I N F O B O T

WEB BASED CHATBOT

DEPARTMENT OF INFORMATION TECHNOLOGY

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ABSTRACT

- A web based chatbot is designed to interact with users via text or voice on a website.The purpose of web based chatbot is to provide a immediate assistance to users by answering frequently asked questions,providing information,and facilitating transactions.
- Nowadays, a lot of corporate websites have started adopting chatbots as support, whether it be for finance or as a means of virtual contact.
- RNN based Deep Learning and PyTorch Model are the algorithms used.

OBJECTIVE

- An FAQ Chatbot is an easy way to help visitors, customers, or even staff get rapid access to information. Based on the format of question and answers, the chatbot will use (Machine learning)ML to identify the most appropriate answer to whatever the user types in.
- Using machine learning algorithms to increase the dataset of questions and answers and ensure that the mapping of questions and answers remain maintained every time there is an increase in the dataset.

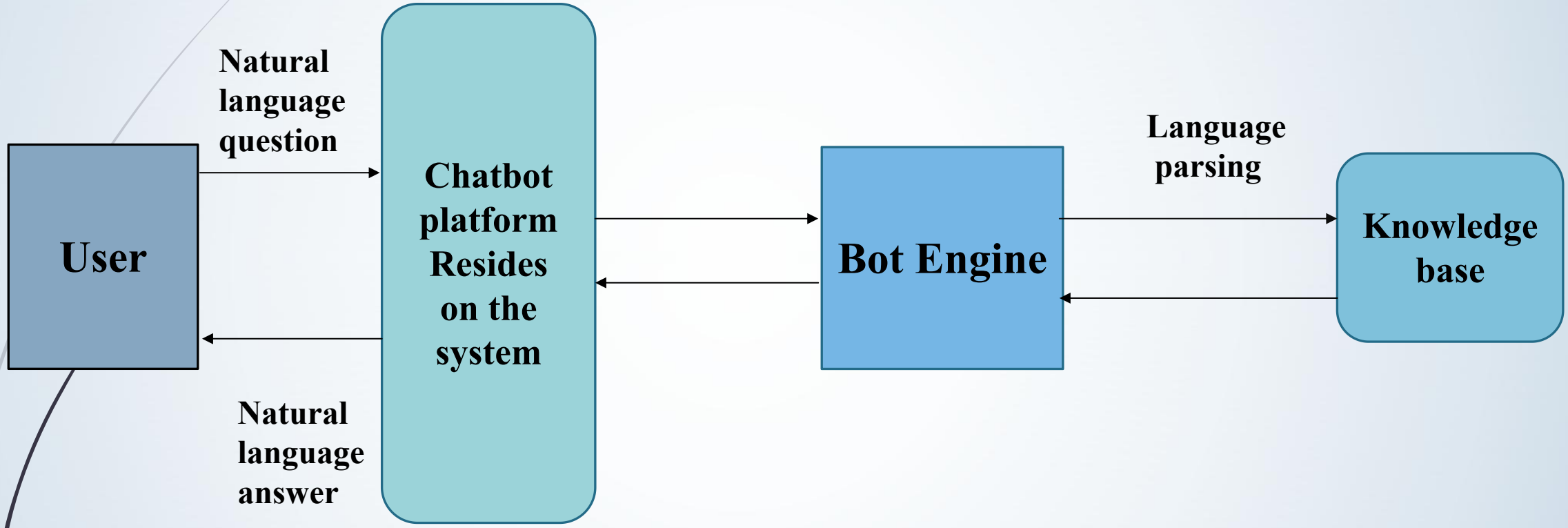
LITERATURE SURVEY

S.No	Year	Author	Title	Merits	Demerits
1	APR 2020	Giancarlo Sperli	A Deep Learning based Chatbot for Cultural Heritage	In this paper the proposed Chatbot is based on deep learning techniques for supporting user's cultural heritage path. Moreover, the proposed Chatbot is able to respond in both Italian and English languages.	Future works will be devoted to extend the evaluation using a larger number of users and improving the Deep Learning approach using an online learning strategy.
2	JUN 2021	Achmad Ramaditiya,Suci Rahmatia,Aris Munawar,Octarina Nur Samijayani	Implementation Chatbot Whatsapp using Python Programming for Broadcast and Reply Message Automatically	This Chatbot program is designed to be able to read messages that are not sensitive, so that if have a similar message, the message will still be read and entered into the Chatbot system. This insensitive sentence can we design according to the requests and needs in the Chatbot program.	This research can still be developed by adding a random message feature. So, the server doesn't need to save the contact number first to spread the messages. This research can also use a system that can read all messages and send them back directly without having to enter the contact's name.

