Virtual Hospital Management

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Abstract – One of the most common problems faced by people suffering from common ailments or maybe even major ones is the lack of immediate first aid consultation or a centralized service to a clinical database. Due to this lack of the knowledge of the standard operating procedure in such cases, these ailments might aggravate. This results in either physical or mental tension for the person suffering from such ailments. In some cases, the patient suffers from intense mental stress as they try to figure out the reason for their condition. The proposed system tries to eliminate their need to figure out their disease by giving them access to a centralized clinical repository in a much interactive way, just like in a virtual assistant, hence Virtual Hospital Management (VHM). The user gets asked several questions, each one contextually aware of the previous one. The user selects the ailments or their condition and thus a conclusion is reached. This project aims to develop a web service that can present information regarding the health issues and ailments & their history. At the end a precise prescription is generated. What this project can't ensure is the accuracy of the health condition that the service arrived at, and thus in such cases a physician must be contacted. These features thus eliminate the need to search for symptoms online.

1. INTRODUCTION

There has been an increase in the usage of mobile applications and web services that run on almost every platform there exists be it on mobile platforms like Windows mobile, Android, iOS etc. or Desktop platforms like Windows, macOS or LINUX. Also throughout the years, the technologies have received a massive spec bump thus supporting a better hardware and software. Our project is thus a web service made available to all the platforms. Following are the features that our web service aims to offer: -

Our web service stores the health records of several users on a remote server.It has a list of symptoms and a medical dictionary stored as a clinical repository stored onto a database located on the server side. Suggestions on improving health are also presented by the system which proposes tips such as sleep cycle, diet plans etc.Our application/service will also be verified by certified doctors and physicians in order to assure authenticity. .

While the diagnosis might not be accurate, nearby physicians are suggested as contacts to the user. Thus, we'll be working in collaboration with doctors.In collaboration with few pharmacies, users can order the prescribed medicines right at their doorstep.

In the existing system, the interface is not very user friendly. Also it lacks many basic features such as direct communication with physician and doctors for medical assistance. Features like online medicine delivery is also absent in the existing system. Also, personal allergies are not taken into account when recommending prescription to the user or patient. The main objective of the proposed system is to make the interaction between the user and the web service easier and less complicated. Physicians and doctors are suggested as contacts to the user as the prescription and conclusions provided by the system might not be not be accurate. It provides the location of nearest hospitals in case any emergency occurs. The system also provides the facility to send an email directly to any doctor of the same field.

2. OBJECTIVE

To automate the existing system, in healthcare domain.

3. TECHNICAL FEASIBILITY

Generally, feasibility studies precede technical development and project implementation. The assessment is based on a system requirement in terms of Input, Processes, Output, Fields, Programs, and Procedure. This can be quantified in terms of volumes of data, trends, frequency of updating, etc., in order to estimate whether the new system will perform adequately or not. Technological feasibility is carried out to determine the capability, in terms of software, hardware, personnel and expertise, to handle the completion of the project.

4. OPERATIONAL FEASIBILITY

Operational feasibility is a measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. The operational

1. To decrease the paperwork and enable the process with efficient, reliable record maintenance by using centralized database, thereby reducing chances of data loss.
2. To bridge the gap between individual users and doctors through online web facility.

5. IDENTIFICATION OF NEED

Virtual Hospital Management is very convenient to implement and quite easy to understand. The most important thing is that it can be implemented by users in their daily life. The need of designing such a web service is to act as a centralized base for all health related problems so that anyone with an internet facility can have access to it regardless of their time and place.

6. CONCLUSION OF FEASIBILITY STUDY

1) Technical feasibility:

The system can be implemented using computer software & hardware.

2) Operational Feasibility:

The system efficiently operates & reduces manual computation and time of processing, reducing cost of paperwork and human errors.

7. THEORY

This web service is basically the destination from where the user or patient can access their health records and can assess their symptoms for any ailment. Detailed features of this web service will contain or allow the following thing

PROFILE: -

USER/PATIENT: Every user/patient that uses this web service will have a user profile in which they would have access to their health records, their past assessments as well as access to a new symptom assessment.

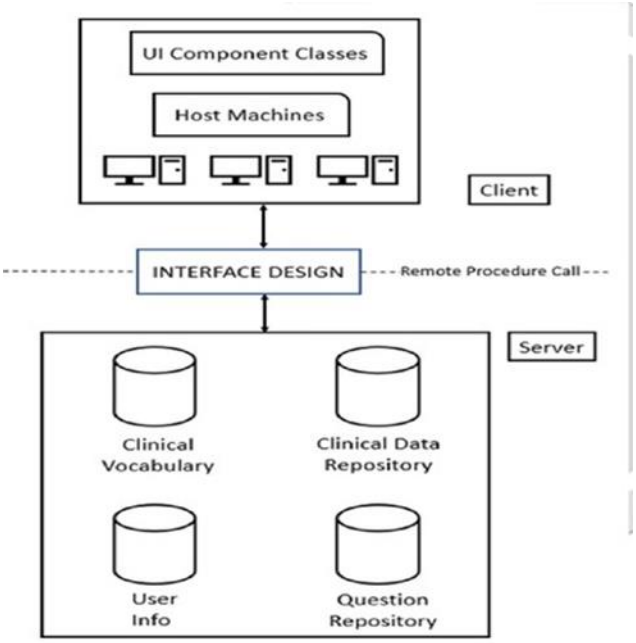
USER

PATIENTS: Patients have access to their health records, their past assessments as well as access to new symptom

