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Research Article

Virtual Assistant For Health Care Services

G. Preethi [1], S. TamilSelvi[2], Varikoti Sai Sathwik Reddy [3], Sarath Chandra Venkata Sai Ram Gupta Biyyapu[4], Vasanth D[5]

[1]Assistant Professor, Department of Electronics and Communication Engineering, R.M.D. Engineering College
[2]Assistant Professor, Department of Electronics and Communication Engineering, R.M.D. Engineering College
[3]U.G Student, Department of Electronics and Communication Engineering, R.M.D. Engineering College
[4]U.G Student, Department of Electronics and Communication Engineering, R.M.D. Engineering College
[5]U.G Student, Department of Electronics and Communication Engineering, R.M.D. Engineering College
[1]gp.ece@rmd.ac.in, [2]sts.ece@rmd.ac.in,[3] uec17428@rmd.ac.in, [4]uec17345@rmd.ac.in, [5]uec17430@rmd.ac.in.

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Abstract - Patients have become responsive to the importance of taking secure management and managing access to their medical information, thereby increasing the adoption of non-public health record systems. During any circumstances like the covid-19 pandemic, people adapted themselves towards technological improvements. We have seen many works were completed without human physical involvement. When we consider the healthcare domain the virtual platforms made were not used. One of the main reasons is there is no unique platform for the virtualization of the healthcare domain. As a result, the stability of the virtual health care services is lost. So here we came up with the idea of 'Virtual Assistant for Health Care Services. The virtual assistant for health care services key aim is to incorporate several hospitals. This project aims to provide patients with consistent and reliable medical solutions from seasoned doctors across the internet. This initiative also removes the need for redundant medical records. The patient will be able to save time and money as a result of this initiative. Telemedicine allows health care professionals to evaluate, diagnose and treat patients at a distance using telecommunications technology. It assists in the elimination of geographical barriers and can increase access to medical services that are not always accessible in remote rural areas. This initiative aims to bring healthcare services to people in remote areas that have access to the internet. Medical records generated in one hospital can be used in any other hospital that is linked to this site. It can monitor testing results as well as patient health information.

Keywords- Telemedicine; Web development;Medical Records; Patient health Monitoring

1. Introduction

The idea of jumping on an online application to consult your doctor a few raw throats or continual headaches could seem sort of utterly trendy issue, however, it should surprise you to find out how long telecommunications technologies are used for the delivery of tending. The approach has positively gained traction and becomes thought in exactly the previous few years, however, it's been around since the primary half of the twentieth century. The primary noted example of a case history transfer occurred in Pennsylvania in 1940 once radiology pictures were sent twenty-four miles between two cities over phone lines. Today, we predict nothing of causing knowledge from place to put, however, at the time the flexibility to induce the experience of a doctor. in another location was a big breakthrough. Another breakthrough occurred once clinicians at the University of Nebraska pioneered the utilization of video for tending functions in 1959. They discovered two-way TV transmission to send info to medical students across the field. In 1964, they used the technology to perform video consultations with patients and doctors at a state hospital. Rural Communities: Telemedicine clothed to be a perfect resolution in rural areas with restricted access to tending. One notable project within the Sixties was the results of a partnership between NASA and therefore, the Indian Health Services. It had been known as house Space Technology Applied to Rural Papago Advanced Health Care (STARPAHC). Mistreatment microwave technology transmitted x-ray pictures, electrocardiographs, and alternative medical info was sent to the Public Health Service hospital and accustomed to treat each Native Americans on the Papago Reservation and astronauts in the house. The success of the STARPAHC program semiconductor diode others to take a position within the advancement of telemedicine technology and fashioned the idea for the solutions we tend to use these days.

Starting early within the 1970s tending suppliers started deploying technology that allows a doctor. and patient in one location, ask a specialist in another mistreatment video conferencing instrumentation. This instrumentation was high-priced and troublesome to line up. It conjointly needed specialized coaching use. Therefore, whereas this approach did facilitate folks get access to specialized care, it is failed to eliminate the requirement to go to the doctor's workplace. The appearance of the web and therefore, the dawn of the mobile age has modified all that. Currently, their area unit straightforward to use applications for PCs and mobile devices that enable the patient to

attach with their doctor from anyplace. This makes it attainable for patients to receive primary, urgent, Associate, in Nursing specialty care while not the requirement for an in-person visit. Online-only tending choices give care on-demand 24×7. Wearable technologies represent another chance for remote patient observance, permitting physicians to judge a patient's very important signs in the period.

