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J-Health Platform - A Doctor Appointment Application System

[1]*Suresh Chimkode, [2]Shivsai sorale, [3]Arati B,[4]Girija D,[5]Sagar JD*

[a] Proffesor of Guru Nanak Dev Engineering College, Affiliated By GNDEC, Department Of Computer Science and l Engineering ,Bidar, Karnataka,Pin Code 585403, India

[b] Students Guru Nanak Dev Engineering College Bidar, Department Of Computer Science and Engineering, Bidar, Karnataka , Pin Code 585403,India

ABSTRACT

Life is becoming too busy to get medical appointments in person and to maintain a proper health care. The main idea of this work is to provide ease and comfort to patients while taking appointment from doctors and it also resolves the problems that the patients has to face while making an appointment. The android application Mr.Doc acts as a client whereas the database containing the doctor's details, patient's details and appointment details is maintained by a website that acts as a server.

Keywords: Appointment, online application, android, hospital, scheduling, track, healthcare

INTRODUCTION

The proposed project is a smart appointment booking system that provides patients or any user an easy way of booking a doctor's appointment online. This is a web based application that overcomes the issue of managing and booking appointments according to user's choice or demands. The task sometimes becomes very tedious for the compounder or doctor himself in manually allotting appointments for the users as per their availability. Hence this project offers an effective solution where users can view various booking slots available and select the preferred date and time. The already booked space will be marked yellow and will not be available for anyone else for the specified time. This system also allows users to cancel their booking anytime. The system provides an additional feature of calculating monthly earnings of doctor. Doctor has to just feed the system regularly with daily earnings and the system automatically generates a report of total amount earned at the end of the month. The application uses Asp.net as a front-end and sql database as the back end.

DETAILS OF LITERATURE SURVEY

There is much work in the literature in this regard [1-14]. An intelligent agent based appointment system has been proposed in [1] in which a scheduling system is provided for patients. The junior medical staff schedules appointment according to the priority level. [2] proposed an Android application that is used to remind the patients of their dosage timings through Alarm Ringing system so that they can stay fit and healthy. Searching doctors and hospitals along with service and the system. Before reasoning users disease history is retrieved from Personal

Health Record (PHR) and passed as an input to reasoning service. Mainly the input contains User's information, disease history, Knowledge base (symptoms) and output of reasoning service. [7] described an android smart phones and tablets application that is freely downloadable from Google play store and it provides various functions including personnel medical records, to trace position of actual user in real-time. Routing algorithm is used to find minimum distance for destination building. Another study consists of an online database for the monitoring of patient with artificial heart [8]. This database consists of monitoring terminal that is portable and keeps continuous record of a patient including history. There are other studies which involve handheld healthcare [9, 10, 11] and efficient algorithms for appointment scheduling including self- inspection [12, 13, 14].

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. Android based online doctor appointment application "Mr. Doc" contains two modules. One module is the application designed for the patient that contains a login screen. The patient has to register himself before logging in to the application. After logging in, the patient can select a hospital and can view the hospital details. The patient has the option of selecting a doctor from the list of doctors and can view the doctor's details. The patient can request for an appointment on his/her preferred day/time. The selected day/time slot will be reserved and patient will receive the notification of the successfully added appointment. The patient can view the location of the hospital on map. In addition, the patient can contact to the hospital and the doctor by making a call or may send an email to the doctor. The second module is the admin module that is designed on the website. The admin views all details of doctors and all appointments by the admin. The admin can add doctor,

view patient's details and doctor's details and can appointments also. All the doctors of the specific clinic are registered by the admin .Doctors cannot register themselves.

Rest of the paper is organized as follows. Section II explains the design interface and the tools which have been used. Section III discusses the implementation and screenshots. Section IV concludes the paper.

METHODOLOGY

This project is made by using Android studio, Virtual emulator and Photoshop. The programming languages used for building the application are Java, XML and C++. User interface is handled using XML codes. Backend programming is handled mainly through set of java codes. Native libraries are accessed through set of predefined C++ codes.
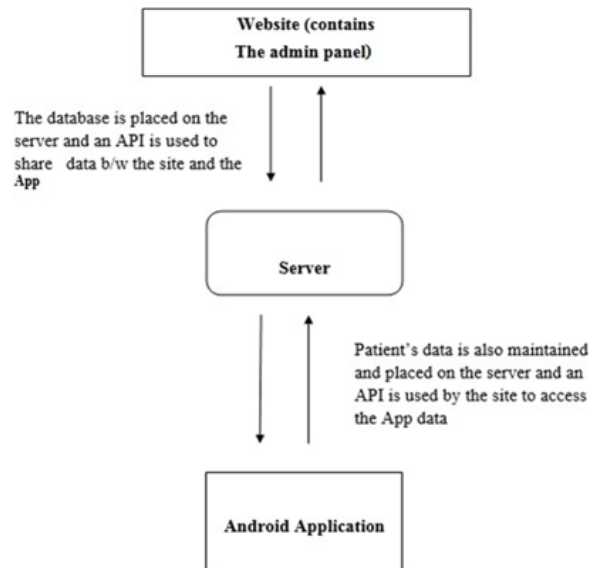