S.No	Year	Author	Title	Merits	Demerits
3	DEC 2022	Sanjay Chakraborty, Hrithik Paul, Sayani Ghatak, Saroj Kumar Pandey, Ankit Kumar, Kamred Udham Singh, Mohd Asif Shah	An AI-Based Medical Chatbot Model for Infectious Disease Prediction	This bot offers medical-related information like doctor's contact details, address of nearby hospitals, contact details for getting an oxygen cylinder, about the disease its symptoms, its prevalence, diagnosis, and its treatment procedures.	This medical chatbot has wide future opportunities. People in remote areas can also receive benefits from this. Here we use 'TensorFlow', which helps to build the NLP for chatbots and utilizes deep neural network architecture.
4	APR 2021	Manik Rakhra, Gurram Gopinadh, Narasimha Sai Addepalli, Gurasis Singh, Shaik Aliraja, Vennapusa Siva Ganeshwar Reddy, Muthumula Navaneeswar Reddy	E-Commerce Assistance with a Smart Chatbot using Artificial Intelligence	This paper is intended to introduce a chatbot based on the Ecommerce engine which seeks to improve the user's engagement with E-Commerce engine. Chatbot stores a variety of answers, but can also consider intricate user feedback and hence includes appropriate answers and product recommendations.	Grammar-based data parsing is needed for efficient Chatbot applications in order for the user to comprehend the intended sentence by defining phrases that are suited to the complexities of the grammar used

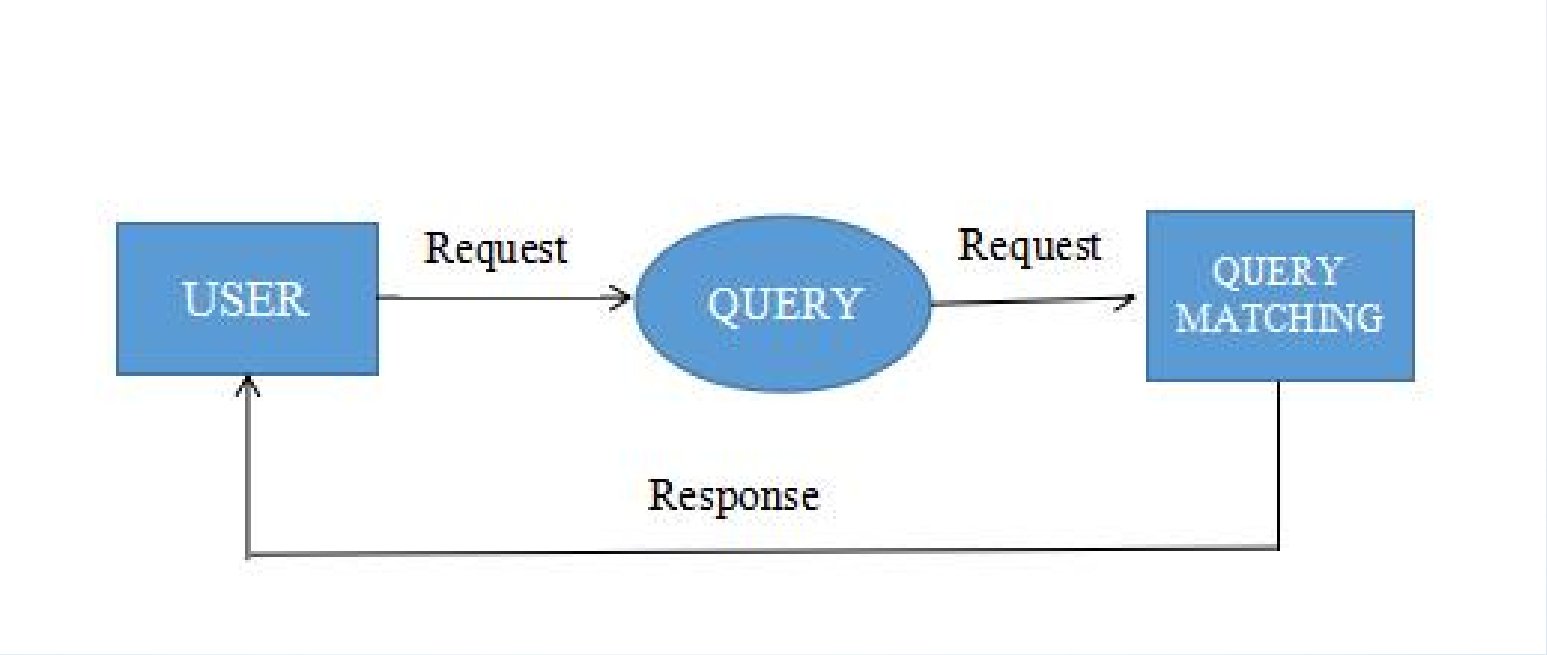
S.No	Year	Author	Title	Merits	Demerits
5	DEC 2020	Mohammad Monirujjaman Khan	Development of An e-commerce Sales Chatbot	The system has a visual platform to train the NLU Engine. It is a single page application which serves all the frontend login and the views as a single file whenever user browses the site, it reduces server side call, improves performance and provides a smooth experience. Users can handle intents, texts, entities and entity synonyms easily using the platform	Artificial Neural Network can be used to improve the accuracy of the NLU Engine. Also, a semi supervised learning system can be implemented in order to increase the dataset. The platform can be made available to word press based system because 60% ecommerce websites are powered by woo commerce which is a word press plugin

