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A Review Paper on Android based Personal Healthcare Companion

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Abstract - *In this paper, an endeavor is made to advance the interaction between a general physician and a patient via android application. This paper describes a tool with which we improve the quality of treatment for patients using an android application. The application, Baymax, runs on several Android based devices with Mobile Data or Wi-Fi connectivity. The system allows user to conveniently record their measured health care data in the real-time database in a most convenient way and check their previous health's record changes. Each time a person visits a doctor, the data stored in the database can be viewed by the doctor with the help of patient's unique id. Doctor's instructions, prescriptions, guidelines and other details can be viewed and the doctor can further do the treatment more effectively.*

Key Words: Android, Mobile Data, Wi-Fi, Baymax.

1. INTRODUCTION

Today, people are very much concerned about monitoring and keeping track of their personal health information. Mostly spreaded chronic diseases are the diabetes mellitus and blood pressure and are especially common in elderly people. It is suggested in a publication of the Department of Health and Human Services that to keep blood glucose and blood pressure at a healthy level, people with diabetes and blood pressure need to keep a balance between three important aspects: diet, exercise and the medicine in daily routine. Because of this self-monitoring of the blood sugar level and blood pressure, daily diet, special symptoms, allergies and medicine is essentials among these people.

Keeping results of medical, laboratory investigations in a hospital for a patient using traditional, paper form is complicated. It becomes difficult for an individual to keep up or search the history of data in the integrated form. It becomes more important when patient uses health services from different providers. In such situations a complete Electronic Health

Records are often not available. Patients, who regularly get new laboratory records, are required to keep them ordered and to bring for each visit in a consulting room. The proposed system of keeping the records manually is often time-consuming and prone to human error from manual data entry.

2. EXISTING SYSTEM

In India, majority of hospitals follow the manual paperwork method of keeping records and the current system is working only under management of the hospital. The portal ORS (Online Registration System) is created for the government hospital named 'All India Institute of Medical Science' (AIIMS) the largest hospital in India. This is an e-portal which works with the web browser.

As Smartphones are becoming an important part of human life so the proposed system can be effective and efficient . The system not only enhances process efficiency and cut costs, but also save lives by preventing harmful medical errors because of this there is a need for automation and elimination of manual work and easy access of files of patients without any restriction or involvements of hospital.

3. PROPOSED SYSTEM

The proposed system has various modules that are easy to use and will give a useful tool for the people. Also precious time will be dedicated to patient's healthcare and not keeping records. We aim to offer a system through which doctor can easily see their patient's previous medical records, reports etc. with the help of a typical Smartphone.

3.1 Architecture of proposed system

The system basically consists of client side and server side. On client side, there are mobile devices. Mobile device will be used by the doctors or consultants to view the records or by the patients to upload or change their medical reports and records. The server consists of real-time database which will store information of the patients.

3.2 System Flow

Our proposed solution involves an android application, developed for both patient and doctor such that the components are connected in a system or network.

The patient and doctor both have to fill their details to get registered at the app. In order to verify or confirm their details a verification mail will get generated and sent to the doctor and patient's email id. The verification mail is a link which should be clicked or tapped by user as a confirmation made by the doctor or patient then the detail of both patient and doctor would get saved in real-time database.

After registration a unique id is generated this would be helpful for the patient or doctor for further communication. The login to their respective account can be done by the mail id of patient and doctor's id. The patients can update their details, upload their laboratory reports on the regular basis.

As the patient visit's the doctor, the doctor asks the patient their unique id then a request will be sent by the doctor profile to the patient profile to allow the doctor to view their records. After accepting the request the patient's record will be visible on the doctor's profile.

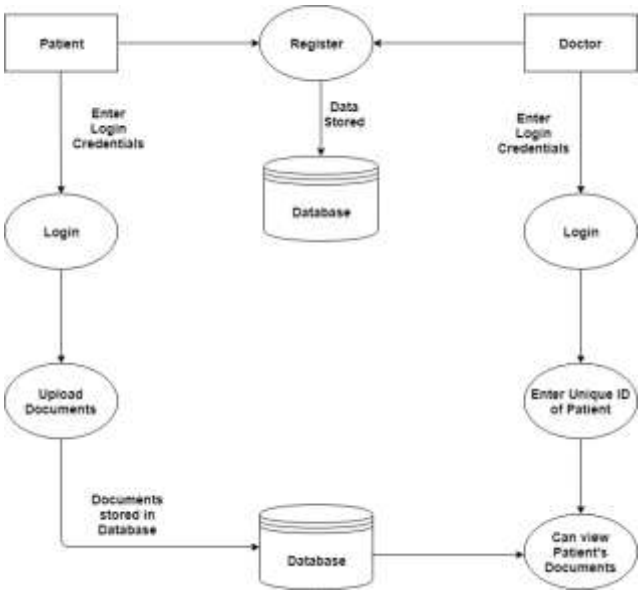

Chart -1: Data Flow Diagram

3.3 Android Application Development

Android is an open source mobile operation system based on Linux platform. In order to solve the shortcomings of traditional system, this project proposed a system based on android smart phone. To develop it we use the Android Studio for coding (java) and Android SDK for development of the apps. In the backend we are using Firebase which provides mobile platform to develop high quality apps.

4. CONCLUSION

The purpose of this paper is to create an application for the portable devices that can be used by the patient during their visits to the doctors will be time consuming. Our application is an independent platform where patients and doctors are at same level. The manual paperwork and maintenance of these are reduced and if somehow a patient looses it hard copy of the documents, so they don't have to worry about these lost documents. They can directly download these document from the database using the Baymax application.

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