An Android Application for Electronic Health Record System

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Abstract - *Nowadays healthcare organizations are moving towards electronic records from records on paper. In healthcare organizations, Electronic Health Record system is being used to create, manage, maintain and retrieve patient's medical records. Electronic Health Record system consists of a comprehensive database used to store and access patient's healthcare information like be progress, medication, doctor's appointment, medical history, laboratory data, radiology reports and much more. The Electronic Health Record has replaced the existing paper medical records as the primary source of information for health care purposes.*

We proposed a system to create appointments with doctors and store the patient's health record using Android-based mobile application. Especially the availability of Android OS based more user friendly GUI and cheap smart phones. The application allows both the patient and the doctor's to manage appointments. And there is one more user like admin who can only see patients and doctors data. Our proposed applications to help patients can perform some simple self-healthcare and monitoring functions via mobile phones through our proposed system.

Key Words: Health Record, Android, Appointment etc.

1. INTRODUCTION

An Electronic Health Record (EHR) is a digital type of a patient's paper-based medical record. Its usage allows for accurate and detailed patient health record-keeping and results in faster and efficient search and retrieval [3].

We proposed a system for patient's health record using Android-based mobile application. Mainly the availability of Android operating system in world is more and cheap smart phones. Mobile phones are a candidate platform for delivering and retrieving health information due to its widespread adoption, and technical capabilities.

We proposed a system for patient. In proposed system is being used to create, manage, maintain and retrieve patient's medical records. EHR system consists of a comprehensive database used to store and access patient's healthcare information like be progress, medication, doctor's appointment, medical history, laboratory data, radiology reports and much more. EHR also provide manually enter blood pressure and sugar level on daily basis for patient. Its functionalities may include retrieving a patient's medical records anytime and anywhere, and the generation of notification to patient's smart phones as a reminder of his/her appointment a few hours before the appointed time.

We proposed a system for Private *Practitioner Doctor* industry to take advantage of mobile devices and use mobile software applications. The proposed system will focus only on improving the doctor-patient E-prescription process and Appointment with doctor within an environment. E-prescription has been defined as the computer-based electronic generation, transmission, and filling of a prescription, taking the place of paper and faxed prescriptions. Most prescription occurs in the private *Practitioner* doctor setting, where paper-based prescribing is most heavily used, so this type of community-based setting holds the greatest potential for e-prescribing to be achieved. Using E-prescription they can easily send report to the patient.

The proposed system will allow the patient to efficiently manage the health related record. And Appointment with the doctor and appointment details which is centrally stored in a server. This should result in improved services to patients as well as for doctor, especially for doctor to improved efficiency by minimizing errors in data entry, and an increase in revenue for the clinics as more patients can be served [3].

2. LITERATURE SURVEY

[Ketan Bodhe, 2007] Recent technological advances in mobile communication and rule based expert system together enable new types of healthcare systems. Availability of Android OS based makes user friendly GUI and cheap smart phones is useful for a continuous monitoring of human health status such his/her BP, Glucose level etc. Our proposed healthcare system mainly takes care of patients who suffer from chronic disease like diabetes such person can live normally when the health condition is stable, but in critical condition he/she needs help of doctors and assistance to maintain their health conditions in normal way. Such chronic patients can perform some simple self-healthcare and monitor their own health in an efficient manner. Rapidly increasing use of mobile devices attached to the Internet has lead us to propose this system to maintain health records and monitor self- health. Also this system provides rapid diagnosis to the patient whenever required.

[Syed Hassan Ahmed, 2014] This paper is about sensors mounted on human body to collect vital data like blood pressure, heartbeat rate, diabetes control, etc. These sensors have limited storage, compatibility, etc. On behalf of human body connected with these devices, software and hardware devices have to make to make this information in more standardized and required format. We pursued to use android OS to make doctors accessible to the patients required anywhere & anytime. We proposed an e-health application for continuous monitoring of patients. In this paper, we mainly focus on providing an IEEE 11703-enabled application for monitoring critical data of a patient. We achieve this goal by developing an android application which receives medical device information and also configures data into an usable format by following the rules defined in Domain Information Model (DIM) of IEEE 11703 stack.

[Daryl Abel, Bulou Gavidi, Nicholas Rollings and Rohitash Chandra, 2015] Electronic medical record is the digital version of patients manual records maintained. This proposed system may help in monitoring the patients record or accessing it whenever and wherever required. Also it helps in giving reminder to the patients of their fixed appointments few hours prior to their appointments. The waiting time or standing in queue time can really be saved if the appointments are booked from smart phones. This waiting in queue scenario is generally seen in outpatient clinics or walk in appointments. Not only to the patients but also doctors can see the list of his current or todays appointment and even edit or cancel the appointments if he is not available for that particular time.

3. PROPOSED SYSTEM DESIGN

This section introduces the system architecture that underlies all processes involved in electronic health record system. Proposed system also shows how exactly our system works. This is the description of all the activities perform in a system and it represented with the help of diagram. In the health record system doctor and patient plays the important role. This is totally about the all activities of doctor and patient. System shows how patient perform their actions and keep all the records about their record of android application. The proposed system architecture allows a patient to manage their appointments using an Android application. The doctor uses same Android application to view his appointment list.

A. Doctor's Application: The login screen is designed to authenticate doctors before accessing his Appointment list. After Logging in, doctor may either search for a Patient using a name, view today's Appointments. Doctor can give prescription to respective patient and see the past medical history of the patient.

B. Patient's Application:

The Patient App has similar features like the Login, Password Resetting and Viewing Personal Details functions of the Doctor App. On the Appointments window, the patient can see the appointment. Patient can see the doctor details after that they book appointment. Patient can set reminder for an Medicine reminder. Patient can save their medical records in the JPEG format. Patient can track their blood level and sugar level saving the data in the application.

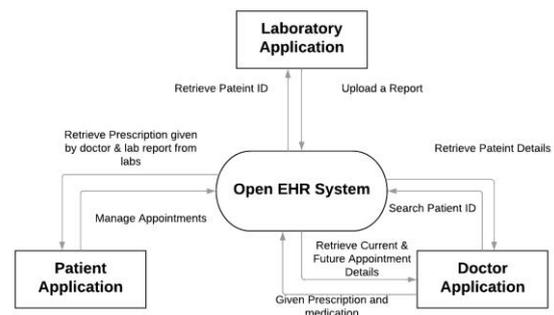Fig-1 Shows the Architecture of an proposed system.

Fig -1: Architecture of an Android Application

4. CONCLUSION

We proposed a system for a Patient, Doctor and Pathology labs using Android application. In general, the proposed system will allow patients to easily access their health records. It will also allow for Patient to appointment with doctor and book lab test in pathology lab. It will improve work productivity and efficiency while reducing cost and waiting times for patients. However, the success of such system

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