ARCHITECTURE DESIGN



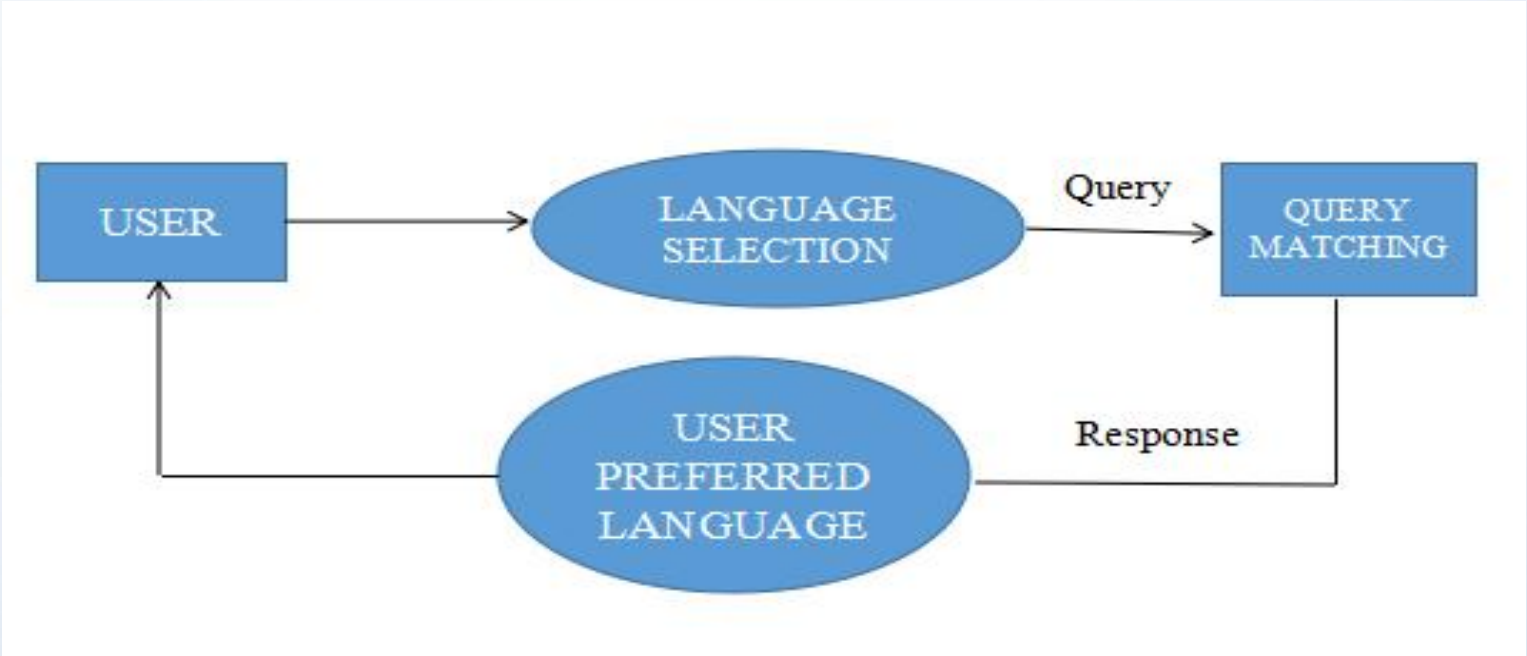
MODULES AND IT'S DESCRIPTION

User: The user enters their query in the chatbot and the chatbot produces the response based on the trained datasets.



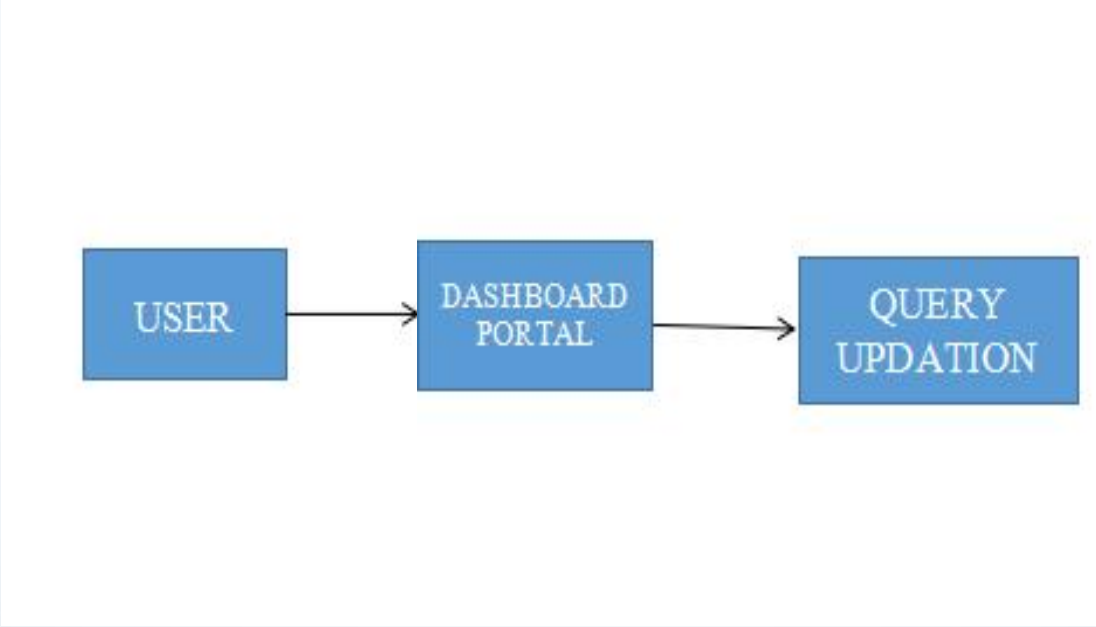
MODULES AND IT'S DESCRIPTION

Multi-Language: The user can select the language as per their preference and the enters their query.The chatbot produces the response based on the user preferred language.



