We discussed basic concept of 'After care drug rehab monitoring system'. We covered introduction, motivation, objective, expected outcome and project management and finance.

In Chapter 2: We will discuss background of 'After care drug rehab monitoring system'. We will try to cover Preliminaries, Related work, Challenge, Problem etc.

In Chapter 3: We will discuss 'Requirement specification for after care monitoring'.

In Chapter 4: We will discuss 'Design Specification'.

In Chapter 5: We will discuss about how we implement this system and it is testing.

In Chapter 6: We will discuss about Impact on society, Environment and Sustainability.

In final Chapter 7: We will discuss about conclusion and our future scope, limitation. Improvement and conclusion of our project.

CHAPTER-02

BACKGROUND

2.1 Preliminaries

We are currently living in digital Bangladesh. By interacting with the outside world Bangladesh are being digital country. Currently most people in Bangladesh are using Android phones and most people are using the internet. People are now largely dependent on the Internet for any task. People feel comfortable doing something on their phone. At Present android apps are very popular. People want easy process for using any app. So this android app is that type of app what use by every people is very easily.

2.2 Related Works

There are many kinds of Android apps in Google Play Store (like: Drug addiction Counselling, Advice for drug addicted) but our apps will be used for medical purposes. Many types of medical apps are used in Bangladesh but our app is different. Basically our app developed for drug addicted patient. Our app will help the doctor and patient guardian. When the drug-addicted patient goes home from rehab then doctor gave some recruitment to patient. Occasionally the patient has to follow up with the doctor. During follow up doctor need some data on the behavior and physical condition of patient. The data that the doctor takes from the patient's guardian. Many times a Guardian forgets to give the doctor some information. If the guardian uses our app can store information above the patient daily behavior and physical condition. Using this application, the guardian will answer some of the daily queries and rating on the daily behavior of the patient. Based on this information monthly statistics will be created those statistics will be seen by the doctor at follow-up. After looking at the statistics, doctor will predict the current state of the patient. In this app Guardian and doctors can easily connected.

Our related works in Google:

1. Drug Addiction Counseling-Get help to sobriety (Reference-page no: 31)
2. Drug addict advice (Reference-page no: 31)
3. Pocket Rehab: Get sober & addiction recovery (Reference-page no: 31)

2.3 Comparative Studies

There are many kinds of apps for medical and drug addiction we have seen ever. Many of these apps helping organization and some of the app are helping the patients. But there is no such app in Bangladesh which is helping doctors and drug addicted patients or patient's guardian alike. We make an app where have two kinds of people doctor and patient guardian. Both types of users can easily access the application. This app will make their job much easier. So it's the first application we have seen in our country.

2.4 Scope of the Problem

We first tried to make a unique app. In this concept is very satisfied. When we want to make this app with this concept we faced more problem. Firstly we visited several organization. We consulted with some doctors and the doctors are shared various information with us. Then we decide what features to include. When we started developing then we faced more error, it didn't run properly. We tried to solve the errors.

2.5 Challenges

We have encountered many problems while completing the project. We try our best to overcome from those problems. So firstly we think what we can add this project. For this project we have to learn how to make features and use that in our project. This app can't found in the Google Play Store. We saw many kinds of drug addicted and medical apps in Google play store. Then we realize many kinds of drug addicted and

medical app works for one side people. It’s for doctor or drug addicted patient. Then we keep thinking such an app which will help for doctor and patient or patient guardian. So we took up the challenge of creating an application arrow with this concept. We try to make a new level of app for Drug addicted patient and doctor.

CHAPTER-03

REQUEREMENT SPECIFICATION

3.1 Business Process Modeling

This project contains the model for "**After Care Drug Rehab Monitoring System**" This model help to understand whole project work. This app will be available for Doctor and Patient's Guardian. It is different to other hospital and drug addiction apps. It is provided a covering the analysis of the business context and process and the design and deployment a possible implementation. Which feature user can be access and the user can easily understand what the requirement is it will be easy to understand in this. The following figure 3.1 shows the business process model.

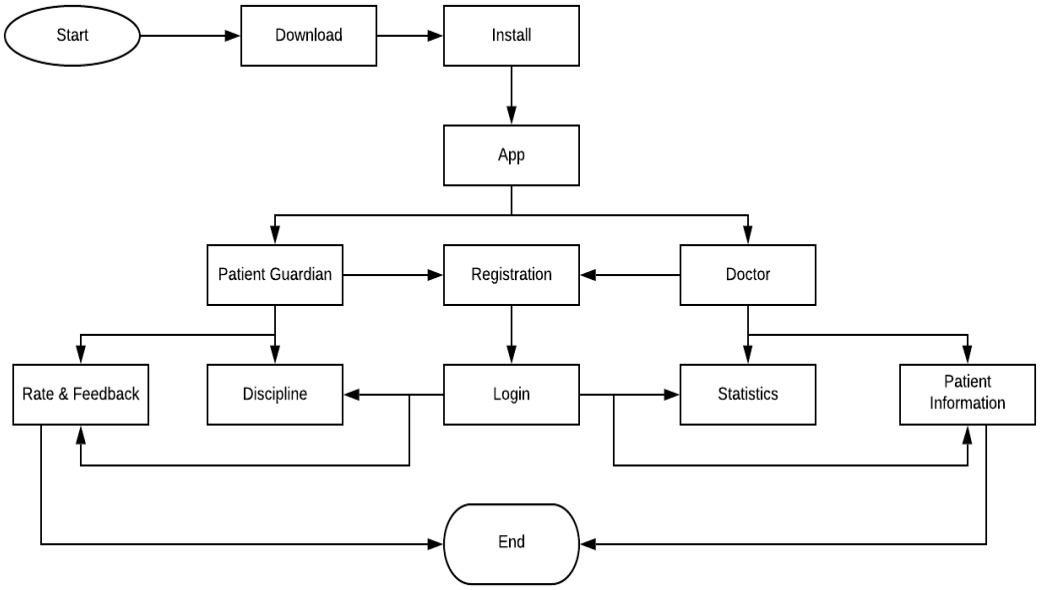


Fig 3.1: Business Process Model

3.2 Requirement Collection and Analysis

This project has many type of requirement. Identifying the best requirement is very important. According to user demand there are many kind of requirement. We have collected user requirement step by step and we also gather lot of information from various rehab center and many website. We deeply analysis lot of requirement and information. We work on our project based on this requirement and information. Only the creation would be good enough to provide a better performance.

3.2.1 Resources Used To Develop and Improve the System

It is important to identify the requirements needed for the project and to design the modules in such a way that all the demands are met**.** Some designing steps are basic need. Some steps require a thorough investigation of the basic needs. It will expect for the satisfaction of the user and the problems will be encountered. Only then the creation would be good enough to provide a better performance.

3.2.2 Resources Used To Develop and Improve the System

For develop or improve any kind of project then it's should be work part by part. One part improve then should take improve or develop another part. After doing all this collected the resource are the most crucial part. For creating this project we must needed XAMPP, MySQL, PHP Storm, Android Studio, a windows pc and an android mobile phone. We are creating an android app that is uses doctors and patient's guardian which can use mobile device and web browser.

3.3 Use Case Modeling and Description

We know that use case is the case where using all working process step by step. In software engineering use case is all list of action or event step. The use case has typically intersection between a systems to achieve target. The user has to be a human there are two type of user use this app. First one is Patient's Guardian and second one is Doctor. So in this app we have tried to connect between two kinds of users.

Let’s go to discuss what kind of user you are. If you are patient guardian then you have to registration then you can login this app. After login you can show your profile and you can give ratting and feedback and also you can show discipline. On the other hand if you are a Doctor then you have to registration and then you can login. After successfully login you can show your patient list and show patient history and show patient information and statistics. The use case model of this project is show in the follow:

