

AN ANDROID BASED APPLICATION FOR DOCTOR'S AVAILABILITY

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

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DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

This Project title “DOCTOR’S AVAILABILITY” submitted by Mahin Hosain(ID:161-15-7395), Masum Islam(ID:161-15-7169),Md. Afsar Uddin(ID:161-15-7411) 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 Bachelor of Science in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 8th July,2020.

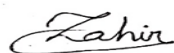
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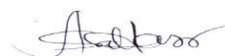
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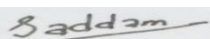
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DECLARATION

I am declared that, this project has been done by me under the supervision of **Md Riazur Rahman, Senior Lecturer, Department of CSE**, Daffodil International University. I 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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ABSTRACT

We live in an age of science. Day by day the technology has been developed. Medical science is one of them. We are working for upgrading the field of medical science and trying to ensure that people can get proper treatment easily using the technology. So we want to introduce an application named “DOCTOR’S AVAILABILITY”. This application will help the patient on their emergency. The patient who need any treatment or any medical emergency they can call doctor’s by this application. There are two option. One for Doctor and another for the patient. When a patient request for a doctor by using this application then this request goes to the doctors and a nearest doctor accept the request. Then the doctor will come to the patient location. The main advantage of our system is, we can provide emergency treatment to the patient and could save a life.

TABLE OF CONTENTS

CONTENTS	PAGES
Approval	ii
Declaration	iii
Acknowledgements	iv
Abstract	v
Table of Contents	vi-vii
CHAPTERS:	
CHAPTER 1 : INTRODUCTION	01-02
1.1 Introduction	01
1.2 Motivation	01
1.3 Objectives	01
1.4 Expected Outcome	02
1.5 Report Layout	02
CHAPTER 2 : BACKGROUND	03-04
2.1 Introduction	03
2.2 Related Works	03
2.3 Comparative Studies	03-04
2.4 Scope of the Problems	04
2.5 Challenges	04
CHAPTER 3 : SOFTWARE REQUIREMENT SPECIFICATION	05-12
3.1 Business Process Model	05
3.2 Use Case Model	05-06
3.3 Implementation & Requirements	07-08
3.4 Logical Data Model	08-12
CHAPTER 4 : DESIGN SPECIFICATION	13-23
4.1 System Environment	13
4.2 Front-end-Design	13-21
4.3 Back-end-Design	22-23

CHAPTER 5 : CONCLUSION & FUTURE SCOPE

5.1 Conclusion	24
5.2 Future Scope	24

REFERANCES	25
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LIST OF FIGURES

Figures	Page No
Figure: 3.1 Use Case Diagram for Doctor's Availability	06
Figure: 3.2 Use Case Diagram for Sign up	07
Figure: 3.3 Use Case Diagram for Login	08
Figure: 3.4 Use Case Diagram for Confirmation	09
Figure: 3.5 ER Diagram of " Doctor's Availability" application	12
Figure: 4.1 System Environment	13
Figure: 4.2 registrations	14
Figure: 4.3 login	15
Figure: 4.4 patient login	16
Figure: 4.5 doctors login	17
Figure: 4.6 request list	18
Figure: 4.7 patient location	19
Figure: 4.8 request confirmation	20
Figure: 4.9 towards to location	21
Figure: 5.1 towards to location	22
Figure: 5.2 towards to location	23

CHAPTER 1

INTRODUCTION

1.1 Introduction

As we know by the use of smart phone every things become easier. In every sector we use it. So why we be backward in this section and that's why we make this application to communicate doctor in the time when a patient need a medical treatment. And send or make a request to the doctor who is near to the patient. By using this application both doctor and patient will be benefited. Mostly the doctor who is passed their MBBS degree recently.

1.2 Motivation

As we mention that in this era, people are using their smart phone to easy their daily task. Sometime in the emergency case or when they need a treatment they can't reach to doctor or they do not have a contact to communicate with them. So it's a very bad situation for them. To overcome or reduce this problem we try to make this android application that help the general people.

1.3 Objective

This android application will used by Doctors and Patients. They will be connected to each other by this application.

Patient:

Patient can easily contact with nearest Doctor.

Patient will get first aid suggestion by our app.

If it is emergency then a Patient can call a Doctor.

All of the service will be on demand.

Doctor:

Doctor will give suggestion and primary treatment to the patient.

They give emergency treatment to the patient on demand.

It will be a short income source for the doctor.

1.4 Expected Outcome

Our Project “Doctor’s Availability” carries Doctor, Patient concept. It provides some specific services like (I) Patient can get emerging treatment in home by Doctor using this android application. (II) Patient can axes the location against doctor response. (III) Doctor could earn short income from treatment the patient.

1.5 Report Layout

Practical knowledge is much better than theory. In our graduation degree we learn lot of things. May would this project is the field of our earning knowledge. By creating this project we can implement our skill more effectively. Our project report first chapter contains the Introduction, Objective, Motivation, Expected Outcome and report Layout. Second chapter contains project Introduction, Related Work, Comparative Studies, Scope of The Problem and also Challenges of this project. Third chapter contains all about Requirement, Specification which are Use Case Modeling and Description, Logical Data Model, Design Requirements. Fourth chapter describes our full Mobile application description which is related to Design Specification like user interface design, Back-end Design, Implementation Requirements, Interaction Design and UX. Our repots fifth chapter contain all about Implementation and Testing. This contain implementation of Database, Testing Implementation, Front-end Design, Interaction and Test Results and Repots. Our last chapter, chapter six contain Conclusion of the full project. This report contains all about our Mobile application System, its problems, solution and use of the system.

CHAPTER 2

BACKGROUND

2.1 Introduction

Online Doctor is the most popular topic nowadays. There are many papers, report and development works are published about this topic. Because science has made our life easy and comfortable. An online doctor is an example of that. Doctor's Availability application will help people to get treatment on their emergency. So we're trying to give people proper treatment. Therefore we choose a mobile phone for running this android application. Because of its much easier for the general public.

2.2 Related Works

There is astonishing related work has published in Play Store like as Call a Doctor BD, Hello Doctor, MD Live, Live Health Online Mobile, Vios Doctor, Doctor on Demand, etc.

2.3 Comparative Studies

Table 2.1: Comparative studies of several related works

Related Works Description

Call a Doctor They support on demand doctor house visits. There are some specialties like physical examination, diabetes, elderly care, etc. Users can pick any option from there what they necessitate.

Hello Doctor Hello Doctor app provides its users with proper and immediate medical consultancy. Users can make a video call to the doctor to get medical consultancy. They also provide medicine reminder.

MD Live They offer pediatric, health therapy services and psychiatry doctors whenever the user demands in online.

Live Health Online Mobile This app features licensed therapists, lactation consultants, registered dietitians on their apps.

