Designing an Efficient System for Healthcare Appointment Scheduling

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ABSTRACT

Nowadays, if a person wants to get a doctor's appointment he have to go to the doctor's clinic or need to call to book an appointment. This consumes the precious time of the patient. Also if the doctor cancels his/her schedule, the patient does not come to know about it unless he/she goes to the clinic. The objective of this project is to build a system that will ease the process of booking appointment of the doctor. The patient will book the appointment through his/her mobile phone. The doctor will come to know the number of patients he has to attend in a day. The system will save patient's as well as doctor's time. It will save the paper work of both doctor and patient. The system will prove to be useful for a doctor as he can check his appointments whenever and from wherever he wants from his mobile phone. It has also contains the functionality to connect with doctor online for suggestions and counseling

I. INTRODUCTION

Many medical applications for smart phones have been developed and widely used by health professionals and patients, so that we can develop a doctor patient interaction system on Android platform to meet the needs of the patient and provide doctors more efficient and convenient means of communication with patients when the mobile communication technology is developing rapidly. The advantages of mobile web can be made full use of to make up the time and distance gap between doctors and patients and to provide fast and adequate medical services. The use of these applications is very helpful because it leads to better communication between doctors and patients. The formation and enhancement of the doctor patient interaction system is a very necessary requirement, especially now when the mobile communication technology is developing rapidly. The advantages of the mobile web can save the precise time of the patient and decrease the distance gap between doctors and patients and provide fast and adequate medical services. Through the connection between mobile terminals and specific service, both doctors and patients are able to obtain required data to achieve a better interaction. If anybody is ill and wants to visit a doctor for check-up, he or she needs to visit the hospital and waits until the doctor is available. The patient also waits in a queue while getting appointment and help to enhance the overall treatment quality. Through the connection between mobile terminals and specific service, both doctors and patients are able to obtain required data to achieve a better interaction. Android is a operating system which is mainly used in portal devices with excellent performance thus making its market share growing.

II. LETERATURE REVIEW

Here we present a doctor-patient interaction system based on Android. Its excellent performance on mobile terminals makes it possible that patients are able to access the hospital server to obtain the necessary suggestion about the symptoms and interact with the doctors on their own mobile terminals, while doctors can track patients whenever and wherever possible or make a diagnosis of alert depends on the monitoring data from the hardware of mobile terminals. Our solution is to build a system that will help the needful people or every person who wants to save their precious time. Any needed information can be supplied at the time of installation. This removes the need for a technician to install software and enormously quickens the implementation of a patient monitoring system. In this paper, we solve this problem by proposing a new system based on android technology, through that the doctor can manage his/her appointments from anywhere. In addition to this the patient who is unable to go to the clinic and take the appointment can also book his/her appointment from a mobile phone within 2-3 min. Paper describes the needful things that the Doctor has to do every day.

III. PREPOSED WORK

The proposed system consists of two panels Doctor and Patient. The users will first have to download the application from Google Play store and install it on their android mobile devices. Once installed, this application will remain into the Device permanently until the user deletes it or uninstalls it.

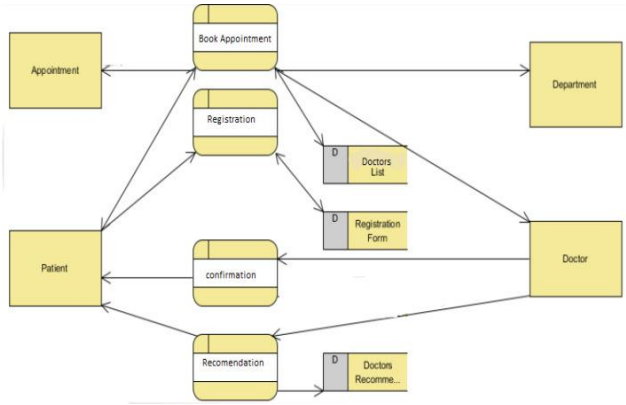

Figure No. (1) Data Flow Diagram

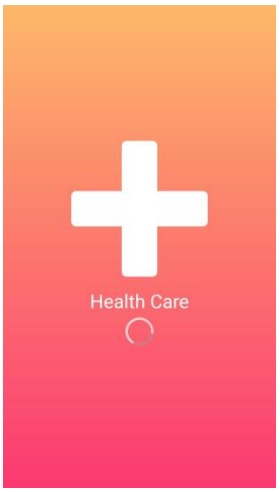

Figure No. (2) Healthcare Application

The new user patient will have to register into the application for the first time. On registering, the patient will receive a username and password. The patient can select any particular doctor and view his profile. The patient will send a request for appointment to doctor. Also the patient can view the doctor's schedule and look for an appointment according to his convenience. The add-on to this system is that the patient will receive a notification before the actual appointment is booked. Require information about the patient will have been save into the database, and user will be used this application second time that will shows only the name of patient and his/her mobile number will required. The database will get updated accordingly and the patient will get a notification on his mobile phone. The proposed work in this paper is an Online Hospital Management Application that uses an android platform that makes the task of making an appointment from the doctor easy and reliable for the users.

IV. DESIGNING ARCHITECTURE

The service consumer/provider portal and the API provide portals and APIs for the consumers, providers, and developers. Regarding technical services, we incorporated a cross-platform UI framework for mobile applications. The CDS content service included tools and knowledge to aid medical staff in making clinical decisions and preventing medication-related errors, such as preventing the administration of duplicate medications, providing standard order sets, and linking to clinical knowledge resources. Regarding basic functional services, we also incorporated fundamental services for patient management, appointment management.