Fig 1 Telemedicine

2. Motivations for the research

All large enterprises need database systems for handling the information. One kind of those enterprises is the hospital. Because of the large number of patients, doctors, and other staff in hospitals, data processing becomes more crucial. Data Management in a hospital can be used for achieving the patient's information, arranging the doctor's schedule, and accounting business. Doctors should have the access to patient's records for giving the best diagnosis to cure the patient. On the other hand, the patient can access their lab results and all kinds of information that doctors indicate. The database helps to control the hospital's accounting business easily.

In a database management system,
1) All the information includes prescription surveys, diagnosis of patients.
2) The patients and the doctor can handle all information.
3) Patients can take appointment time for visiting.
4) They can access their information via the internet if the organization is online.
5) Administration can access the statistics about the hospital such as patient's capacity, number of employees, etc

In a study named, reasons for consulting a doctor on the internet: web survey of users of a doctor consultancy service, it was found that as computers are quite common, in every part of our life, in most developed nations it is quite obvious why convenience was a noteworthy factor behind participants picking up Internet consultations. Moreover, the asynchronous access to the Internet-based doctor consultancy service allows users to receive the services at any point of the day, the component which was applauded by many of the participants.

The confidentiality level in an encrypted conversation with a doctor is unmatched. The hospital will never have the capacity to give private consultation since you have to be available in the crowd to see the doctor. Subsequently, though medical records are kept undisclosed in password-protected systems and computers, the staff handling it is well known about your details. However, in an online consultation model, this is kept between you and your doctor with no other human interaction in between. So all data privacy and protection is maintained and remains very confidential. In the internet consultation, the individual may stay unknown thereby enabling inquirers to ask, e.g., sensitive and embarrassing questions. More than 33% of the participants rated the chance of being able to ask anonymously, suggesting that this feature may supplement regular health care.

3. Proposed model

The medical reports generated in one hospital are authorized by the representatives of other hospitals which are connected through this platform. Hence all the hospitals can use the same reports for diagnosis if the patient wishes to visit any other hospitals in the network. The patient is asked to register and authenticated to use the application assuring the data integrity in the application. The patient has to fill the 'OUT-PATIENT' form, to confirm the appointment with the doctor by paying the doctor's consultation fee. After confirmation of the appointment, the patient and the doctor will get an email reminder about the appointment for online consultation through a chat application. The laboratory personal is given an option to upload the digital medical reports into the

patient's profile which are later authorized by the representatives. These reports are also sent to the doctor who will generate the prescription. A copy of the prescription is sent to the pharmacy. The pharmacy personal delivers the medicine to the patient home. Before initiation of the delivery, the patient is asked to pay the pharmacy bill through an online payment.

