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Doctor Patient Data Sharing Using Android Chat Application

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Abstract— Today there are lots of Chat applications available in market that are useful for communication and sharing of data between doctor and patient. But In all available chat applications both doctor and patient must know mobile numbers of each other. The objective of this paper is to build a system where patient can communicate and share his data with doctor without knowing mobile number of doctor.
This paper presents an application that is developed based on the Android operating system, using Android Studio and Firebase. The programming language is Java. The project is tested on an Android Emulator which is a tool that allows developers to easily test an application without having to install the application on a real device.

Keywords— Android, Sharing of data, Doctor-patient communication.

I. INTRODUCTION

The improvement of doctor-patient communication system is a very important requirement, specially now when the mobile communication technology is developing rapidly. The proposed system uses android platform and firebase as a backend.

Android is a Linux based open source operating system which is mainly used in portal devices with excellent performance.

Benefits of using Firebase
Real-time Database: Real-time Database is a cloud-hosted database.
Hosting: Hosting is production-grade web content that facilities the developers.
Authentication: Firebase Authentication gives backend services, simple to-use SDKs, and instant UI libraries to confirm clients over your application.
Storage: It is built for application developers who need to store and serve user-generated content, for example photos or videos.
Cloud Messaging: It is a cross-platform messaging solution that lets you dependably convey messages at zero expense. You can inform a customer that new email or other information is accessible to sync.
Remote Configuration : It is a cloud service that gives you a chance to change the conduct and appearance of your application without requiring users to download an application update.
Test Lab: Test Lab is utilized for testing your application on gadgets hosted in a Google data-center.

Here we present a doctor-patient communication system based on Android. Using this application doctor and patient can communicate with each other and Doctor can share data such as x-rays, ECG, blood reports etc. with patient. The whole data is stored on firebase server. Doctor registration is done directly on firebase server and patient can register remotely using application.First based on specialization of doctor, patient send request to particular doctor from list of doctor. If doctor accept patient request then they can communicate and share data with each other.

II. LITERATURE SURVEY

An Android-based Instant Message Application (Qi Lai, Mao Zheng and Tom Gendreau) The communication in this application is using TCP. A MySQL database is used as a backbone to store the user information.

Design And Implementation Of On-Line Chatting Application Using Android(Kavitha, Rupali Wagh , Remona Yacoop, Deeksha) The main aim of this application is to share any last minute updated information to a specific group and receive the status of the messages.

Design of Chatting Application Based on Android Bluetooth(Nikita Mahajan, Garima Verma, Gayatri Erale, Sneha Bonde, Divya Arya) Chatting application based on android Bluetooth which establishes a connection between smart phones using Bluetooth and then messages are exchanged between them.

A Complete Study of Chatting Room System based on Android Bluetooth(Rahul Verma, Ruchit Gupta, Manas Gupta, Rahul Singh) This application allows two Android devices to carry out twowaytext chat over Bluetooth. APIs wirelessly connect applications to other Bluetooth devices, enabling point-topoint and multipoint wireless features.

Patient Monitoring System Using Android Technology (Prema Sundaram)
This project elaborates the experience; a methodology adopted and highlights various design aspects to be considered for making telemedicine in patient monitoring system effective. In this method, the patient's vital signs like ECG, heart rate, breathing rate, temperature, SpO2 are captured and the values are entered into the database. It is then uploaded into the web based server and sent to the doctor's phone using ANDROID technology. It also enables the doctors to instantly send back their feedback to the nurse station.

Doctor Patient Communication System – Android Application(-Corpus Christi
Corpus Christi, TX) Doctor Patient Communication System (DPCS) is an Android app which sets up online communication between a doctor and a patient. This app is helpful to patients to ask questions and state their concerns to doctors regarding their health condition. This app will facilitate the patients to interact with doctors without making any physical appointments, but the patients are restricted to only one message per day before receiving a reply. If the patient gets a response from the corresponding doctor, the patient is allowed to send another message. In addition using this app, the patient can make an appointment to meet the doctor in clinic/hospital.

III. PROPOSED SYSTEM

In proposed system, Patient can send request to the doctor and he will accept it and their details are stored into the database. Doctor can select the patient (It is depending on the will of doctor) and patient can select the doctor for his /her treatment . Patient can chat to doctor at any instant of time ,he can share his document using this application (like ecg ,xray, blood report etc.).

