HEALTH CARE CHATBOT USING MACHINE LEARNING

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Abstract: Healthcare has become an important part of living a healthy life in today's society, but consulting with a doctor for every health problem is very difficult for common people. The Medical chat bot is created to diagnose diseases and provide basic information before consulting a physician. By doing so, healthcare costs will be reduced and medical knowledge will improve. A chat bot interacts with users through natural language. The chat bot then saves the information in a database, chooses sentence keywords, decides whether to answer an inquiry-, and provides information.This chatbot gives the nearest hospital location also . so that users get the hospitals information . With that, the users contacts the hospitals.With this approach, people can spend less time in hospitals while performing repetitive tasks like providing solutions, sending emails, marketing, and analyzing results. Chatbots receive increasing attention from media and industry, but at the same time it is not yet well known what chatbots really are, what they can be used for and how to create them. The goal of this work is to answer these three questions by analyzing existing platforms, products and technologies, and additionally developing an exemplary chatbot. Explaining what chatbots are, demystifying what to use them for and showing how to create them will help more people to be able to use and create chatbots and thereby accelerate the development of the chatbot ecosystem. Starting by defining fundamental terms, the first half of the work focuses on showing available platforms, products and technologies, while the second half guides through the development of an exemplary chatbot, including user interaction design and software architecture.

1. INTRODUCTION

Chatbots receive increasing attention from media and industry, but at the same time it is not yet well known what chatbots really are, what they can be used for and how to create them. The goal of this work is to answer these three questions by analyzing existing platforms, products and technologies, and additionally developing an exemplary chatbot. Explaining what chatbots are, demystifying what to use them for and showing how to create them will help more people to be able to use and create chatbots and thereby accelerate the development of the chatbot ecosystem. Starting by defining fundamental terms, the first half of the work focuses on showing available platforms, products and technologies, while the second half guides through the development of an exemplary chatbot, including user interaction design and software architecture. Healthcare has become an important part of living a healthy life in today's society, but consulting with a doctor for every health problem is very difficult for common people. The Medical chat bot is created to diagnose diseases and provide basic information before consulting a physician. By doing so, healthcare costs will be reduced and medical knowledge will improve. A chat bot interacts with users through natural language. The chat bot then saves the information in a database , chooses sentence keywords, decides whether to answer an inquiry-, and provides information. With this approach, people can spend less time in hospitals while performing repetitive tasks like providing solutions, sending emails, marketing, and analyzing results.

2. LITERATURE SURVEY

2.1. "A Pediatric Generic Medicine Consultant Chatbot" Authors :Comendador, B. E., Francisco, B. M., Medinilla, J. S., Nacion, S. M., & Serac, T. B.The purposes of this perspective paper are to present a brief literature review of chatbot use in promoting physical activity and a healthy diet, describe the AI chatbot behavior change model our research team developed based on extensive interdisciplinary research, and discuss ethical principles and considerations

2.2. "Chatbot Using A Knowledge in Database-Human-to-Machine Conversation Modeling". chatbot aims to make a conversation between both human and machine. The machine has been embedded knowledge to identify the sentences and making a decision itself as response to answer a question. The response principle is matching the input sentence from user. From input sentence, it will be scored to get the similarity of sentences; the higher score obtained the more similar of reference sentence

2.3. A chatbot-based approach for improving adherence to medication in patients with chronic disease. Authors:Ji, S., He, W., & Liu, R. Chatbots have emerged as a promising tool inhealthcare for improving patient engagement, providing education and support, and delivering interventions for a variety of health conditions. In the field of mHealth, chatbots are being increasingly used to support

self management, provide remote monitoring, and offer personalized coaching to patients with chronic conditions

2.4 A medical chat bot for self diagnosis. Artificial Intelligence is based on how any device perceives its Environment and takes actions based on the perceived data to achieve the result successfully. It is the study of intelligent agents. The term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving. Artificial Intelligence gives the supreme power to mimic the human way of thinking and behaving to a computer

2.5 "Chatbot for Disease Prediction and Treatment Recommendation using Machine Learning. This research intends to apply the concepts of natural language processing and machine learning to create a chatbot application that can be of great use to people in conducting daily check-ups, makes people aware of their health status and encourages people to make proper measures to remain healthy.

