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# Medbot: Artificial Intelligence based Interactive Chatbot for Assisting with Telephonic Health Checkup Service Post COVID-19

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**ABSTRACT:** By utilising a conversational artificial intelligence-based application, telemedicine can aid patients by allowing them to receive supportive treatment without having to visit a hospital. As a result, telehealth will transform in-person care into remote patient connection quickly and drastically. Existing system get lots of time to execute as well as it has low accuracy. Because of this reason we propose our system Chatbot for assisting with Telephonic Health checkup service post COVID-19 by using NLP process and Fuzzy logic.

**KEYWORDS:** Chatbot, NLP (Natural Language Processing), Cloud computing, Fuzzy logic.

## I. INTRODUCTION

Chatbots powered by Artificial Intelligence (AI) are exemplifying the function of a virtual assistant that can manage a conversation via speech or textual tactics in the current digitalization era. It retrieves responses, conducts activities, and makes recommendations based on the user's wants using spoken inquiry. They adapt to the user's individual language usages, searches, and preferences over time.

A conversational bot with a voice and/or chat interface can help overcome the current challenges to making primary healthcare affordable, accessible, and possibly sustainable in the rising digital economy.

Virtual assistants are now available in every country because to AI advancements. The rapid service and personalised user experience open up a lot of opportunities for delivering Tele-health utilising conversational AI.

Chatbots use a circle called deep learning, a kind of AI in which a neural association will unravel conversation, knowledge, and unmistakable models and present data through the layers of the association. The next layer extends to the first layer, etc., for more detailed effects, each time the Artificial Intelligence is faced with a comparative query or problem.

The implementation of chatbot eliminates the cost of human requirement to perform these tasks that will help the organization to operate in fewer budgets. This character of chatbot makes organizations engage with tons of users without having to worry about monetary assets to keep resources working all the time. The strangeness of the

Chatbots claims that various individuals are changing their busy work and life plans. However, they also have important implications in industry, where they could smooth out processes and improve productivity. Chatbots have a long path to discover before they understand their maximum capacity.

## II. LITERATURE REVIEW

Mahmoud M. Elmesalawy et.al [1] The worldwide epidemic of COVID-19 has sparked a surge of hobby in e-studying. However, for industries that require laboratory activities, along with engineering, science, and technology, the dearth of ok on-line laboratory control structures has furnished a unique issue. The authors' studies outlines the standards and structure for a bendy AI-primarily based totally laboratory studying gadget (LLS) that may behavior on-line laboratory trials. The consequences of a survey for a particular set of LLS functions are used to elicit LLS layout needs.

EslamAmer [2] The authors display an advanced chatbot gadget that may talk with human beings and solution queries approximately the COVID-19 of their study. To address the famous task of query answering, the author's answer employs the pre-educated Google BERT language model. For the query-answering task, they upload architectural stages to the BERT.

W. Astuti et.al [3] In the sphere of herbal language processing, the chatbot is a famous dialogue gadget (NLP). Chatbots are designed to facilitate conversations among human beings and machines. COVID-19 is a sort of Corona vicinage micro organism belonging to the Coronaviridae (CoV) own circle of relatives that reasons main breathing troubles in human beings. In this author's article, the RASA framework is utilised to are expecting chatbot responses to COVID-19 queries, and the DIET Classifier pipeline is used for three hundred schooling data.

Marc Brodsky et.al [4], In reaction to a July 2020 Centres for Disease Control and Prevention guide that defined fatigue and different purposeful problems, an Integrative Medicine Center designed a post-COVID-19 myalgic encephalomyelitis (ME) programme. The intention is to provide procedure development records on adjustments in health-associated quality-of-life (HRQOL) in "lengthy hauler" patients.

Ravindra Ganesh et.al [5] s, It is envisioned that as much as 10% of COVID-19 sufferers can have long-time period post-COVID signs. After the intense contamination has subsided, those signs might also additionally stay for weeks or months. The reason of this studies become to enlarge our know-how of numerous post-acute problems and medical outcomes. The important reason become to apply the Patient-Reported Outcomes Measurement Information System (PROMIS®) to gather post-COVID contamination information a good way to decide the superiority and functions of post-COVID impairments. The ensuing measurements have been used to assess the physical, mental, and social fitness of the sufferers.

