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Medical Chabot for Pregnant Women during an Epidemic like Covid-19 A literature Survey and Review Paper

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Abstract:- Medical facilities available in metropolitan cities and towns are much reachable by the people compared to the people in the rural areas and villages. During pandemic situations like novel corona virus, people especially pregnant ladies struggle to travel to hospitals or clinics for the routine checkups and they are hesitant to visit hospitals in the fear of getting infected by virus.

Usually pregnant ladies are not aware about all the symptoms regarding the pregnancy and even for small changes in the body they get scared and they think need medical assistance in person. Sometimes they would have questions which are easily answered while staying at home, might have to visit clinics in person. During such scenarios Medical Chatbots are best suitable and provide solutions to most of the issues.

In the medical field, more of interaction is required in terms of planning the appointments, responding to patient's queries. Most of the times these tasks are repetitive in nature and require unnecessary manual effort and job are time consuming too. These scenarios or use cases can be automated through ChatBots which serves as a boon during pandemic like Covid.

Keywords:- Medical Chatbot**;** NLP (Natural Language Processing);Smartphone; Disease Prediction; Online Consultation; Pandemic (Novel Corona Virus)

I. INTRODUCTION

The main purpose of the survey is to build the system which bridges the communication gap between patients and doctors during pandemic like Covid-19 especially for pregnant women who would require visiting hospitals very often for their routine checkup. Even if they ignore visiting hospitals, would definitely end up with a major issue in some cases. Since there is a wide spread of the infection across countries, it becomes critical to take very good care of pregnant ladies as the impact of virus is unknown.

Many existing systems have live chat facility with doctor application where if the required doctor isn't available then patient has to wait for desired doctor to be available online. In some cases where it is automated are having a limited training dataset in which the system responds to the regular questions, however training examples aren't updated on a regular basis. There could be a times where immediate assistance is required when doctor is not available. Also the livechat and bot software need to be installed separately on target device.

These problems can be addressed in the proposed system by combining both live chat and automated chatbot in a single web application which we need not to install separately. There are few standard protocols being used in assisting or treating pregnant ladies depending on the use cases. These use cases are repetitive in nature and hence can be fed to system as a input data set and train the automated system to assist when required. Machine learning algorithm like Naïve Bayes can be used for prediction purpose and Natural Language Processing (NLP) technique allows interaction or communication between machine and user.

II. RELATED WORK

To harness the potential of reality (VR) in the healthcare sector, the expenditures for users such as clinics, doctors or health insurances, have to be reduced - a requirement the technology platform VIA VR (an acronym from "virtual reality adventures" and VR) promises to fulfill by combining several key technologies to allow specialists from the healthcare sector to create high-impact VR adventures without the need for a background in programming or the design of worlds. This paper fleshes out the concept of VIA VR, its technological pillars and the planned R&D agenda. [1]

To create a model using AI [Artificial Intelligence] this helps people recognize the right treatment for the disease. Many treatments are available for a specific disease; no one can possibly know the proper treatment which is best suited for their disease. In the proposed model, AI takes up the main role of providing a list of available treatments based on the disease identified through the symptoms. The system provides more precaution about disease by online. To build a system using artificial intelligence that can help users to avoid consultation with a doctor. It is made to diagnose the disease of the user and provide necessary details about the disease. This is built to be a cost effective

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system with improved accessibility to knowledge about diseases. Chatbot is beneficiary to users only when it can diagnose any type of disease and provide necessary information. The proposed system is a conversational agent which interacts with users to retrieve knowledge about their medical conditions, thereby providing a proper diagnosis. [2]

In today's digital world the information exchange has reached very large volumes per minute, assisting people in doing their business from long distances, without their presence being necessary. At the same time, Human Machine Interaction (HMI) devices are used in many places of service and interaction by removing humans from the loop. Although these devices have advanced recently, they are still far away from replacing the human from the interaction loop. Their major problem is that they cannot reliably and efficiently respond to human requests; they mainly behave as "answer" machines. In response to this problem we propose a new HMI scheme, capable of offering a better communication and interaction to human users, based on SPN dialogue rather than answers to questions. [3]

III. EXISTING SYSTEM

Many of the existing systems have either live chat with doctor application where if the desired Doctor isn't available then patient has to wait for desired doctor to come online. And some more applications where it is automated which is limited to a dataset which is trained where the system is answering to the user and the dataset isn't updated regularly. And there may be applications which we need to install to our device.