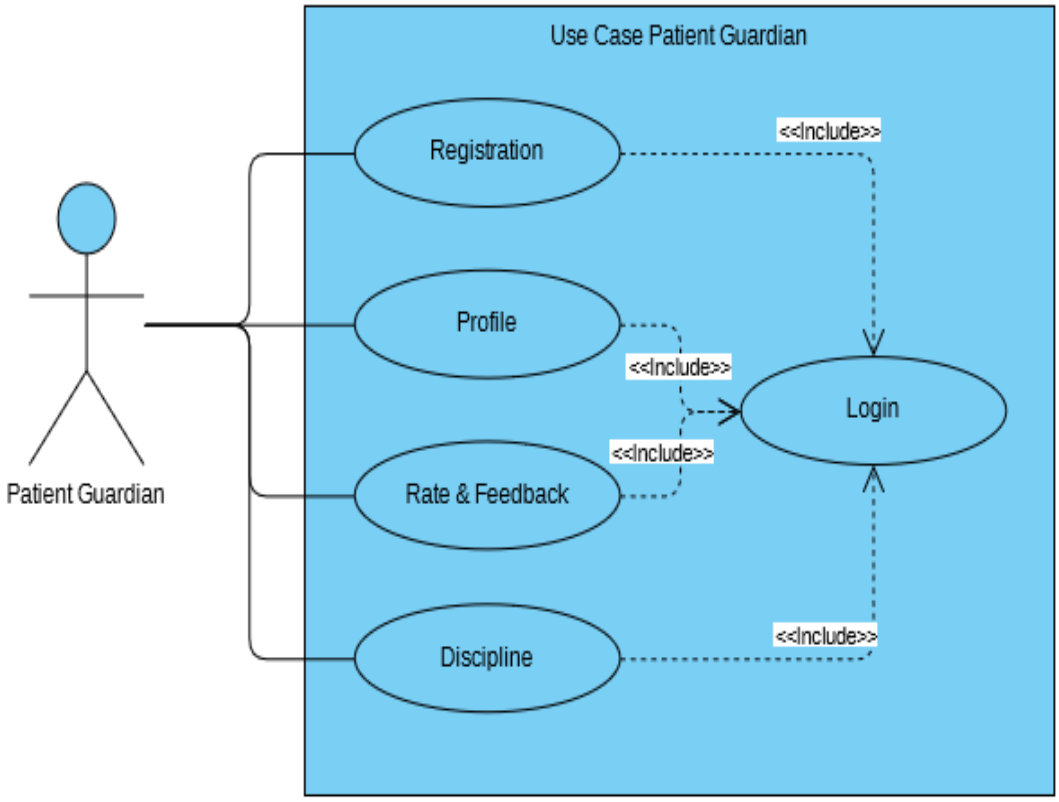


Fig 3.3A: Use Case for Patient Guardian

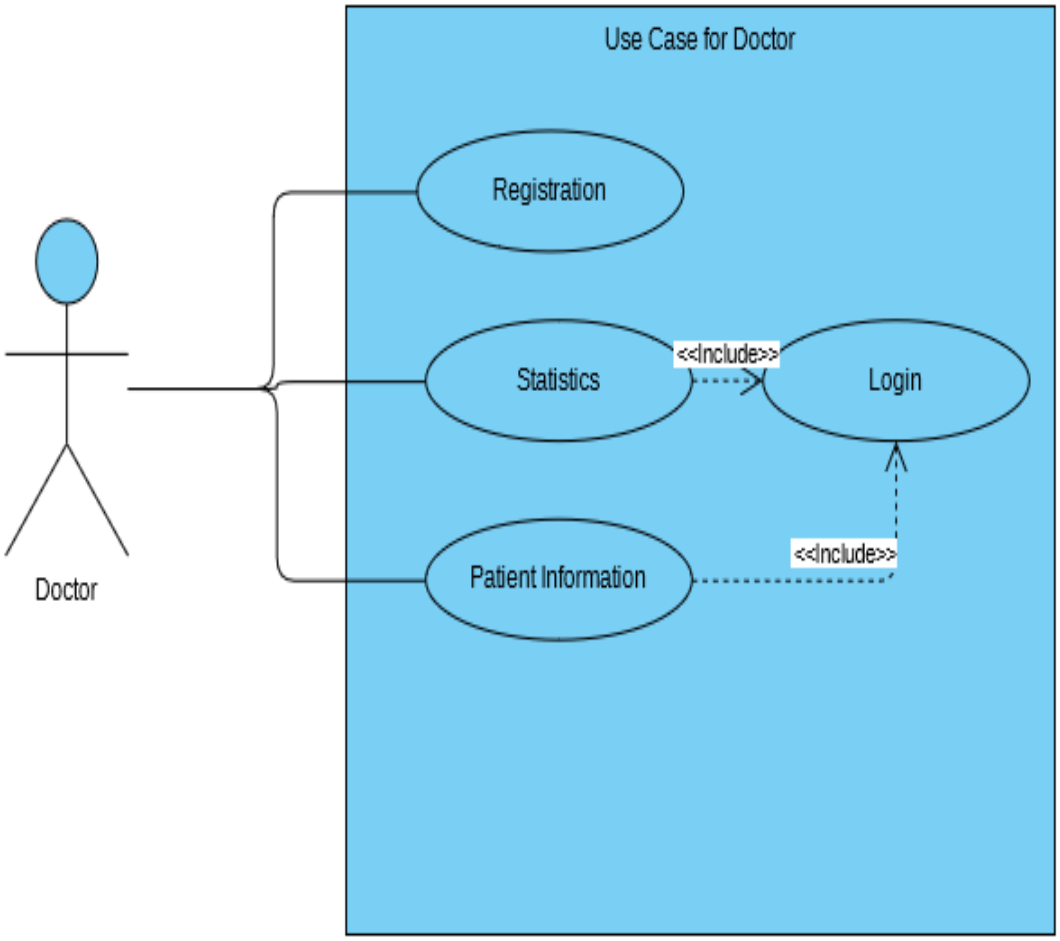


Fig 3.3A: Use Case for Doctor

3.4 Data Flow Diagram / Logical Data Model

In this diagram user uses this app which has some user friendly features. In this app all information store in database. Two types of user doctor and patient. When user registration this app then he/she give some information then all information store in database table. When patient's guardian login and gave ratting and feedback then all information store in database. During follow up doctor show feedback data or information from database.

The following figure 3.4.1 and 3.4.2 shows the data flow:

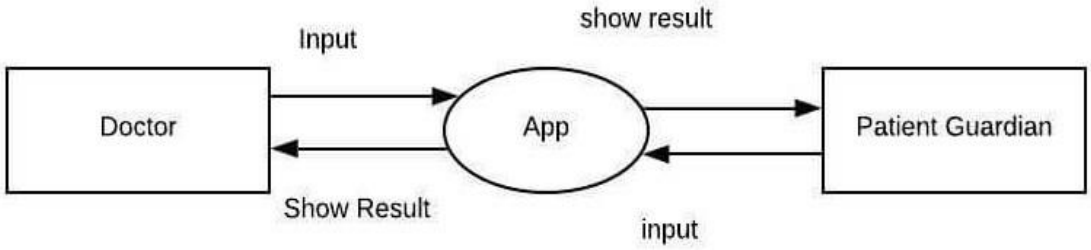


Fig 3.4.1: Data Flow Diagram (level 0)