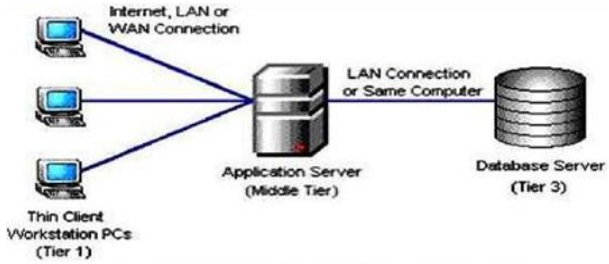
DOCTORS: Doctors have access to various health records of patients and also have the feature through which they can get in touch with their patients. PHARMACIES: Various pharmacies have the access to the prescription of a patient, should the patient want to order medicines online. These pharmacies deliver the prescribed medicines to the patient right at their doorstep.

8. SYSTEM ARCHITECTURE DIAGRAM

System architecture of the project contains different interfaces at both client and server system. Client system contains the interface or an UI component and server contains it's own interface for accessing and different databases for the storage of different task being done while using the url. Clinical database will contain the information about the doctors and patient.Clinical data repository data will contain information about your login and and active hour information. User info will contain the information like name, problem and symptoms. Question database will contain the sequence of questions which will be asked from the user.



9. DATABASE STRUCTURE



NUMBER OF MODULES

- After careful analysis the system has been identified to have the following modules:
- Login
- Registration
- Homepage
- Heath Details
- Assessment History
- New Symptoms Assessment
- Symptoms Assessment
- Diagnosis Display
- Ailment

- History
- Diagnosis
- Prescription
- Hospital Locator
- Mail Report

REGISTRATION

This module is used so that a new user/ patient can add their details into the database. A new user has to enter details like their name, contact information, blood group, address and the medical ailment if any, that they have suffered from in the past. They need to enter their email address, which is then later verified and also a password.

LOGIN

This module is used verify whether the user accessing the service has an account registered to their name onto the database. After a user has been registered to the website, their details get stored onto the database. Thus, they need not register to the system again. The login details provided are stored onto a discrete user info database and thus remains discrete.

HOMEPAGE

After the user has been logged onto to the system, a homepage is presented. It acts as a user friendly interface for ease of interaction between the user and the remote database. The homepage also acts as a centralized location for all the other modules present throughout the project. The sub-modules it contains, has been discussed as follows.

HEALTH DETAILS

It shows the health related details entered by the user or patient at the time of their registration. Thus details like their name, contact information, blood group as well as their previous health conditions have been summarized into this module.

ASSESSMENT HISTORY

This service is used to find out the health condition that the user is going through. Any health condition that the service has suggested to the user, shows up in this module. Thus it contains all the medical ailments' that the user has been predicted to have, by the system.

NEW SYMPTOMS ASSESSMENT

This module initiates a new symptoms assessment related to the present health condition that the user is currently facing. More on this in the next module.

SYMPTOMS ASSESSMENT

This module presents a list of questions to the user. These questions are presented one at a time. The user answers these questions by either choosing a symptom from a list of available symptoms that are present in the symptoms repository in the server side database. Since the system is contextually aware, every next question asked, is related to the answer of the previous question. The interface keeps on asking questions until the result if positively conclusive. After assessing the combination of answers, the ailment is concluded.

10. ADVANTAGES

Following are some of the advantages our system has to offer the proposed system eliminates the need for a user supposedly suffering from an ailment, going through several health care forums in order to arrive to an inconclusive result. Instead our system centralizes all the search keywords and symptoms into a centralized database on the server side. Hence the user has only place to go to in case they want to go through a website to consult online.

Many of the users suffering from an ailment do not know most of the time, what must be done first hand. Instead they tend to freak out and immediately try to contact the hospital. Thus they do net know the standard procedure of first aid. Our web service eliminates this by providing step by step procedure to counter these problems.

During any emergency situation, this website provides its user with the location and contact number of nearest medical facilities available in and around the locality.

Our website also stores the health records of its users so that in case a user wants to refer to their past health records, they can do so by going through our website. This database is monitored by our website staff on a daily basis to protect the individual information from getting leaked or misused. Unlike other system, the language of our website van be changed depending upon individual preference of the language given in by the user.

11. ACKNOWLEDGEMENT

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12. LIMITATION

- Since our application is web oriented, it won't work offline.
- The prediction made by the web service has chances of minimal inaccuracy.

13. CONCLUSION

Thus, Virtual Hospital Management is a very useful tool for to maintain the health records of the patients and users of this web service. It maintains the patient's or users' personal details. Doctors and health institutions can look into these records if need be. Thus, this system automates the excess amount of labor it takes to maintain these records on paper and also these records are monitored so that there are no chances of data leaks.

The system offers reliability and ease - of - access. It can be used as a base for creating and enhancing applications for viewing health records. Patients and doctors can view these records. Also a prediction system is offered for identifying health ailments. The proposed system thus provides a new way of computing and displaying records with responsive and attractive user - interface.

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