HEAL APP

Team Members :

1.Geet Shingi (31457)
2.Vedangi Wagh (31468)
3.Niraj Sarode (31456
4.Shraddha Lodha (31460)

Motivation

Amit had to travel frequently to different places and often during his visits to different cities he was exposed to a new environment and would often catch a viral infection. Since places were new, it was difficult for him to get his condition diagnosed, he used to spend hours searching for a diagnosis center to get treated. And after so much trouble he used to only find a doctor who didn't have any idea about his previous prescriptions and allergies and used to prescribe him of his condition based on little information, which then worked in favor of treating his condition or the reverse.

All this trouble could have been saved if only he had used the Heal app. Since the heal app helps to find a nearby doctor and also keeps the data of all previous diagnoses handy.

Importance

In today’s fast-paced era, booking an appointment with the doctor is hectic thing. The long queue adds up to the frustration of the patient so rather than waiting in a long queue the patient can book an appointment to his/her doctor through the portal without any hassle.

Also, it is important for the doctor to know his previous symptoms and allergies to certain medicines and products. Through this portal, the doctor can view the patient’s profile as well as previous records and prescriptions prescribed by any other day.

It is difficult in today’s world to keep all the prescriptions and report handy all the time. So we had come up with an innovative idea to overcome this problem by storing the doctors' prescriptions and reports on the portal which can be used anywhere at any time for reference.

Abstract

The aim of this project is to create a doctor-patient handling management system that will help doctors in their work and will also help patients to book doctor appointments and view medical progress. The system allows doctors to manage their booking slots online. Patients are allowed to book empty slots online and those slots are reserved in their name. The system manages the appointment data for multiple doctors of various dates and times. Each time a user visits a doctor his/her medical entry is stored in the database by the doctor. Next time a user logs in he may view his/her entire medical history as and when needed. At the same time, a doctor may view the patient's previous medical history while the patient visits him. The doctor is able to prescribe the patient online through the portal which will help other doctors for better diagnosis.

Idea

For making the whole process user-friendly and efficient we are building a android application through which the user will gain the features like :

1. Book an appointment to doctor, specialists,etc.
2. The patient will also be able to store and retrieve its medical history.
3. The Doctors and authorities will be able to check schedule, appointments, orders and manipulate them as per convenience.
4. The doctor can also prescribe patient on the application.

Solution

- With the help of **Firebase Database** the app can maintain patient's data as well as other associated details.
- Patients can book and manage appointments to various doctors near hime through the application.
- On the server side, the doctor can manage his/her schedule by checking the appointments according to his convenience.
- The doctor can prescribe patients and the patient will be able to view this prescription for future reference.
- All users will be able to update their profiles.

Implementation

Patient’s side :

1. With the help of Firebase Database, the application can maintain patients' data as well as other associated details.
2. The patient can search for various doctors based on location and his choice and book an appointment to the respective doctor.
3. Manage appointments that he has booked to various doctors.
4. A patient can book only one appointment to a doctor at one point of time. Once the doctor has consulted him or he has canceled the appointment with the respective doctor he can book another one.

Implementation (Continued)

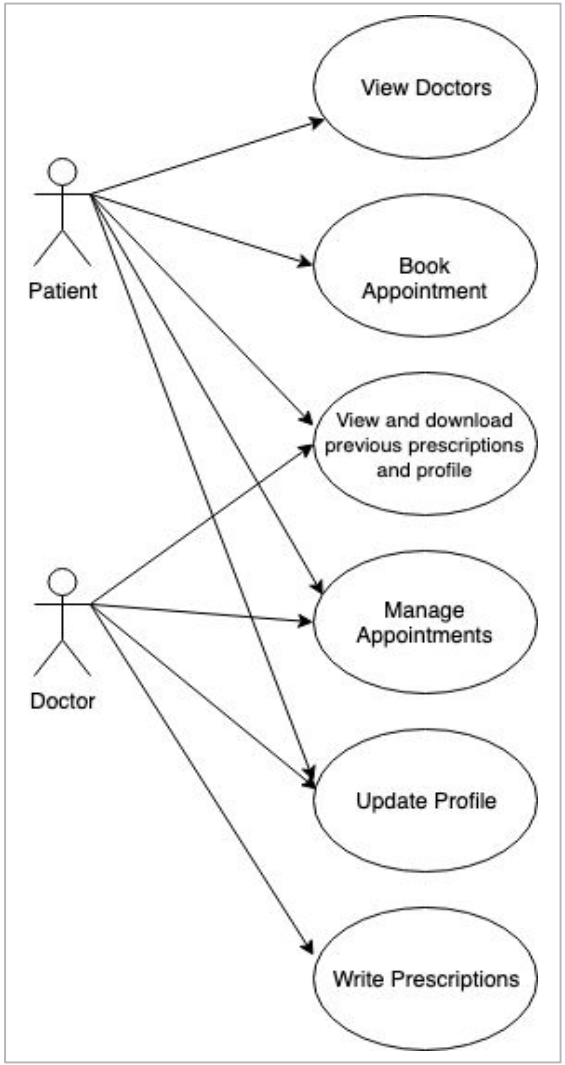
Doctor’s side :