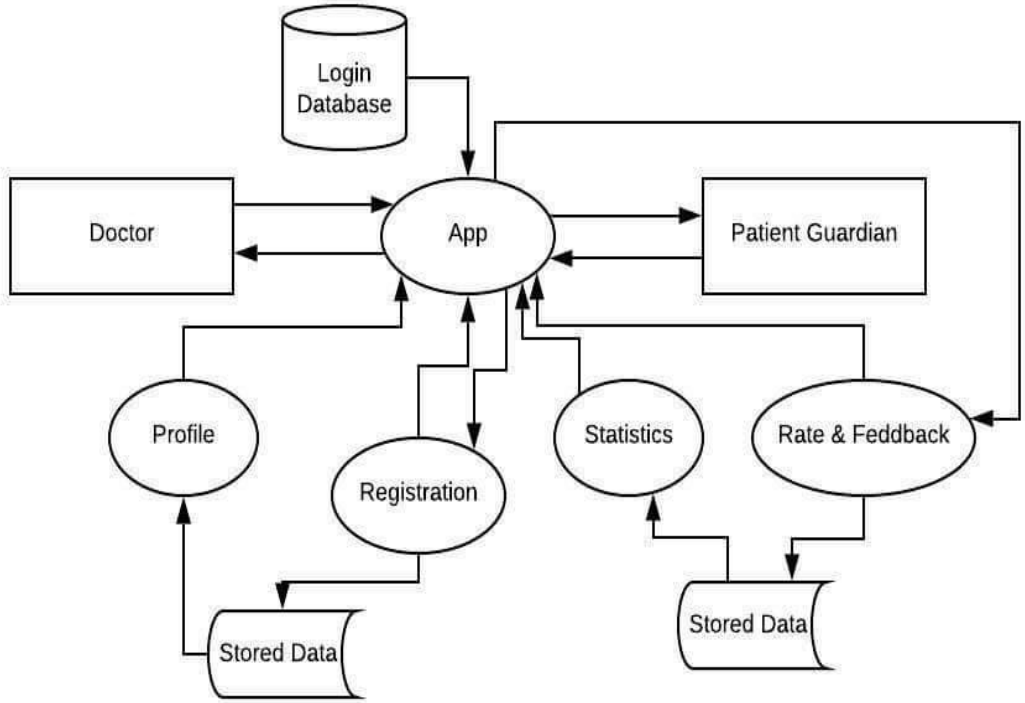
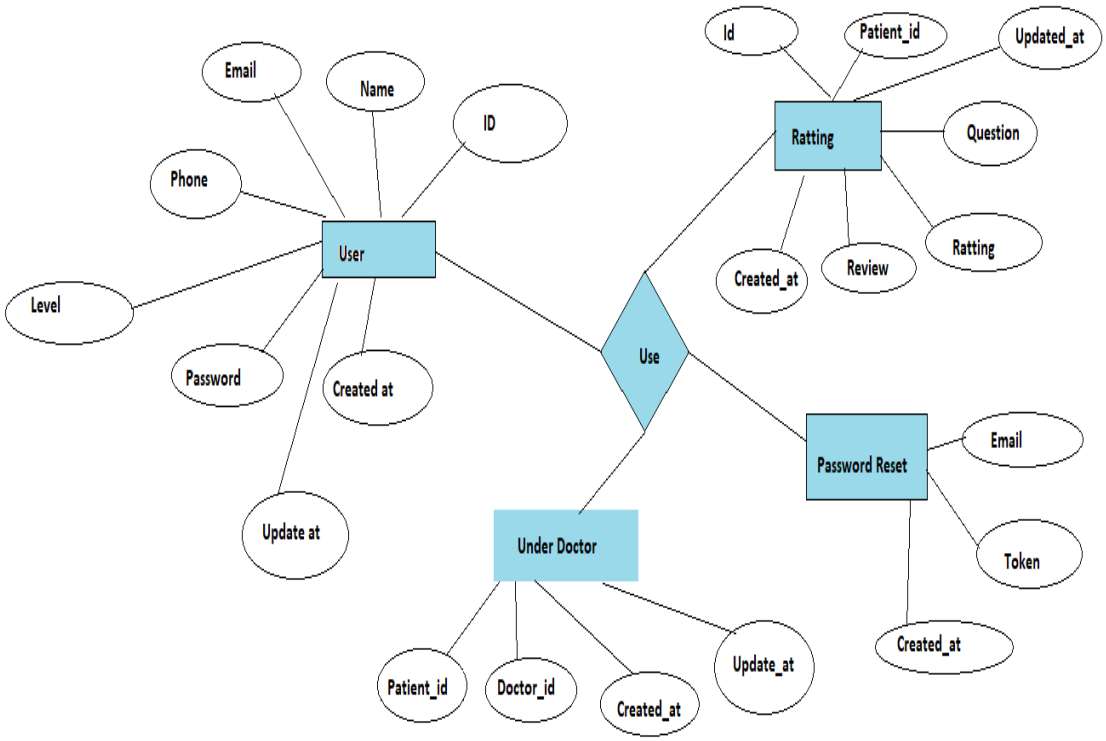


Fig 3.4.2: Data Flow Diagram (level 1)

3.5 ER-Diagram

ER diagram is a model between user and software. It is a data model. So ER Diagram is a data model of a specific problem domain expressed independently of a particular database management product or storage technology. Our project is two type of user first one is doctor and other one is patient or patient's guardian. Drug is a serious problem in our country. Lots of drug rehabilitation center available in our country. Most time drug addicted patient recover from drug rehab center and go to home after recovery. We noticed sometimes patient take drug again for bad monitoring. If use this app the doctors will be able to monitor the patient. The feature of this app is very easy. Patient side give ratting and feedback and doctor get patient information based on feedback. The following figure 3.4 describes the ER diagram of this project.



Fi Fig 3.5: ER Diagram

3.6 Design Requirements

Design requirement for user:

- Registration page.
- Login page.
- Home page for Patient Guardian,
- Discipline Page,
- Profile Page.
- Statistics Page.
- Patient Information Page.
- Logout

CHAPTER-04

DESIGN SPECIFICATION

This chapter we will discuss all about front-end-design and back-end-design and interaction design and implementation requirement. Create the entire thing we use two different languages. We use HTML, CSS, JavaScript for front-end-design and PHP, LARAVEL for backend design.

4.1 Front-End Design

Front-end part is the important part in any application which is visual to the user. When user connect back-end and also connect database then need front-end. We will part by part discuss initial front-end design.

4.1.1 Front-End Design for Patient

We will discuss about front-end design for patient side. We saw front-end design when receiver login this app and registration and give ratting and feedback. Ratting and feedback have in home page.
Here,

Figure 4.1.1.1 show “login page of this app”
Figure 4.1.1.2 show “Registration page of this app”
Figure 4.1.1.3 show “Home page of this app”
Figure 4.1.1.4 show “Discipline for Patient”, there have a feature for Patient’s guardian page, where Patient’s Guardian can be view how to Patient’s observe daily routine.

In figure 4.1.1.1, there have design for inputting email and password. After registration successful a user can be logged in this Home page.

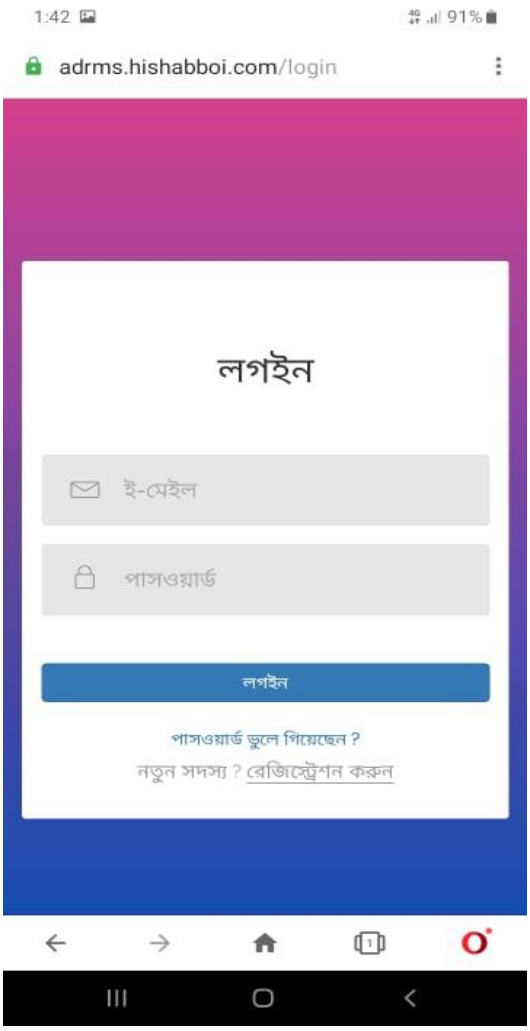


Fig 4.1.1.1: Login Page for Patient

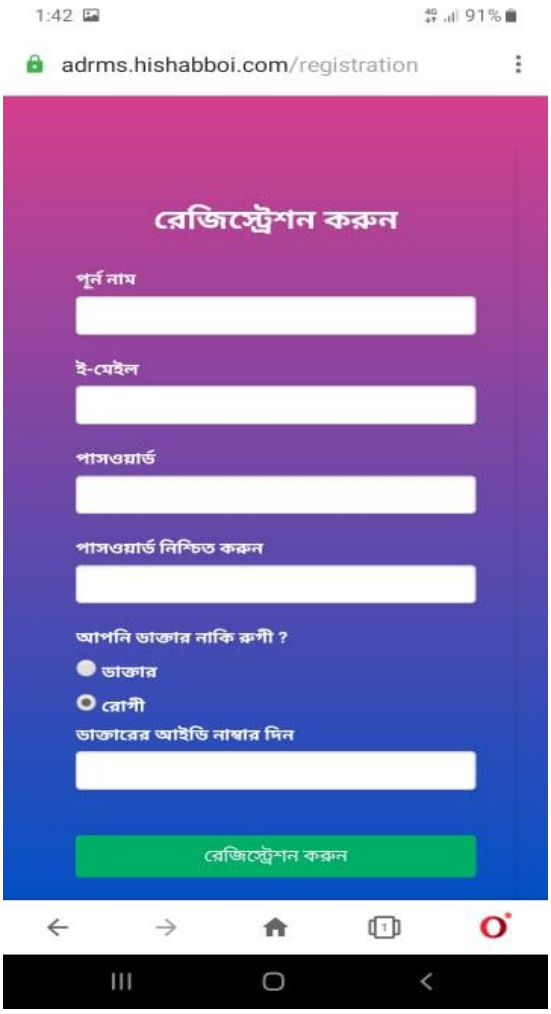


Fig 4.1.1.2: Registration Page for Patient

In figure 4.1.1.2, there have design for registration page, where user must be input their full name, email, password and confirm password and identity radio button. Patient and doctor two types of user can registered same page.

In figure 4.1.1.3, there have a feature for Patient's guardian page, where Patient's Guardian can give ratting feedback, can be view their own profile and discipline and can be logout.

