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## REAL TIME HEALTHCARE CHATBOT USING PYTHON

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### ABSTRACT

With increasing population of India, increasing birth rate and decreasing death rate due to advancement in the medical field it's found that numbers of doctors are less to serve the needs of the increasing population. This scenario can be better understood while walking through the city's government hospitals where the less availability of the doctors is the major cause behind the improper treatment of the patients and in certain scenarios the resultant death. Sometimes even doctors can make mistakes in providing the correct treatment resulting in the death of a patient. To encounter such cases there is a need for the smart and Intelligent chatbot who can provide advice to the doctors and sometimes even patients about what to do in such cases which ultimately results in the saving the life of hundreds of people. The AI based medical chatbot on which this research topic is based deals with providing medical advice in such scenarios because sometimes doctors can even make mistakes while observing the symptoms but the machine which is specifically developed for it can't make such mistakes. This AI based medical chatbot can take decisions as per the request of the patient. For this it uses its own database and in certain scenarios where something isn't available in its database as per the request of the user, it collects the information from the search engine like Google and gives it to the user in the Audio format like Google does.

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### I. INTRODUCTION

The Now a day's chatbots can be seen in every industry to guide the user as per their need. They are found in IRCTC with name of Disha chatbot, in banks and also in different online travel companies like MakeMyTrip. As we are moving toward the digitalization their demand in the market is keep on increasing day by day all the time.

The increasing population of the India and availability of the less doctors to serve the need of the increasing population is the major cause behind the need of the medical chatbot in the medical industry. Even sometime doctors can make mistake while making decision regarding the cause of symptoms in patients thus risking the life of patient. For example, during the decade of 90's Mohammed Binarize who was also known by the name of the 'Giant killer' was one of the dominating bodybuilders in the bodybuilding industry. He has died because of Hypokalemia (means high potassium level) in his body. Because of this excess potassium level, he was getting the cramps on the body. The doctors were unable to understand what exactly is happening and they were came on conclusion that Mohammed is potassium deficient which creating the cramps on the body.

Thus, doctors have injected more potassium in his body result in spreading of the cramp toward his heart and ultimate death. There is even lot more cases where even doctors can have made mistake. Thus, to avoid such scenario there is the need of medical chatbot who can guide the doctors about what to do in such critical cases. Its application is not only limited till the doctors but they can also be utilized by the normal human being as in the case of emergency where It can guide the user about the primary treatments which should be taken by the person under treatment along with the person is suffering with a certain disease then by simply giving the answer of few of the questions asked by chatbot, it can judge the kind of disease a person is suffering with. After this if a person wants to know about the precautions and the remedies that he/she should take then chatbot can also give the information regarding it.

### II. METHODOLOGY

Method Flora Amato [1] paper was based on the concept of the Deep machine learning and Artificial intelligence; it allows the application to interact with patient in a manner that doctor does. For creating such powerful application researcher has used Watson conversation service which is designed and trained by the blue mix platform.

Priyasankari. M [2] proposed an idea in which it uses user dialogue. User dialogue is a linear design that proceeds from symptom extraction to symptom mapping, where it defines the corresponding symptom then diagnosis the patient where it's a major or minor disease.

Tobias Cowitch [4] says that in past year's text based chatbots are made. They are working on few diseases only. They are making application mobile coach in which they using mobile chat app in which patients can communicate with doctor. Doctor will be chatting with them daily and suggest them how to maintain their health. They can give them advices and suggestions. They are fetching data from Google & doctor.

BenildaEleonor [3] the paper introduces a Pharma Bot: A Pediatric Generic Medicine Consultant Chatbot. Pharma Bot which is a conversational chatbot that is designed to prescribe, suggest and give information on generic medicines for children. Human machine as a technology integrates different areas and the computational. The researchers used descriptive method in the study. The researchers use Left and Right Parsing Algorithm.

