Android Based Effective Patient and Doctor Communication Application

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Abstract— Innovations in mobile code development which benefits the general public as the mobile platforms are made affordable. We have developed and evaluated mobile app for Smartphone on android platform that facilitates interaction between the doctor and the patient whenever the patient needs to book appointment, search for nearby doctors and maintain a digital copy of the prescription and message generation on booking or cancellation of an appointment. The bookings can be done to that specific day alone. We also facilitate Blood donor ship according to the user’s choice.

Keywords— Smartphone, Android, Appointment Booking, Blood-Donorship, Appointment Cancellation.

I. INTRODUCTION

Smart phones have quickly become a part of living round the world. The provision of cheaper, quicker and additional mobile devices that has let to many inventions in every field where they can be applied. According to ITU, the entire variety of mobile users worldwide from 2006 was concerning 2.7 billion and also the variety of web users was simply higher than 1.1 billion. Mobile service is quickly rising as a new frontier in reworking government and making it accessible and user friendly by extending the uses of easy delivery of services and information to the users through Smart phones. Android is a Linux operation system primarily based upon open supply operating system which is mainly used in portal devices [1].

According to recent 2015 survey, more than 82.8% of users use android mobile services and IOS consists of 13.2% users. Recent achievements in communication technologies have stirred the development of projects in telemedicine, which is thus thought-about as a necessary technology for health care.

All these factors will be mitigated to some extent by the usage of smart phones with the appropriate software system. A mobile application which is understood briefly as ‘mobile app’, could be a software system application designed to run on Smartphone’s, tablet computers and different mobile devices [5].

II. LITERATURE SURVEY

A. Development of Mobile Phone Medical Application Software for Clinical Diagnosis:

Playing an important role in this fast moving world this application stays weak in providing efficient way of communication between patients and doctors, thus to solve this a effective notification strategy is involved [1].

B. Android Application for Doctor’s Appointment:

Doctors appointment needs to be notified to the user or the patient side operation so as to make sure the confirmation or cancellation of bookings soon as the process. It needs to be done instantly so as to find an easier and convenient way of communication [2].

Self-organized e-Health Application Development of more interactive interface for doctor patient communications has lead to e-Health applications which avoids direct contact between the doctor and the patient and also booking the appointments. The way of enhancements that can be done to provide an efficient way of communication includes finding the doctors by their locations, so that the user can get the details about the doctors at their current location especially in case of emergency [4].

III. EXISTING SYSTEM

The existing system has booking for doctor’s appointment through websites and also mobile application. The website is called as “practo.com” and the mobile application is called as “practo”. This has various features which are useful in different fields. There is no appointment confirmation in this system. It has no blood donor ship record. The main drawback of the existing system is that it has no face to face communication between the doctors and the patients. The communication takes place over the website for which the users would require good internet facility in order to load the webpage. Immediate diagnosis cannot be done by the doctor in order to consult the patient with their present health condition [7].

There are many websites and applications based on appointment booking, but they not fully based on medical purposes alone. These kinds of websites and applications do not provide proper confirmation or cancellation details to the patients. They do not provide facilities to store digital or captured prescriptions and view it when required for future references.

Websites do not fetch information about the current location of the doctor which is one of the major drawbacks when it comes to consulting a doctor. This requires the use of GPS system in order to find the patient’s locations and fetch them the nearby doctors available. Some of such applications are categorized as paid applications which would not be affordable for all the Smartphone users [6].

III. PROPOSED SYSTEM

![Figure 1: Overall Architecture of the proposed system](image-url)
The proposed system has two panels: Doctor and Patient. The user must download the “.apk” file from the play store onto the mobile devices. Once installed, the application exists in the device permanently until it is uninstalled is shown in figure 1.

A. Patient Module:

The patient must register in the application for the first time of use, by which it creates a record in the database. After the registration phase, the patient will get to choose his own username and password for logging-in in future. This user name and password can be used every time they login to the application is shown in fig.2 Once the user has created their own Login ID and Password, these credentials will be used to access the application instead of all other details.