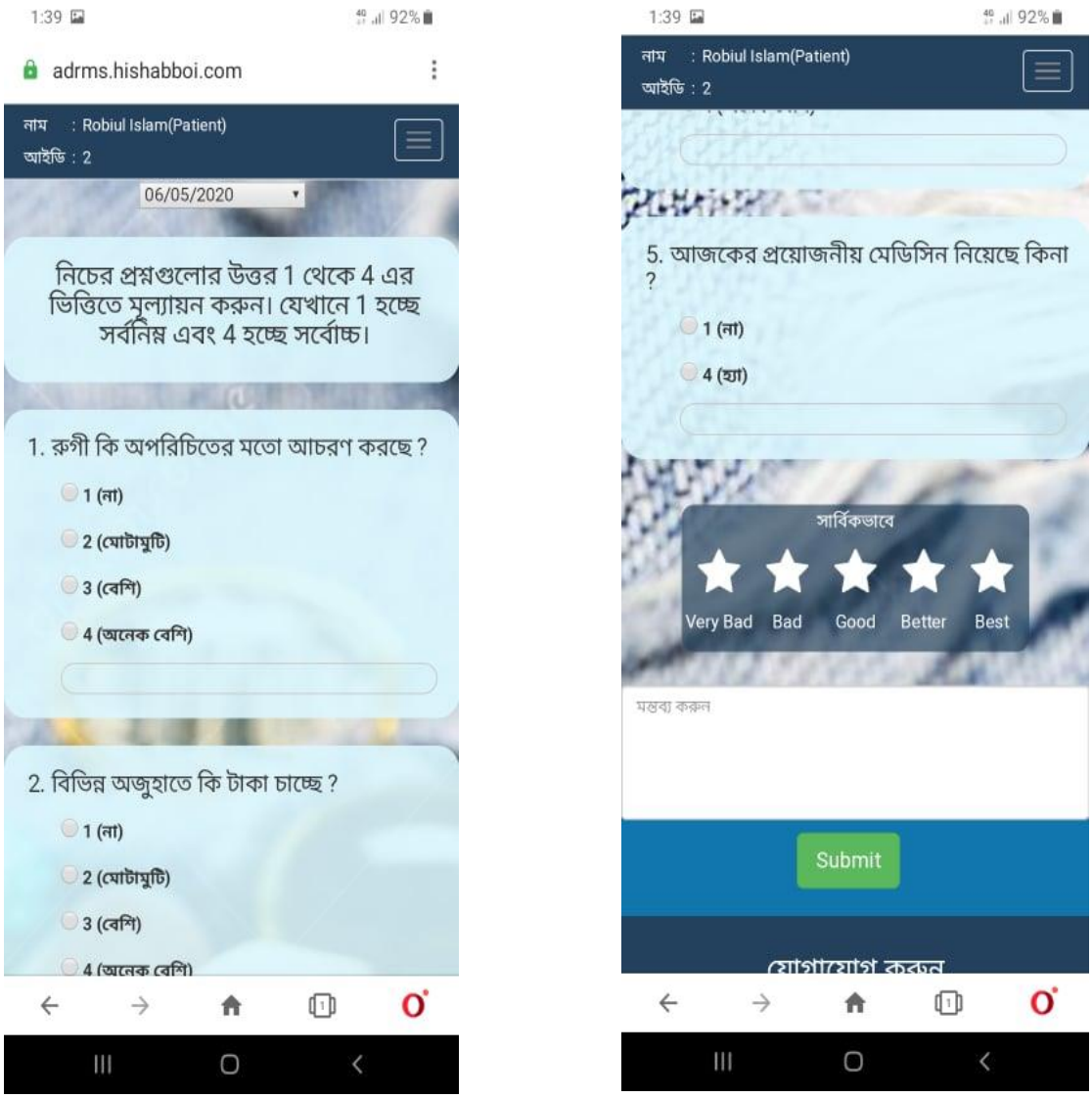


Fig 4.1.1.3: Home Page for Patient

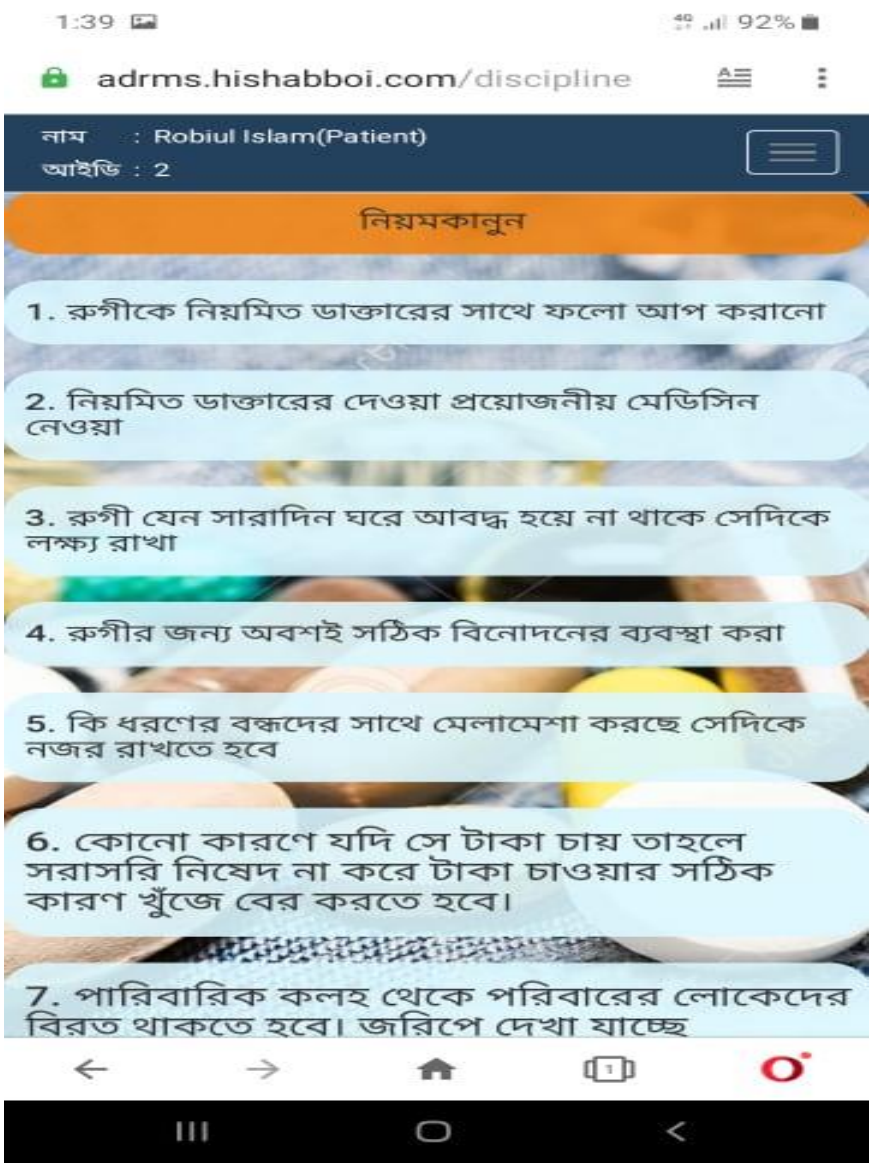


Fig 4.1.1.4: Discipline for Patient

4.1.2 Front-End Design for Doctor

We will discuss about front-end design for doctor side. We saw in front-end design when receiver login this app and registration. If doctor show patient information then doctor must be login first. Here doctor can show patient information & patient monthly behavior statistics. The doctor can only see his/her registered patient.

Here,

Figure 4.1.2.1 show Registration page of this app. And Figure 4.1.2.2 show login page of this app. And Figure 4.1.2.3 show patient discipline information. And figure 4.1.2.4 show doctor profile & Figure 4.1.2.5 show patient monthly behavior statistics.