Vios Doctor They offer online consultants service in Dhaka additionally allows you to search online for doctor consultations.

2.4 Scope of the Problems:

- Data connection must be needed.
- Must need an android phone.
- Patient must need to install this app.
- Doctor must need to install this app.
- Doctor and Patients must needed on the location to their phone.

2.5 Challenges

The first thing is making a plane that how we can implement this project in android studio. As Android studio is official IDE for Android development. Then we learn Java. Java is that the official Language of Android development from the begging and it's lot of resource. Then in the UI designing, we face a lot of problem, if the UI interface is not user friendly, User are not satisfy when they use the app. After designing choosing online database is important because nothing is free. In making our application it crash hundred time by unknown BUG, Then we find the BUG. No application is 100% bug free. We try to reduce the BUG or Error in our Android application. As our application base on GPS base and nearest patient will serve first so calculating the most nearest is difficult for this reason we use built in method to solve this problem.

CHAPTER 3

SOFTWARE REQUIREMENT SPECIFICATION

3.1 Business Process Model

Business Process Model System (BPMS) is the graphical representation of a company. It's also representing the process of an enterprise. Business Process Model is a procedure of one more business process and also it's define the ways in which operations are carried out to accomplish the intended objectives of an organization. It's also deal with business plan of a product. However, we will go to provide our android application totally free because of all class of people could use it.

3.2 Use Case Model

Use Case Model is a model where the different types of users interact with the system to solve the problem. Use Case Model consist of 4 types of model elements. The most important elements are Use Cases, actor and relationships. Our android application, there has 2 type of actors. "Patient" and "Doctor". In Use Case Model we show, Doctor and Patient sign up in this system and they must need to confirm Register then they need login. Registered patient can send request to a doctor for treatment. There has seven use case used in our applications (Sign up, Login, Location, Request, View Patient List, Confirm, Status) and also three more use case (Send, Cancel, Accept) have in our system which is joined by generalization. Information stored in Back4App database and every 5sec later update it.

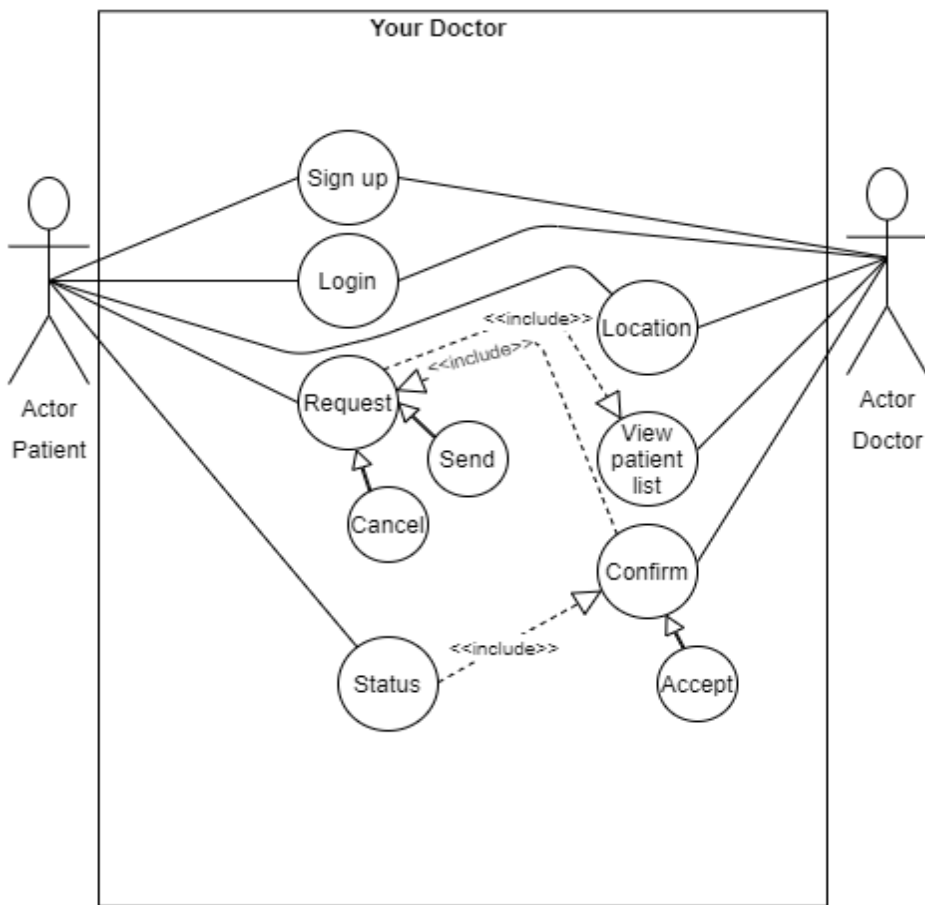


Figure: 3.1 Use Case Diagram for Doctor's Availability Application

Use Case for Sign up

A doctor and patients must need to sign up for register by using user name, email address and password.

