



Development of Online Hospital Booking Portal for Patient Appointment

Vinayak Jogalekar¹, Reekshab Pal², Arunkumar Yadav³, Archana Ingle⁴

¹(ECE, Viva Institute of Technology/Mumbai University, India)

²(ECE, Viva Institute of Technology/Mumbai University, India)

³(ECE, Viva Institute of Technology/Mumbai University, India)

⁴(ECE, Viva Institute of Technology/Mumbai University, India)

Abstract : Health care is changing with a new emphasis on patient-centeredness. Fundamental to this transformation is the increasing recognition of patients' role in health care delivery and design. Medical appointment scheduling is the main point of most non-urgent health care services and it is undergoing major developments to support active involvement of patients. The project presents approach to design a smart appointment booking system that provides patients or any user an easy way of booking a doctor's appointment online. By using the Internet as a medium, more freedom is given to the patients in decision making about their preferences for the appointments and have improved access.

Keywords –Online hospital booking portal, Emergency appointment, Healthcare management.

I. INTRODUCTION

If anybody is sick and wants to visit a doctor for check-up, he or she needs to go to the hospital and should wait till the doctor is available. While getting appointment the patient also waits in queue. Because of some emergency reasons if the appointment is cancelled by the doctor then it is difficult to know about the cancellation of the appointment to the patient unless or until he or she visits the hospital. As the mobile communication technology is developing rapidly, therefore, one can use the mobile's applications to overcome such problems and inconvenience for the patients.

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 portal 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 the effective solution is offered by this project where users can see various booking slots available and select the preferable date and time. In this system users can also cancel their booking anytime. The system has to be fed by the doctor regularly with his daily earnings and at the month's ending a report is automatically generated by the system of total amount earned.

II. LITERATURE REVIEW

The patient will have their own profiles under which there will be some options such as taking input of medical data, viewing the previous records, taking online appointment of registered doctors and taking online medication from the appointed doctor. The appointed doctor can view the patient's data and listen to the patient's health complaint via message system[1].

It is worked by mobile devices such as smart phones, providing user interfaces for configuring medication schedules and user alerts for reminding users about the time and type of medication according to the configured medication schedule. To ensure that patients actually take their medications some systems use sensors, radio-frequency identification (RFID), or motion detection technologies. It is a free application which supports

up to 15 reminders. Peoples can use this feature in either repeating or non-repeating alarm patterns. Starting from the minimum of 1 hour any hourly time interval between alarms can be selected[2].

If the appointment has done online via web and patient has to walk in but still the front desk personnel before being sent to the concerned doctor. In view of this problem, many techniques such as online suggested to improve the flow of work and therefore smoothen the waiting time. However, these systems still has some drawbacks such as facilities towards prioritization, patient's security level and also there is no reminder system present for these appointments[3].

The main goal of this system is to achieve prognosis based report generation which is unique facility. The vital signs that are BMI, Framingham heart study, Metabolic syndrome which will be recognized and interpreted by prognosis algorithm. They provide a quick assessment of how sick is someone and how urgently they need medical care, like by calculating high body glucose, abdominal obesity, HDL, total cholesterol as a metabolic syndrome. If we find three or more syndromes in user, then he is prone to be heart disease. This system is specially useful in emergency room where patients are treated according to who is in need of the most urgent and not on first come, first serve basis, for example someone with a very high heart rate and a very low blood pressure could be bleeding internally and requires immediate attention, then doctors can give first priority to him using this system [4].

This system will search availability of nearest specialized hospital through the EMS server which provides continues information about hospital to the patient. It also contains some user useful services like Tracking Blood Bank and Clinic model. So if user is having any health issue he or she can log in the system, and their status will be sent to the server. Emergency will be selected that is accident, heart attack, burn case or any other and it will be sent to the server. Then the client accepting request and searches out nearest hospital[5].

The main goal of this research is to support Smart Cities Approach in UAE by developing and implementing system and mobile application "Mwa3edk" to add new idea for the process of taking appointments with doctors in hospitals and medical clinics by transferring this process into the online world technology. This system can connect lots of hospitals and clinics with users in UAE; and allows people to search for doctors in different locations and take appointments that issuitable for them[6].

For the hospital service, agent based systems have also been developed which searches and fix appointment over mobile phones and gives a direct reply when the appointment is done or the next available date(s) or get cancelled. However, there is no facility like priority appointment of patients has been developed. Also the emergency situations like Accidents, heart attack, etc. does not take into consideration and the scheduling reported is only for general patient appointment [7].