Figure 1: Block diagram of the appointment application

Figure 1 shows the block diagram of the application. It mainly contains how the application works behind as you can see the data base is placed on the server and an API is used to share data b/w the site and the App. Then the patient data is also maintained and placed on the server and an API is used by the site to access the App data.

SYSTEM ARCHITECTURE

Android

Android is a mobile operating system (OS) currently developed by Google, based on the Linux kernel and designed primarily for touch screen mobile devices such as smart phones and tablets. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. In addition to touch screen devices, Google has further developed Android TV for televisions, Android Auto for cars, and Android Wear for wrist watches, each with a specialized user interface. Variants of Android are also used on notebooks, game consoles, digital cameras, and other electronics. Initially developed by Android, Inc., which Google bought in 2005, Android was unveiled in 2007, along with the founding of the Open Handset Alliance – a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices. As of July 2013, the Google Play store has had over one million Android applications ("apps") published, and over 50 billion applications downloaded. An April–May 2013 survey of mobile application developers found that 71% of developers create applications for Android, and a 2015 survey found that 40% of full-time professional developers see Android as their priority platform.

Figure2 .Android Logo

IMPLEMENTATION

The user will firstly downloads the application and install it in their mobile devices. Figure 3 shows the block diagram of the application. Once installed, this application will remain into the device permanently until the user deletes it or uninstalls it.

After installing the app the first thing you see after opening is the logo of the app and the choice of selecting category b/w doctor and patients as shown in figure 3.As you click on any one of them it will take you to registration process.
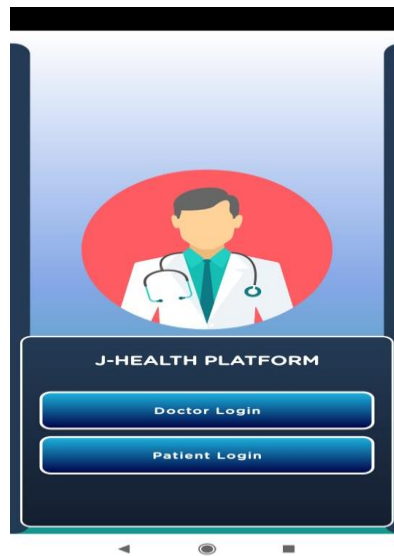

Figure 3:Showing the logo and log in option

In the fig4 the complete process of registration of doctor takes place. Like details of name of the doctor, qualification, specialization, and most imp the IMR no this is the one which verifies the doctor and the most important one. If the IMR number does not matches

Figure 4 : Doctor Registration

the data base then a invalid messege will display on the screen.If all the details were correct then registration will be complete and takes the doctor to their log in screen.where they can log into their account with respective credintials:
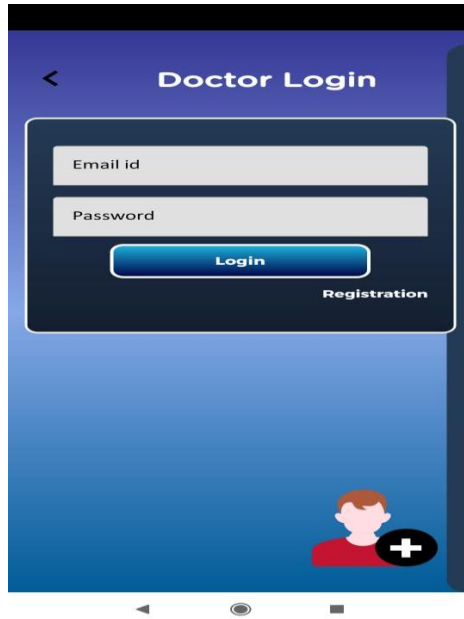
Figure 5 : Doctor login