2.6. "Automatized Medical Chatbot Authors:P. Srivastava and N. Singh. diagnosis chatbot to engage patients in a discussion about their medical questions and difficulties in order to deliver a personalized diagnosis based on their diagnosed symptom and profile. With a standard precision of 65 percent, the chatbot system is qualified to diagnose symptoms from user inputs. 2.7. Authors:Gupta, V. Singh and I. Kumar, "Florence- A Health Carechatbot". Created a chatbot to assist customers in predicting their potential sickness through a simple discussion in which they would be questioned about their symptoms, emotions, and diets. It will inform indi viduals about the severity of their sickness and whether or not they need to take action to combat it.

2.8. "Machine Learning Based Healthcare Chatbot Authors:R. Goel, R. P. Goswami, S. Totlani, P. Arora, R. Bansal and D. Vij. chatbots are programs with the ability to understand and respond to natural language in a way that is both informative and engaging.

2.9. Personal Healthcare Chatbot for Medical Suggestions Using Artificial Intelligence and Machine Learning Authors:R Jegadeesan , Dava Srinivas , N Umapathi , G Karthick ,N Venkateswaran They create a medical chatbot that can diagnose diseases and provide basic information about the disease before consulting a doctor. Healthcare costs will be reduced, and more people will have access to medical information, by adopting a medical chatbot

3. EXISTING SYSTEM

Before exploring new technology one should examine prior work and learn from past ideas, both succeed and also failed attempts. This section presents a selection of events from the last century, which introduced the ideas that formed the present definition of a chatbot. It is not an attempt to give an all- encompassing overview about the history of computing, instead the aim is to explain where the concept of chatbots and the interest of creating them originated from.

DISADVANTAGES

• Many healthcare chatbots struggle to understand complex queries or provide inaccurate responses, leading to frustration and dissatisfaction among users.

• Accuracy is less.

• Due to inadequate algorithms, healthcare chatbots may provide misleading information, potentially harming users health outcomes.

4. PROPOSED SYSTEM

This is an automated chat robot design to answer users frequently asked questions, earlier natural language processing techniques were using to design this robots but its accuracy of giving correct 4 answer was less and now due to Deep Learning algorithms accuracy of giving correct answer increase, so here using python deep learning project we are building health care CHATBOT application to answer users questions. To implement this technique first we train deep learning models with the train data (all possible questions' answers) and whenever users give any question then application will apply this test question on train model to predict exact answer for given question. Earlier companies were hiring humans to answer user's queries but by using this application we can answer user's question without using any man power. Chabot can be described as software that can chat with people using artificial intelligence. Chabot's are generally used to respond quickly to users. Chabot's, a common name for automated conversational interfaces, present a new way for individuals to interact with computer systems. Traditionally, to get a question answered by a software program involves using a search engine, or filling out a form. A Chabot allows a user to simply ask questions in the same manner that they would address a human. There are many well-known voice- based catboats currently available in the market: Google Assistant, Alexa and Siri. Chabot's are currently being adopted data high rate on computer chat platforms. To implement this project we are using python deep learning neural networks and NLTK (natural Language Processing API) to process train and test text data.