Doctor and patient two types user can registered and login same pages:

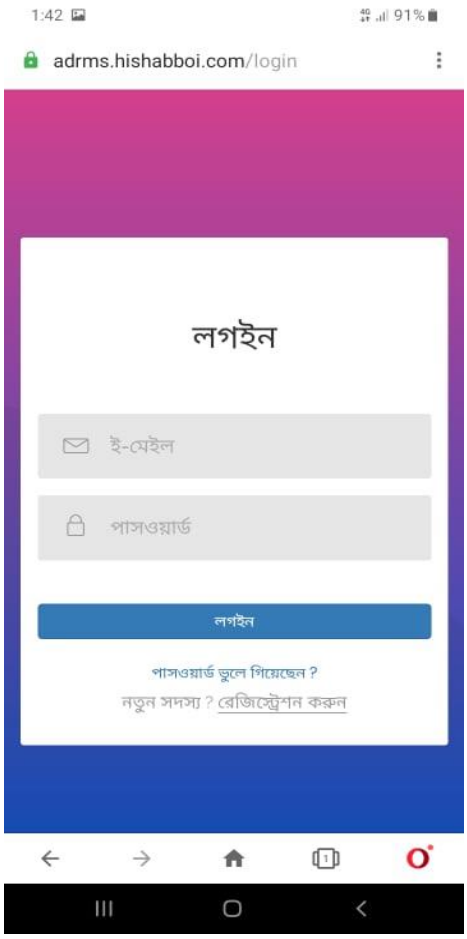


Fig 4.1.2 2: Login Page for Doctor

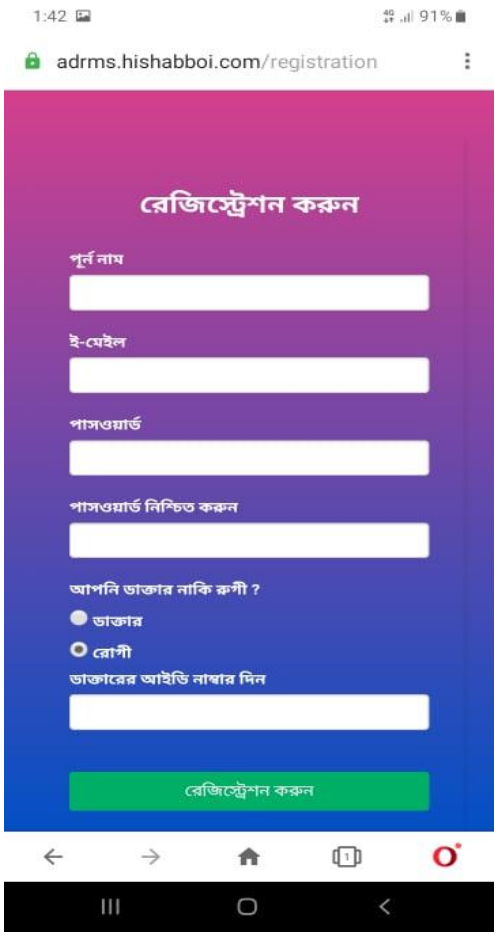


Fig 4.1.2 1: Registration Page for Doctor

Fig 4.1.2 4: Doctor Profile

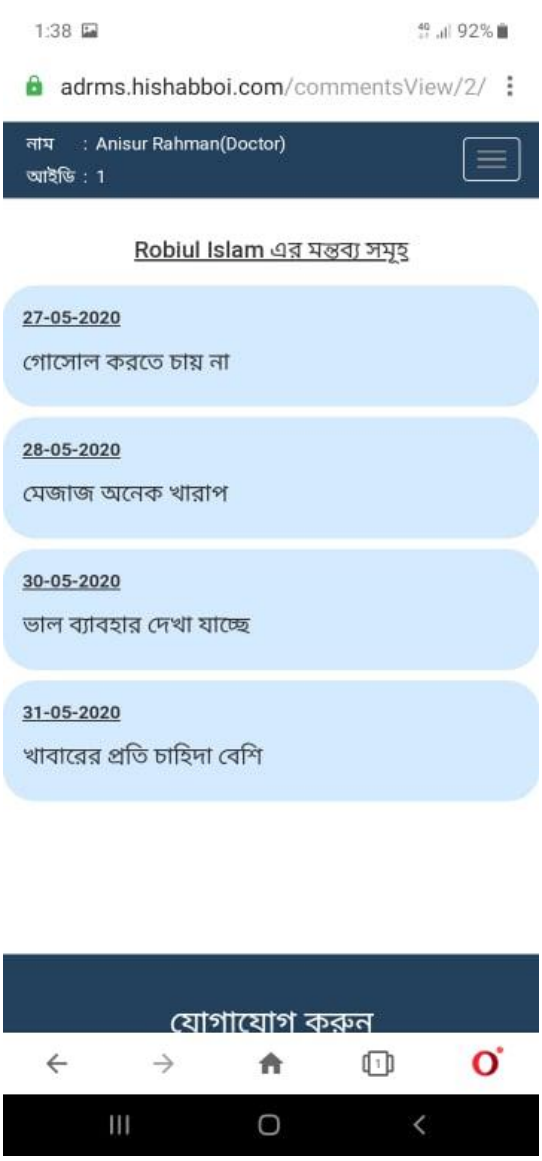


Fig 4.1.2 3: Patient's Discipline Information

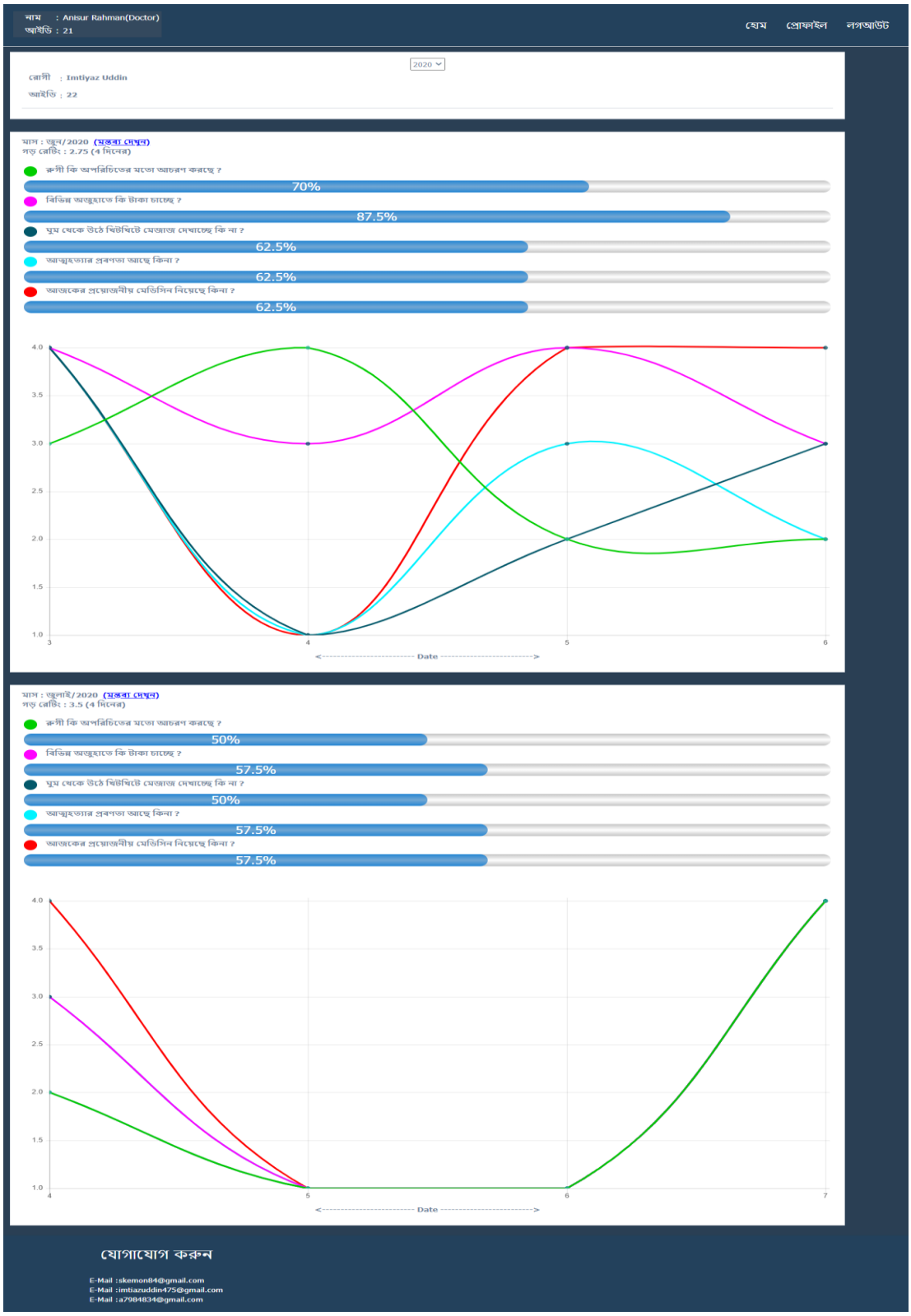


Fig 4.1.2.5: Patient monthly behavior statistics

4.2 Back-End Design

Back-end is not visible for the user in the application. In any application the back-end give service for user. User give input through front-end part then back-end part process the input. It's the behind-the-scenes functionality – the brain of a site. By using PHP-Storm, we can build easily back-end design.

4.3 Interaction Design and User Experience (UX)

Interaction Design that meaningful communication and collaborative between user and technology. It is a system where communicate People and software technology.
User Experience (UX) is that there is a system overall use and how much it user friendly and how much it easy to user. This will be great full for both user and the authority of the project. How user will be benefited to use this, that's that the main view of this project. The following figure 4.1.2.6 is showing the Interaction Design.