A . Patient Module

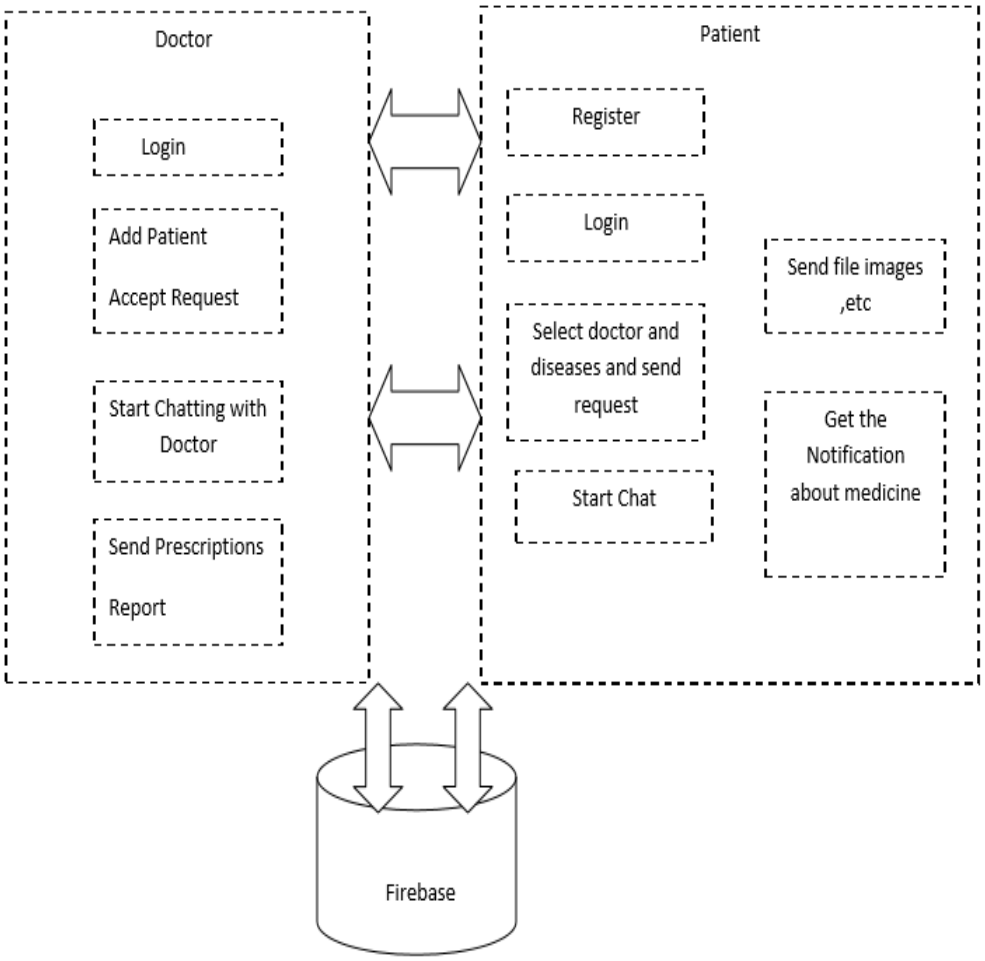
In this module patient has to register the details about himself incase he/she is patient otherwise any member of family can register themselves from same number. Then patient has to login by selecting as patient module. The doctors list is provided with specialization, among the list patient can select the particular doctor. If patient is far away from the doctor and he suddenly injured then patient will able to send his injuries photo, files ,xrays, reports to doctor and then doctor will give him a prescription of first aid. As you know many people fear to speak with doctor for some disease directly like HIV so with the help of this chatting facility they can discuss their critical problem.

B. Doctor Module

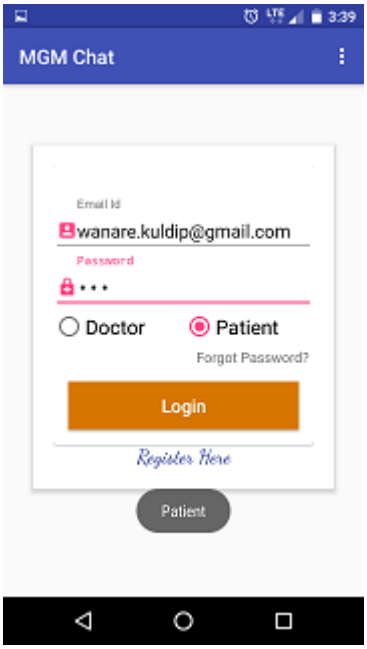
In this module the details of the doctor are inserted from server side, and username and password is provided to every doctor of that particular hospital. Doctor login through smartphone and all the request from patient are shown in a doctor dashboard. If request is accept then a notification is sent to the doctor and further the interaction is started with doctor. Unlike a traditional system doctor give prescription using paper and pen but in this system doctor give prescription using this app.