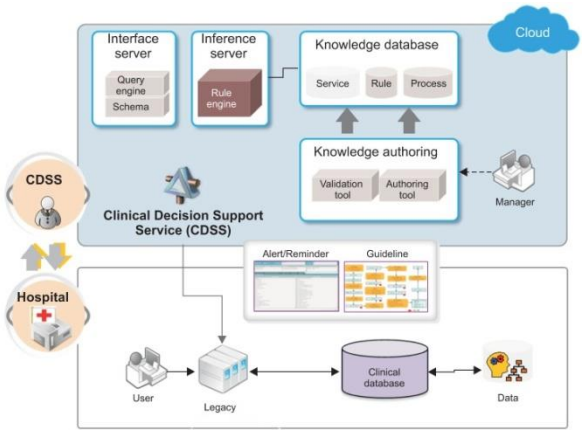

Figure No. (3) Architecture Of Healthcare Appointment Management

V. DESIGN IMPLEMENTATION

The front end design is simple and user-friendly. Once the application is started the patient will register himself and then he will be able to log in into the application. The patient can make an appointment by selecting the preferred doctor, date and time. The appointments are managed by the admin through a website. The admin also registers a doctor.

Admin is able to view doctors, view patient's records and view feedback also. The back end design includes a server which acts as a centralized database. All the data of the registered doctors and patients and the data regarding the appointments are placed on the server. The data is approached and shared by using API'S between the website and the android application.

Patient

First registered the patient detailed. Create patient record and Appointment report User can book an Appointment with a particular doctor and also view and their medical record and prescription. User can Login into his/her account with a Unique.

Doctor

Provide daily appointment scheduling reports**.** Doctors can enter medical detail about a patient likes specifying Patient condition, Kind symptom and prescription.

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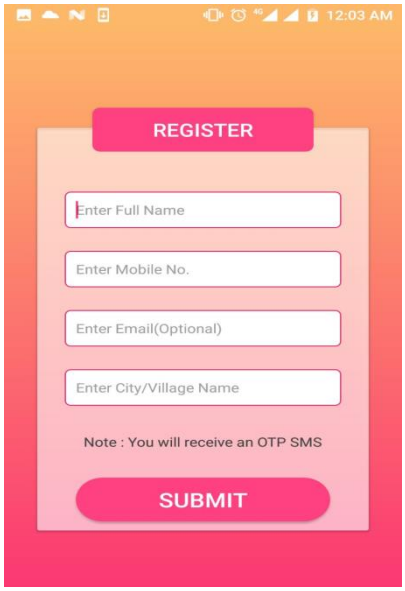

Figure No. (4) Patient Registration Form

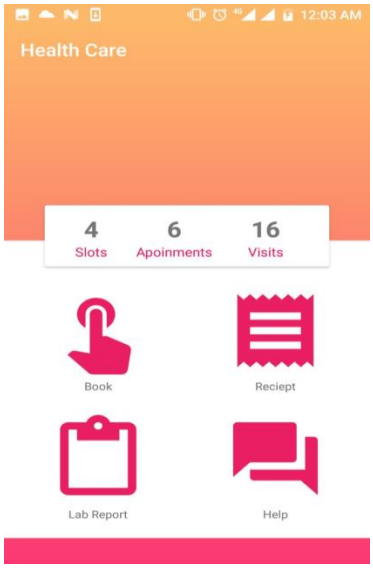

Figure No. (5) After Login Patient

VI. ADVANTAGES

- The application will prove very beneficial to doctors and patients.
- The application is a freeware, user friendly and easily accessible. Also it will save time, reduce the effort and paperwork of both patient as well as doctor.
- It will save time, reduce the effort and paperwork of both the patient as well as the doctor.
- The system focuses on improving the rate of attendance at healthcare appointments.
- It supports an easy implementation as it is less expensive, trustable, adaptable, and accessible.

VII. RESULT AND DISCUSSION

The improvement of doctor and patient interaction system is very important requirement, especially not, especially now when the mobile communication technology is developing rapidly. The mobile application is tested using a variety of emulators of Android Development Tools from Google, and on several smart phones such as Galaxy Grand 2, Galaxy Core Prime, and Sony Xperia C. The applications are tested by the students and the employees of the Higher Institute for Applied Sciences and Technology and we noticed a big satisfaction of the users in time saving and mobility. Initially mobile phones were developed only for voice communication but now-a-days the scenario has changed, voice communication is just one aspect of mobile phone. Every day more than 1 million new Android devices are activated worldwide. Android gives you a world-class platform for creating apps and games for Android users everywhere, as well as open marketplace for distributing them instantly.

The android applications are included in future work. That would help the doctor to register on the application and perform all the tasks on the app.

VIII. CONCLUSIONS

A mobile healthcare system based on Android and Web applications is presented. This system aims to simplify the task of the patient and the doctor. It will make patients more relaxed as they do not have to stand in a long queue to fix their appointment and also book an appointment according to their choice in a more convenient way. The proposed online appointment system has been implemented in android studio for application development and website is developed. This application simplifies the task of both the patient and the doctor. It will be very beneficial to the patient because now they don't have to stand in a long queue to take their appointment.

IX. REFERENCES

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