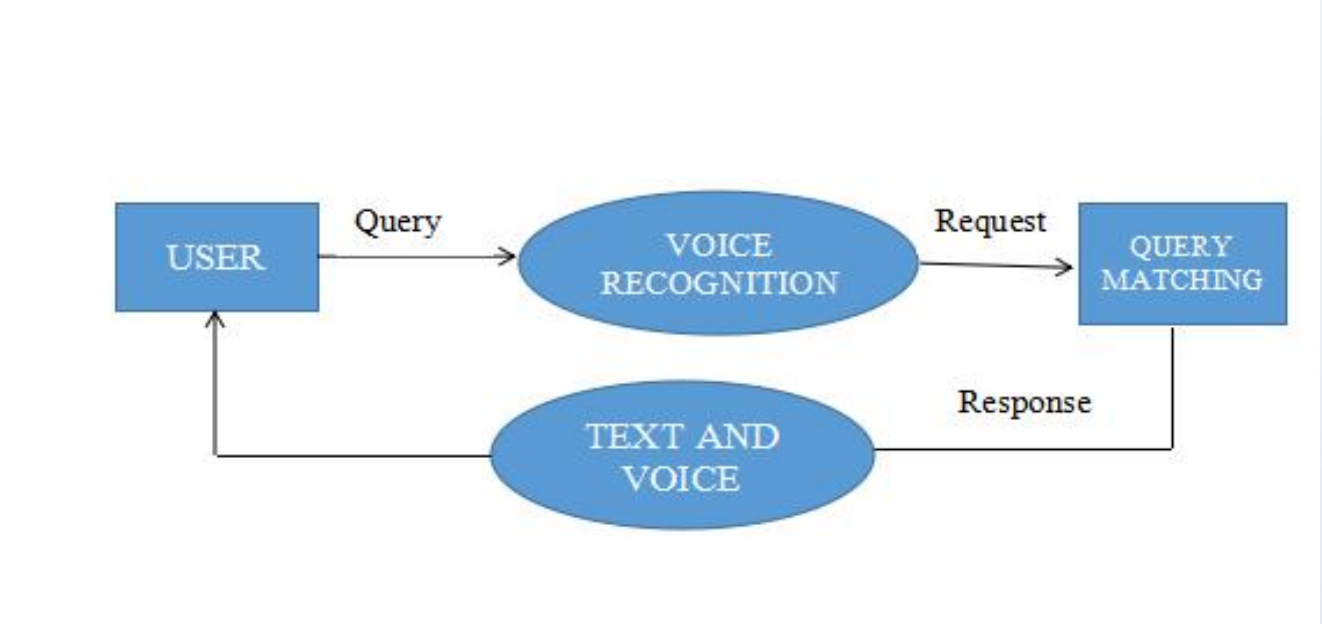
MODULES AND IT'S DESCRIPTION

Admin: The admin enters the login credentials and can modify the datasets.