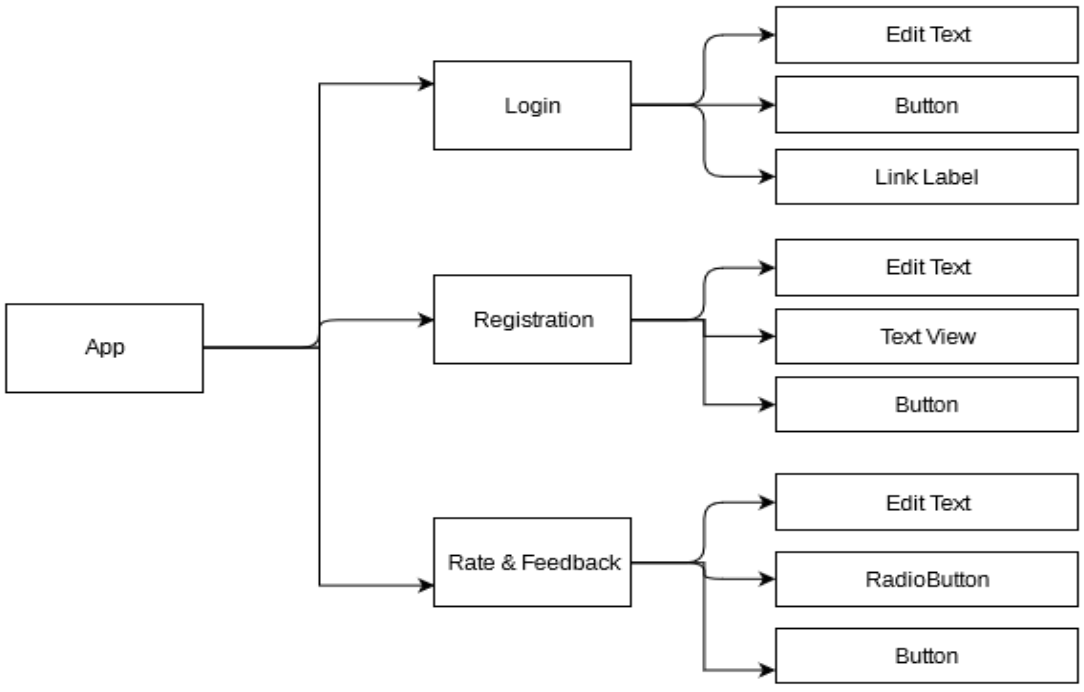


Fig 4.1.2.5: Interaction Design

4.4 Implementation Requirements

First of all we want develop front end back end and database Relation of this app. We need some IDE and need some programming language markup language styling and database. This app is an android and web based app. So this app can be used web browser and android mobile.

We need some tools like XAMPP to turn our machine into local server. For front-end design we need HTML, CSS, JavaScript and Bootstrap. Used MySQL database for store data and need PHP and LARAVEL to process data and interact with the database. Used java for launch app to mobile based. Used IDE android studio for lunching android based app.

CHAPTER-05

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Here we show database implementation. We used a few tables each table has unique name. In figure 5.1 we shown relationship between tables. When user registration the system then all data stored in user table if user registered the system then assign unique id for all user. All table in this project database used same id. At all table data will be saved in that id reference. So id of the user table called primary key and id of the other table is called foreign key.

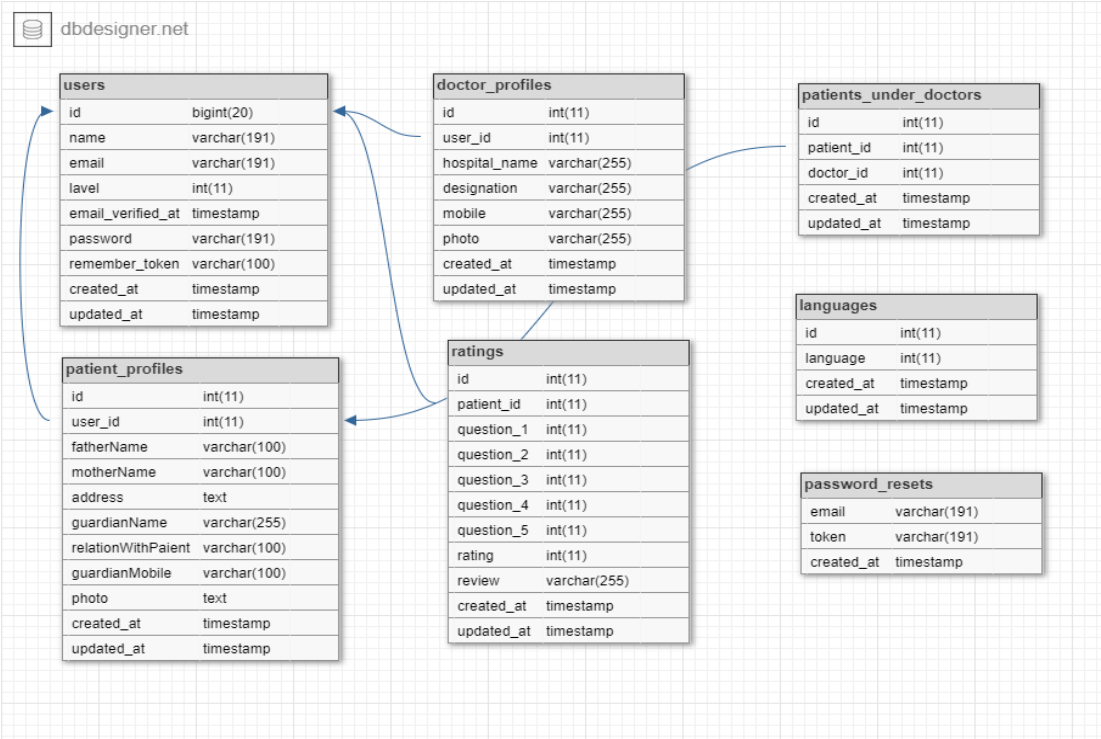


Fig 5.1: Database Relationship

5.2 Implementation of Front-End Design of Android

A collection of information organized in such a way that a computer program can quickly select desired pieces of data. This is SQL query needed to perform action.

In Figure 5.2.1 here we show registration page. The registration page has some field like name email password. If any user once registered then he or she does not registered again use the same email. Another task is password if user entered less then 8 character password then show a warning message. If user give 8 character password then show a warning message. If user give 8 character password then user can registration successfully.

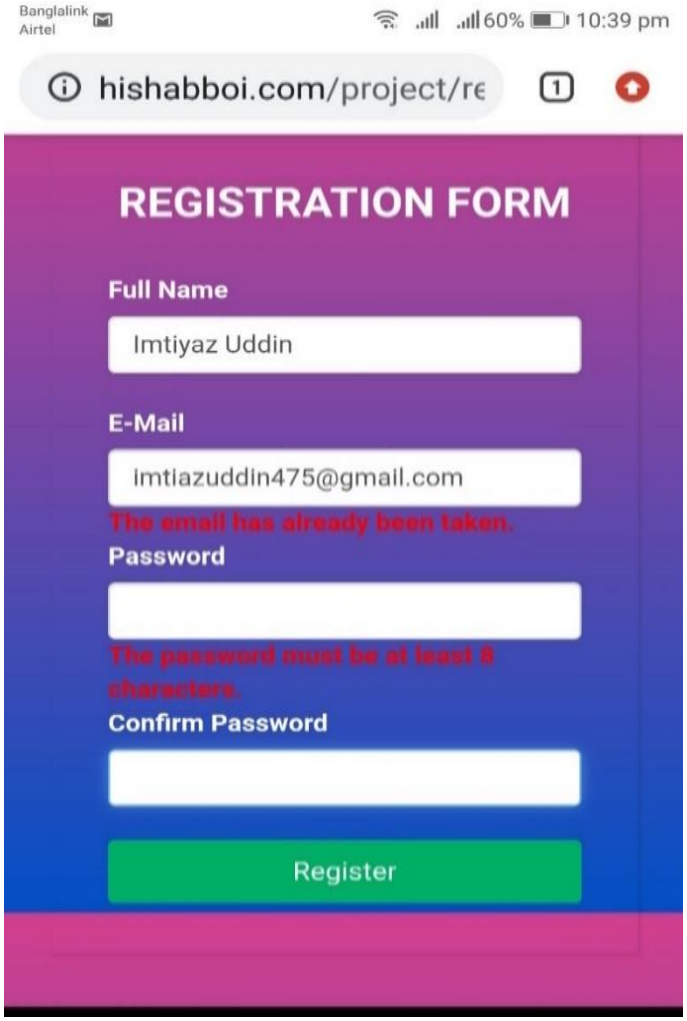


Fig 5.2 1: Process Registration Page

In Figure 5.2.2 patient database profile. When patient can successfully registered form, then entered data kept on this database.