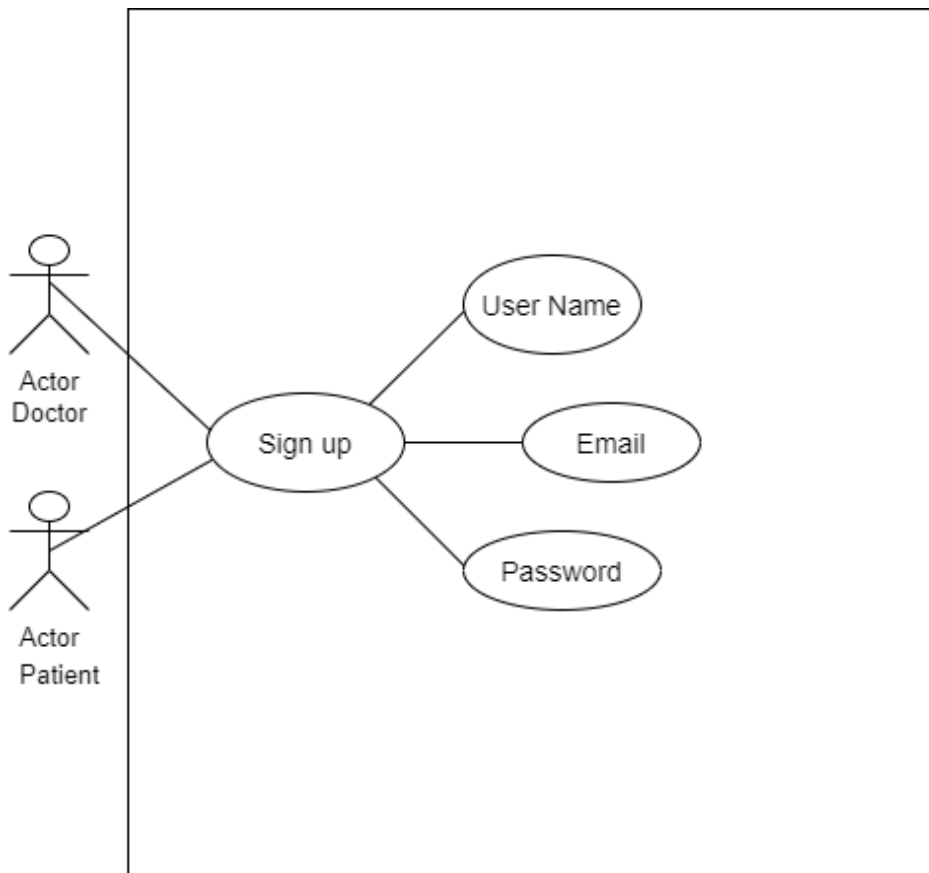


Figure: 3.2 Use Case diagram for Sign up

Use Cases Details

Use Case Name : Sign Up (For Register)

Precondition : None

Actor : Doctor, Patient

Primary Path : 1. Enter User Name
 2. Enter Email Address
 3. Enter Password
 4. Click one option from Doctor and patient
 5. Click "Submit; button

Exceptional Path : None

Use Case for Login

If a doctor or patient has an account in our application then they will login by using their email and password

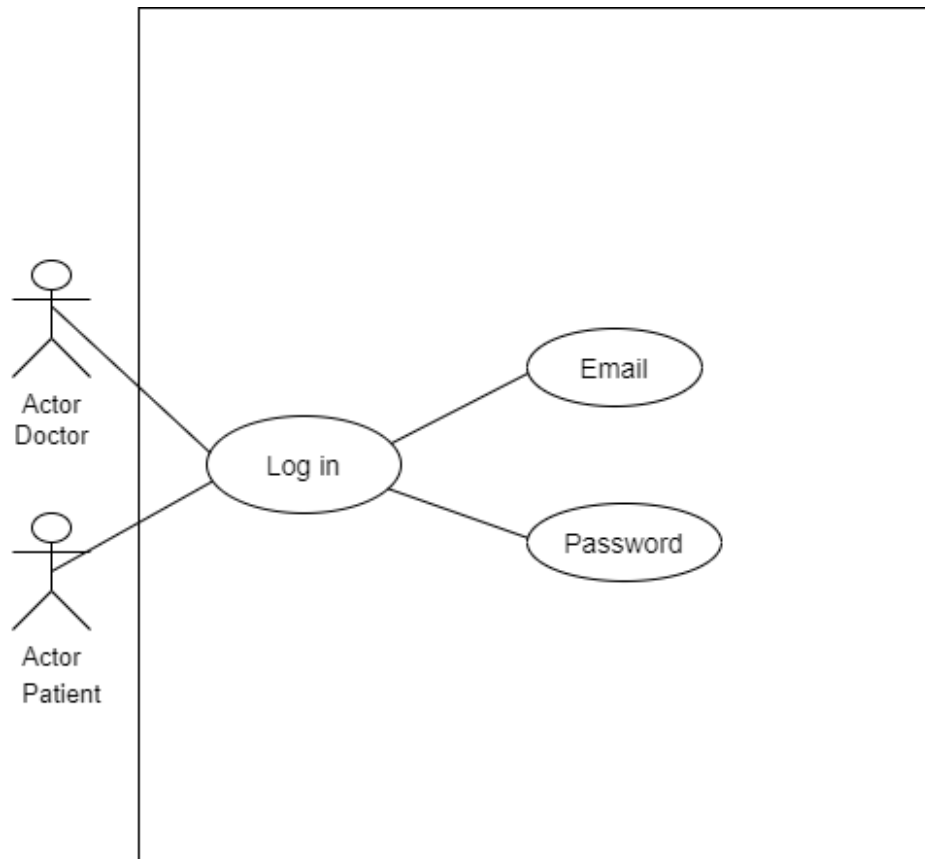


Figure: 3.3 Use Case Diagram for Login

Use Case Details

Use Case Name : Login

Precondition : Must need registered by Sign Up

Actor : Doctor, Patient

Primary Path : 1. Enter Email Id
2. Enter Password
3. Click "Login" button

Exceptional Path : Invalid Email, Password then back to step 1 or 2.

Use Case for Confirmation

When patient request then doctor could confirm the request by accept or not accept.

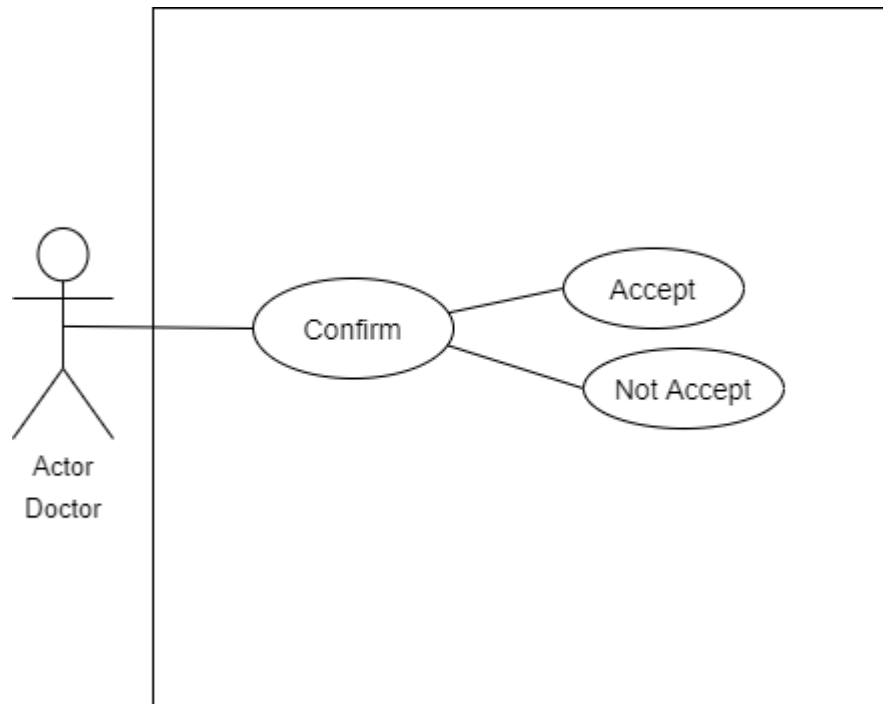


Figure: 3.4 Use Case Diagram for Confirmation

Use Case Details

- Use Case Name : Confirmation
- Precondition : Must have Request from Patient
- Actor : Doctor
- Primary Path : 1. View Patient request list
2. Click for Request Accept
3. Not need to Click Not Accept
- Exceptional Path : None

3.3 Implementation Requirements

There are some rule or requirement which is badly need for execute a program. Without the requirement a program cannot run smoothly. So we must have some requirement.

