Artificial Intelligence based Healthcare Chatbot System

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Abstract: In today's growing age of technology Health care is important. Sometimes it may happen that we need not ask for advice from doctor for some non-life threatening problems and ignoring such problems can cause huge problem. So to overcome from this problem we are going to introduce healthcare system which is Artificial intelligence based Chatbot system which will provide solution and advice for our daily health based on our symptoms which we will going to provide by text-to-text diagnosis.

IndexTerms–**Machine learning, Chatbot, text-to-text diagnosis, pattern matching, natural language processing (NLP)**

I. INTRODUCTION

Artificial Intelligence in healthcare system is an essential one. It composed of complex algorithm which provides supreme power so that it would have thinking capacity as like human beings. There is very less number of Chatbot in a medical field. Chatbot are such kind of computer programs that interact with users using natural language. Healthcare Chatbot is a system which helps to reduce the cost so that patient not need to take appointment and pay huge amount just for one visit. In this system we are going to identify the disease by text-to-text conversation using Chatbot system and provide diagnosis based on their symptoms. Artificial intelligence based healthcare Chatbot system gives daily report to the user about their health and provide advice information for healthy life so that they can follow that and avoid diseases. Since doctors language is little bit heavy to understand normal people so that Our Artificial Intelligence based healthcare Chatbot system builds text to text conversation agent diagnosis the patients and explains their condition using natural language so it is easy for normal people to understand their health problem. This healthcare Chatbot system will help hospitals to provide healthcare support online 24*7.

LITERATURE REVIEW

Sometimes, patients have hesitation to share their problems comfortably that's why it may happen 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 allows patient 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 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 understand 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 give the list of available treatments. It can facilitate us to figure out the problem and to validate the solution. [5] Pattern matching strategy is utilize as a part of most Chatbot and it is very regular being referred to reply framework relying upon coordinating   kinds. Pattern can be created by one self using logical operators that is AND, OR, NOT. [6]
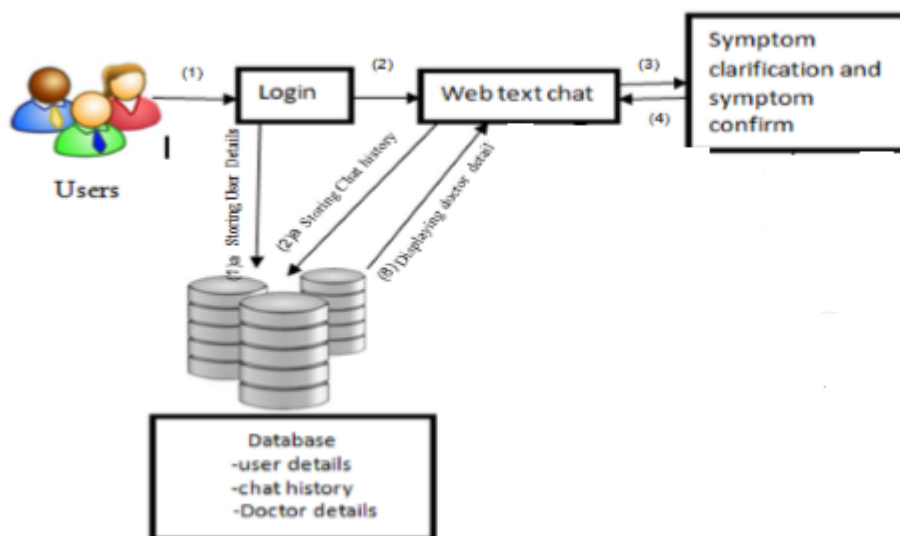
II. PROPOSED SYSTEM

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 user to diagnose his or her problem. It allows patient to directly interact with it and tell his or her problem openly. The old Chatbot are 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 diagnoses. The system helps users to submit their complaints and queries regarding the health. The Chatbot will clarify the user's symptoms with 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 users can also talk to a virtual doctor the other time whenever required about the another set of symptoms after receiving their first diagnosis.

 The working of the system is as follows-

- **User Login:**

  User need to register on Chatbot System for getting access. Then they can ask queries regarding healthcare and medical details. [5]

- **Ask some Questions:**

  Regarding medical details and healthcare related issues ask questions by text-to-text conversation using natural languages. [5]

- **Medicine dosage detail based on age:**

  Software get age from registration data and based on age and predicted disease it provides medicine dosage details.[5]

- **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 the 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 clinic or hospital. But the Chatbot can provide healthcare in low cost an 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.

The above Figure proceeds with the users login where the users' details will be stored in the database. Then the user can start their conversation with the chatbot and it will be stored in the database for future reference. The chatbot will clarify the users symptoms with serious of questions and the symptom conformation will be done.

III. CONCLUSION

Artificial Intelligence plays important role in today's world. Artificial Intelligence based Chatbot system uses complex algorithm which thinks as like human intelligence. The Chatbot are 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 processing in order to communicate a computer with user in their term. User can get related answers displayed on android app. Advice from Artificial intelligence based healthcare system is well tested and gives accurate result for diagnosis of disease and provide accurate advice. Now a days it is widely acceptable.

IV. FUTURE SCOPE

 Future scope of the Chatbot is very vast as future era is messaging app as people spend more time on messaging app than other. Thus by making use of this Chatbot whether the people are so far from each other, the only thing which is required is tablet or smartphone. Audio system can also be include in the system to make the Chatbot more interactive.

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