



e-ISSN: 2319-8753 | p-ISSN: 2320-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 11, Issue 5, May 2022

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.118



Implementation of Medical Chatbot using Machine Learning Algorithm

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ABSTRACT: Intelligent Chatbot is a project that investigates the capabilities of artificial intelligence agents in modern culture. Artificial intelligence was invented by Alan Turing (1912-1954), recognised as the "Father of Modern Computing." He laid the foundation for computer science by breaking the Enigma code employed by the Germans during WWII, which had previously been assumed to be unbreakable. He also looked at what electronic computers and artificial intelligence could do. "Can computers think?" he questions in his 1950 treatise Computing Machinery and Intelligence. He devised the Turing test, which assesses a machine's capacity to exhibit intelligent behaviour that is comparable to, or indistinguishable from, that of a human. He dives more into this topic throughout the paper, and I came across an incredible quote.

KEYWORDS: NLP Speech Recognition, Machine Learning, Preprocessing, Feature Extraction

I. INTRODUCTION

The chat bot system automates customer assistance tasks as well as company, institution, and organisation websites. To frequently requested questions, the user receives a rapid response. A patient-facing chatbot system was demonstrated. Patients might expect a flood of questions regarding their illness, treatment options, and other services. Instead of addressing a random person, users can use this chat bot system to get a quick response. A chatbot is a machine with artificial intelligence that can converse with humans. The vast majority of them have a chatbot interface that takes user input and responds with chatbot output. The chatbot interprets the user's input and gives relevant responses. It could be a welcome, a topic for debate, or even a photograph. The vast majority of chatbots will respond.

II. PROBLEM DEFINITION

The system focuses on the messages sent by the user when the chat begins. The purpose is to find out if the user is experiencing any early warning indications or difficulties. After the Chatbot has acquired enough keywords from the opening messages, it takes control of the conversation by asking the user questions and tries to narrow down a few diseases. After the Chatbot has narrowed down the possible disorders that the user may be experiencing, it assigns a ranking to those ailments. When the user selects a sickness from the list, the Chatbot begins questioning them about their feelings. After gathering sufficient data, it determines the most likely disease that the user is suffering from.

III. SURVEY OF LITERATURE

"Model of Multi-turn Dialogue in Emotional Chatbot"[1] by Chien-Hao Kao and Chih-Chieh Chen.

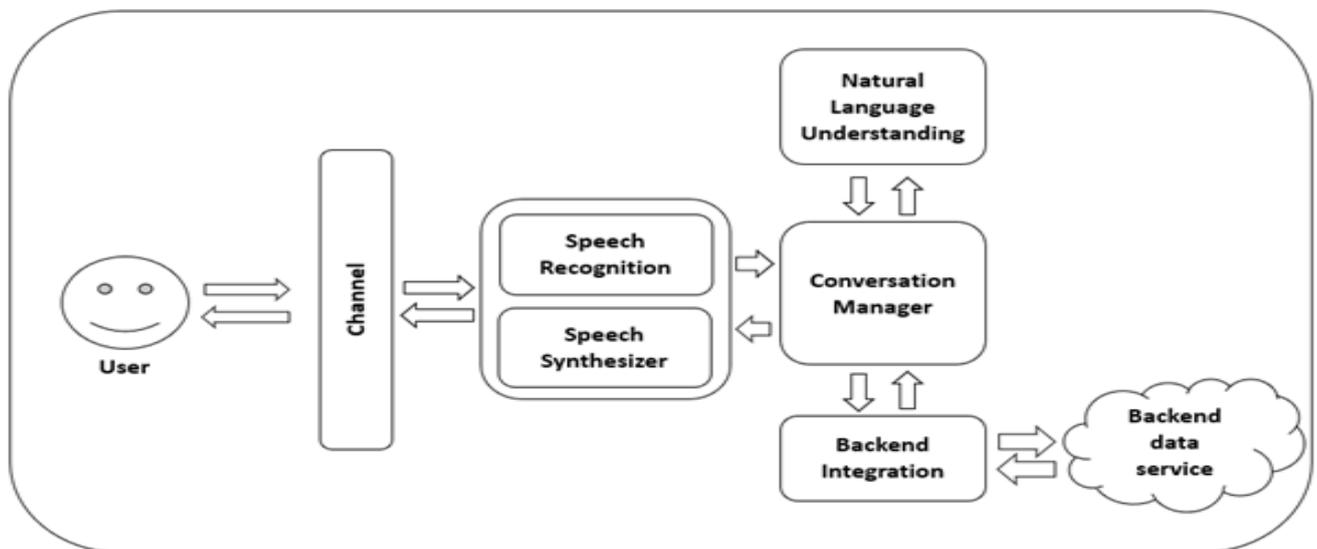
As it stands, In multi-turn interactions, the capacity to recognise intent and understand natural language is important to the commercialization of chatbots. Chatbots are typically used to automate particular tasks, such as offering products to customers or resolving related concerns, in order to save time and money. Text sentiment detection allows a chatbot to recognise a user's emotional condition and respond appropriately, which is critical in medical care. In this work, we combined the multiturn dialogue model and the sentiment detection model to build a chatbot that is intended for general use rather than specific tasks. As a result, the chatbot can provide input on the robot's emotions while also interacting with the robot.