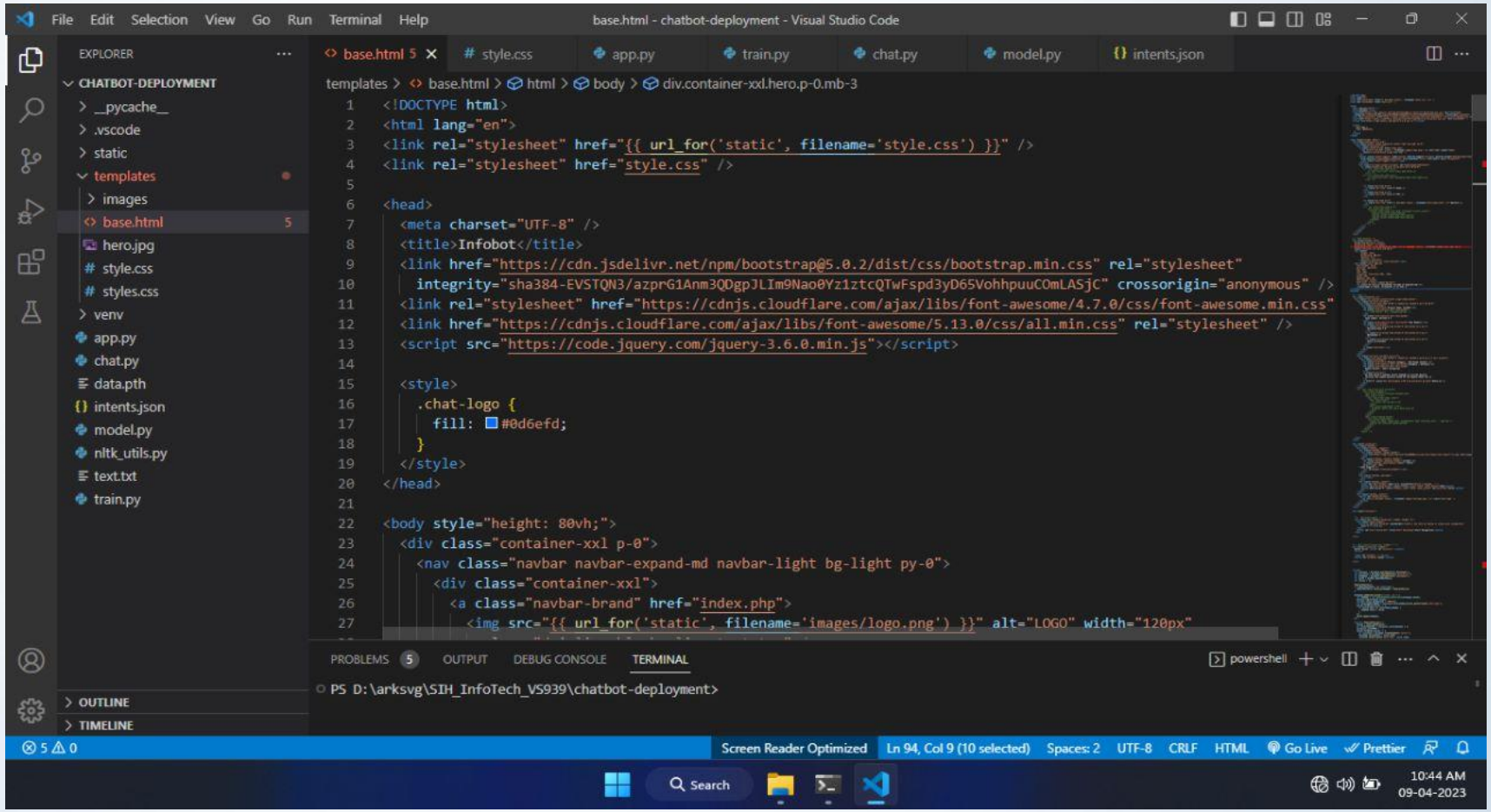
MODULES AND IT'S DESCRIPTION

Speech Recognition: The user can give the query as speech and the chatbot produces the response as both in speech and also as text.