User as a Patient Requirements

- The user must granted internet permission
- The user granted location permission
- The user must do registration and login permission

User as a Doctor Requirements

- User must granted internet permission
- User must granted location permission
- User must do registration an login permission

Software Requirements:

- Android studio IDE
- Android virtual Device
- Database: Back4App with parse serverⁱ
- Operating system: Windows

Google Map API, Google-Place API, Google-direction API.

Hardware Requirements:

- Android supported device
- Configure configuration
- Ram-4GB (min)
- SSD-150GB (min)
- Processor-1.5GHz (min)

Analysis:

As our application need internet and location permission so user must have granted this permission. User/Patient must insert valid information for sign up and login, then he/she can request a doctor. Without internet and location permission our application will not work after sending a request. Patient have to wait for doctor response. As doctor can see the list of patient who send request and most nearest patient will be top that list. Doctor also see the patient location. If a doctor is available on that time he accept that request and patient can now see the location of doctor.

3.4 Logical Data Model

Figure 3.5 is the Logical Data Model or ER Diagram of this android application which representing the relationship among the entities (Entities are: Sign up, Login, Location, Status, Request, Confirmation, view Patient)

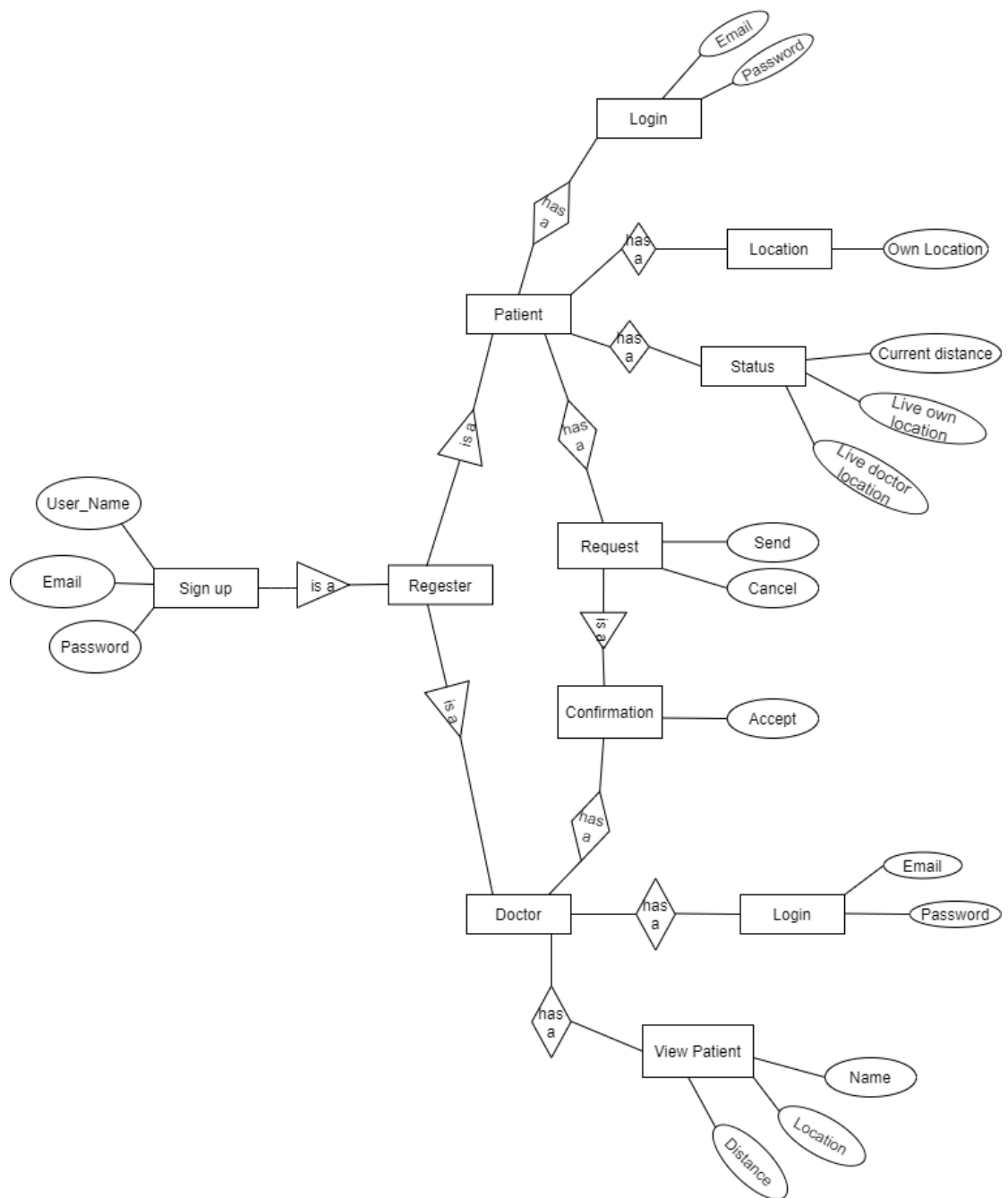


Figure: 3.5 ER Diagram of “Doctor’s Availability” Android application

Chapter 4

DESIGN SPECIFICATION

4.1 System Environment

This system environment design and develop for “Doctor’s Availability” android application. If patient connect with internet then and they request for doctor then all of data (request information, registration information) will be uploaded in database and if Doctor also connected with internet then doctors information also stored in database and if doctor accept patient request then doctor also show their data.