As you can see this is the window after login. If you are a existing doctor in the platform then you will see your schedule of appointment and patient details.
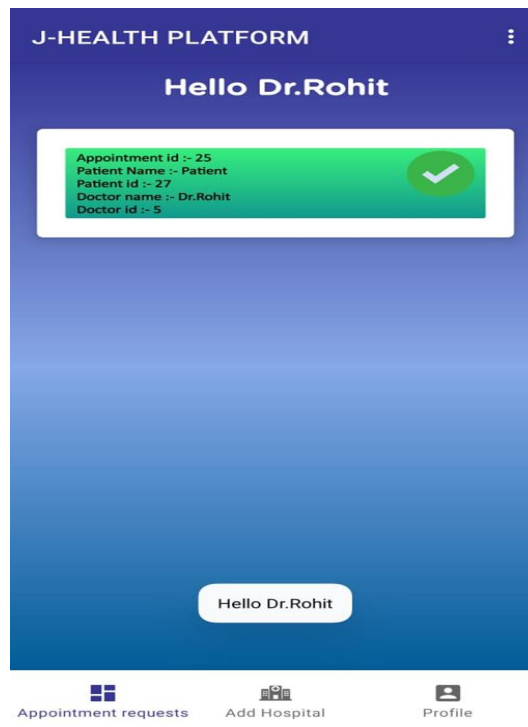

Figure 6: information to doctor

On the other hand the same process goes with the patient or guardian of patient except for unique identity verification, this includes adhar number, driving license etc.
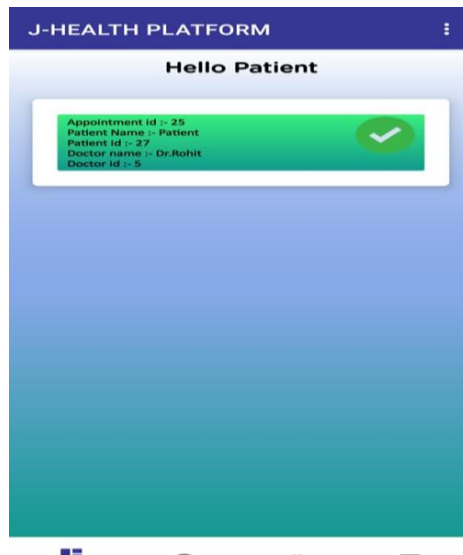
Figure 7: patient login information

The fig7 shows the information regarding to the patient like if he is already booked an appointment then the details of the appointment will be there.

Figure8: Hospitals lists

You also can view various hospital lists under the view hospital option on the screen according to your comfort. After you selecting a hospital various appointment booking option will appear.

Figure 9:Booking Information

If you book an appointment there will be an appointment fee that must be paid via online payment option as shown in fig10.Withouts the appointment fee booking of appointment will not be confirmed. Then you will confirmation message after successful booking of your appointment.
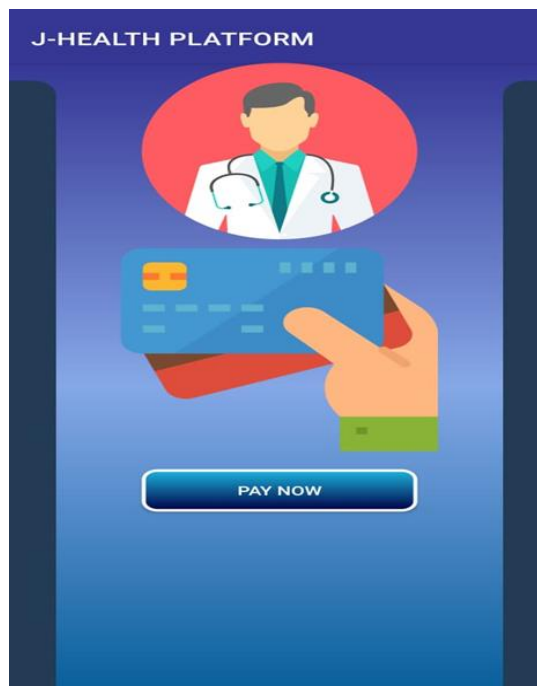

Figure10: payment option

CONCLUSION

The proposed online appointment system has been implemented in android studio for application development and website is developed using HTML and PHP. The tasks involved in this work are divided into modules. The data is approached and shared by using API'S between the website and the android application. The proposed system is efficient and has friendly user interface. Addition of the admin and doctor modules in the android application are included in future work. That would help the doctor to register on the application and perform all the tasks on the app. The admin

would be able to use the app for managing the details of the patients and the doctors instead of using the website. A payment or some amount may be charged to the users/patients while making an appointment to avoid the unethical users. As many users only register themselves just for fun and has no concern by making an appointment. Some more future directions are the improvements in the patient's module which includes setting reminders for the appointments and saving the appointment date to the calendar.

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