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4a.system structure



System Architecture diagram

4b.system architecture explanation

- Press the voice input button in Module 1.
- Module 2: We must submit our question or query to the system.
- Module 3: The system will recognise the speech.
- Module 4: Recognize the query using the Speech Recognition Module and convert it to text using Text Conversion.
- Module 5: Translate the query using a translator.
- Module 6: Match the query with the database (Use NLP).
- Module 7: Responding to a question with a quick translation

V.THE PROPOSED SYSTEM'S ALGORITHM

Natural language processing (NLP) is a field of linguistics, computer science, and artificial intelligence that focuses on how computers interact with human language, specifically how to build computers that can process and analyse large amounts of natural language data. As a result, a computer can "understand" the contents of papers, regardless of how sophisticated the language used is. After that, the system can extract accurate data and insights from the documents, as well as categorise and organise them. Natural language processing presents common obstacles to speech recognition, natural language interpretation, and natural language production.

Text and speech processing:

Optical Character Recognition- Using optical character recognition, extract the matched text from an image of printed text.

VLAPPLICATIONS

- 1.Applications of chatbots in healthcare
 - 1.1 Provide medical information
 - 1.2. Schedule medical appointments
 - 1.3. Collect patient data
 - 1.4. Answer insurance questions
 - 1.5. Assist with mental health issues
 - 1.6. Make a prescription refill request
- 2.The future of healthcare chatbots
- 3.Learn more about chatbots here.