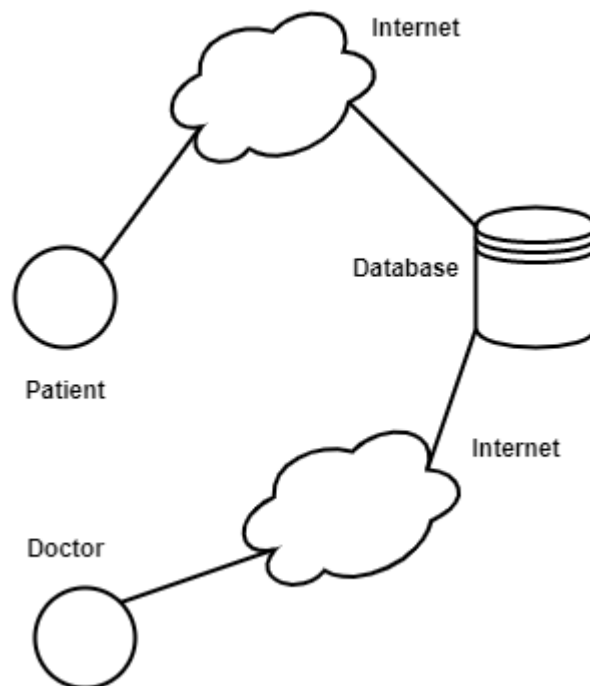
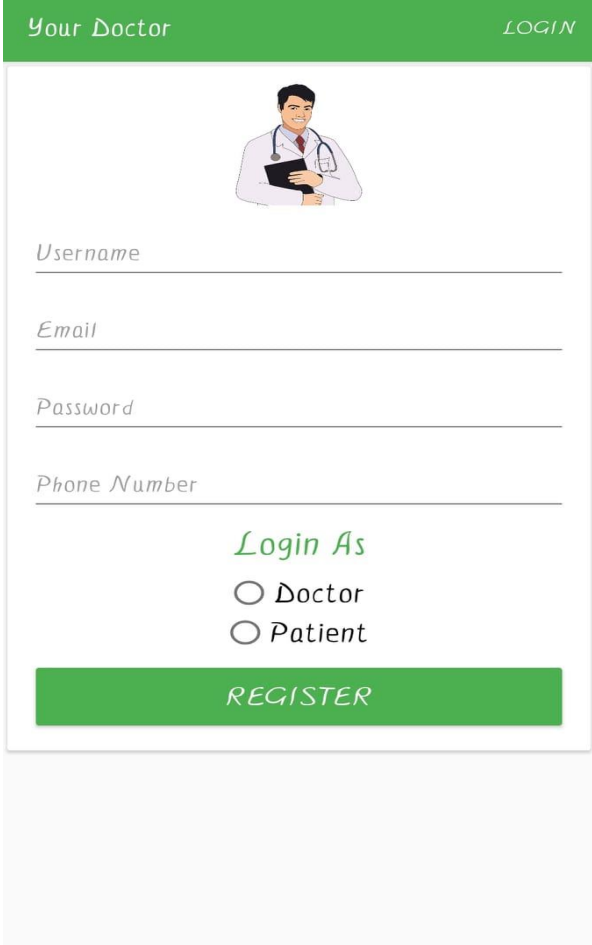


Figure: 4.1 System Environment

4.2 Front-end Design

Sign Up Page

At first, Doctor and patient those need to sign up for registering and they need some information that's are (1) User Name, (2) Email, (3) Password then need to select one option from Doctor or Patient. After choosing option need to click "Register" button. If get the success message then Sign Up completed.



The image shows a registration form for a medical application. At the top, there is a green header with the text "Your Doctor" on the left and "LOGIN" on the right. Below the header is a white box containing a central illustration of a male doctor in a white coat with a stethoscope, holding a clipboard. Underneath the illustration are four input fields, each with a label above it: "Username", "Email", "Password", and "Phone Number". Below these fields, the text "Login As" is displayed in green, followed by two radio button options: "Doctor" and "Patient". At the bottom of the white box is a green button with the text "REGISTER" in white capital letters. The entire form is set against a light gray background.

Figure: 4.2 registrations

Login Page

If user has install this application and has an account (can be doctor or patient) then he/she needs to login. For login, must need to Email and password and click the “Login” button.

2:30 AM 0.0KB/s

Login

Welcome, [Sign Up Here](#)
Sign in to Continue

Email
mk@gmail.com

Password
....

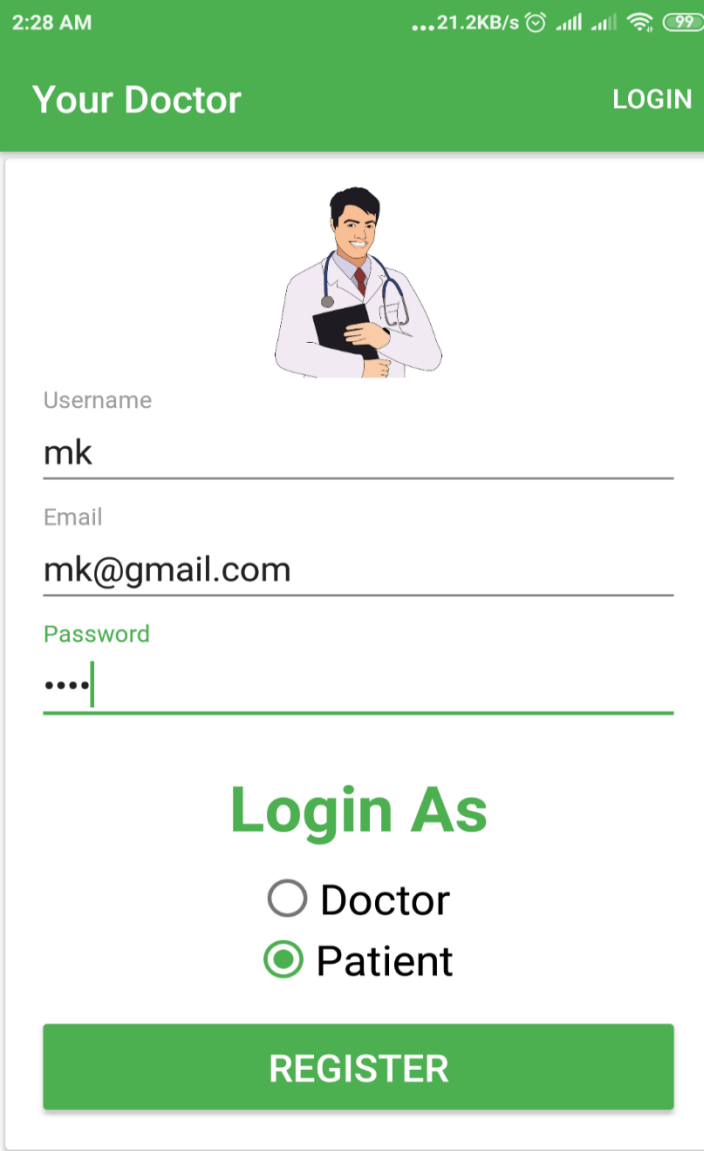
LOGIN

[Forget password ? Click here](#)

Figure: 4.3 login


Patient Login Page

When Patient successfully login then he/she can see his/her own location and a button (“Search a Doctor”). If patient need to treatment then he/she can click the “Search the Doctor” button. And also can get “Log out”.



2:28 AM ...21.2KB/s

Your Doctor LOGIN



Username
mk

Email
mk@gmail.com

Password
....

Login As

Doctor

Patient

REGISTER

Figure: 4.4 patient login

Doctor Login Page

When Doctor successfully login then he/she can see just a button that Request Patient List. Doctor can see the Patient list or can log out.



Figure: 4.5 doctors login

Patient Request List view

If a Doctor Click the “Patient Request” button and there has any request then Doctor show this request. And top of the request is most nearby patient.