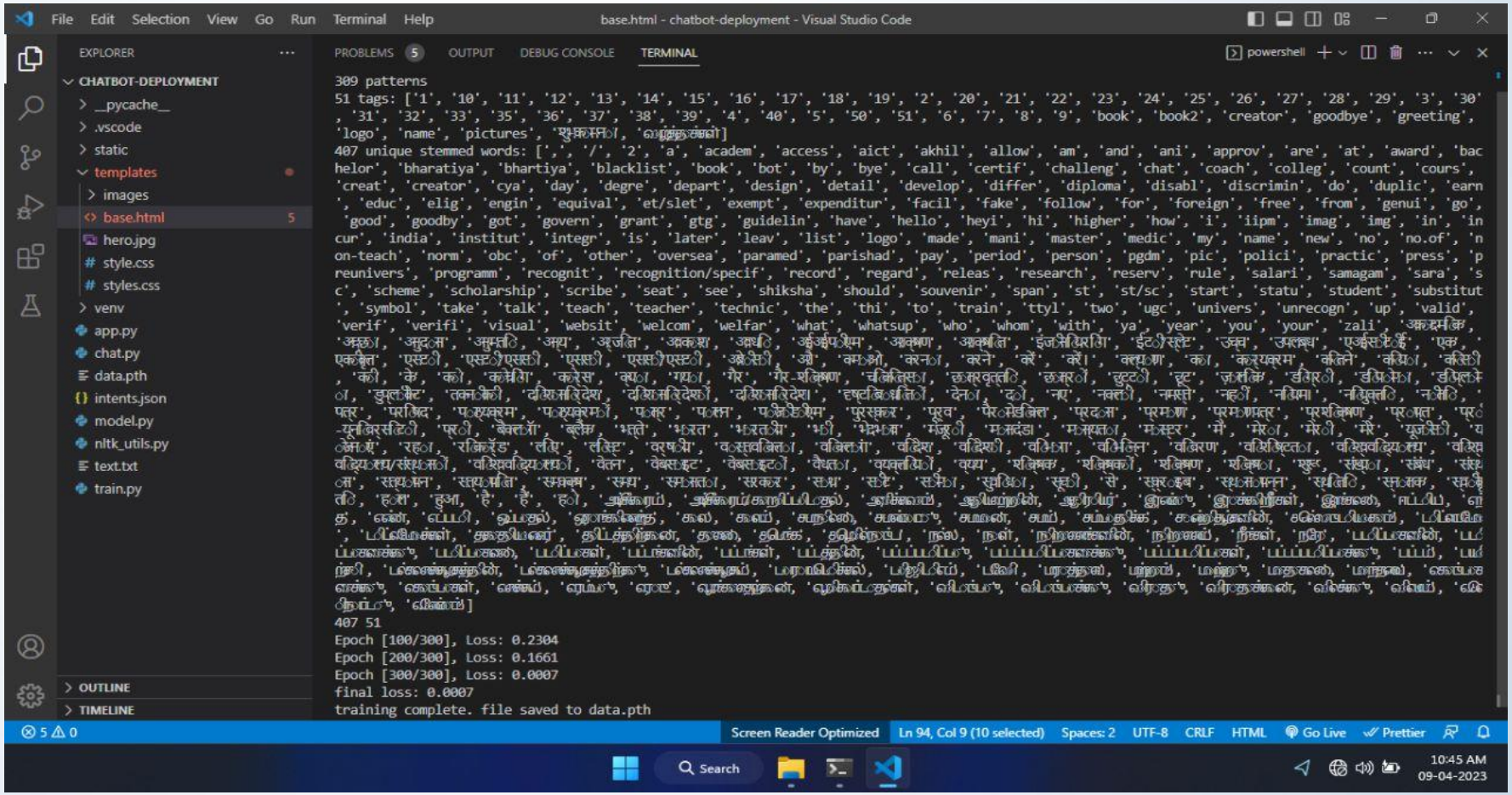


IMPLEMENTATION

Code:



Data Training:

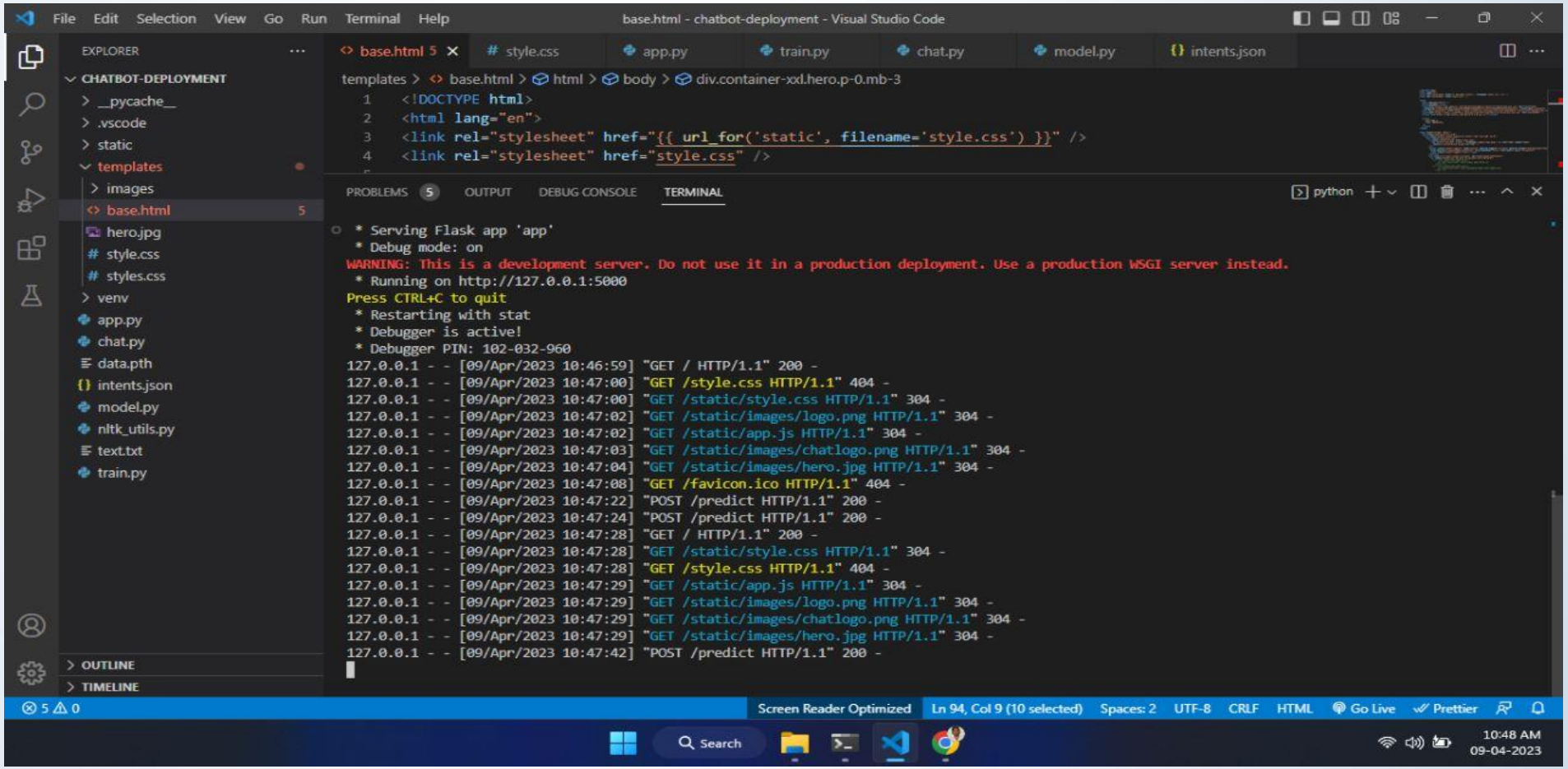


```
Epoch [100/1000], Loss: 0.7783
Epoch [200/1000], Loss: 0.4894
Epoch [300/1000], Loss: 0.0036
Epoch [400/1000], Loss: 0.0041
Epoch [500/1000], Loss: 0.0024
Epoch [600/1000], Loss: 0.0004
Epoch [700/1000], Loss: 0.0767
Epoch [800/1000], Loss: 0.0004
Epoch [900/1000], Loss: 0.0392
Epoch [1000/1000], Loss: 0.0284
final loss: 0.0284
training complete, file saved to data.pth
```