1. On the doctor's side, the doctor can manage his/her schedule by checking the appointments and managing them according to his/her convenience.
2. The doctor can prescribe the patient once the doctor has diagnosed the patient.
3. The doctor can also view the patient's' profile and previous results and prescriptions of patients that are consulting him/her or consulted him/her.

Other:

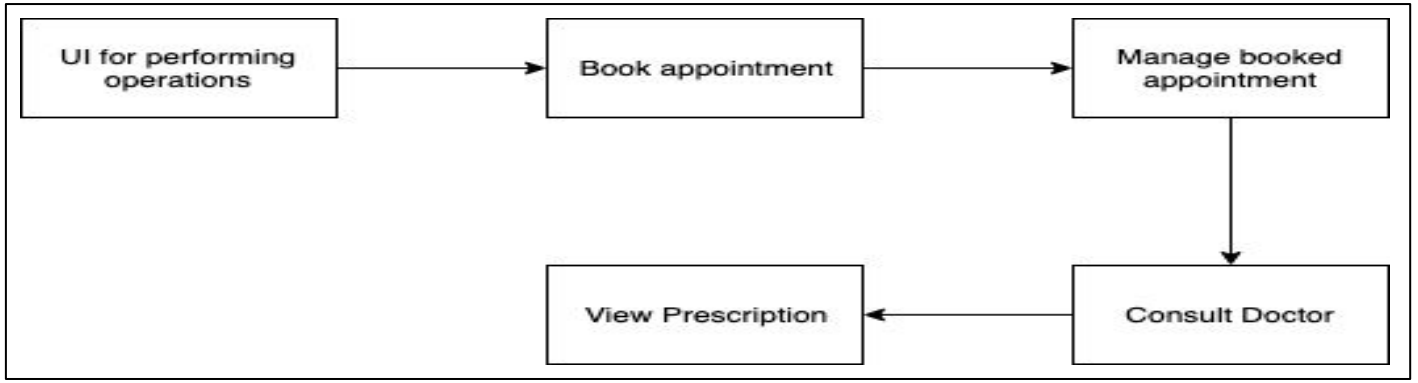
1. If on any given date and time and appointment to a specific doctor already exist with another patient any other patient will not be able to book the same slot with the same doctor.
2. A doctor has to specify his/her clinic timings and slots of 30 minutes are created between those timings.

