Monitoring and Diagnosis of Health Care Environments

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Abstract - **Monitoring and Diagnosis of health is a very important task in healthcare industry. Due to busy schedule, people are avoiding their routine check-ups, which might and possibly lead to a lot of health issues in one instant of time. India being a most populated nation where majority of people live in villages deprived of healthcare facilities on real-time basis continuously and regularly. With the increasing use of technology Health care environments today have turned to be technology-oriented. This system allows the doctors to view the patient's previous reports and consult him/her accordingly. The system allows patient to send report with description to doctor and doctor can also do the same. The system can be useful for a person where he has many medicines to intake. The system named is named Health-care.**

Keywords: Android, alert, vital health parameters, health care, server, medical helper.

1. INTRODUCTION

The proposed system, Intelligence system to manage healthcare is an Android application which helps the doctor to view the information of the patient's health like reports, medicine, medical history, etc. The doctor can make notes regarding a patient and also view them. The system organizes patient data such his/her medical history, reports, appointment details, medical prescription and etc. Also it includes all the information regarding doctors. This system can be used by hospitals to provide health-care services in efficient manner. It is designed with an aim to facilitate efficient communication between doctors and patients. The proposed application is based on client-server architecture where client is an android smartphone handled by patient or doctor and server is computer handled by admin. The system contains various modules such as registration module, login module, add reminder module, scheduling an appointment module, add tablets module, add prescription and reports module, chat module with doctor and patient, view medicine list and add as well, view patient list at doctor's side and view doctor list at patient's side.

2. LITERATURE SURVEY

In the existing health care system the primary requirement is physical presence of patient and doctor for every consultation and that is main disadvantage. Also there is a high chance of loss of data like reports, etc. as well as occurrence of errors while communicating orally through calls. Moreover the process is time consuming and cumbersome. The traditional method of monitoring health care has become out dated because of increase in amount of patients in the hospitals. As a result of this an advanced and efficient health care management system has been the demand of time.

Now-a-days Health care system is moving towards computerized based system like other industries. Many health organizations already use digital hospital management system. For example, hospitals like Apollo, AIIMS and many other hospitals have their own customized software to carry out the daily activities of the hospital such as - patient registration, scheduling appointments or diagnostic tests, others. But these operations are only handled by the hospital employees and are specific to their own hospitals.

There are no scopes for the patients to use it personally and cannot access it from anywhere else. This is just hospital management software designed for a specific hospital.

3. USED METHODOLOGY

Home Screen of the system gives the option to choose the user type, doctor or patient. A link to do new registration is also provided which redirects the user to a registration page.

(a) Existing user or doctor can login with their username and password. For a successful login, a dashboard page will be displayed depending on the user type.

(b) For new patient registration, there is a registration link that redirects to a registration page.

Doctor's dashboard: It consists of options to work with all features related to medicine list, Patient List, View Appointment and Add Medicine, Send attachment to Patient and Chat with Patient.

(b) Patient Dashboard: Provides the options to work with all features related to view doctor's list, book appointment, view prescription, set reminder, Send attachment to doctor and Chat with Doctor.

4. IMPLEMENTATION

Implementation of every module is described in this section.

4.1 Android Framework Components

User Interface and server-side communications are implemented with Android and Java using Android Studio. MySQL is used to define and manipulate user database, symptoms database, and drugs database. The PHP and XML are used in web service architecture implementation and communication. AndroidManifest.xml file in the project consists of all the related activities, intents, intent-filters, etc. stored as a part of the project in the root directory. It provides all the information regarding the linking of different modules, loading, and execution environment of the app. Proper hints are provided with each component to support the user while entering the correct data.

4.2 Login Screen

The login screen is the first screen of Health- care application, after its launching page. Implementation results using a banner, two user selection radio buttons, and a patient registration link is shown in Fig -1. There is a user selection radio button to choose the type of user; the users are categorized into doctor and user patient. The user is redirected to different screens based on the type of user. There is a user registration link which provides the sign-up form for new users. Login of the existing user is carried out based on the selected user type.

4.3 Patient Registration Screen

When the new Patient clicks on the link of the home screen, the registration screen is displayed, as shown in Fig -2. Here the essential details related to the name, age, email id etc. are collected. Validation of name, mail id, the phone number is strictly validated. The collected details are stored in a MySQL database using JSON parsing. After successful registration, Login screen again appears for the first login using contact as 'username' and 'password' stored in the database.
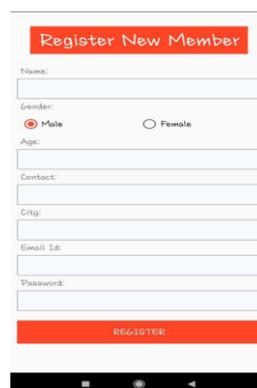

Figure 1: Patient's Registaration Screen

4.4 Doctor's Dashboard Screen

The dashboard screen of the doctor, which contains all the primary functions that the doctor can perform. Doctor's dashboard consists of options to work with all features related to medicine list, Patient List, View Appointment and Add Medicine, Send attachment to Patient and Chat with Patient.

Patient's dashboard consists of options to work with all features related to book appointment, view prescription, set remainder, Send attachment to doctor and Chat with Doctor.

Figure 2: Medicine List

Advantages

1. Maintaining records of patients.
2. Saving Time of patients and doctors.
3. Patient can add reminders so patient will not miss any dose.
4. Patient can have chat with doctor which will help him to solve any doubt.
5. Prescription will be send to the patient through application which will be saved in database and will save paper also.
6. Reports of Patient will be transfer, so no need to carry reports every time for consultation.

5. CONCLUSION

We have developed a Healthcare Application which is easy to use. This application is user friendly and efficient in reporting and communication. This application met all the advantages of the proposed system. By deploying the application on mobile phones we will be able to bring the healthcare App on the palm of every individual. Thus simply making people to go one step ahead regards to their health. According to the feedback of the App users further improvements would be incorporated within the system to make it more reliable for user.

6. FUTURE WORK

The Future work or functionalities which can be added to this project are as follows:

1. A Chatbot can be provided on patient side.
2. An emergency alarm facility for patient can be added.
3. Ambulance facility through call can be added
4. Online Payment to doctors from patient module can be added.
5. Patient will be able to purchase medicine through application.

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