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Swastha: E-Healthcare Application

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***Abstract*—**Healthcare organizations are undergoing major reorganizations and adjustments to meet the increasing demands of improved healthcare access and quality, as well as lowered costs. As the use of information technology to process medical data increases, much of the critical information necessary to meet these challenges is being stored in digital format. Web-enabled information technologies can provide the means for greater access and more effective integration of healthcare information from disparate computer applications and other information resources. In this, web-based applications in healthcare area have been described. This presents a mobile healthcare system based on Android and Web applications. The system provides assistance to patients, identifies and selects doctors based on the location and the specialties of the doctors. The system allows patients to make appointments with doctors and assigns reminders to take the prescribed medications and vaccinations. The results of testing the applications show a big saving of time and mobility of doctors and patients.

Keywords*—*Android, Web, Application, Health, Healthcare.

I. INTRODUCTION

Many medical applications for smart phones have been developed and widely used by health professionals and patients. The use of these applications is very helpful because it leads to better communication between doctors and patients and help to enhance the overall treatment quality. The literature review of healthcare applications shows that applications focus on different area of healthcare such as patient care and monitoring apps, weight loss and fitness apps, communication among doctors and nurses on inpatient wards, the uses of the smart phone in medical education and research. Our proposed healthcare system is based on Android and Webapps to provide medical assistance for patients who live in regions where mobility is difficult and limited and can save the doctor and the patient lots of time. The proposed application defines and selects doctors registered in the system based out their location, specialty and availability. The application allows patients to make appointments with doctors and assigns re-minders for the prescribed medications and vaccinations. The paper is organized as follows; first we present the design of our mobile healthcare system and its different applications and service, followed by testing results and finally a conclusion. Healthcare applications or the so-called mHealth solutions are growing along with the global increase of smartphone usage. Such mobile apps for healthcare organizations help to provide their services with quality care, improved workflow and increased patient interaction while minimizing the cost and complexity.

II. LITERATURE SURVEY

The research paper Emergency Patient Care System Using Chatbot gives information regarding chatbot system which answers all the questions fed by user. This is an emergency services chatbot for patients that helps user get answers of queries through natural language processing. The system takes a plain text as input and answering all type of questions output by a qualified user is the output. The purpose is to provide a solution to the problem. It uses dialog flow to build the chatbot.

In the A Personalized Medical Assistant Chatbot : Medi Bot research paper the system tries to enhance the ability of a chatbot from being used just as a tool of communication to predict disease based on symptoms provided as input. We will be using the speech to text feature to make our chatbot more user friendly and have voice enabled feature.

In Mr. Doc: A Doctor Appointment Application System 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 have to face while making an appointment. This android application acts as a client whereas the database containing the doctor's details, patient's details and appointment details is maintained by a web site that act as a server.

Security Model for Healthcare Application Paper says In Cloud Computing In this paper, My PHR Machines, a cloud-based PHR system answers our research question. One of the agreed key requirements for share-ability of the EHR is to break the nexus between the EHR and the EHR system. The My PHR Machines architecture clearly separates PHR data from the software to work with these data. This paper demonstrates how this creates novel opportunities for the market of PHR software services without compromising patient privacy.

Salubrity - A medicine reminder application using android paper says the proposed system is based on Android Operating system which will remind the users to take medicines on time through notification and automatic alarm ringing system. The mobile application can be installed on the android devices. It will add recurring events to the mobile's calendar and will alert the user when he/she has to take the medicine with the image of medicines. Security Model for Healthcare Application In Cloud Computing paper provides a secure and trustful m-healthcare application, so that users can use this application for their sensitive data without any doubt of security threat. It is also a user-friendly application, so users can easily use the application. Applications on Android, it is learnt that Mobile money applications are convenient, and they are the future of banking and transactions. We are proficient in finding vulnerabilities potential security issues using this.

III. PROPOSED APPLICATION FRAMEWORK

3.1 Flowchart and its explanation

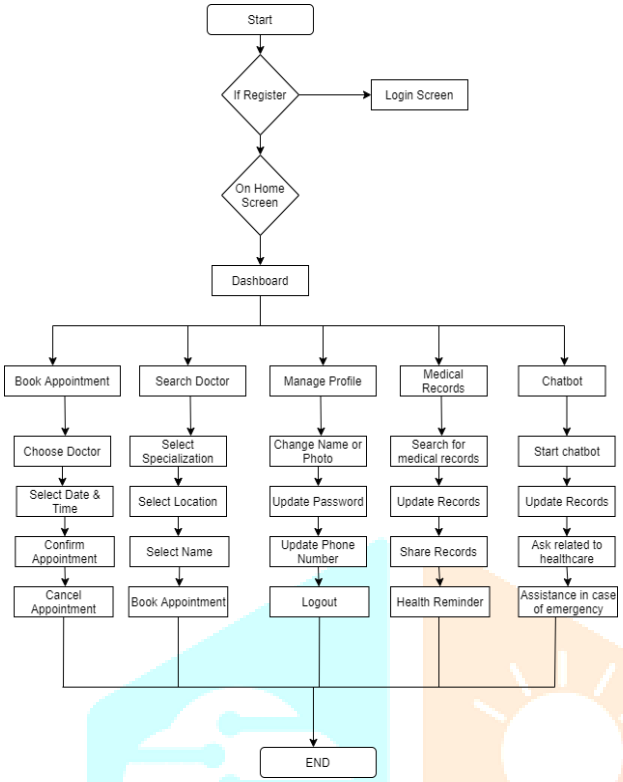

Fig. 3.1.1 Flowchart

Here, the user has to register by sharing their personal data. Then the user can directly sign in and use the features that are available and then the user can use the logout option after finishing their task.