In Figure 5.2.3 we show Sign In page. When user can successfully registered then user can sign in. If user give valid email and give valid password then entered login page.

If user entered invalid email or password then show a message. Here we show a warning message.

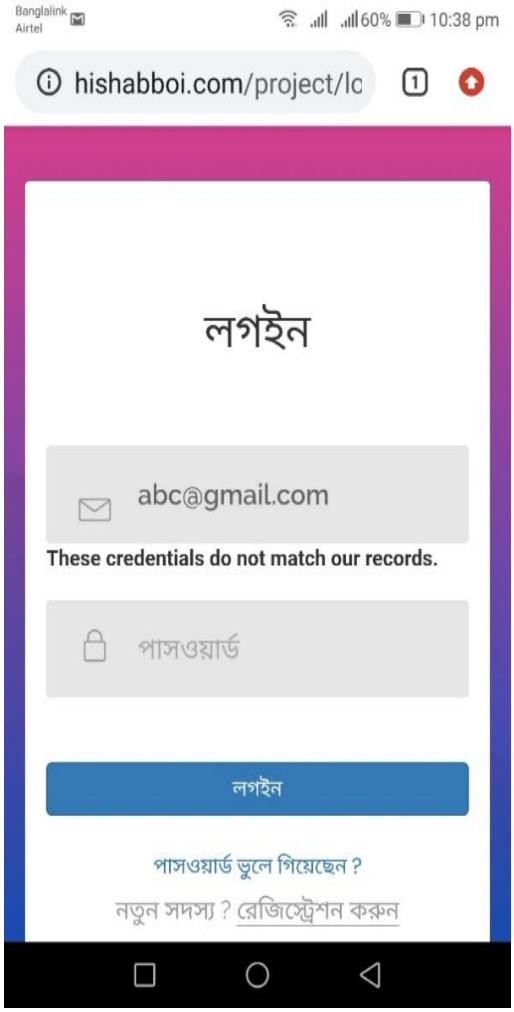


Fig 5.2.3: Sign In Page

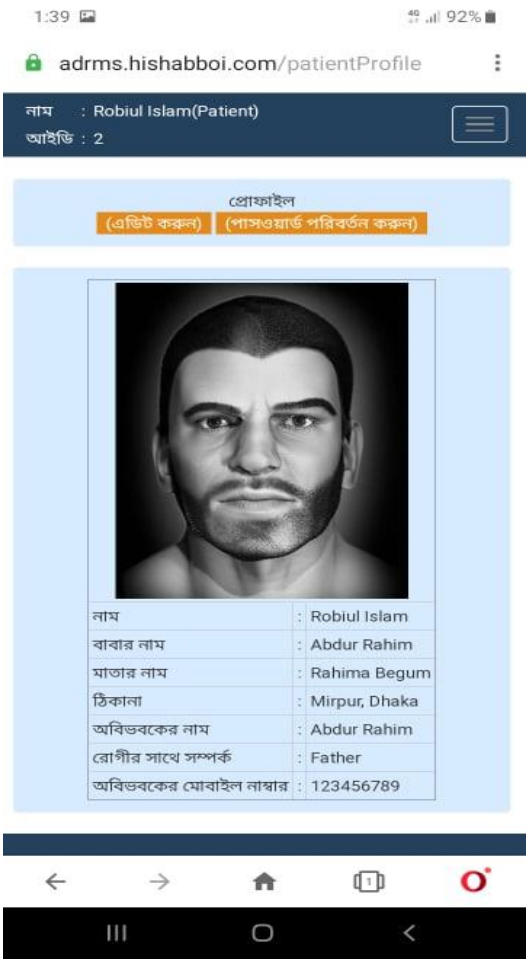


Fig 5.2.2: Patient Profile

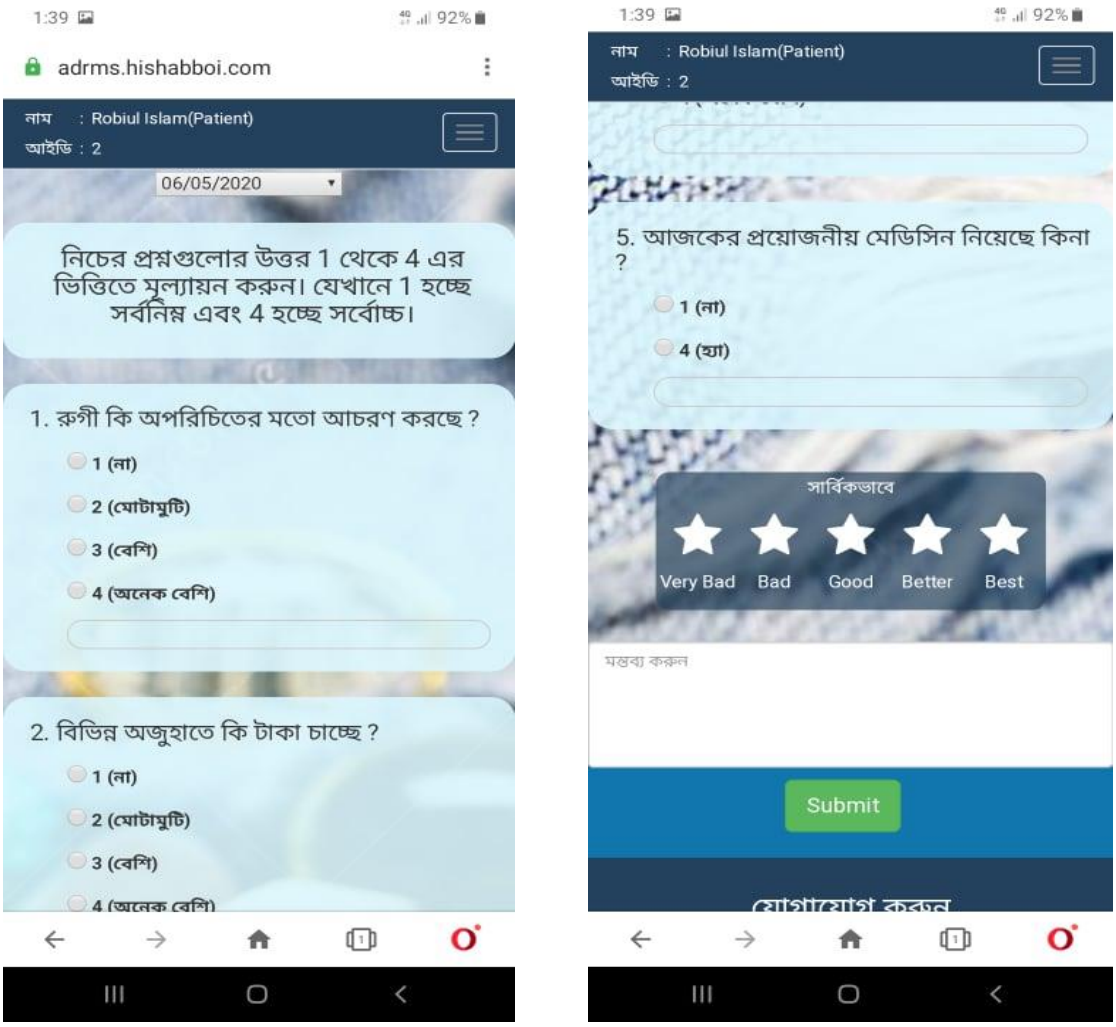


Fig 5.2.4: Home Page for Patient

In Figure 5.2.4: We see Home Page for patient or guardian. When user can successfully login then show home page. And used give input like give question answer find give ratting. When user fulfill all field then enter submit button. If enter submit button then All data save in database reference by patient id.

5.3 Testing Implementation

In Figure 5.3.1 and 5.3.2 we see two testing page here. 5.3.1 page's see login page user give invalid email address and get message user also give valid email and password then can successfully login.

And 5.3.2 pages see registration page fill up all field. If one field is blank then user can not registered successfully.

