Online Doctor Appointment App

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Abstract:

Long waiting times for registration to see a doctor is problematic in India, especially in tertiary hospitals. To address this issue, a web-based appointment system, we developed a mobile app for hospital. The aim of this study was to investigate the efficacy of the mobile based appointment system in the registration service for outpatients.

Introduction:

Online Doctor Appointment is an android based project. Today you can easily connect with anything through internet services. So online platform is the best choice for our project. If anybody is ill and wants to visit a doctor for checkup, 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. If the doctor cancels the appointment for some emergency reasons then the patient is not able to know about the cancelation of the appointment 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. Doctors who are willing for online appointments can register in Online Doctor Appointment by giving necessary details like Specialization, Experience, Timings, OP fee etc., After registering into this app he/she can directly login into the application and he can view his/her details. If Doctor want to do any modification like Experience, OP fee, Timings etc., he can edit his details by clicking edit menu. Doctor can also see the appointed list of patients and they details. Patients also register and directly login into the Online Doctor Appointment. Patient can search the doctor's by selecting doctor specialization and from which district they belongs too. Then the application gives the list of doctor's who belongs to the search. Then the patient can select the doctor by clicking on doctor image. By result the application can give brief details of the selected doctor like timings, experience, location, OP Fee ,Hospital name and contact numbers. If patient satisfied by the given details then he can click on the Apply For OP button. By -clicking on that button he enters into the OP Appointment page. In that page he gives his details like patient name, contact number, email etc., and also select the date of appointment. By clicking on

Conform OP buttonhe got the message like "Your OP is Conformed". And the doctor also got the message like "New OP is Available".

Back ground:

Reducing outpatient waiting times has been the focus of a large number of studies [1–3] because waiting and treatment times are usually regarded as indicators of service quality [4]. The Patient's Charter of the UK Government sets a series of standards which state that all patients must be seen within thirty minutes of their appointment time [1]. Outpatient waiting time can be divided into two types: waiting before consultation, and waiting after consultation [5]. Time spent waiting before consultation has attracted much research attention, and can be further separated into waiting time for registration, and waiting time for consultation [6]. Because of China's limited medical resources, long waiting times for registration are common in the health care system, and the registration waiting time is generally much longer than the consultation waiting time. Long registration waiting times for outpatients have already become a long-festering healthcare problem in China [7]. For this reason, our study focuses on registration waiting time only.

In recent years, China has been in the process of implementing health care system reform [8]. The aim of the reform was to provide basic and convenient medical care. Easy access to a doctor is the first step for patients using health services. The traditional registration method (usual queuing method), had unacceptable waiting times, and placed great stress on clinic staff [7]. With the rapid development of the internet over the previous 2-3 years, some hospitals trialed the use of web-based appointment systems (WAS) for outpatients [9]. In 2009, supported by the Ministry of Health, all public tertiary hospitals began to use WAS. However, to date there are few studies about the efficacy of WAS in China. Thus, our study aims to evaluate the efficacy of WAS for outpatients, by comparing waiting times for the WAS and usual queue method, and investigating reasons for not using the WAS. This work was approved by the ethics committee of Xijing hospital, Fourth Military Medical University. Informed consent was obtained from participants prior to the administration of study measures. Study participants were recruited from outpatients of Xijing hospital, which is a tertiary hospital in Shaanxi province of China. A two-stage sampling method was adopted. First, from January to December 2010, 10% of all patients registering through the WAS were randomly selected for potential inclusion in the study, giving a total of 5641 patients. For each patient, detailed information including demographic characteristics, appointment, and contact data were obtained from the hospital statistics office. Then, from the selected patients, 500 were randomly selected for a telephone interview. The interview assessed satisfaction with the WAS and the time spent making appointments, and were performed by trained interviewers.

Rinder et al., (2012) proposes a Healthcare Scheduling by Data Mining: Literature review and future directions. The article presents a systematic literature review of the application of industrial engineering methods in healthcare scheduling, the research work defines two categories of healthcare scheduling which are; work/patient scheduling and provider resource scheduling, Patient appointments are scheduled based on the number of appointments slots available. The number of appointments available is established based on the type of work, such as regular visits, follow-up visits, tests and procedures, education sessions, and the number of

providers available by hour and day of the week. The paper described application of data modelling technique to improve scheduling in healthcare, and the modelling technique had to be a data mining technique. However, none of the methods modelled no-show and walk-ins patient behaviour, also the research work should include more variables related to patient and/or environment.

Mardiah & Basri (2013) researched Analysis of Appointment System to Reduce Outpatient Waiting Time at Indonesia's Public Hospital. The research aimed to provide a study of the major causes of patients length of time for medical treatment in an outpatient clinic at one of Indonesian public hospital and also provide recommendation on the best strategy to improve the appointment system so that can maximize the effectiveness and efficiency of resource and capacity, The research made use of interview method (Data Collection) to see the appointment system and the factor that effect patient waiting time, Observations was also employed for field visit to public hospital and to see directly outpatient service and arrival pattern of patient hospital, the collected data was analysed using descriptive analysis. However, the research is a preliminary study that analysed each variable separately. The analysis was performed to confirm that the waiting time target not met the minimum service of standard of hospital. For future, further analysis is still required to design this system such as make a simulation of all variable that affects bottleneck and it supposed to make clinical performance more effective and efficient.