IV. METHODOLOGY

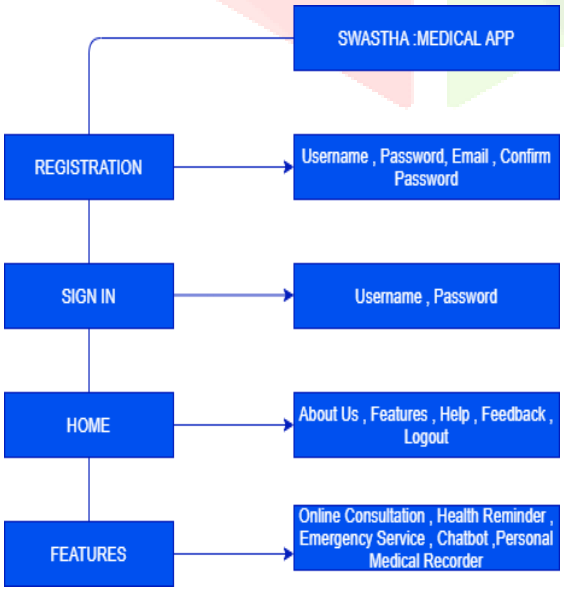

Fig (1).

The above block diagram explains the home page of the web page. It provides registration of the user with login logout feature. The menu bar consists of the About Us page, Feedback page and all the features like Online Consultation, Personal Medical Recorder, Health Reminder, Emergency Service and Chatbot would be available to the user.

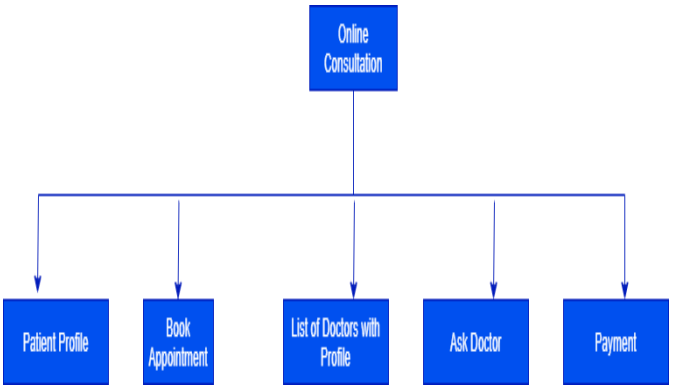

Fig (2).

The Online Consultation is an interesting feature that is available. It is like an interaction between the Doctor and the Patient but through Internet. It includes patient's profile, doctor's profile, list of doctors. The patient can book an appointment and ask health related solutions to the doctor via chatbot.

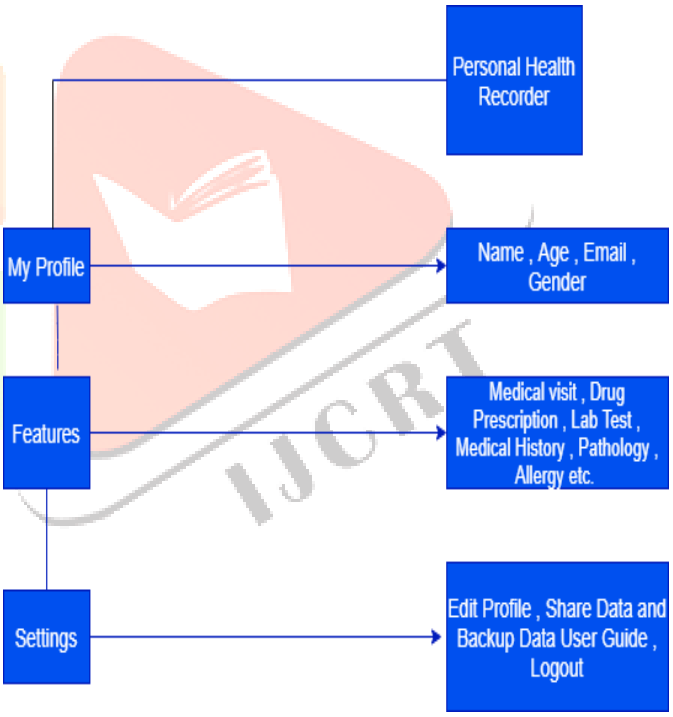

Fig (3).