Life is becoming too busy to maintain a proper health care and to get medical appointments. As the time zone changes due to traveling it can totally change the medicine course for people and also it is difficult for the peoples to cope up with such travels and work who having serious medical problems. Patients having diabetes and high blood pressure they should to take proper medicines at proper time. But because of present busy schedule of people they don't follow such timely medications. This is a problem that is common for all over the world and because of this for workaholics and travellers it is difficult to maintain both their health and work. With many choices technology has been provides us and proposes of this paper one such innovation using the android platform for a healthier lifestyle[8].

The functions are divided into 6 processes: login, send notification, message, appointment, manage appointment, and administrator web application. patient and doctor can access to the automated patient appointment reminder application only when they login to the application. When they register, they get the username and password from the hospital to access to the application. Afterwards, the patient can access to the send notification, message, appointment, and manage appointment processes. The proposed system can also show to the reports of appointment cancelation and the number of appointment. Every function can access to data connected to database[9].

In this study we see that an Android Apps was developed for an outpatient physical therapy clinic. The aim of this handheld healthcare information system is to record medical processes and patient appointment. During the app development medical system's environment characteristics were observed and in the comparison of efficiency between traditional paper-based approach and App system a scenario simulation method was used [10].

The authors have designed a database system for a purpose which consists of a portable monitoring terminal, a database which keeps continuous recording of patient and device status, and a web based data access system with which the clinicians can access the real time registering of patient’s data and data of past history as well. The system has been tested with data generation emulators installed on remote sites for simulation study and in 2 cases of actual animal experiment conducted at remote facilities. The system showed acceptable functionality and reliability[11].

The inputs are, firstly, a specific doctor of an outpatient clinic the patient wants to visit and, secondly, her/his symptom. The output is the estimated duration of the appointment. The neural network is trained by the administrator at regular intervals by using a training set of the completed appointments whose duration is known. When a new appointment form is submitted by the patient, a background process starts and activates the neural network. During the process of filling of the new appointment form, the patient selects from the corresponding dropdown lists the proper outpatient clinic, the desired doctor of this clinic, her/his symptom and the desired date for the visit[12]

III. METHODOLOGY

Design methodology of this project is categories as follows:

Patient Registration System:

The patient needs to register and log in after entering he can search for the doctor by giving the location, the reason or problem. Basing on the doctor availability the admin will confirm the request of booking and will send to mail that the booking is confirmed. In this user can choose the doctor and book the appointment by login and registration according to their choice.

Doctor Registration System:

Doctor need to be registered by giving the necessary details like timing, fees etc. After registering he need to log in. He can view the patient request forwarded from admin and he can accept and also he can view the feedback given by pThe doctor’s logins by username and password and adjust their appointments according to their convenience.

DOCSYS Administration:

Admin can view the registered doctors and patients. He can also view the patient’s request and doctors requests and he will confirm the patients and doctors requests.

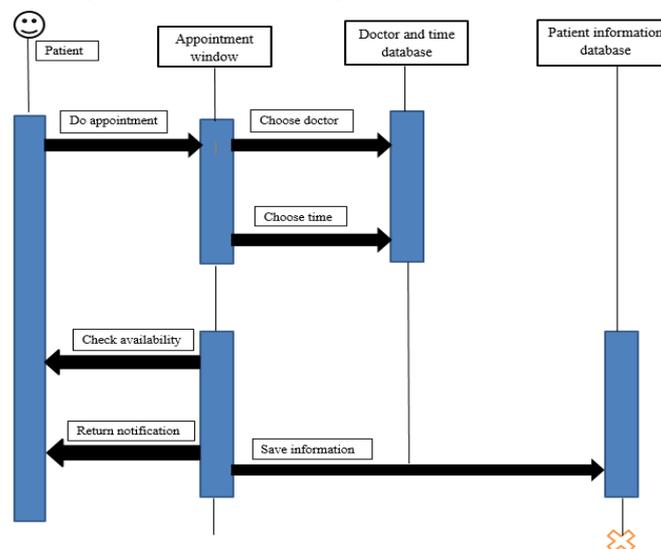


Fig 1: Block Diagram

Website based online hospital booking portal contains 4 module:

Guests (patients): view client pages , clinics, specialists, doctor, making an appointment, search for information.

Doctors: View statistical information, create their own schedule and sending invoice to patients.

Supporters (counselors): Confirm the patient’s appointment, create post.