### III. EXISTING SYSTEM

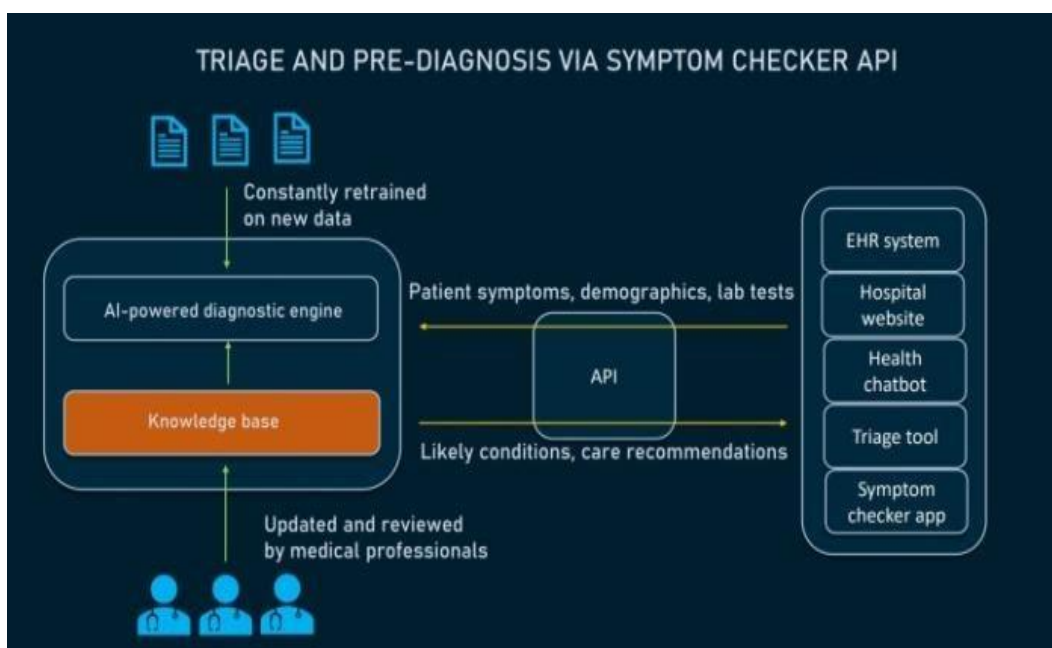
There are a lot of medical healthcare chatbots that are being developed by the developer's day by day. These are also used in many hospitals to know the symptoms and diseases that are not even familiar for some doctors. Some chatbots are also used by normal people to check their health condition without going to hospital. But these chatbots has a drawback that not all the people can access them. Visually challenged people cannot use these chatbots as they are "text-based healthcare bots" as they cannot use the computer or mobile phones like normal people.

### IV. PROPOSED SYSTEM

The proposed system of real-life healthcare chatbot is based on completely very simple and effective idea that can also be used by the visually challenged people. It uses the speech recognition concept through which the chatbot can listen to the user's voice and take it as an input and provides the results according to it. Also, the chatbot can speak that means it can deliver voice output. So that even visually challenged people can access this chatbot and get their results accordingly.

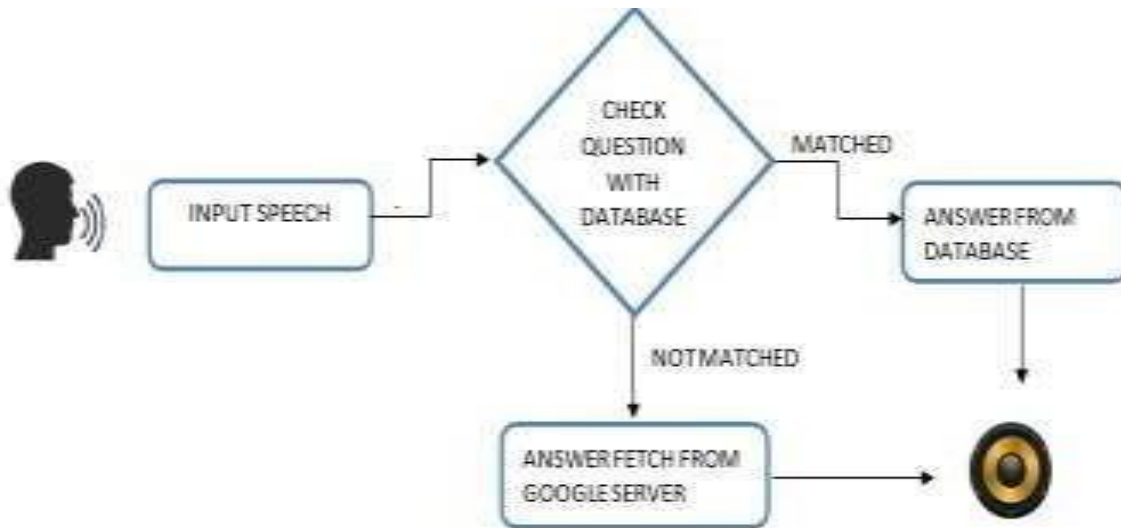
Along with this, this project is developed using Api Medic API (called Application Programming Interface) through which the symptoms can be analysed and diagnosed perfectly. The Api Medic is developed using Artificial Intelligence (AI) algorithms through which it can give accurate results according to the user input. IBM cloud services are used to develop the user-friendly interface so that the interface will be very simple to handle.