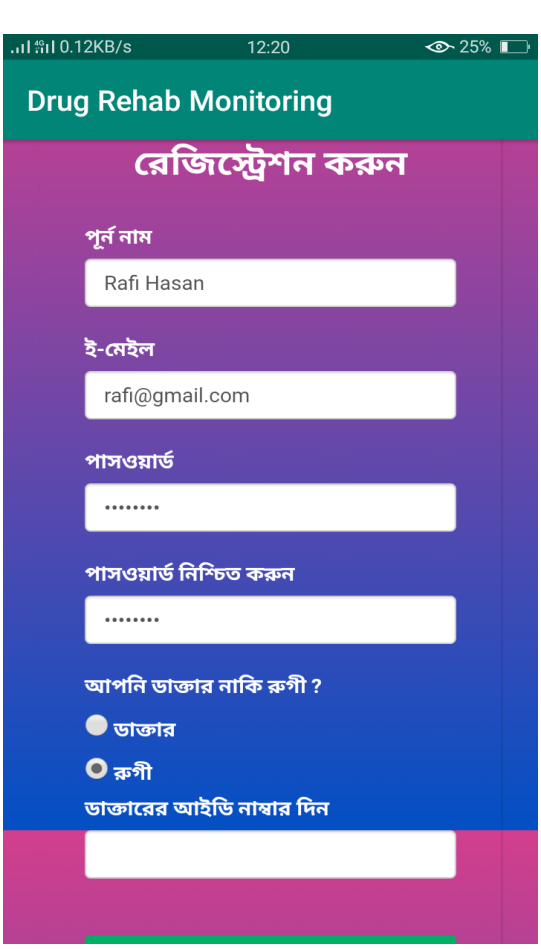


Fig 5.3.2: Implementation

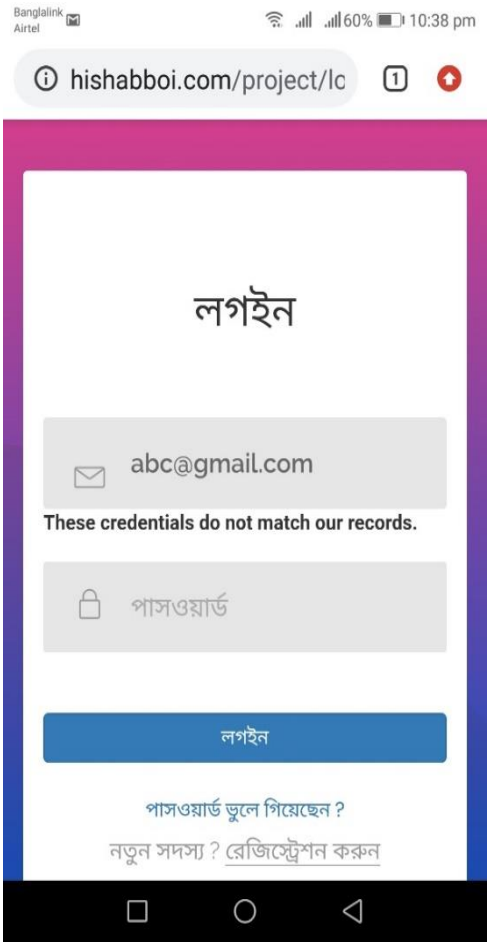


Fig 5.3.1: Implementation

5.4 Test Result and Report

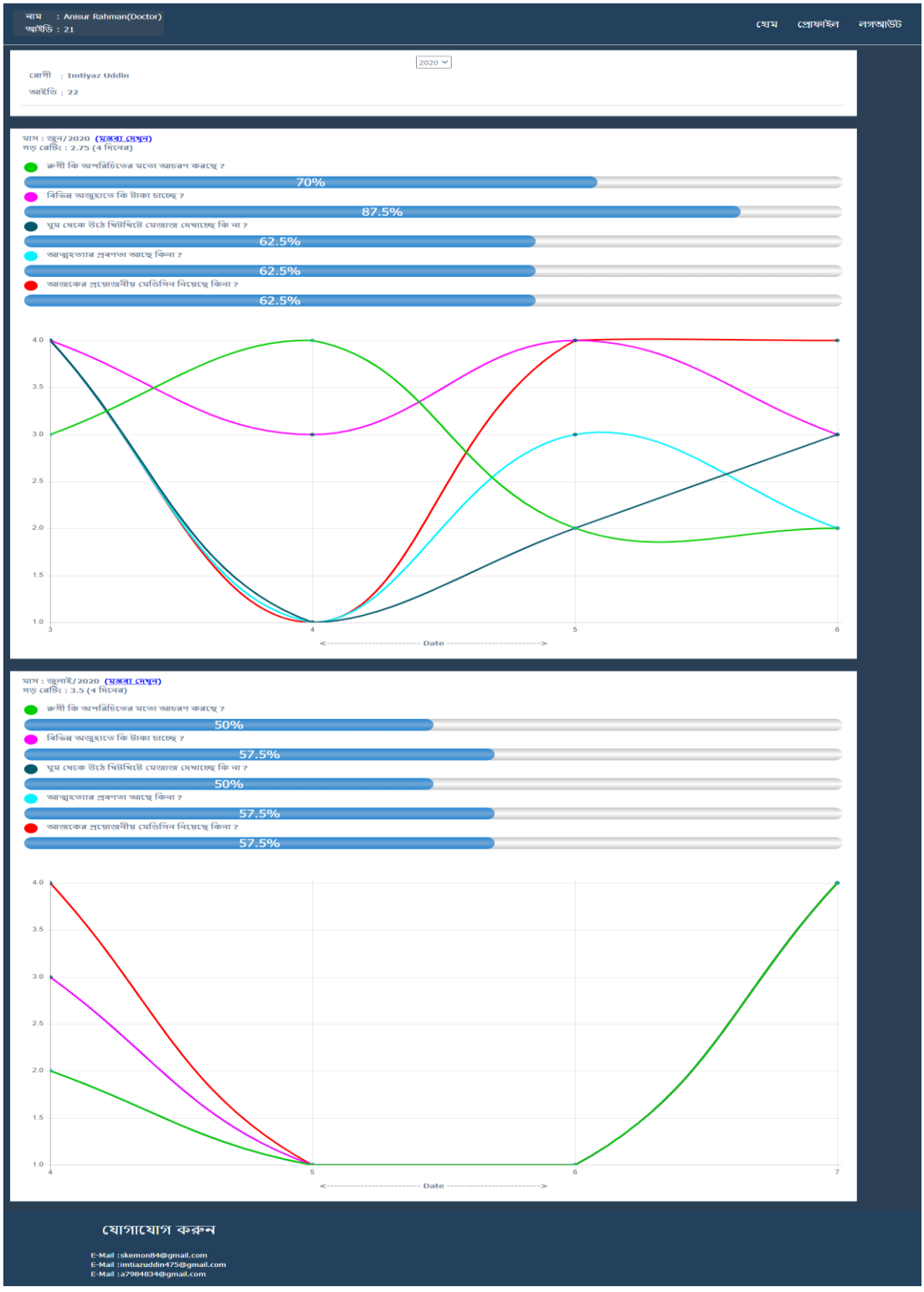


Fig 5.4.1: Test Result and Report

CHAPTER-06

Impact on Society, Ethical Aspects, Sustainability

6.1 Impact on Society

In present time drug is a serious problem in our society. Village to town drug are a problem everywhere. The reason for this is lack of awareness. For example if any patient recover from rehab and he go home sometimes he or she does not get proper care. So they take drug again. If use this app when go home from rehab center. Then the patient will be at the doctor's monitor and this will increase awareness. And no patient will relapse into the drug.

6.2 Ethical Aspects

In this app there are various ethical aspects like discipline for drug addicted patient monitoring the patient and behavior statistics. Sometimes drug addicted patient do not get proper care when they go home from rehab. If use this app they get proper care from doctor and guardian. Patient always be on monitor. The doctor will be able to review a statistic on the patient's behavior then Patient treatment will be better.

6.3 Sustainability Plan

This app will basically use doctor and patient guardian. In this app the doctor and the patient can register. Only authorized patient can registration via doctor reference ID. Not everyone can register for this application. If the patient has valid doctor id then they can registration this app. Doctor show only authorized patient whose registered valid doctor reference ID.

CHAPTER-07

Conclusion and Future Scope

7.1 Discussion and Conclusion

We have tried to our level best to finish this android app. We started it by creating the registration page and slowly more features have been added in this app. Two type of user doctor and patient Guardian. When patient side can successfully login then show their patient profile show discipline and give ratting and feedback. In doctor side doctor show patient information. Show patient behavior statistics and predict the patient status. Use this app doctor can monitories there patient. So our app is very useful for doctor and drug addicted patient.

7.2 Scope for Further Developments

An android app can be developed more and more, there have no limitation in development. For user friendly and easy, a developer always tries to make an app developed every day. Our app is very easy to use. If we add some new feature in future the new feature is like automatic SMS to patient's guardian during follow up time. Doctor show notification based on feedback and doctor get alert when patient have low feedback. If we add the feature in future the app will be more effective and useful. We shall try to add these features in this app in future. We hope we can do it successfully.

APPENDIX

8.1 Appendix: Project Reflection

From Summer-2019 semester we had stated our journey to make a system which is an android app for An android app for After care drug rehab monitoring system with the all hard work and spending a lot of time finally we were able to reach our goal. This system is time saving and error free compared to the traditional system. This also useful for doctor and patient guardian. This will attract user using its attractive and user friendly UI. And will be continuously upgrading our system.

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