VII. UML DIAGRAM

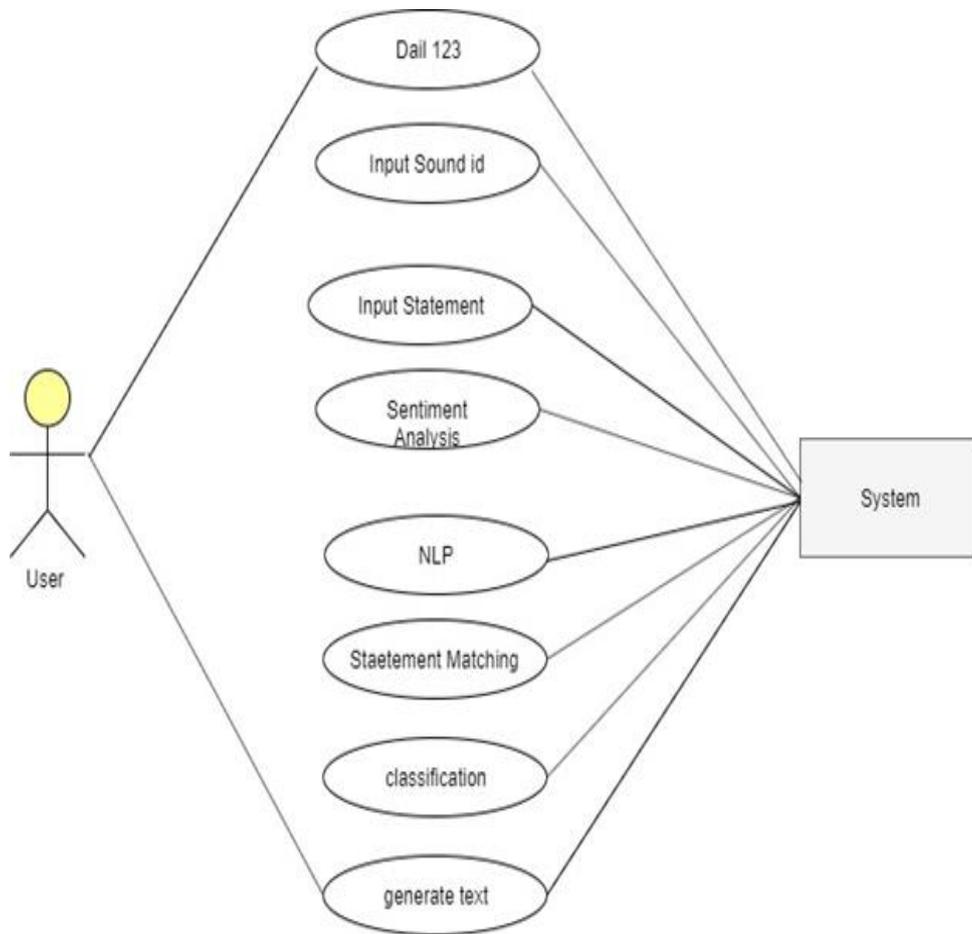