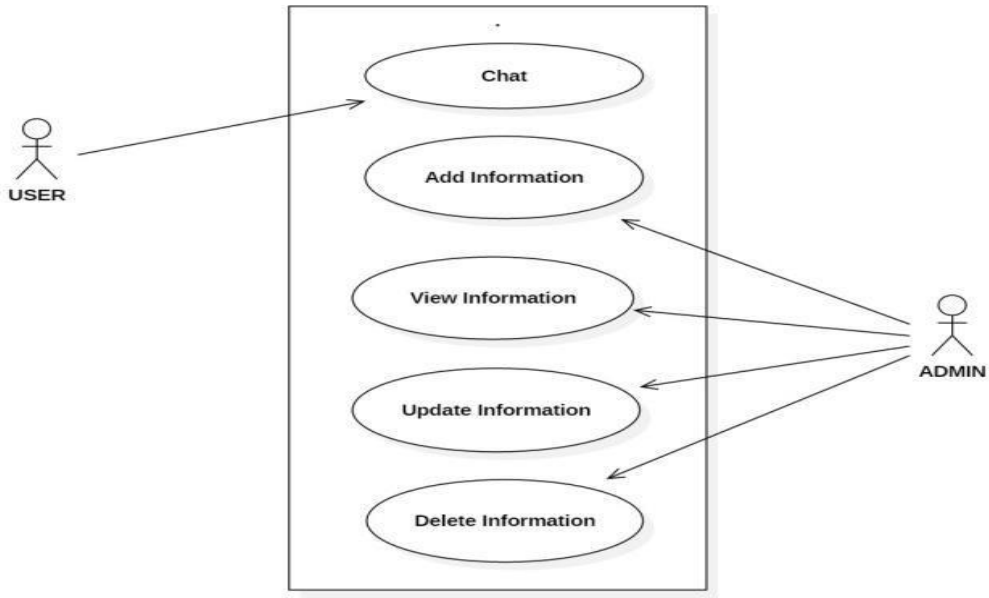
Many of other applications which are totally automated chatbots which don't update their dataset for training module regularly. And many of the applications which have only live chat application where availability of doctor for live chat is less possible. These all drawbacks are recovered in the proposed system by combining both live chat and automated chatbot in a single web application which we need not to install separately.

- *Disadvantages of existing systems*

Low Accuracy
More Time Consuming
Manual Work
Report Generation is Tedious
Managing is cumbersome

IV. METHODOLOGY

The fundamental objective of the proposed framework is to provide chatbot service for pregnant ladies as and when required. In the target framework, the user the questions as an input text, depending on the keywords used, appropriate context is identified by the bot. Once the input text or question is received, the user is authenticated using the credentials. Once the user is authenticated, the required response is sent by searching in the database. If user wants to have a normal conversation with the bot, if appropriate training data or pattern is available, the response would be sent. Otherwise system prompts the appropriate error message to the user. Once the purpose is served, the users can logout of the system.



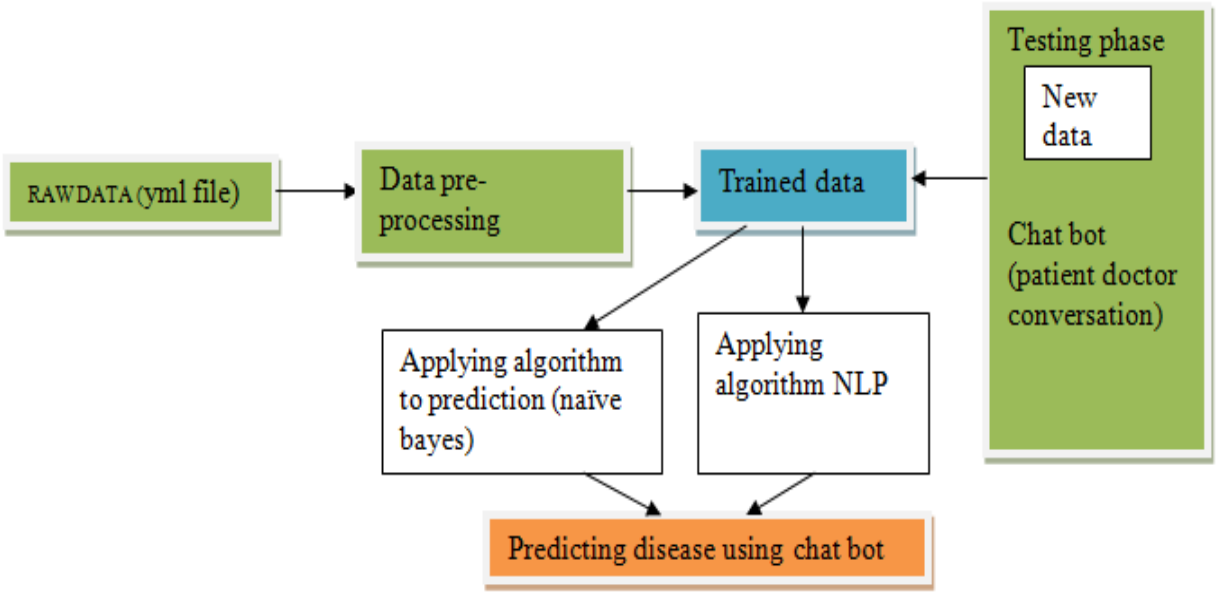


Fig 1:- Block Diagram of Medical Chatbot to Assist Pregnant During Pandemic

V. CONCLUSION

The Chatbot application would help to resolve the problems of busy people who cannot visit hospital often, senior citizens, kids & pregnant ladies.

The Conclusion makes a return on the goal of this work. The development and implementation of experimental and participatory research in this context a crucial need and saves time at most of the time.

Development of this web is a cross-cutting function and cannot be successfully implemented without collaboration between a variety of social users and doctors it can also be made specifically belonging to one hospital by restricting registration of doctors, to improve public awareness of the potential of busy people and less resources.

The framework is still a work in progress and intends to evaluate its ease of use with pandemic.

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