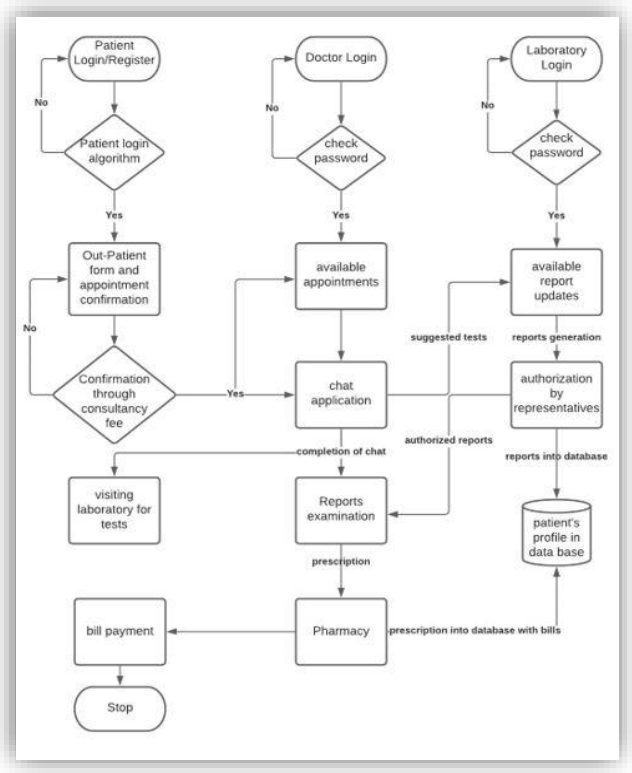

Fig 2 Flow diagram of Virtual Assistant for Healthcare Services

4. Login/registration:

A. Patient Login/Registration:

The Patient can login to avail the services. Once the patient logs-in, he is redirected to a personalized page where he can contact the concerned doctor for consultation (through a chat application) and selecting appointments. If it is the first time then the patient has to register and create his profile.

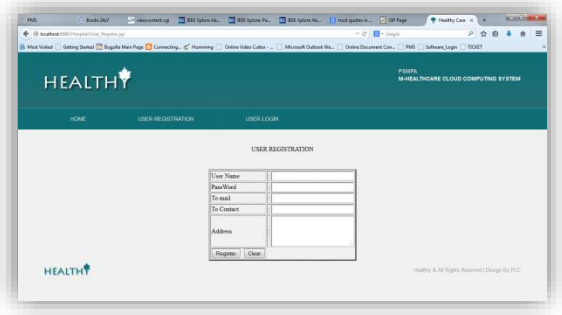

Fig. 3. Patient login

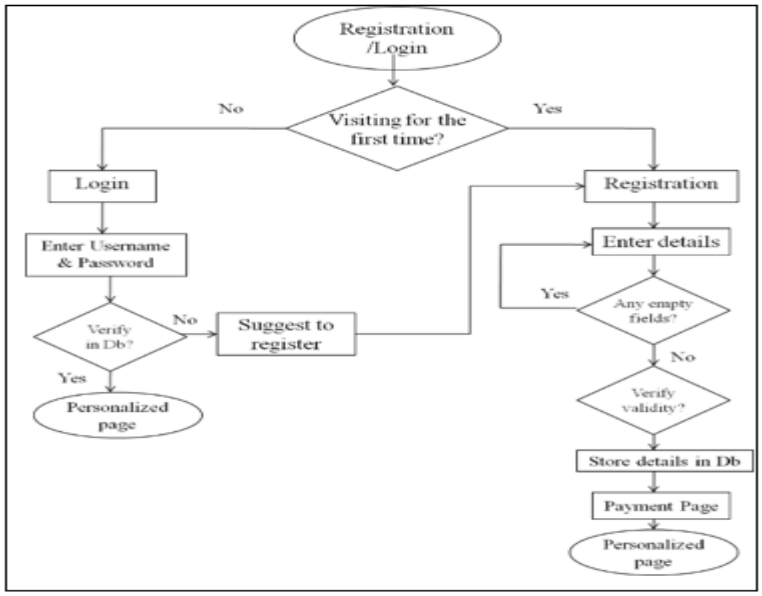

Fig. 4. flow diagram of patient login algorithm

B. Provider login:

The Provider acts as a representative and admin of a certain group or an individual hospital. The provider is the one who verifies the patient and their reports so they are accepted in any hospital of the organization. The provider will be having admin privileges and he is the responsible of addition or modification or deletion of the doctors.

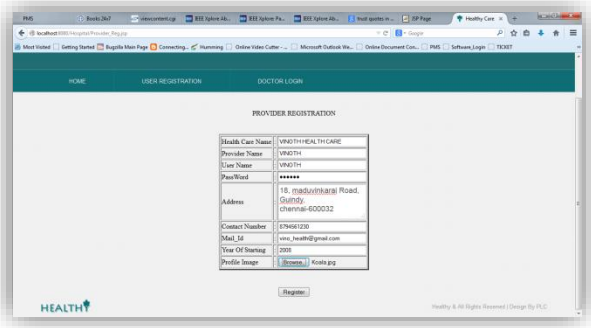

Fig. 5. Provider Registration

C. Doctor Login*:*

The Doctor is registered by provider under his hospitals. The provider gives the doctor his username and password. Once the doctor logs-in, he is redirected to a personalized page where he can view his available appointments.