The third feature is Personal Health Recorder. It is a health record where health data and other information related to the care of a patient is maintained by the patient. The patient can also share their records to whoever they want. First, the user has to include their personal information like name, age, email and gender. The features that are available to the user are medical visit, prescription, lab test etc.

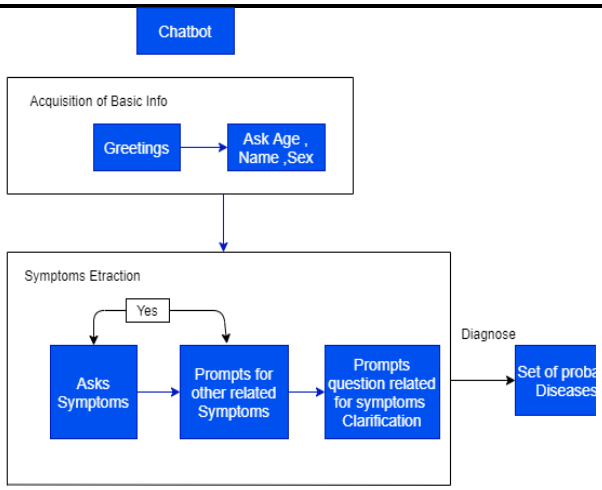

Fig (4).

The main purpose of chatbot is to build the language gap between the user and the health providers by giving immediate replies to the questions asked by the user. Here the user can ask doctors and according to the user's need, doctor would give prescription.

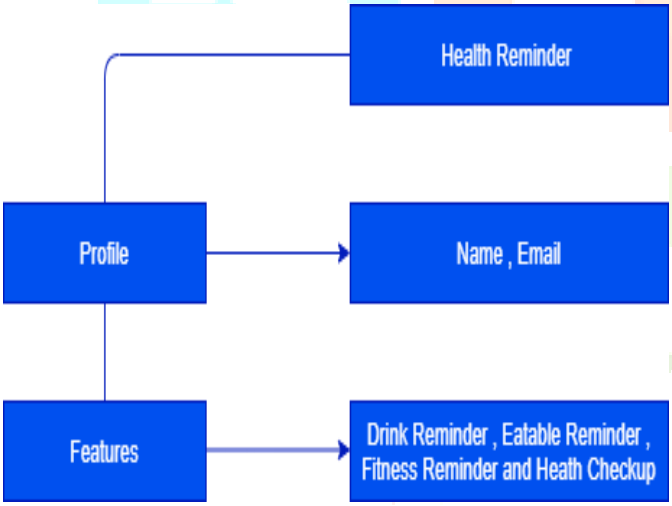

Fig (5).

Health Reminder is a feature in which an automatic reminder or alarming system is implemented. The features include drink reminder, eatable reminder, fitness reminder etc. The user will can set reminder and get alerted about their dosage.

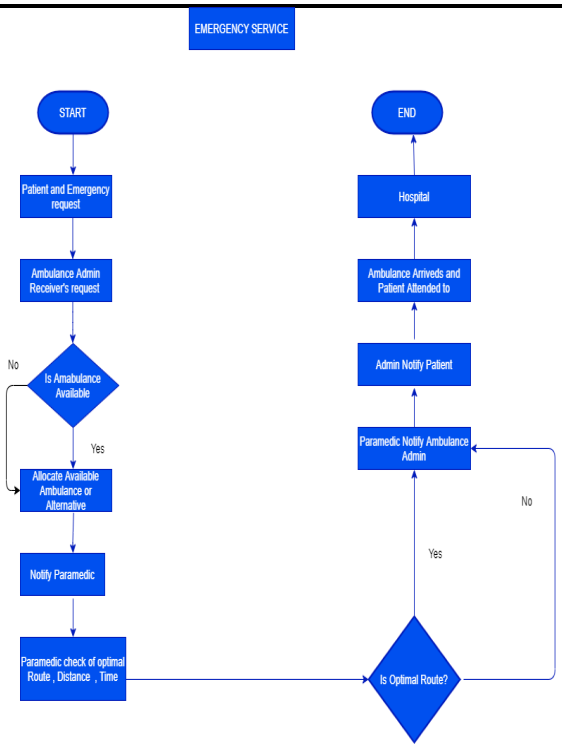

Fig (6).

The emergency service provides immediate ambulance service to the user. The user sends a request to the ambulance admin and after receiving the request from the user, the admin allocates an ambulance if it is available and then notify the paramedic. The paramedic checks for an optimal route, distance etc. and if the optimal route is available, the paramedic notifies the ambulance admin and admin notifies the user. After all this process, the ambulance arrives and transport the patient to the hospital.

V. CONCLUSION

Health care is moving into the home increasingly often and involving a mixture of people, a variety of tasks, and a broad diversity of devices and technologies; it is also occurring in a range of residential environments. The factors driving this migration include the rising costs of providing health care; the growing numbers of older adults; the increasing prevalence of chronic disease; improved survival rates of various diseases, injuries, and other conditions; large numbers of veterans returning from war with serious injuries; and a wide range of technological innovations. The health care that results vary considerably in its safety, effectiveness, and efficiency, as well as its quality and cost.

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