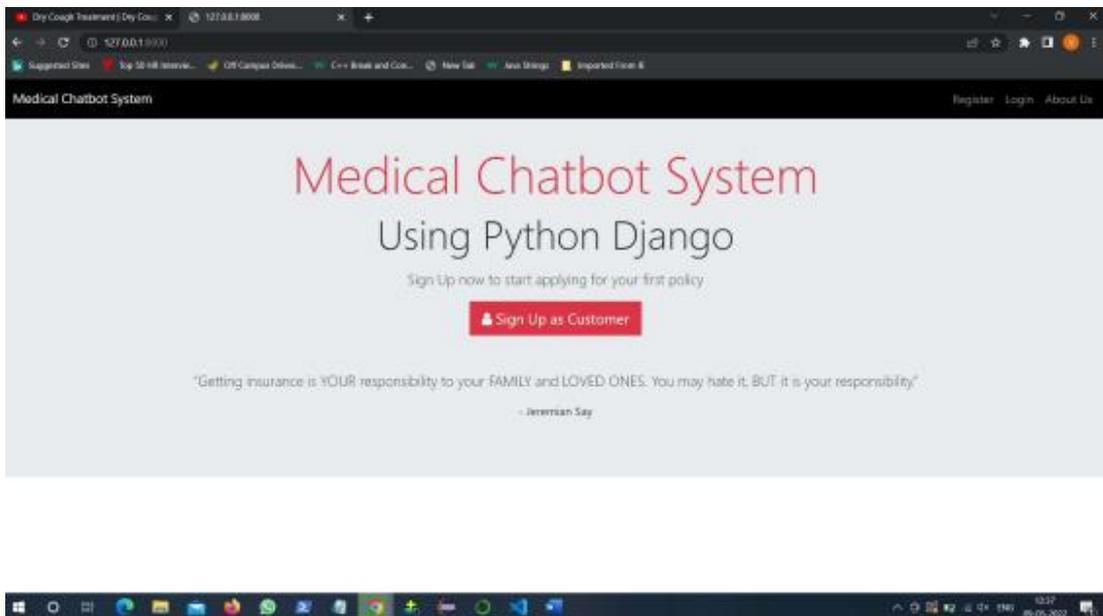
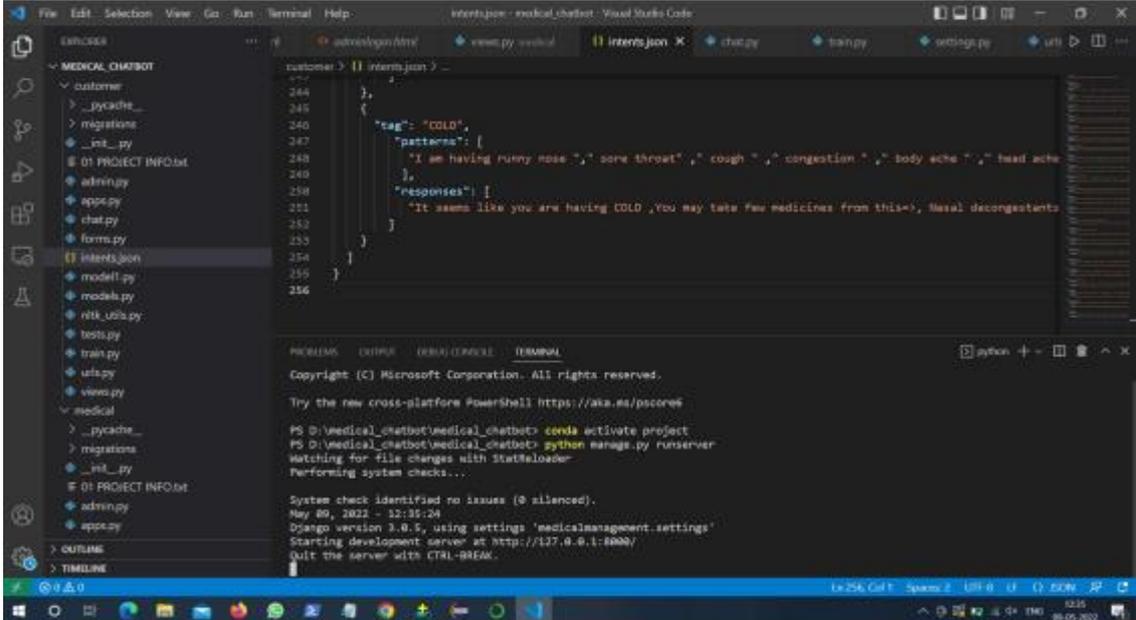