Use Case

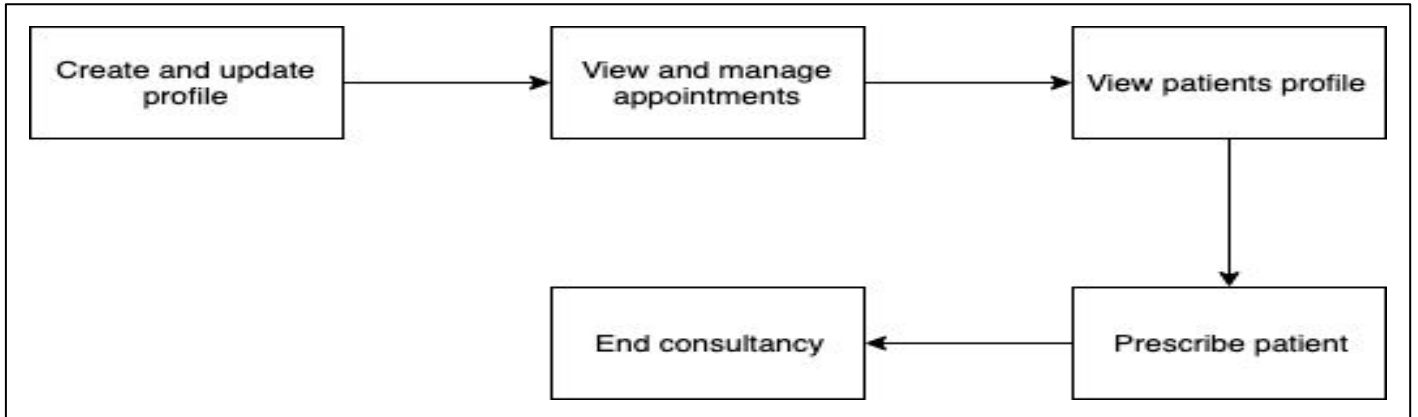

View Doctors
Patient
Book Appointment
View and download previous prescriptions and profile
Manage Appointments
Doctor
Update Profile
Write Prescriptions

Workflow

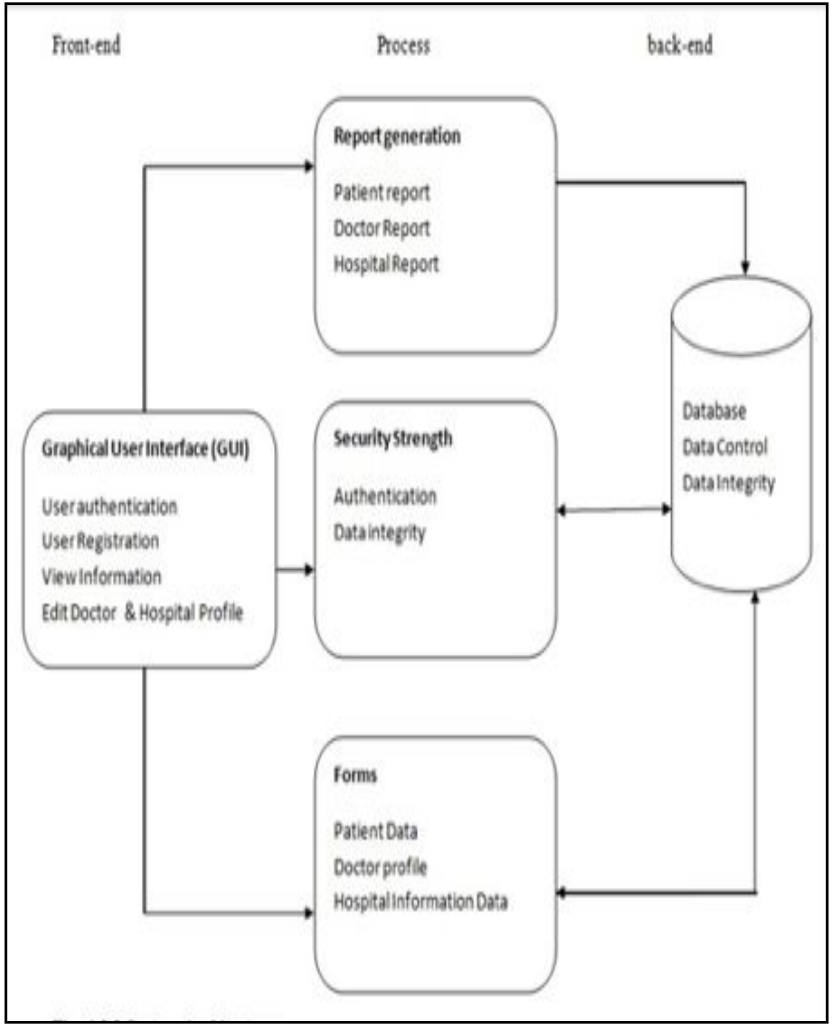
Patients' flow :



Doctors' flow :