Rafael Mellado-Silva et.al [6] Chatbots have revolutionised how agencies have interaction with their personnel and clients each internally and publicly. They have had a right away have an effect on on time financial savings in company operations, stepped forward enjoy, and economic financial savings for people who enforce them. At the instructional level, a lot of digital assistant reports had been valued, with promising consequences in phrases of the way the equipment are carried out to college students' mastering outcomes. This have a look at describes the enjoy of accounting college students who used a policies-primarily based totally chatbot with choice timber to educate policies associated with tax manage processes. For COVID-19 considerations, the have a look at cantered on far flung mastering.

Nourch`eneOuerhani et.al [7] The authors' purpose of their paintings is to create COVID-Chatbot, a clever omnipresent chatbot for COVID-19 guide all through and after quarantine that engages with someone to elevate his or her attention of the actual chance of this outbreak. Using herbal language processing, COVID-Chatbot also can understand and manipulate pressure all through and after lock-down and quarantine periods (NLP). COVID-effective Chabot's messaging and approach of verbal exchange can be capable of help reduce the unfold of COVID-19.

AsmaChanna et.al [8] This paper via way of means of the authors examines numerous e-fitness wearable gadgets that useful resource within side the early detection of COVID-19 signs, in addition to a top level view of a few synthetic intelligence and gadget mastering tactics used on CT-test or Chest X-ray photos to refine affected person diagnosis. Finally, the authors' findings emphasises the want of clever chatbots that could assist folks who are burdened or hectic all through quarantine. These chatbots can offer psychiatric remedy in a remoted setting, which may be pretty beneficial.

Stuart J. Barnes et.al [9], This new surroundings has provided the data control studies network with unheard of probabilities to do studies on the way to have a enormous effect on preparation in those and different areas. They are basically on the reducing aspect of recent virtual advancements, and that they should try to create exemplars which could serve to chart the destiny path of virtual worldwide society for the advantage of everybody. Nonetheless, the problems of digitization were increased, and within side the post-COVID era, they should be higher recounted and addressed. The COVID-19 pandemic has created possibilities and problems in data control, in keeping with this author's article. It is going into outstanding duration approximately the results for studies and preparation.

Patients and physicians are the 2 maximum in all likelihood customers of healthcare voice assistants. These programmes permit medical doctors to view and file affected person data. It is a much less steeply-priced alternative for sufferers; AI-enabled digital assistants which could offer 24x7 care to a huge variety of sufferers. Chronic disorder sufferers, disabled sufferers, and sufferers residing in rural and distant places might all advantage from such state-of-



the-art digital helpers. There are several benefits to the usage of those structures: Physicians spend much less time at the job, affected person statistics is extra secure, and healthcare data is to be had on demand, making healthcare extra handy and reasonably-priced for everyone. [10].

A. Fadhils et al., [11] The paintings demonstrates how smart conversational structures can be used to have interaction with aged humans which will gather data and hold ongoing tracking in their fitness problems, in particular when they were discharged from the hospital. It suggests a clinical notion gadget this is especially constructed to interact with the user, functioning as a physician.

Ajay S. Laddkat et.al [12] This observe discusses the tuning of matched filters as an critical factor. This record explains the way to adapt and adjust matched clear out responses for smooth Hard Exudate segmentation. It additionally consists of graphical consequences for diverse sigma values and the way the algorithm's accuracy varies with them. Experimentation suggests that categorization of exudate vs. non-exudate pixels is 99.sixty two percentage accurate, and challenge stage accuracy is 93.seventy five percentage for recognising abnormal (with exudates) and normal (without exudates) photos, respectively.

### III. PROBLEM STATEMENT

To design and develop NLP based chatbot for assisting with Telephonic Health checkups service post COVID-19, which will be able to fix patient's appointment with respective doctor.

### IV. EXISTING SYSTEM

In the existing system we see that the chatbot for covid 19 patients by using hybrid methodology. Server less allows users to integrate stateless functions into platform architectures. Because of this statelessness, each invocation is distinct from the ones before it. Existing application's backend architecture is provided by Firebase Cloud Functions and Google Cloud Platform.