Peter et al. (2014) the research work proposed a dependable online appointment booking system for NHIS outpatient in Nigerian teaching hospitals. The research proposes a web based medical appointment booking. The scope of the research work is to design a web-based appointment booking system where patients can register, login to the system, book an appointment with a doctor and view appointments. The system also includes the doctor logging into the system, cancel an appointment, generate appointment and view appointments. However, the research was limited in that the display of bio-data an X-rays and laboratory results were not included in the system due to technical constrains. And more so, the system was not able to diagnose of prescribe drug for usage. Choudhari et al (2014) proposes an Android Application for Doctor's Appointment. The proposed system consists of two main panel which include the patient, the patient can register with the system, login into the system. After logging into the system, the patient can see list of available doctors and click on any available doctor to view profile of the doctor and access the doctor schedule, and can send a request for an appointment. The doctor on the other hand will be able to view request from patients and can respond to patient request by either accepting the request or rejecting the request. The system will then notify the patient as to the response from the doctor and get notification 2 hours before the actual appointment which will be very useful in case the patient tends to forget the appointment. However, the research does not integrate medical consultation.

Methodology

The study adopts the use of Object Oriented Analysis and Design (OOAD) method. The underlying principle is that one model software systems as collections of cooperating objects, treating individual objects as instances of a class within a hierarchy of classes (Booch, 1998). Object-oriented analysis describes an information system by identifying things called objects. An object represents a real person, place, event, or transaction. For example, when a patient makes an appointment to see a doctor, the patient is an object, the doctor is an object, and the appointment itself is an object. Object-oriented analysis is a popular approach that sees a system

from the viewpoint of the objects themselves as they function and interact. The end product of object-oriented analysis is an object model, which represents the information system in terms of objects and object-oriented concepts.

The following procedures shall be followed in the execution of the work:

i. Data Collection/Information Gathering: Information was gathered on flow of the manual method of medical appointment and consultation.
ii. Modelling: Well-defined UML diagrams (Data Flow Diagram, Use Case Diagram, Sequence Diagram) were used for the modelling the proposed system.
iii. Design and Implementation: Object-oriented design approach is adopted for the design of the proposed system, which is to be implemented as android-based.
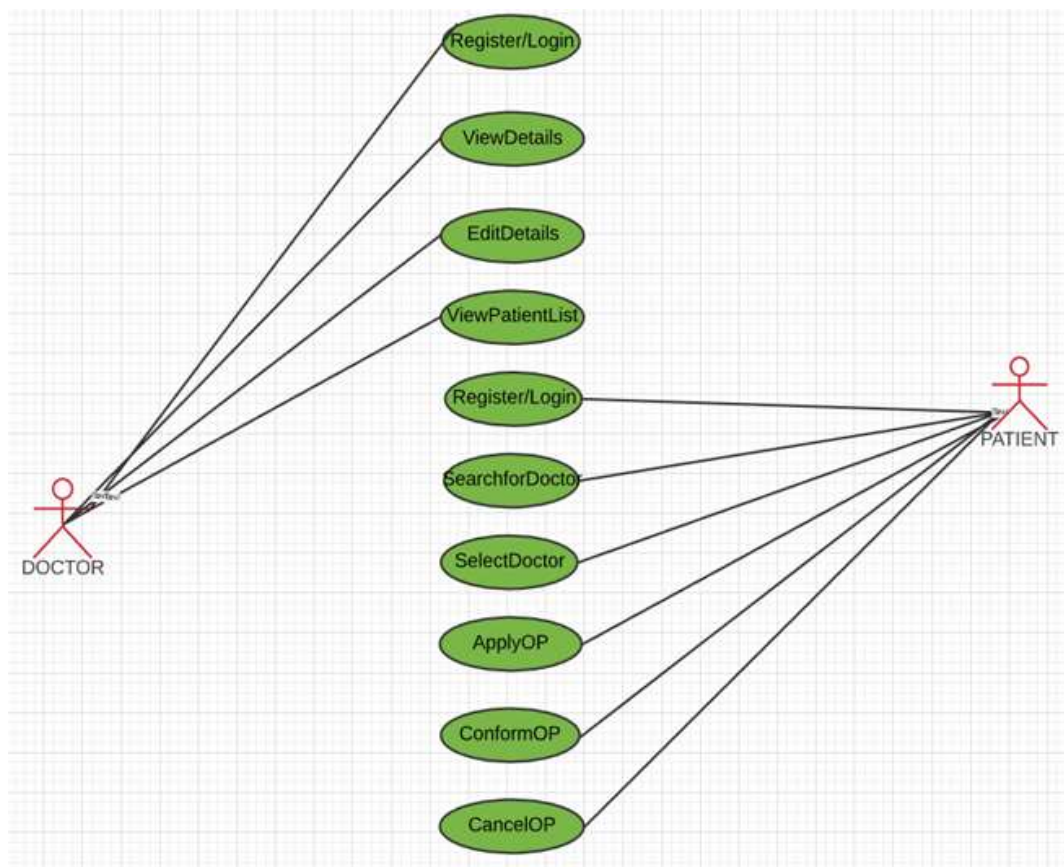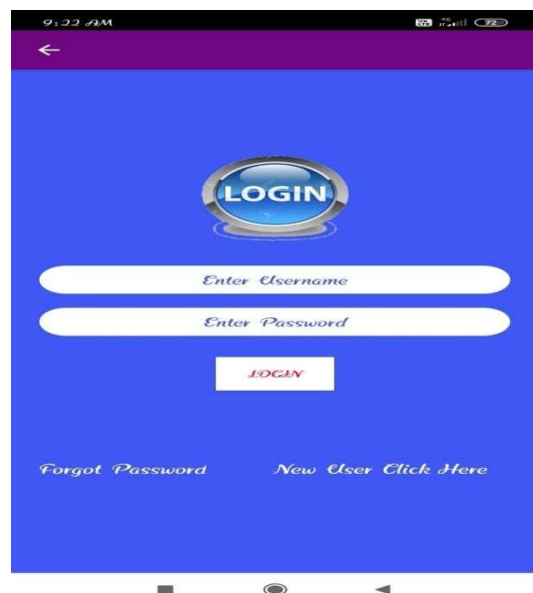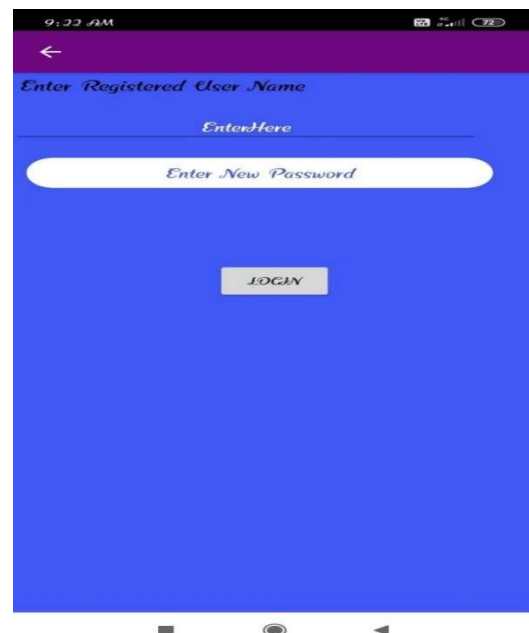