ADVANTAGES

- High Accuracy
- Easy to Understand

SYSTEM ARCHITECTURE

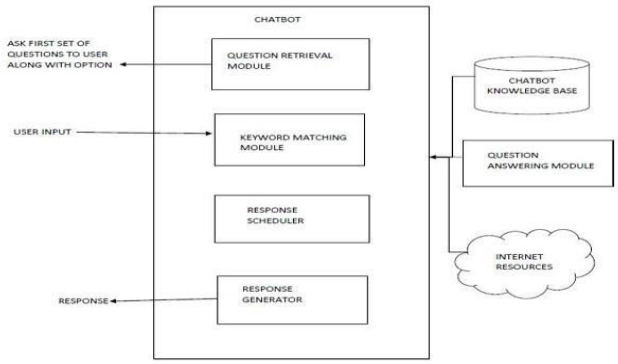

Fig1: System Architecture

5. UML DIAGRAMS

1. USECASE DIAGRAM:

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted

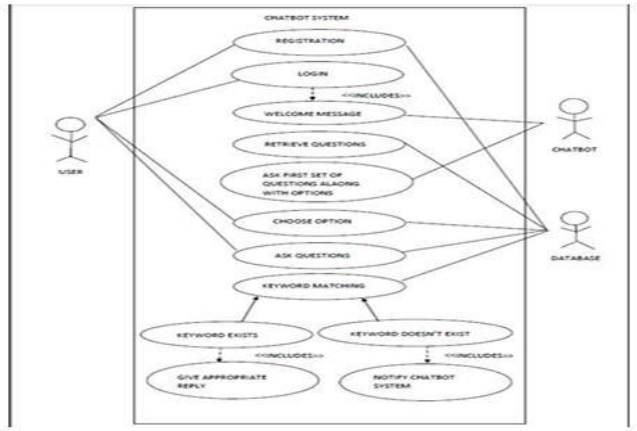

Fig 5.2 shows the Use case Diagram

6. RESULTS

6.1 Output Screens

To run this project we need to install python and MYSQL and then deploy application on python Flask server. After setting up application we need to run on browser to get below screen

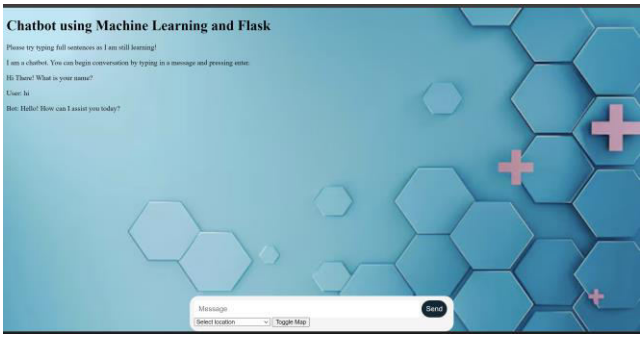

Fig 6.1 home page

To start a conversation with the healthcare chatbot, the user needs to enter their problem in the message section and press enter. The bot will then provide a response.

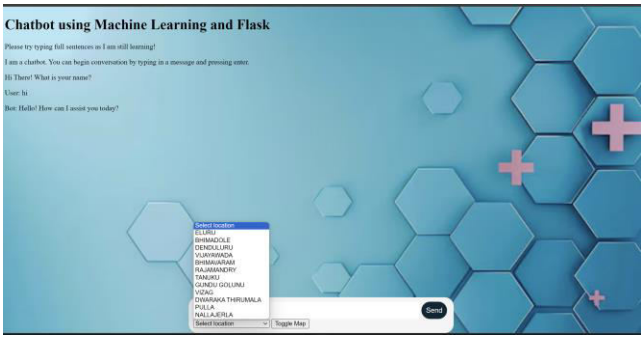

Fig 6.2 Hospital location selection page

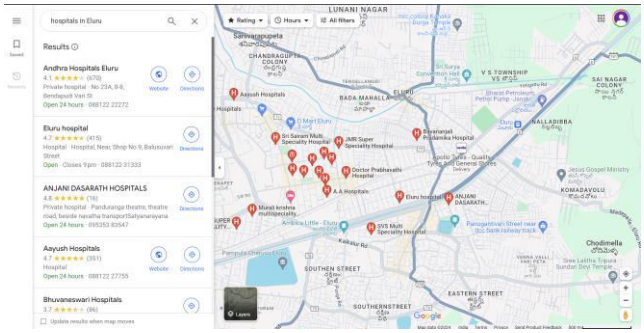

Fig 6.2 Hospital locations

7. CONCLUSION

This work introduced the fundamentals of what chatbots are. It gave an overview about ideas, products and platforms, both, from the past and available today. The current interest in chatbots, potential use cases and limitations has been explored in detail. Different aspects of the implementation of a chatbot and working with conversational interfaces have been presented through the creation of an exemplary chatbot, which included interaction and user experience design, and a general, reusable software architecture for chatbots. While not all aspects can be covered within the context of this work, the goal was to give an overview about what chatbots are, their use cases and how to create them. This knowledge should help exploring further possibilities of chatbot usage and it should enable more developers to apply chatbots to new scenarios and thereby also improve human-machine interaction in general.

FUTURE SCOPE

We would further like to integrate the Chatbot system with Google Maps. This will assist the user to navigate to the various desired project locations. The Chatbot system can also be integrated with different websites to serve queries about different projects by different builders. Integrating it with leading real estate websites provides more options for the user, enabling him to choose the best suitable option from a wide range of projects.

8. REFERENCES

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