An Android Based Smart Prescription Application in Medical Field

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Abstract: Health care management systems plays a vital role in these days. The Doctor's Prescription is a health care program implemented by a physician or other qualified health care practitioner. This system contains the information about the medication prescribed by the doctor which governs to cure the patient individually. Misinterpreted drug names in medical prescriptions cause severe and lethal effects to patients. This is because of the variations in doctor's handwriting or lack of pharmacist's knowledge in this field. The present android project mainly focuses on maintaining the prescriptions digitized and accessible at any moment of time. It connects the Doctors, Patients and Pharmacists under a single platform. The main motto is to maintain the medication data non-volatile and make the medication ease of use.

Keywords: Doctor, Patient, Pharmacist, Medication.

1. INTRODUCTION

In this modern life still, patients are facing difficulties in managing their manual prescription and pharmacist have problem in understanding this prescription. This application connects the doctors, patients and pharmacists under a single platform. It can be considered as a small contribution in making the medical field digitalized which helps in simplifying the work of doctors and patients. Instead of prescribing the medicines manually on a piece of paper the doctor can enter or select the medicines and its dosage with this application. This application is very much useful for medical fraternity where it saves the time consumption and avoids the paperwork trouble.

By utilizing this application, the patient's records can be stored and maintained easily instead of understanding the manually documented prescription which is written by the doctor. With a single touch the doctors can prescribe the medicines electronically, by entering the accurate course instructions. This generates the prescription which maintains the patient's general information.

The patient's data can be searched whenever the data is required with just one click. This helps the doctors to quickly access the previous medication courses which is used by the particular patient. The prescriptions that which are prescribed by the doctor can be retrieved from the database. Usage of manual prescription may lead to privacy issues. So, this app will provide the security for the data as well as medication process of the patients

II. RELATED WORK

The main thought behind making this paper, originates from looking over different IEEE papers. All the surveyed papers had some common highlights identified with our paper some in terms of technology and some regarding use. The main goal of our paper is to design an application which would give a effective and simpler approach to keep up patient's record and decrease the overhead of manual recorded remedy given by specialists. [1] [2] As we all know that interpretation of drug names in medical prescription is terribly injurious to patients, which might have harmful effects on patient's health. This is caused by either unclear hand writing or inability of pharmacists to acknowledge medicine names which are prescribed by the doctor. This may additionally facilitate pharmacists from selling the wrong medicines to patients. [3] The main aim of this hand-held medical protection information system is to record the medical processes. Throughout the development of the application the comparison is performed efficiently between the paper-based system and the app system. The health care system's environment and its concerned characteristics were ascertained and a situation simulation technique was utilized which helped a lot.

[4] [5] [6] [7] Transformation of prescription electronically mainly focuses on patient's privacy. Patients are responsible for protecting the privacy of the prescription information. Therefore, to produce this privacy, a national electronic transfer of prescriptions which is also called ETP system has been made that is

totally different from paper-based prescription. This system was essentially designed keeping privacy of patient's prescription data in mind. However, others will use this technique both inside and outside the medical sector for alternate applications.
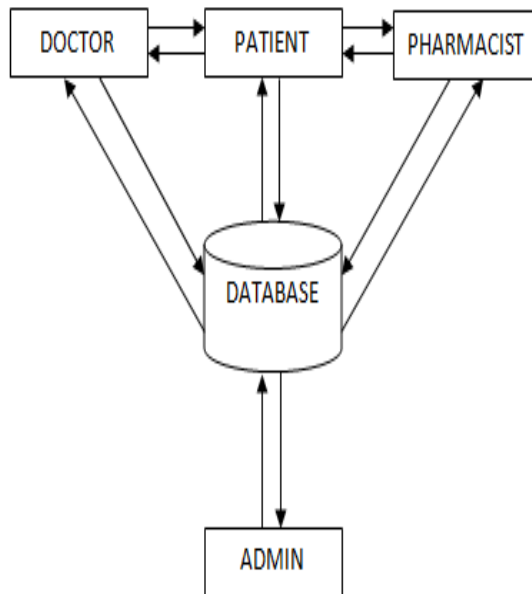
III. SYSTEM ARCHITECTURE

Fig: 1 Context Diagram of Smart Prescription

As shown in the above Fig:1 Intially, the patient needs to register into the app and after that the patient needs to consult the doctor manually.The doctor will diagnose the patient disease and enter the prescription and stores in database through the mobile application. The doctor can review the patient's previous prescription if the patient has already visited the hospital. Now, the patient can view the prescription by logging into the application through database. Later the patient goes to the pharmacist and tells his phone number in order to collect the prescribed medicines. Then the pharmacist enter the patient's phone number in order to view the prescription which is obtained from database and sells the medicines to the patient that which are prescribed by the doctor. The data which is stored in the database is maintained and managed by the admin.

