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ARTIFICIAL INTELLIGENCE BASED HEALTHCARE CHATBOT SYSTEM

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ABSTRACT

As time changes, people get more busy in their daily work so many times they ignore their health. In this high age of technology people do not get time to look at their health. For some non-life threatening symptoms many times it may happen that we need not ask for advice from doctor and ignoring such cause can lead to huge problems. So to overcome this situation we are going to introduce the DOC.BOT system which is an Artificial intelligence based Chatbot system which will provide solutions and advice for our daily health.

Keywords— Chatbot, text-to-text diagnosis, pattern matching

INTRODUCTION

Artificial Intelligence provides a new way to the healthcare system by analysing the symptoms and provides accurate diagnosis. It is composed of complex algorithms which provide supreme power so that it would have thinking capacity like human beings. By using a Pattern matching of complex algorithms which provide supreme power so that it would have thinking capacity like human beings. By using a Pattern matching algorithm our bot analyses what exactly users want to say. There are very few Chatbot in the medical field. Chatbot is a kind of computer program that interacts with users using natural language. Healthcare Chatbot is a system which helps to reduce the cost so that patients do not need to take appointments and pay huge amounts just for one visit. In this system we are going to identify the disease by text-to-text conversation using the Chatbot system and provide diagnosis based on their symptoms. Artificial intelligence based healthcare Chatbot system gives daily reports to the user about their health and provides advice for healthy life so that they can follow that and avoid diseases. Since doctors' language is a little bit heavy to understand normal people so that Our Artificial Intelligence based healthcare Chatbot system builds text to text conversation agents diagnose the patients and explains their condition using natural language so it is easy for normal people to understand their health problems. To provide 24*7 online healthcare support by hospitals Chatbot system will help.

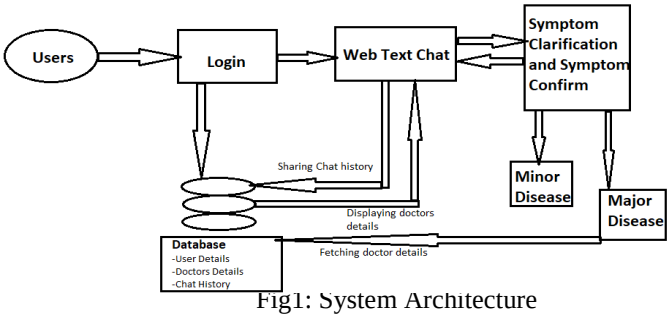


Fig1: System Architecture

LITERATURE REVIEW

Sometimes, patients have hesitation to share their problems comfortably. That's why it may happen that the doctor fails to identify the disease and cannot provide satisfactory diagnosis. Artificial intelligence based healthcare system provides a suitable way for patients to communicate without hesitation by text-to text conversation where by using natural language patient can share their symptoms so that based on their symptoms our system identifies disease and provide necessary solution and also day to day healthcare advice so that patient can avoid diseases and get more information about their health. The Chatbot will act as a virtual doctor and allow patients to interact with the virtual doctor. For the development of this Chatbot natural language processing and pattern matching algorithm is used. It is developed using the python language. [1] The Chatbot will act as a virtual doctor and make it possible for the patient to interact with the virtual doctor. Our system focuses solely on the analysis of natural language to extract symptoms, which could make it easier for elderly, less technical users to communicate. [4] The Natural Language Processing permits users to ask a query. The machine understands the important elements from the users input that may relate to particular features in a data set, and gives an answer. The use of NLP is to recognize the meaning of the text. The stored information contains the text file like the symptoms related to particular disease on the basis of which we can predict the disease. Paper uses Artificial intelligence for prediction of the disease based on the symptoms and gives the list of available treatments. It can facilitate us to figure out the problem and to validate the solution. [5] Pattern matching strategy is utilized as a part of most Chatbot and it is very regularly being referred to as a reply framework relying upon coordinating kinds. Patterns can be created by one self using logical operators that are AND, OR, NOT. [6]

THE PROPOSED METHOD

There is a requirement of such a system which is helpful in diagnosis and would make the diagnosis easy and interacting like casual chat. We propose a system which is able to hack a conversation with the user. We propose a Chatbot that will ask questions from users to diagnose his or her problem. It allows the patient to directly interact with it and tell his or her problem openly. The old Chatbot is a client communication system and their best effort is a question and answer page on a website. In the proposed system the Chatbot will gather information from patients related to their conditions. The information must reach the correct diagnosis. The system helps users to submit their complaints and queries regarding their health. The Chatbot will clarify the user's symptoms with a series of questions and the symptom confirmation will be done. Each symptom being entered is compared to the symptoms of the common diseases in the list of diseases in the database. The diseases are shortlisted based on the end users input on the question evaluation. The accurate disease is identified and specified to the end user by the Chatbot. The working of the system is as follows-

- **Home Page:**

In the home page there is About and Contact icon is provided after clicking on it the user gets directed towards the About and contact page where information about the DOC.BOT website and also contact information is provided.