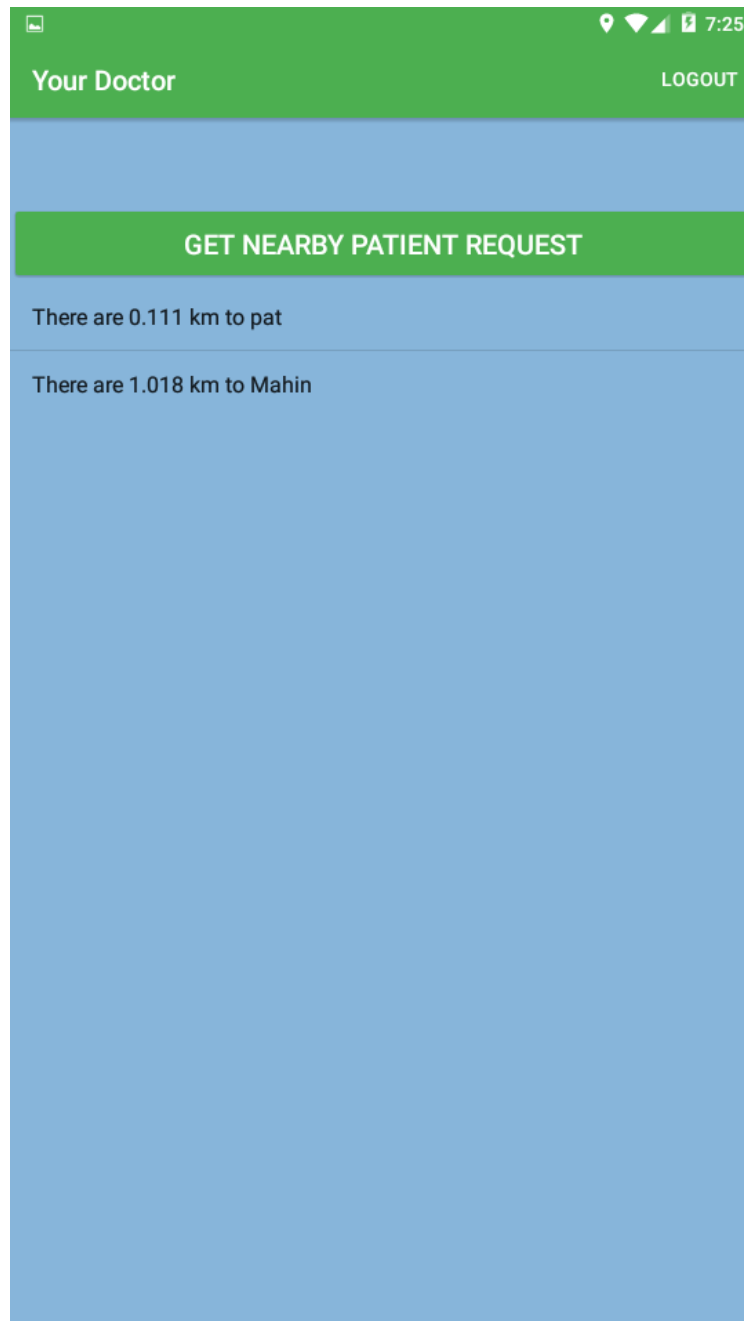


Figure: 4.6 request list

View Patient Location

Doctor can click the request and see the location of patient also name, Distance.

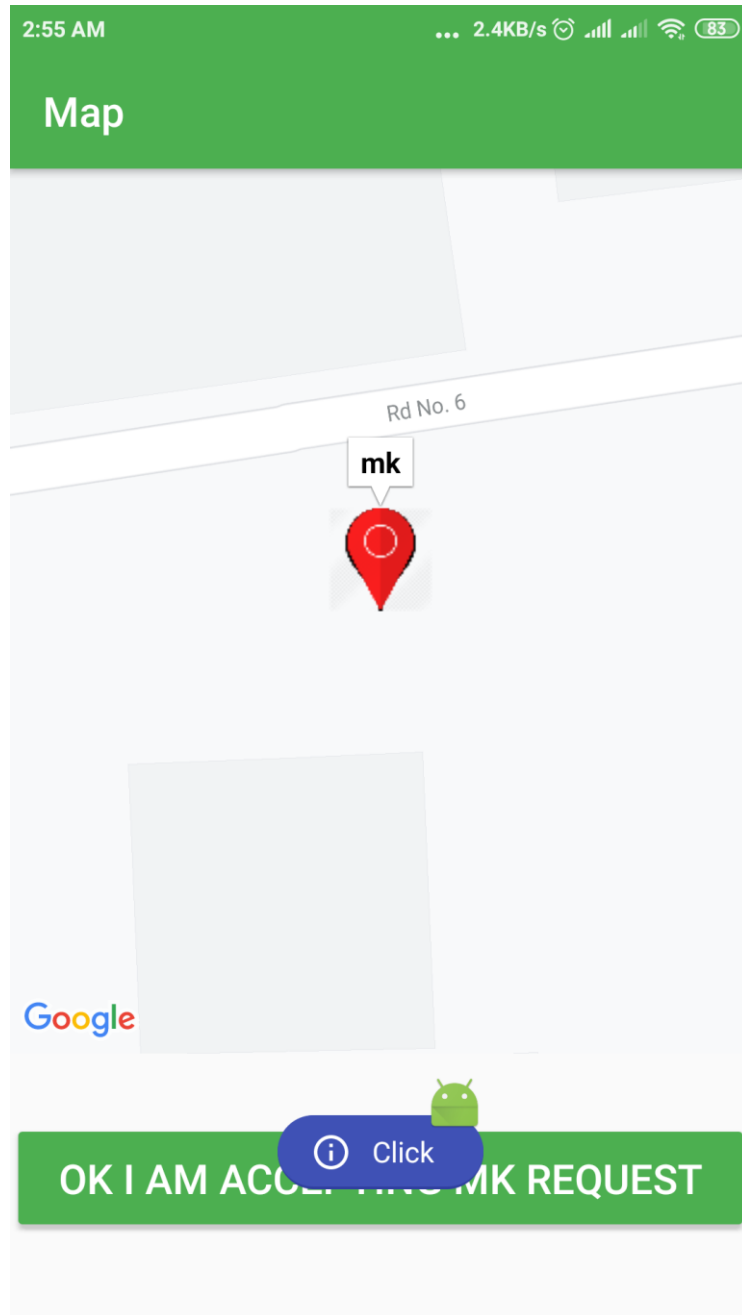


Figure: 4.7 patient location

Request Confirmation

If a Doctor accept the Request then it shows the real time distance with Doctor and Patient by using Google map API.