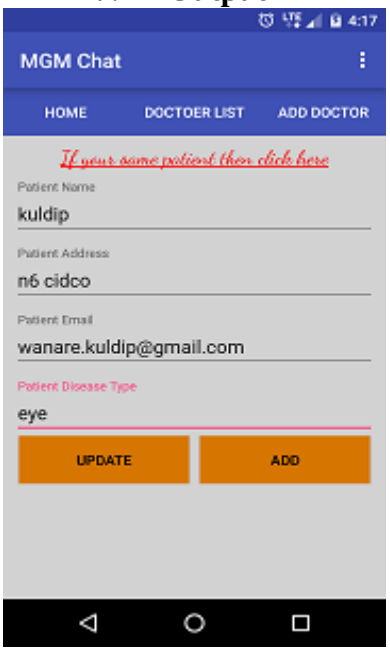
C. Firebase

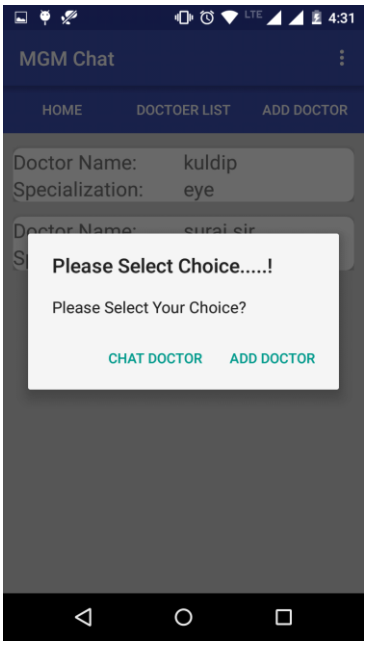
Firebase is providing backend to our app, including data storage, user authentication, and more.



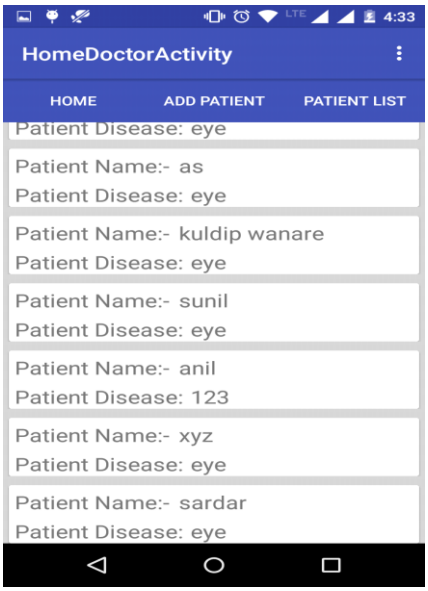
IV. Output

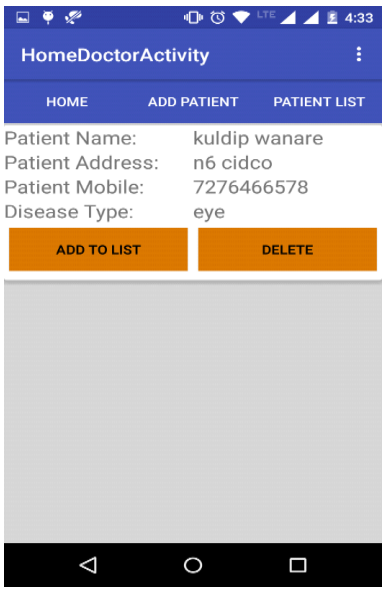




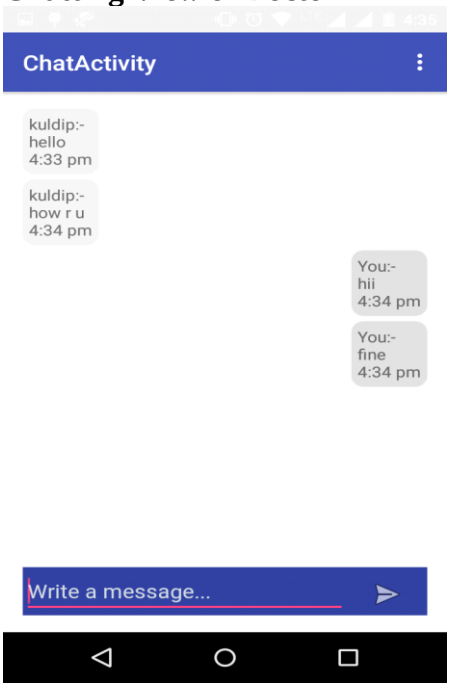


Doctor:

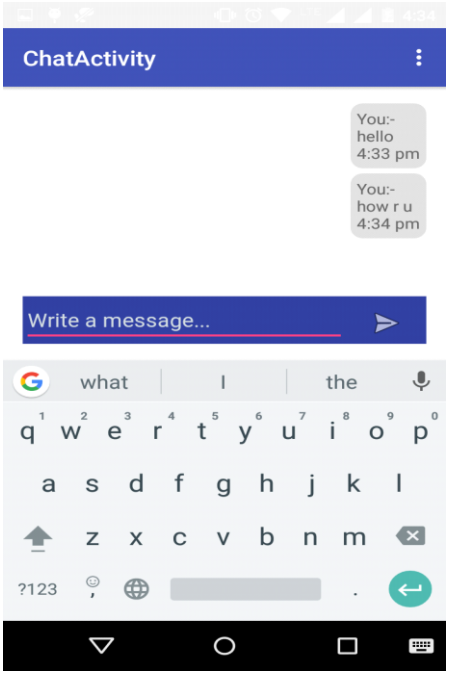




Chatting View of Doctor



Chatting View of Patient



V. CONCLUSION

This application improves the communication between doctor and patient. In this app Patient can communicate with doctor without knowing his or her mobile number. It reduces the extra paperwork, delay in timing.

VI. FUTURE WORK

This app can be improved in the future by adding the following functionalities:

- Sending Voice message and videos.
- Sending Current Location of patient to doctor.
- Extending to Apple ios.
- Patient can request for appointment.

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