Diagram of a Use Case



VIII.RESULT





Medical Chatbot System

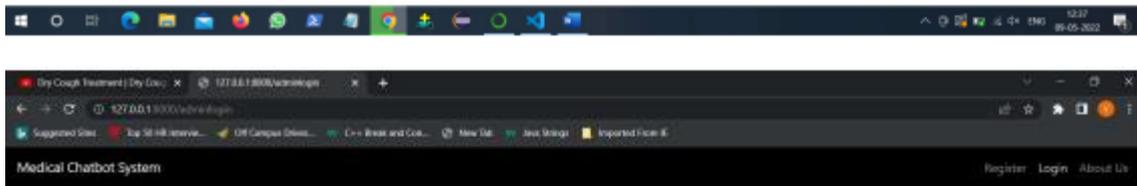
USER SIGNUP

Username: Password:

First Name: Last Name:

Contact: Address:

Profile Picture:

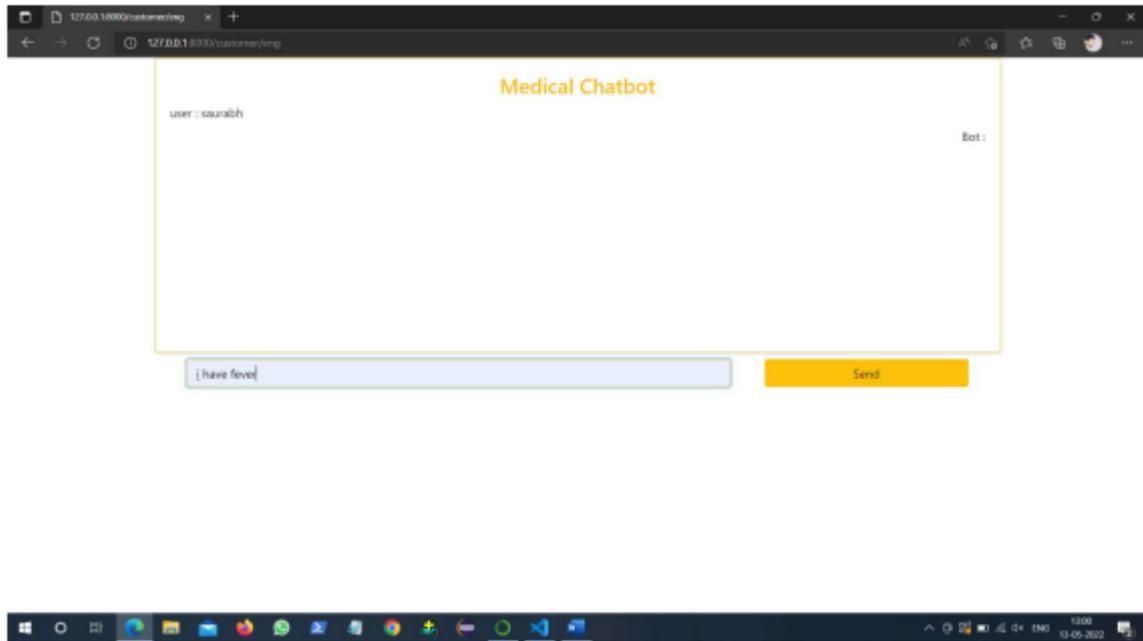
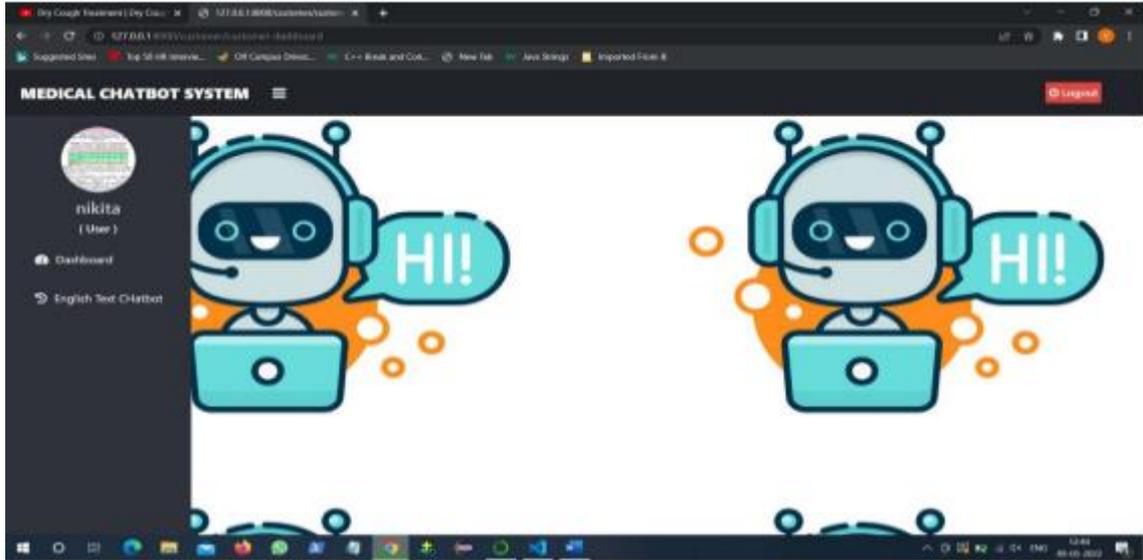