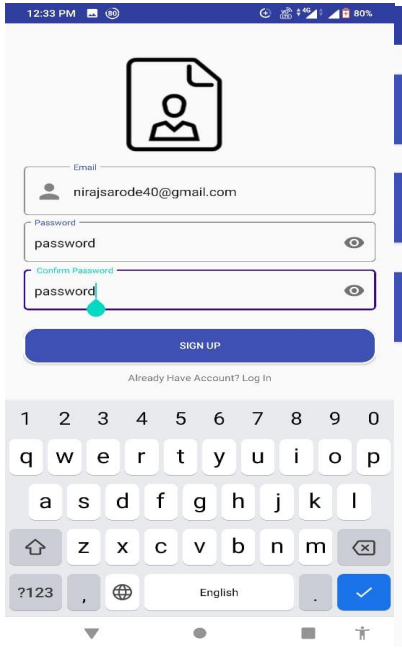


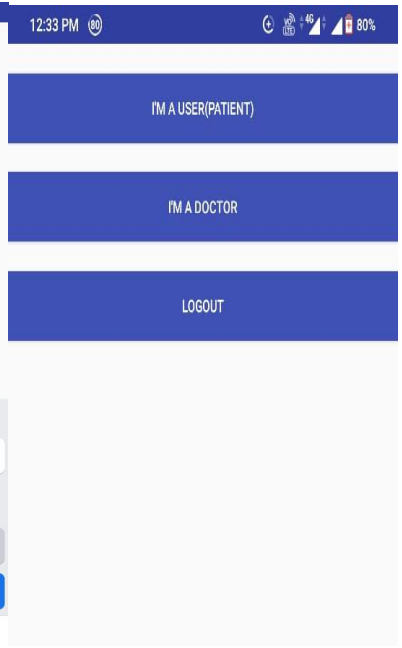
System Architecture



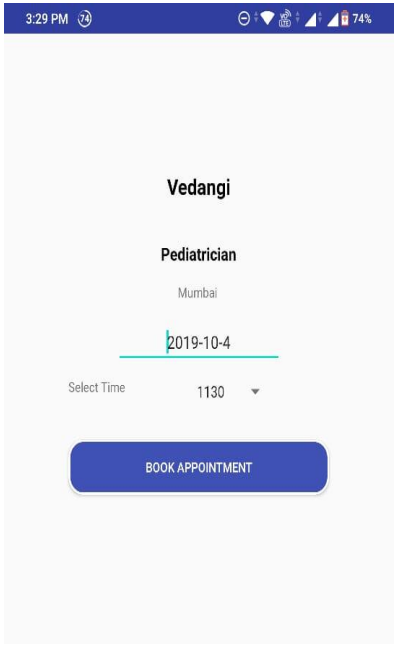
Result and Analysis

Login/Signup:



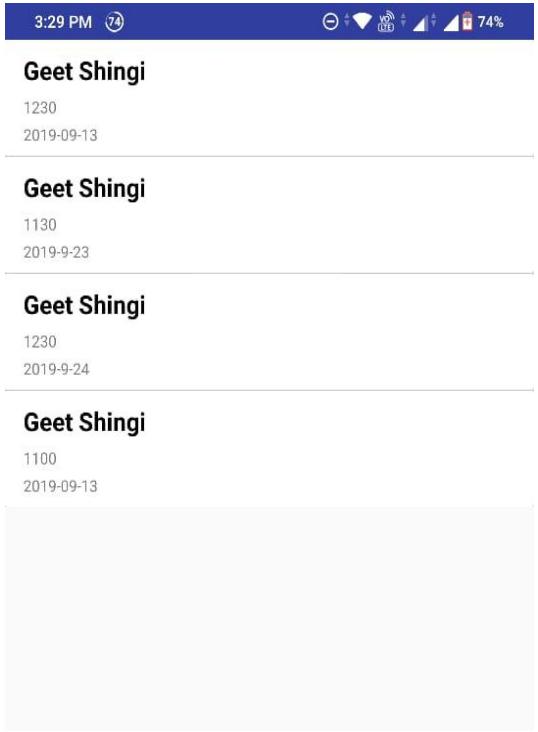


Patient appointment booking:

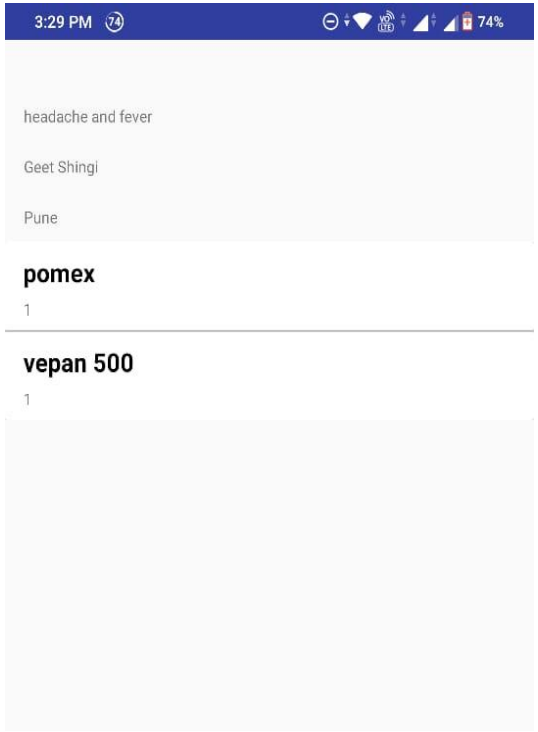


Result and Analysis

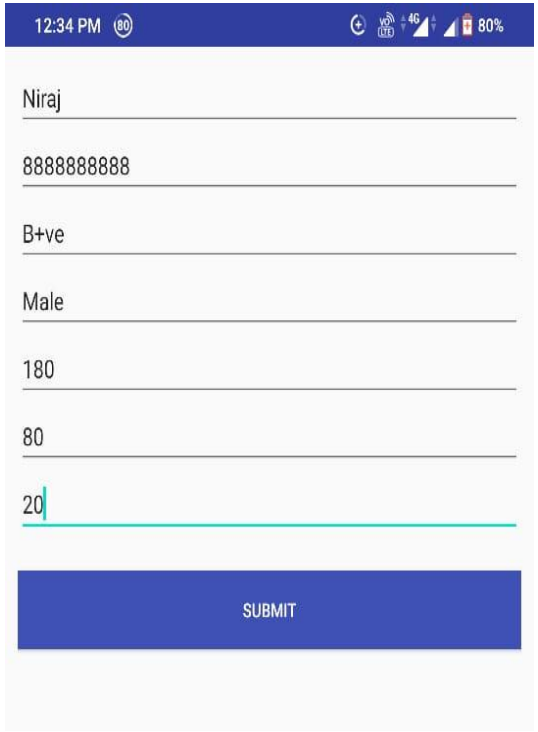
Patient's appointments:



Patient's prescriptions:

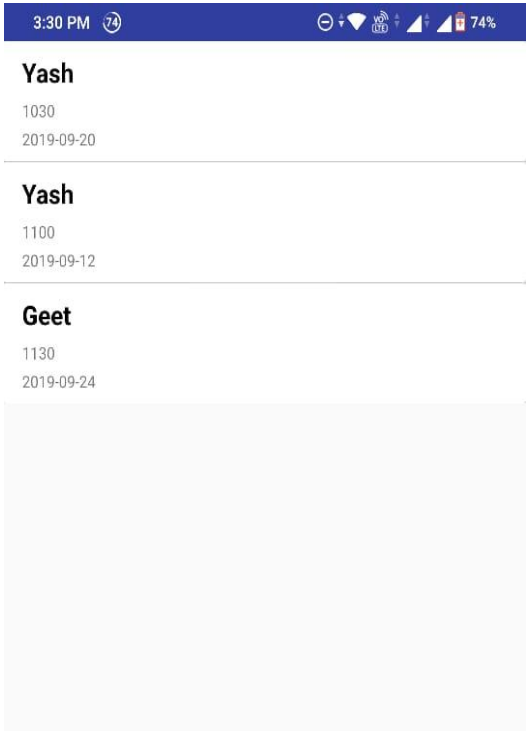


Patient's profile:

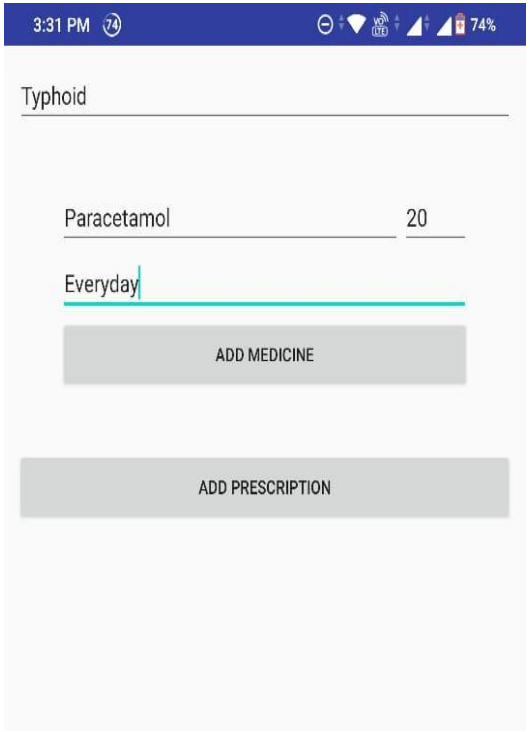


Result and Analysis

Doctor's appointments:



Doctor prescribing:



Doctor's profile:

System Requirements

Android Studio Requirements :

- Linux OS requirements
  1. GNOME or KDE desktop. Tested on Ubuntu 14.04 LTS, Trusty Tahr (64-bit distribution capable of running 32-bit applications)
  2. 64-bit distribution capable of running 32-bit applications
  3. GNU C Library (glibc) 2.19 or later
  4. 3 GB RAM minimum, 8 GB RAM recommended (plus 1 GB for the Android Emulator)
  5. 2 GB of available disk space minimum, 4 GB recommended (500 MB for IDE plus 1.5 GB for Android SDK and emulator system image)
  6. 1280 x 800 minimum screen resolution
- Windows requirements
  1. Microsoft Windows 7/8/10 (32-bit or 64-bit)
  2. 3 GB RAM minimum, 8 GB RAM recommended (plus 1 GB for the Android Emulator)
  3. 2 GB of available disk space minimum, 4 GB recommended (500 MB for IDE plus 1.5 GB for Android SDK and emulator system image)
  4. 1280 x 800 minimum screen resolution
- The Android Emulator has additional requirements beyond the basic system requirements for Android Studio:
  1. SDK Tools 26.1.1 or higher
  2. 64-bit processor
  3. Windows: CPU with UG (unrestricted guest) support
  4. HAXM 6.2.1 or later (HAXM 7.2.0 or later recommended)

System Requirements

Hardware Requirements :

Sr. No.	Hardware	Minimum System Requirement
1	Memory	1 GB RAM
2	Processor	1 GHz
3	Disk Space	500 MB

Software Requirements :

Sr. No.	Software	Minimum System Requirement
1	Operating System	Android higher than 4.0.3
2	Wifi Support	802.11 a/b/g/n/ac
3	Wireless Mobile Telecommunication	3G or 4G/LTE

API's and Libraries :

1. Library adds support for the Action Bar user interface design pattern: implementation 'com.android.support:appcompat-v7:28.0.0'
2. Design dependencies : implementation 'com.android.support:design:28.0.0'
3. Support for the CardView widget: implementation 'com.android.support:cardview-v7:28.0.0'
4. Support for the RecyclerView widget: implementation 'com.android.support:recyclerview-v7:28.0.0'
5. FirebaseUI is an open-source library for Android that allows you to quickly connect common UI elements to Firebase APIs: implementation 'com.firebaseui:firebase-ui-firestore:4.3.1'
6. Dependency for the Firebase Authentication Android library: implementation 'com.google.firebase:firebase-auth:16.2.0'
7. Cloud Firestore Android library: implementation 'com.google.firebase:firebase-firestore:18.1.0'
8. Google maps Dependency: implementation 'com.google.android.gms:play-services-maps:16.1.0'
9. Google maps location Dependency: implementation 'com.google.android.gms:play-services-location:16.0.0'

Future Enhancements

1. Improvisation in User Interface
2. Integration of medical stores to buy medicines.
3. Chatbot to predict symptoms of the patient.
4. Rescheduling of appointments based on patients' location.

Conclusion

The core reason for the establishment of computerizing Online Doctor Appointment System is to enable the hospital administrators in a convenient, fair and timely manner.

Therefore the IT used should support the core objective of the system if it is to remain relevant to the hospital. A lot still needs to be done in the IT department in order to make available technology effective. This may involve training of the hospital staff on how to enter data in the right and relevant data in the system and the management to keep updating the hardware and software requirements of the system. IT and computer systems need to be kept being upgraded as more and more IT facilities software are introduced in today's IT market. The researcher acknowledges the fact that this system does not handle all patient doctor and hospital. The researcher therefore suggests that for further research, the following can be researched on. The most cost effective way of handling all Hospital Patient management system process.

References

1. **Youtube. “Android Firestore Basics”. [Online] Available: https://www.youtube.com/playlist?list=PLGCjwl1RrtcRB0hvGQ_DixFoW0zSNf6O6**
2. **Youtube. “ Custom Buttons Design - Android Studio Tutorial”. [Online] Available: https://www.youtube.com/watch?v=nlPtfncjOWA**
3. **Cloud Firestore Documentation [Online] Available: https://cloud.google.com/firestore/docs/**
4. **Android Documentation [Online] Available: https://developer.android.com/docs**