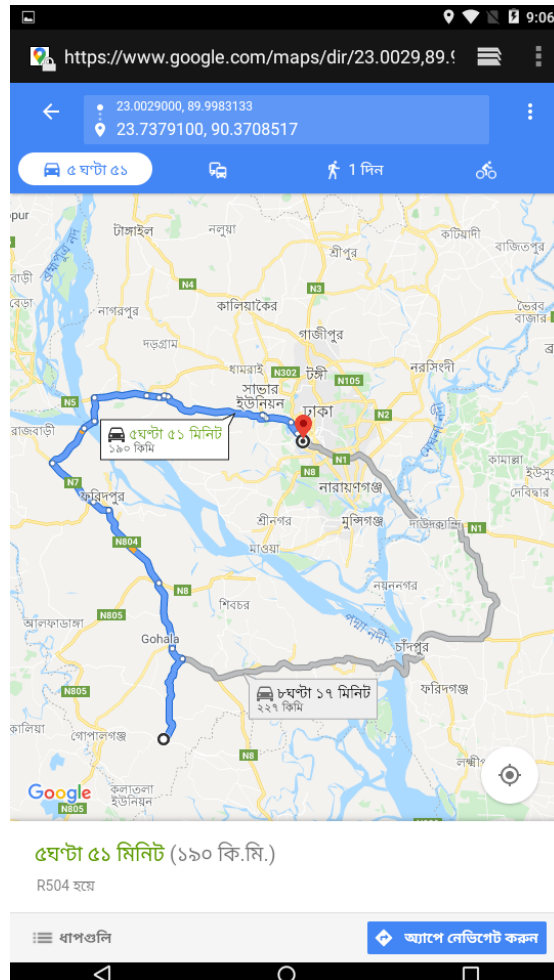


Figure: 4.8 request confirmation

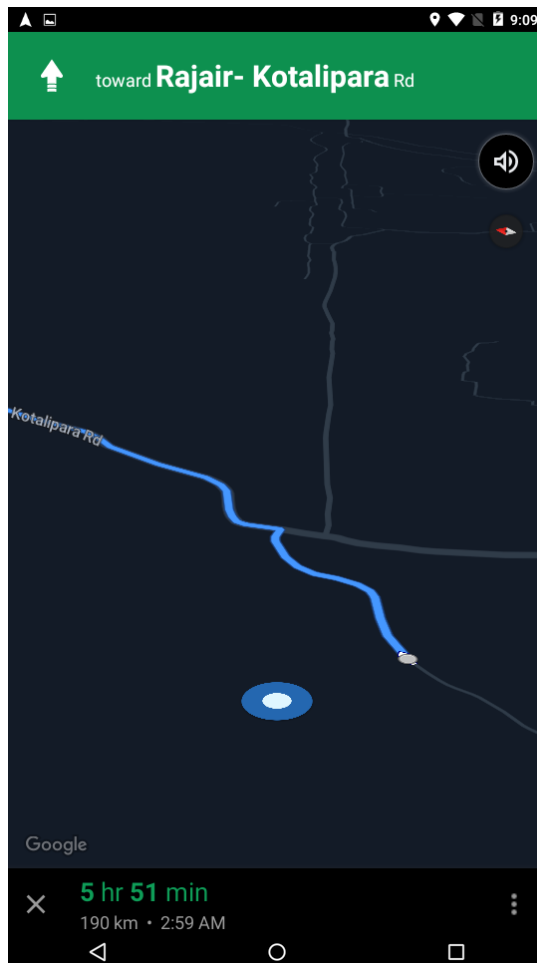


Figure: 4.9 towards to location

Database

To store the patient and doctor information like name, phone number, real time location ,request for doctor we use back4app server.

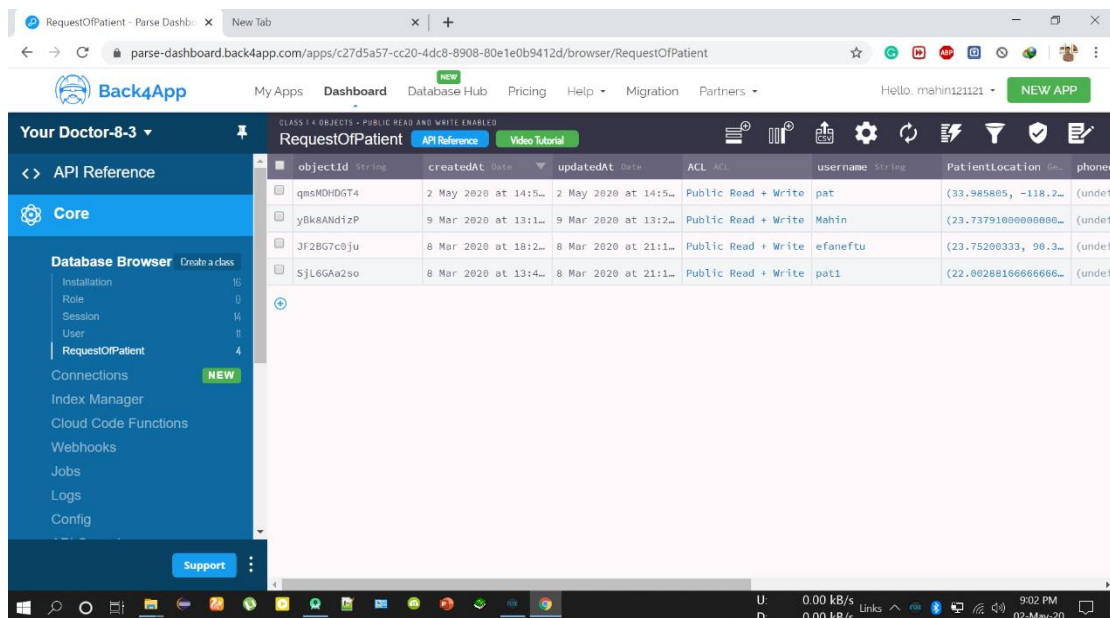
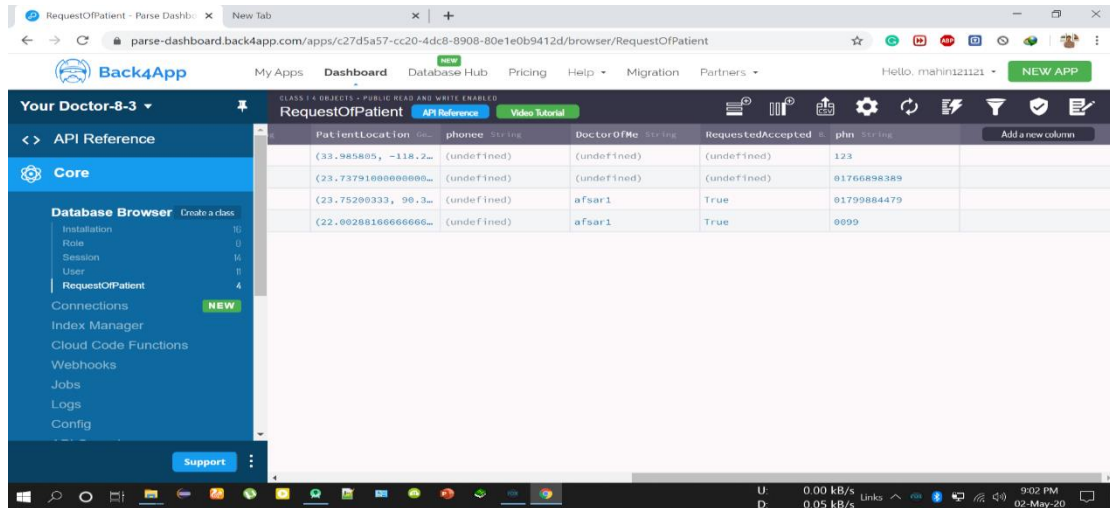