IV. IMPLEMENTATION ANDE METHODOLOGY

4.1 ANDROID STUDIO:
Android Studio is the Integrated Development Environment (IDE) which is official for Google's Android operating system. It is specifically designed for android development. It is built on JetBrains' IntelliJ IDEA software. It supports cross platform as it is available and can be downloaded easily on Windows, macOS Linux operating systems. Eclipse Android Development Tools (ADT) is replaced by android studio for native android application development.

Google I/O conference announced android studio on May 16, 2013. In early stage it started accessing form version 1.0 in May2013. Later, it promoted into beta stage starting from version 0.8 which was released in June 2014.In December 2014, the first stable build was released starting from version 1.0. The present stable version of android studio is 3.0 which is released in October 2017. This stable version supports many features which are provided as follows:

• Building of Android Wear applications are supported.
• A rich layout editor was provided which allows users to drag and drop the UI components.
• Provides an Emulator or Android Virtual Device to run and debug applications.
• It provides built support for Google cloud platform, Google app engine etc.

4.2 SQLite:
SQLite is associate in-process library database that implements a self-contained, zero-configuration, serverless, transactional database engine. The code written in SQLite is free for any commercial purpose or private purpose and it is in the public domain. SQLite is one the most widely used database with many applications throughout the world. This is also used in several high-profile projects.

SQLite is considered as the embedded SQL database engine. SQLite database does not need separate sever process unlike most other SQL databases. SQLite read and write to ordinary disk files directly. In a single disk file, the multiple tables, triggers, views of complete SQL database are contained. In this database, the file format can be freely copied between 32-bit and 64-bit as it supports cross-platform. Thus, with the help of these features SQLite makes a popular choice.

V. RESULT

Fig: 1 Application View

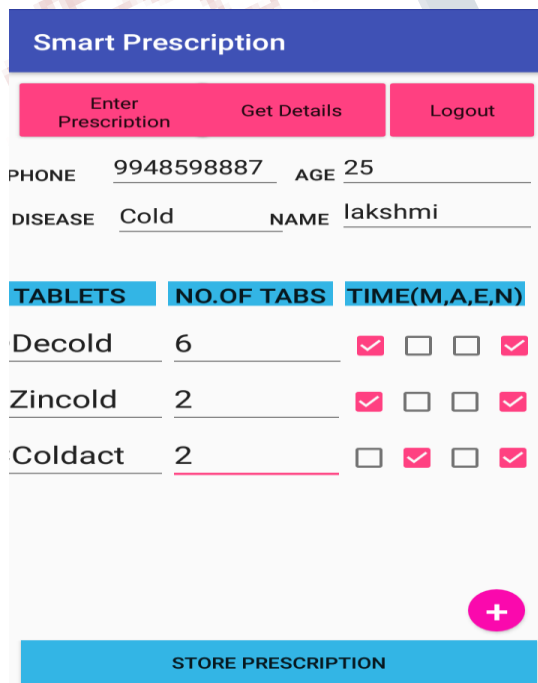In the Fig: 1 It represents the login and sign up screen for doctor, patient and pharmacist.

Fig: 3 Prescription entered by the doctor

The doctor enters the credentials of the patient and the disease he/she is suffering from in the given text fields. Then the doctor prescribes the respective medicines, number of tablets to be used, the time at which the tablets must be taken and stores the prescription. Fig 3 shows the above operation.
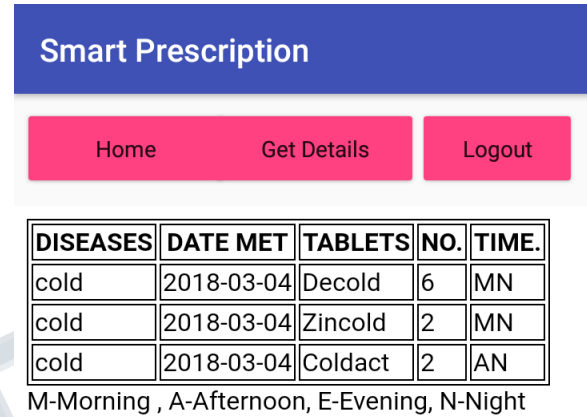

DISEASES	DATE MET	TABLETS	NO.	TIME.
cold	2018-03-04	Decold	6	MN
cold	2018-03-04	Zincold	2	MN
cold	2018-03-04	Coldact	2	AN

M-Morning , A-Afternoon, E-Evening, N-Night

Fig: 4 Patient Prescription View

As shown in the Fig: 4 The patient needs to login to view his prescription. Once the patient gets logged in, his/her prescription including with the date they met the doctor can be viewed by clicking the "Get Details" option.

VI. CONCLUSION

The manual prescription can be enhanced to the electronic prescription as described. This helps to reduce the burden of manual documented prescription which are prescribed by the doctors. Moreover, the patient's record can be maintained efficiently. It will also provide an intuitive form to the patients of understanding the prescription and also enhance the knowledge of the medicine. This application reduces the chances of misinterpretation of prescription which contains the medicines names as they are not handwritten.

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