- **User Login:**

Users need to register on Chatbot System for getting access. Then they can ask queries regarding healthcare and medical details.

- **Symptom check:**

After login when users start chatting with bot by default user gets welcome message from bot and checks symptom button. After clicking on the check symptom button then the user gets a text box where they need to specify symptoms they have. Then bot will ask for gender and user need to select there gender. Then bot will ask time period from which user have this symptom for this bot provide four options such as few days, few months, few weeks or more than three months. Then for better analyzing bot provides a list of possible causes and users need to select symptoms they have. After selecting symptoms bot analyze it and provide a consultation report.

- **Consultation Report:**

After analyzing symptoms by using symptoms and disease mapping tables which we have created in the database bot will predict possible causes users may have and provide article links for the same disease so that users can get detailed information about precautions they need to take and when to see a doctor.

- **Disease Prediction:**

Based on the symptoms, prediction of the disease is done.

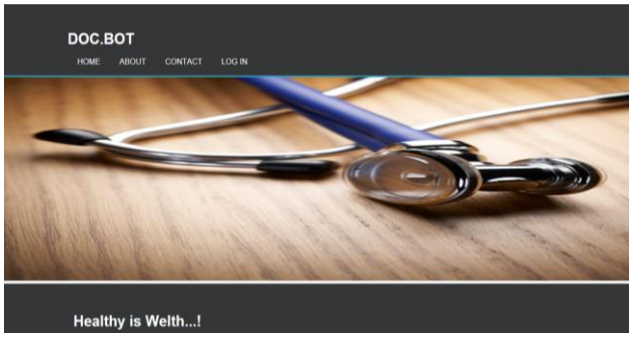
The satisfaction of the customer is the major concern of our system. The actual welfare of the Chatbot is to facilitate the people by giving proper guidance regarding good health and healthy leaving. The high cost of our healthcare system can often be attributed to the lack of patient engagement after they leave the clinic or hospital. But the Chatbot can provide healthcare at low cost and improved treatment if the doctors and the patients keep in touch after their consultation. Advantage of Chatbot will be easy and correct diagnosis of disorders.

- First users need to register with DOC.BOT to create their username and password for authentication .
- After successfully logging in, the user is redirected to the dashboard page where actual interaction will be done.
- The next phase in which bot will provide options either the user wants symptom check .
- In symptom check according to users symptoms bot will ask a few more questions for better analysis.
- After getting symptoms bot will provide a consultation report in which the most accurate disease will be predicted by using the database where mapping of diseases with symptoms is done.

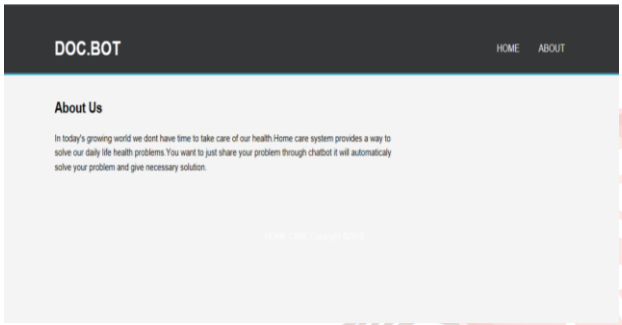
After clicking on disease, the user will be redirected to the same disease article page where the user will find overall info about disease and how to cure instructions.