Results:
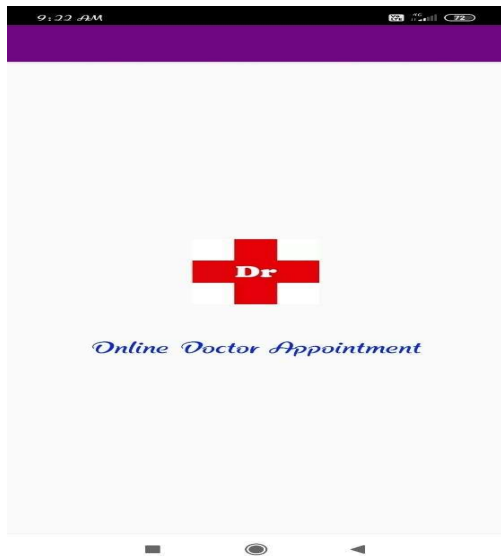
LAUNCHER SCREEN
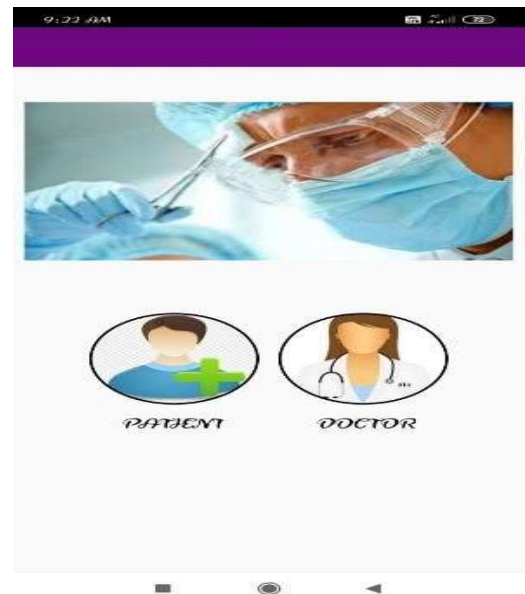
MODULES SCREEN

LOGIN FORM OF PATIENT

PASSWORD RESET PAGE

Conclusion:

Online Doctor Appointment app is developed for an android phone where one can easily access it through their mobile phone. This app is more useful to the Patients. People who are interested can use to this application. Here we will provide all the information of the Doctor and Hospital such as Booinkg Appiomentes, contacting to doctor. Here doctor and patient both can easily communicate with each other and both are at same platform We will provide all the needed information which is needed to the patient like expriencre, opp and timings.

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