Admins: CRUD (create, read, update, delete): users, clinics, specialists. To make an appointment first thing we have to do is search for doctor then select one available date and time Fill up your information and register for appointment. After that patient will receive an email that your appointment is pending Here supporters/counselors needs to confirm the patient appointment. With supporters action patients can be notified that their appointment is processed. Finally doctors can see the appointment with patients and can send the invoice. Also they can view patients profile and document attached with them.

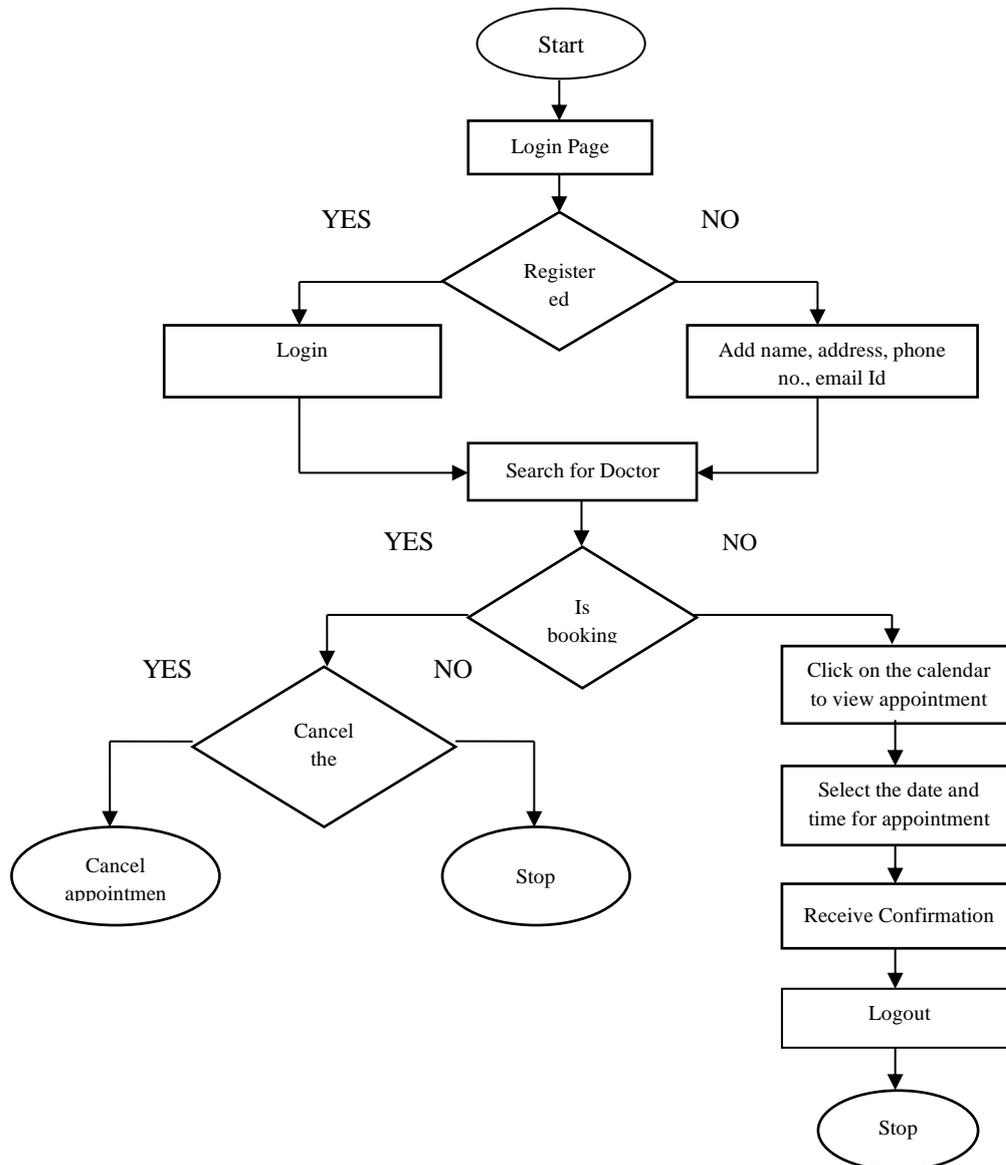


Fig 2: Flowchart

IV. RESULT

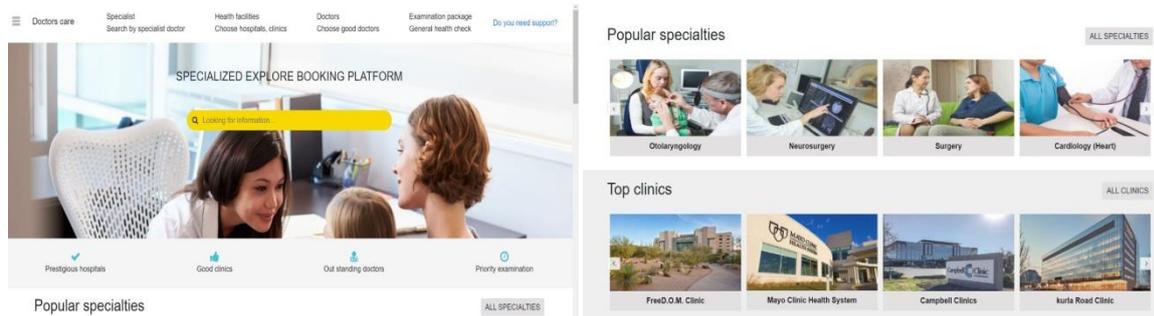


Fig 3(a): Front page

This is the front page of our hospital booking portal. To use the facilities of this portal user has to register or login here first. After login user can see nearest specialised doctor according to disease as shown in above figure, such as Cardiologist, Dentist, Neurologist, Eye specialist, etc. User can search for doctor by using city's name also.

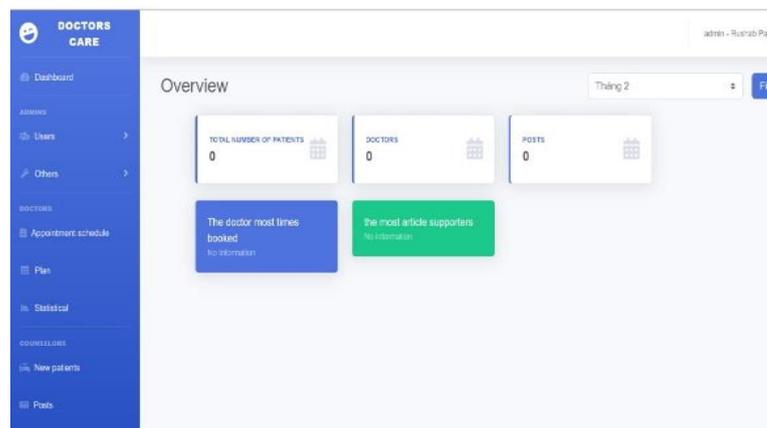


Fig 3(b): Booking system

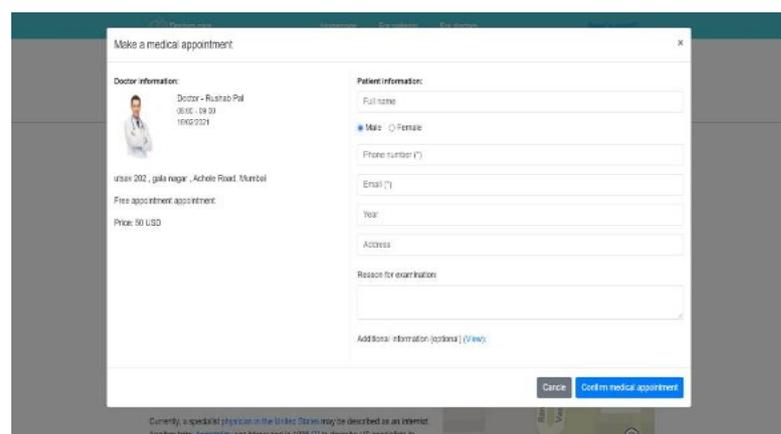


Figure 3(c): Appointment page

After searching hospital and choosing doctor user has to enter his or her personal information and has to specify disease, previous medical records. When user completes this official formalities then he will be able to book the appointment and then he can pay appointment fees online.

V. CONCLUSION

The web-based appointment system could significantly increase patient's satisfaction with registration and reduce total waiting time effectively compared to the usual queuing method. However, further improvements are needed for broad use of the system. Our study showed that use of this system can effectively reduce waiting times while taking appointment and will increase patient satisfaction with getting a registration.

The main reason behind not using such system is a lack of information about online appointments. In the development of a web-based registration system non-attendance is an inevitable problem. Further studies on various interventions such as the promotion of online registration, and use of a reminder system should be considered to increase the efficiency of the registration system, and to reduce non-attendance rates.

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