RESULTS AND ANALYSIS

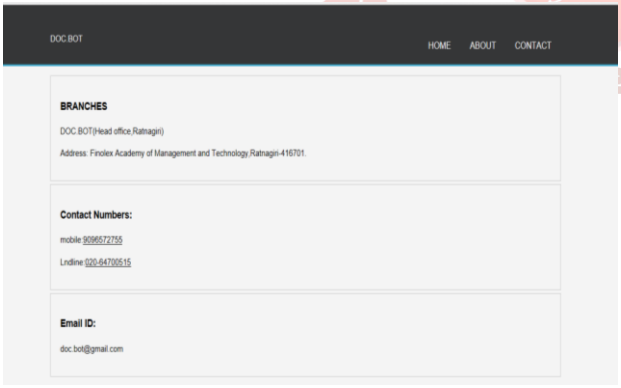
a. *Home page*



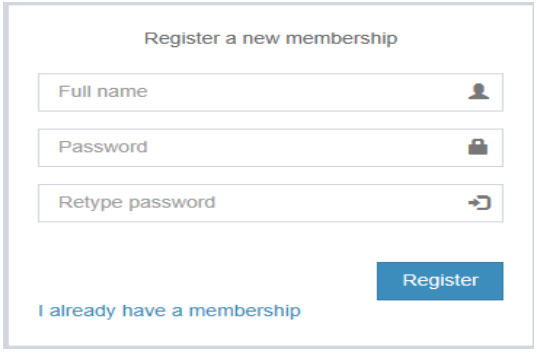
b. *About page*



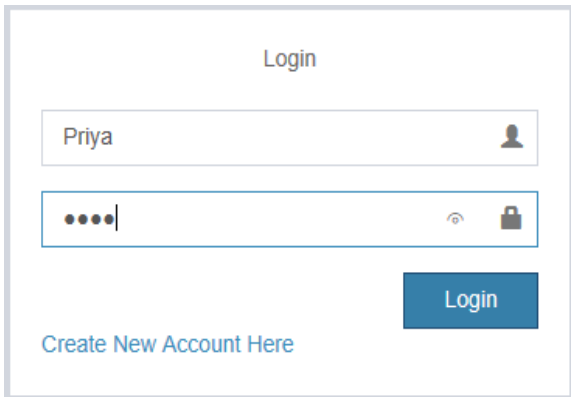
c. *Contact page*



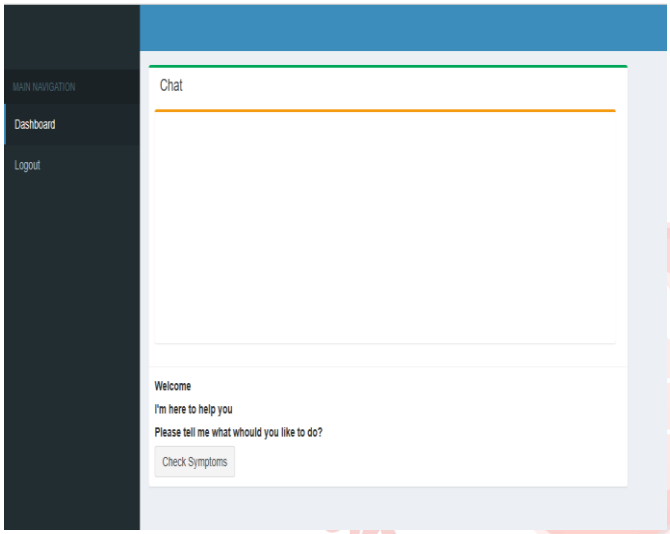
d. *Register*



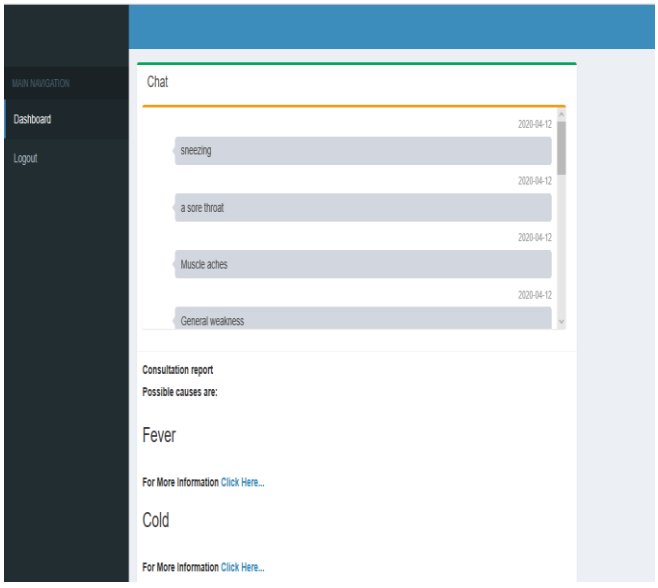
e. *Login*



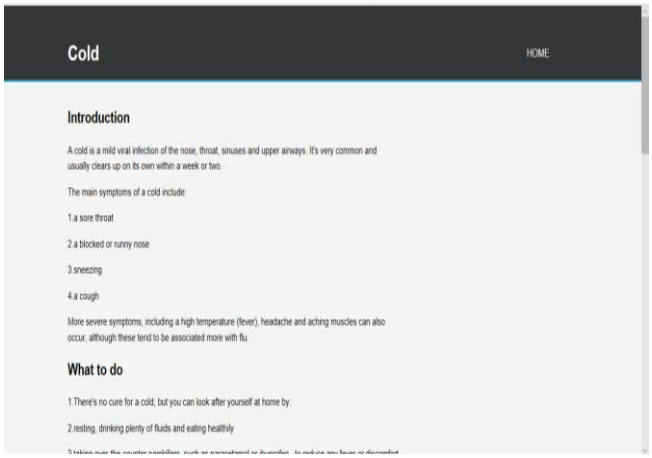
f. *Chatbot*



g. *Consultation Report*



h. *Article Page*



CONCLUSION

The Chatbot is user friendly as it can allow the person who can chat in their own language in mobile app or desktop version. A medical Chatbot provides personalized diagnosis based on symptoms. We are using natural language in order to communicate with a computer with users on their term. Users can get related answers displayed on websites. Analysis of symptoms by Artificial intelligence based healthcare systems is well tested and gives accurate results for diagnosis of disease and provides accurate advice. Nowadays it is widely acceptable.

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