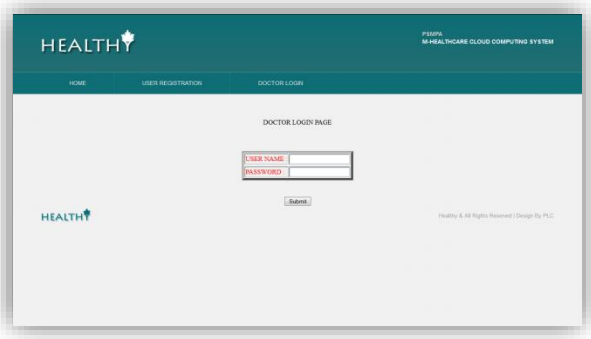

Fig. 6. Doctor Login

A. HOSPITAL FINDER MODULE:

Technological advancements which have shown a substantial growth concerned with each and every field of humanity, the rapid development that has occurred in web based application has become a very significant factor in achieving our daily tasks. In this modules, the user can able to find the nearest hospital by searching in the web application by their location.

B. ADMIN MODULE:

In this Module, a User must Authorized in an application and there is a provider side must add the doctors and hospitals for the further counselling for Patients or Users. Even Doctor Profile, Doctors only able to known the Password for their view of Counselling Information. The admin is going to verify the patient during the counselling and reports uploading into the server. All the privileges of this module are given to the provider.

C. CONSULTATION MODULE:

This module provides means for the patient to interact with the doctor and avail the services. This interaction between the patient and the doctor is achieved through a chat application. The patient can upload any of his previous reports which will beavailable for the doctor to download and the doctor can do the same for the reports and prescriptions. The patient's profile is updated with the reports and prescriptions that the concerned doctor suggests.

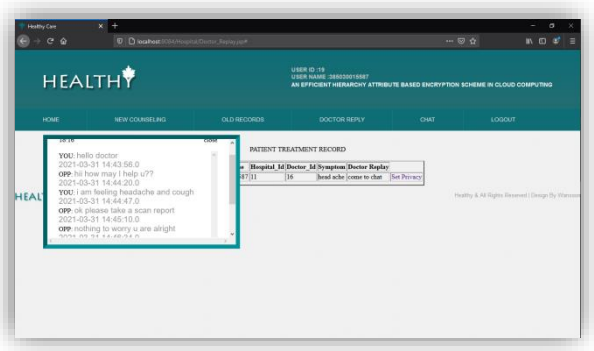

Fig. 7. Chat Application

D. DATABASE REPORT SEARCH MODULE*:*

In this module, admin can able to view overall users report, Users personal Records and User Counselling Records which are approved by the all the other hospital's admin. When anyone other than admin or doctor tries to access the report, the report is shown in the encrypted form (cipher text) or the document not found error. We had implemented one of the main goals of the Project it denotes security for viewing our personal information to all roles in an application. To prevent that we had proposed to use Attribute Based Encryption Algorithm for the access to encrypt the Selected Details to Restrict to view by others.

5. Experimental results

A. INPUT:

The major inputs for Web Based Accommodation can be categorized module-wise. Basically all the information is managed by the software and in order to access the information one has to produce one's identity by entering the user-id and password. Every user has their own domain of access beyond which the access is dynamically refrained rather denied.

B. OUTPUT:

The major outputs of the system are tables and reports. Tables are created dynamically to meet the requirements on demand. Reports, as it is obvious, carry the gist of the whole information that flows across the institution. This application must be able to produce output at different modules for different inputs.

6. Conclusion

The project helps us adapt to any situation of life like the covid19 pandemic or any other situation when an individual can't move around freely. It opens into a new era of technological development in society. It will make an individual reduce the cost of health test reports whenever they want to change the hospital and avoids duplication of the reports which in turn reduces the use of chemicals in the testing process.

7. Future work

This project becomes the foundation of the virtual medical business. In future, the project can use many IoT devices like smartwatch etc. for the collection of data and can make a way for remote monitoring of the patient's normal health status. It can also use various other technologies like Image processing for remote diagnosis. The current chat application can be developed to a video conferencing platform which can have a higher possibility of making it nearer to reality.

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