Once the user had entered the login credentials, it will be authenticated and then the user will be able to access the application. While creating the user for the first time, the user will be given an option to select whether he is willing to be a blood donor. On selecting which the particular users details will be stored at the doctors phase storage. The doctor will be able to contact the user who as registered as a part of blood donor ship. This will help the doctors to find the users who are willing to donate blood and not to disturb other regular users.

After logging in, the patient will have to select a specific option from the displayed menu. The List of all registered doctors is displayed in the “Show all doctors” menu. The next option “Nearby Doctors” gives details about the doctors available in that locality of the user is shown in figure 3.

There are also facilities where the user can view their booked appointments. Once the appointment is booked, the database will get updated and intimation about the confirmation or cancellation of appointments is sent through an SMS and also through an e-mail. There is a provision to Store Prescriptions to capture an image of a prescription instantly in the application. This is done by automatically accessing the camera present in the mobile device once the user selects this menu.

Once the prescriptions are stored the user can view the list of prescriptions that has been stored using the “View Prescription” menu. Using these menus the user while logging in as a patient will be able to see all the registered doctors, nearby doctors based on the patient location and book appointment for that particular day.

The user who has enabled the option for blood donor ship will have their details stored with the doctor phase. They can be able to drop their name from the blood donor ship anytime in case the user is no more interested in it. This helps the user with more ease of accessing the application.

To provide more interactive interface between the user and the mobile application, the user phase is provided with voice outputs for easier understanding of the status of their process in booking appointments or any other process in accessing the application. This comes in more effective in case the user is outdoors, as the user will be able to access and book appointments from any location. This voice results are provided to the user in the form of notifications and alerts for booking or cancellation or even for any other interactive terms.

B. Doctor Module:

Similar to Patient’s login phase, the doctors also have separate login phase. The user on the doctor side will have to enter all the required details about the doctor and his specialization. The doctor needs to provide their approximate consultation fee to the user. The location of the doctor’s clinic or hospital is highly necessary so as the user can trace the doctor based on their locations. The doctor needs to have a separate database in order to store the patient’s lists who are interested in blood donor ship only.

The doctors needs to give proper timing at particular locations so as to be traced or identified by the user and appointments can be booked accordingly. The doctor’s contact number is required so as to provide proper communication in case of emergency. The doctor phase involves an additional option that the doctor can manage his appointments in any kind of situations which makes it highly efficient for the doctors. Once the doctor has created his account for the first time it is shown in figure 4. Later the doctor can enter and access the application using his own login credentials.

This will help the doctors to minimize the effort in entering more details so as to login each time. Once the doctor has entered the login credentials, it will be authenticated and then the doctor-user will be able to access the application. This registration process will make easy the way of finding the doctors and also the recursive factor. In this case fake registrations can be minimized and it will be easy for the patients phase to identify doctors based on location as well as registration details.
The Successful login leads to the menu view on the doctor’s phase. In this page, the doctor’s details and corresponding options will be displayed to the doctors. This phase consist of menus which include a provision to view the doctors own profile through which one can edit their personal details, timings, approximate consultation fee, availability by clicking on “view profile” menu. The doctors can also give a proper intimation about the cancellation of appointments in advance. The doctors can also view the booked appointments for the day and can manage them by accepting or canceling the appointments in case of emergency.

The doctors will be able to view the donors list so as to find easily the list of users who have accepted to donate blood during the registration process. The doctor can also contact the blood donor directly so as to consume less time. This avoids storing all the patient details and searching the blood donors among them. The doctor phase also has an option for calling the patient whose appointment was booked and has not arrived, so as to confirm the cancellation of appointment.

CONCLUSION

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. Doctors need not worry about managing their appointment. Though you are not going to clinic for taking an appointment, your appointment gets booked from anywhere and however you want. This helps to save the time of patient. The doctor is also able to view his day to day appointment list which makes it easier for him to plan his schedule. This application will help to optimize the work of patient and doctor. In the future the security of the application will be improved. Future enhancements may include doctor-patient interaction for the purpose of online clinical diagnosis. This will also lead to a future enhancement of adding up f blood pressure recognition using flashlight present in the mobile phone. Hence this might be a step towards a minimized fork future to have or jobs pre done.

References