### V. MODELING AND ANALYSIS



**Figure 1:** Triage and pre-diagnosis via symptom checker API

IBM Watson Assistant for Health Benefits can drive fast, dynamic and personalized interactions with your members, at scale. It answers real-world questions about complex health plan benefits quickly and easily, in natural language that is easy to understand. Also, it helps the visually challenged people to use these chatbot without some other people’s help. The Api Medic acts as an interface to fetch the details with a secured way of transaction calls.



**Figure 2**

The electronic connection between the hard drive and processor has undergone a number of changes over time. Each interface change has improved the data transfer speed and ease with which the hard drive is handled by the motherboard in the computer. The current standard interface is SATA, the Serial Advanced Technology Attachment

**VI. RESULTS AND DISCUSSION**

The Health-Care Chat Bot System should be written in Python, GUI links and a simple, accessible network API. The system must provide a capacity for parallel operation and system design should not introduce scalability issues with regard to the number of surface computers, tablets or displays connected at any one time. The end system should also allow for seamless recovery, without data loss, from individual device failure. There must be a strong audit chain with all system actions logged. While interfaces are worth noting that this system is likely to conform to what is available. With that in mind, the most adaptable and portable technologies should be used for the implementation. The system has criticality in so far as it is a live system. If the system is down, then customers must not notice, or notice that the system recovers quickly (seconds). The system must be reliable enough to run, crash and glitch free more or less indefinitely, or facilitate error recovery strong enough such that glitches are never revealed to its end-users.

**VII. CONCLUSION**

All Our medical chatbot provide medical assistance to the patients for some of the general diseases like fever, cold, typhoid, malaria, jaundice etc. We are inventing the system because of the need of the increasing population of our country. Such systems are available in foreign but not in our country. As we know well about it that the numbers of doctors are less to serve the need of the patient. This scenario can be better understood by walking through the city’s government hospitals.

Thus, the medical chatbot will give the medical assistance to the patients while the doctor is not available which will ultimately improve the efficiency & performance of the medical industry by decreasing the death rate.

**VIII. REFERENCES**

[1] Jadhav, K.P.; Thorat, S.A. Towards Designing Conversational Agent Systems. In Advances in Intelligent Systems and Computing; Springer: Berlin, Germany, 2020. [Google Scholar].

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- [2] Battening, G.; di Canio, M.; Chintalapudi, N.; Amenta, F.; Nittari, G. Development of physical training smartphone application to maintain fitness levels in seafarers. *Int. Marit. Health* 2019, 70, 180–186. [Google Scholar] [CrossRef] [PubMed]
- [3] Yan, R. “Chitty-chitty-chat bot”: Deep learning for conversational AI. In *Proceedings of the Twenty Seventh International Joint Conference on Artificial Intelligence (IJCAI-18)*, Stockholm, Sweden, 13–19 July 2018. [Google Scholar]
- [4] Tobias Kowatsch, “Text-based Healthcare Chatbots Supporting Patient and Health”, 01 October 2017.
- [5] Chin-Yuan Huang, Ming-Chin Yang, Chin-Yu Huang, “A Chatbot-supported Smart Wireless Interactive Healthcare System for Weight Control and Health Promotion”, proceeding of the IEEE, April-2018.
- [6] Boukricha, H., Wachsmuth, I.: Modeling Empathy for a Virtual Human: How, When and to What Extent. *The 10th International Conference on Autonomous Agents and Multiagent Systems-Volume 3. International Foundation for Autonomous Agents and Multiagent Systems*, 2011., pp.1135–1136