Figure: 5.1 firebase database

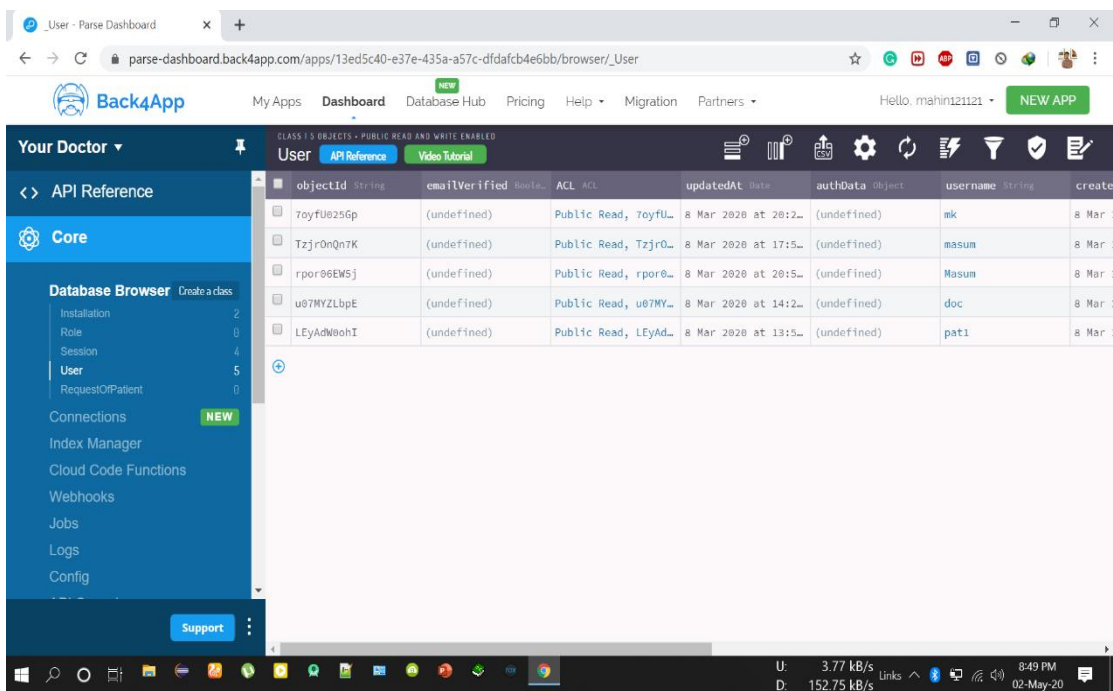
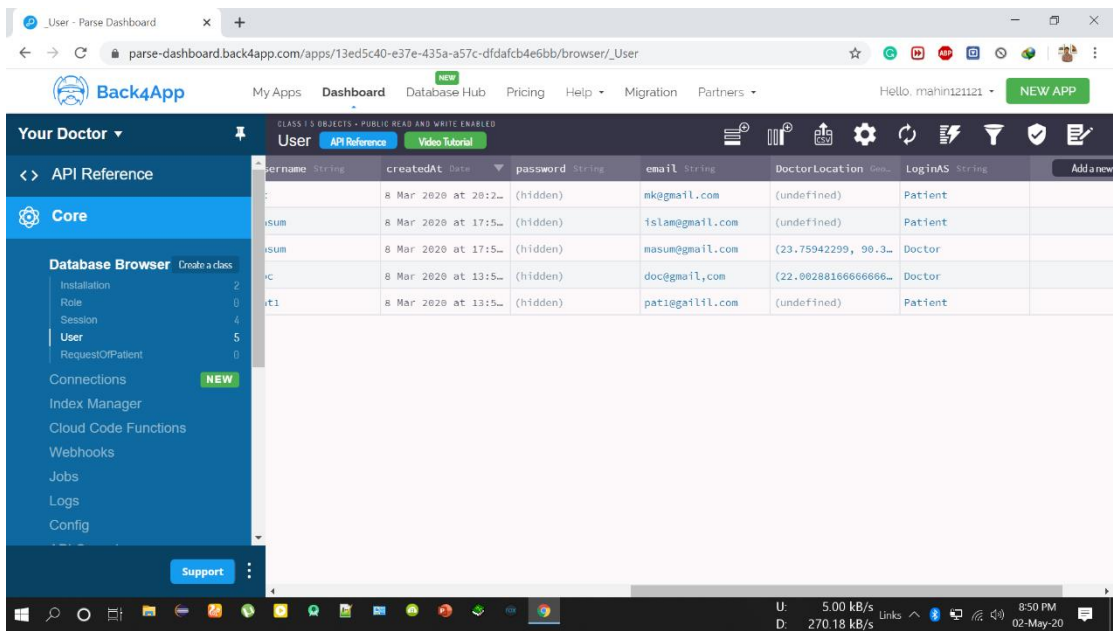


Figure: 5.2 firebase database

CHAPTER 5

CONCLUSION AND FUTURE SCOPE

5.1 Conclusion

Doctor's Availability android application can make a great effort to the patient. As it is starting is difficult for us but hopefully the patient side and doctor side both will be benefited. Day by day we try improve our features so that all the user can easily use this application and will be benefited. And when all the requirement from user both doctor and patient will fill-up then we will successful. So that basic need of a human life " treatment " will be ensure.

5.2 Future Scope

Our Android Application is "Doctor's Availability". It contains short features but in future it will upgraded with some new features.

1. Patient could make a call for Doctor.
2. Also Doctor could make a call for patient.
3. Doctor and Patient both could show their profile and could be change their basic information.
4. Insure Doctors verification.
5. Design layout can be change.

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