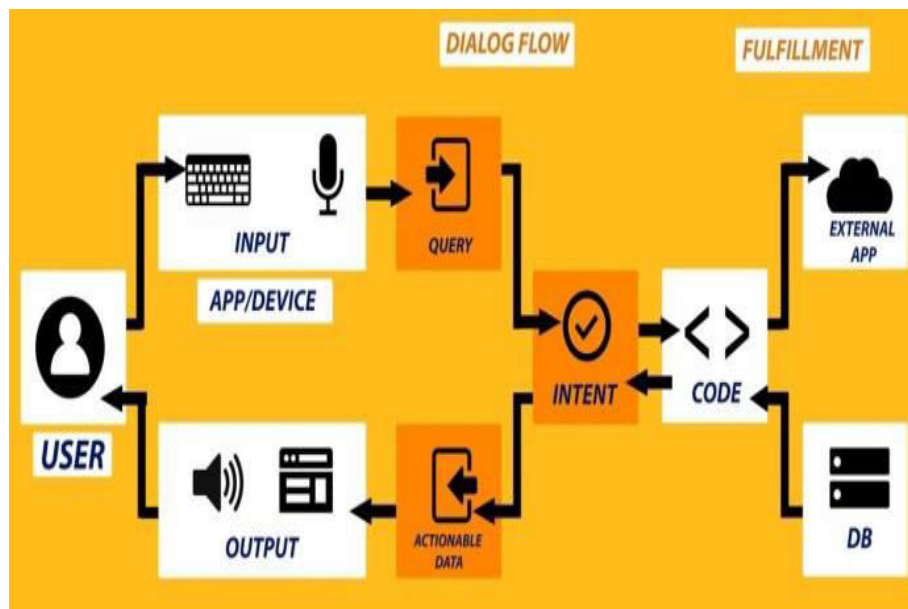


Fig 1.1: Block diagram of Existing System

Tele-health is the electronic and telecommunications-based distribution of health-related services. It enables healthcare providers to give long-distance patients with care, counselling, reminders, education, monitoring, and remote admissions. A chatbot is a type of conversational agent that communicates with users using natural language. Despite the fact that some apps operate as virtual healthcare consultants, none of them give generic healthcare information, preventive measures, home remedies, or counselling for the Indian market with multilingual support.

By using this existing system we see that the system get lots of time to execute hence it has very lengthy process as well as it does not get high accuracy. To overcome these problems we propose our system by using NLP and Fuzzy logic. User uses the web application that solves the query of user. Web interface provides chatbot services for user. First user gets the message that what are the symptoms of user? Then after the users answer symptoms are not too serious then they provide the tablets name or some medical treatment. If symptoms of user are serious then they gives the references of doctors. NLP classifies input alphabet according to extracted features. Dataset of alphanumerical alphabets is feed to NLP for training. Letters identified then converted to text file. System stored each and every alphabet and group them as a word in text file only when a space is detected. Again after giving a space it resumes grouping of alphabet into words w.r.t. Space. This sentence is then organized and output is given in forms text.

## V. ALGORITHM

The user accesses a web application that answers the user's question. The user can access chatbot services using a web interface. The user is first given the message, "What are your symptoms?" Then, if the users' problems aren't too serious, they're given the name of the drug or any medical remedy. If the user's symptoms are severe, they provide doctor referrals. The retrieved features are used by NLP to classify the input alphabet. NLP is trained using a dataset of alphanumerical alphabets. After identifying the letters, they were converted to a text file. When a space is detected, the system stores each alphabet individually and groups them as a word in a text file. It restarts grouping of alphabet into words w.r.t. after giving a space. After that, the sentence is structured, and the output is supplied in form text.

Dialog flow takes advantage of Google's machine learning technologies, as well as other Google products like Google Translate. Google Cloud Speech-to-Text makes use of GCP.(Google Cloud Platform) is a cloud computing platform for scaling your business. These programmers are used by hundreds of millions of people. In the event that there is a multitude of things can happen when a user interacts with our software. They have a variety of utterances at their disposal to target the intended audience the same objective

## VI. CONCLUSION

In above research we can conclude that the existing system gives lots of time to execute as well as it has low accuracy. As compare to our system get small execution time that means it get fast result without waste of time. Our system gives better accuracy as compare to existing system by using Fuzzy logic algorithm.

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