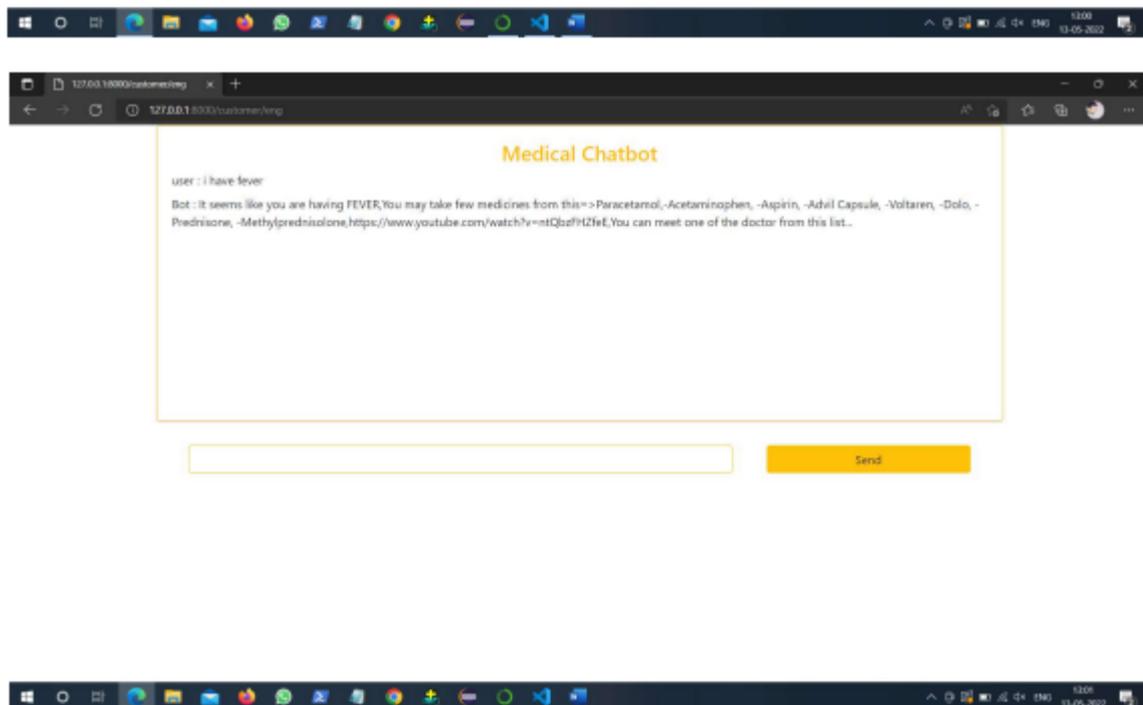
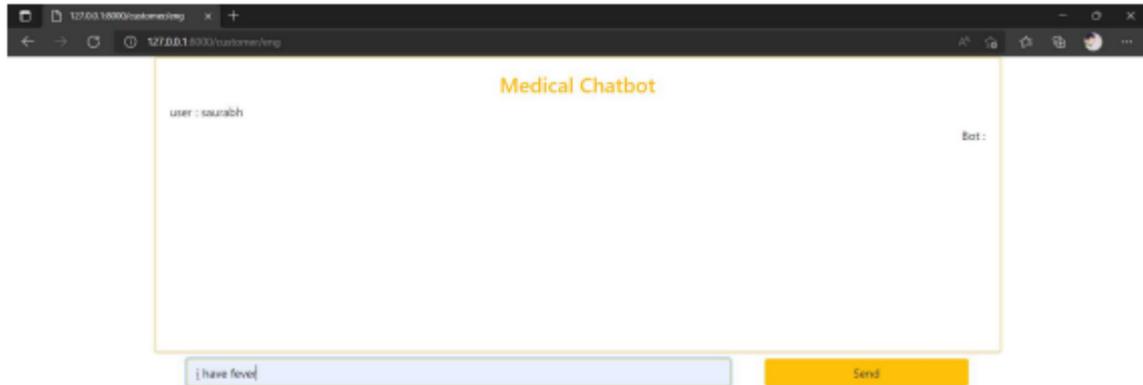
Login Panel

Username:

Password:







IX. CONCLUSION

The framework we design in order to make client benefits as transparent as feasible. We're currently striving to make the framework easy to connect. There will be no compelling incentive to push the catch to choose the choice, just as there will be no compelling reason to wait for the response. The Speech Recognition, Speech to Content Change, and Language Interpreter modules are used in this application. Chatbot service providers serve as customer service representatives for a variety of businesses, institutions, and industries, as well as a personal assistant for everyone on the planet. Our site's bots can also assist you in remembering a variety of things. It could also benefit a wide range of enterprises.



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