Number of Epochs Trained

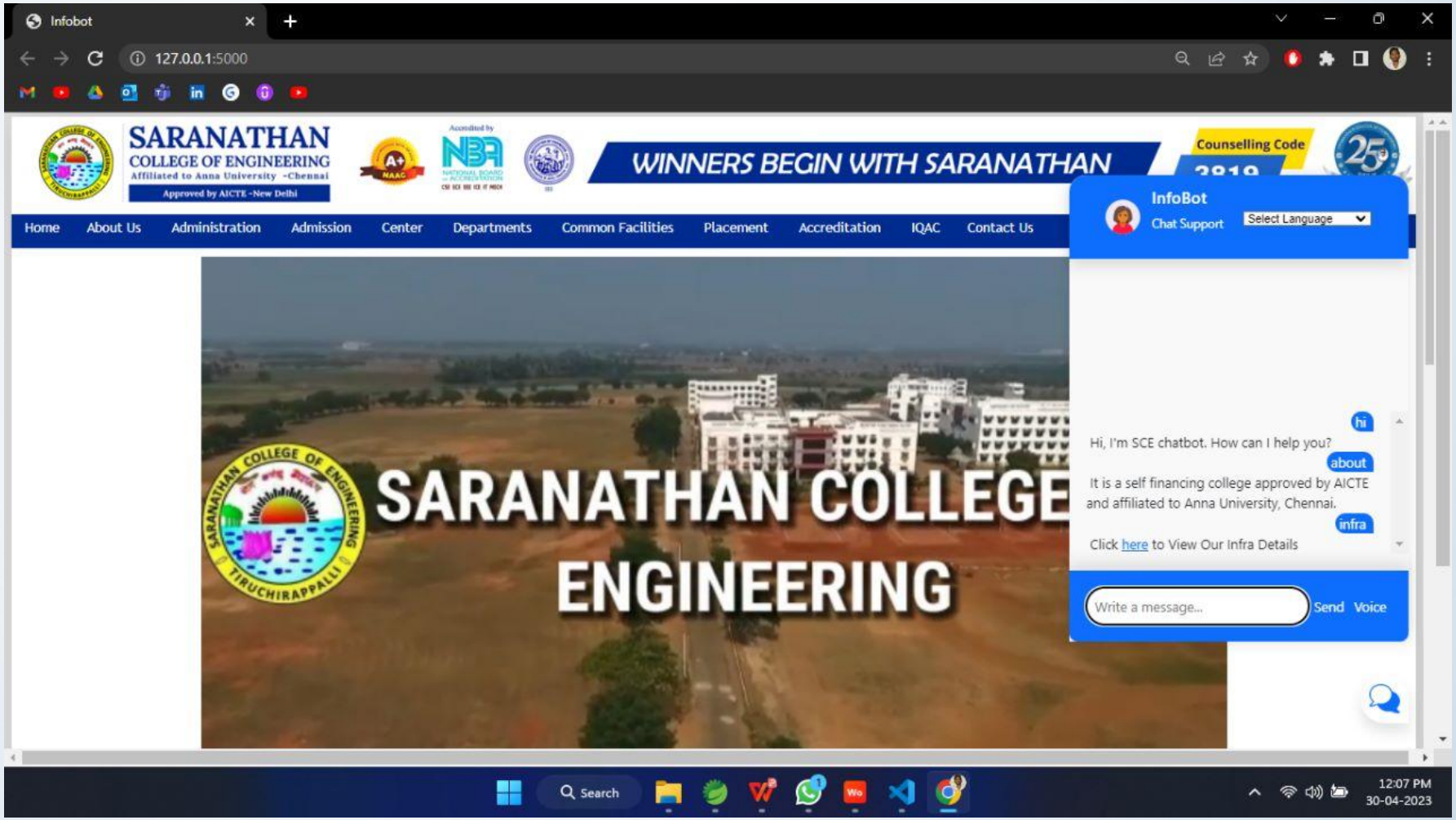
Loss Accuracy

Server Deployment:



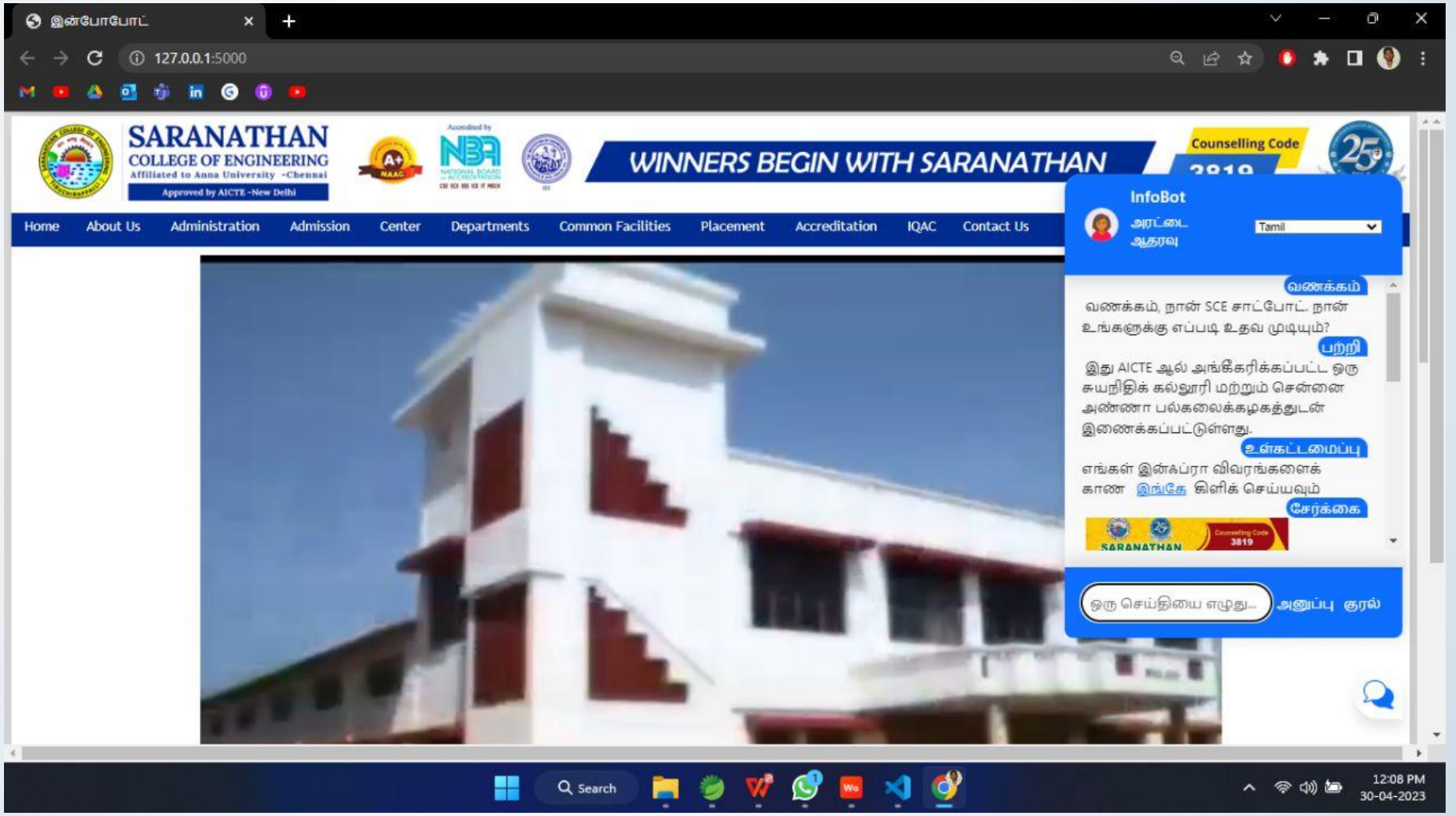
OUTPUT

User Interaction

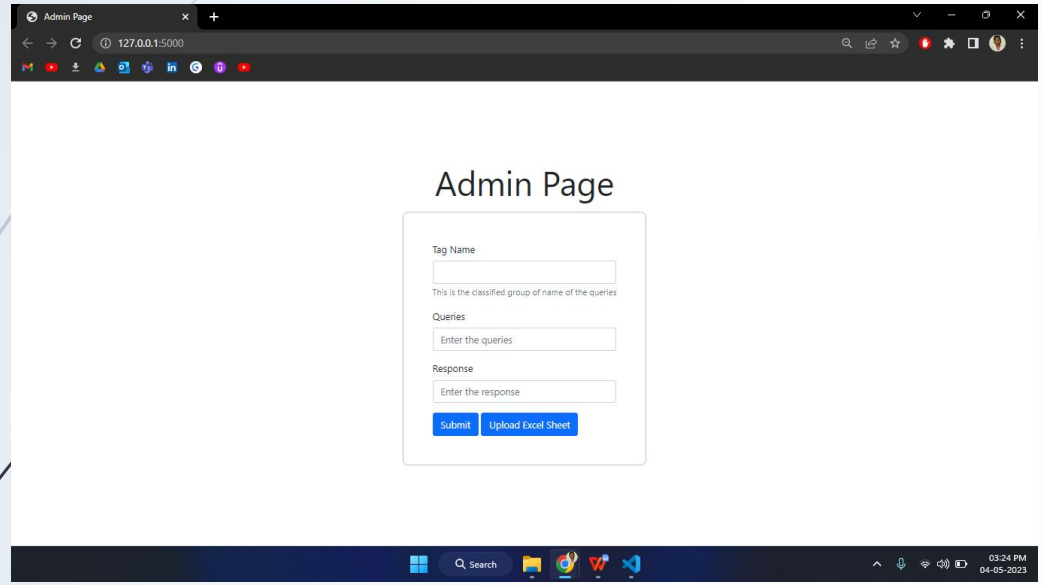


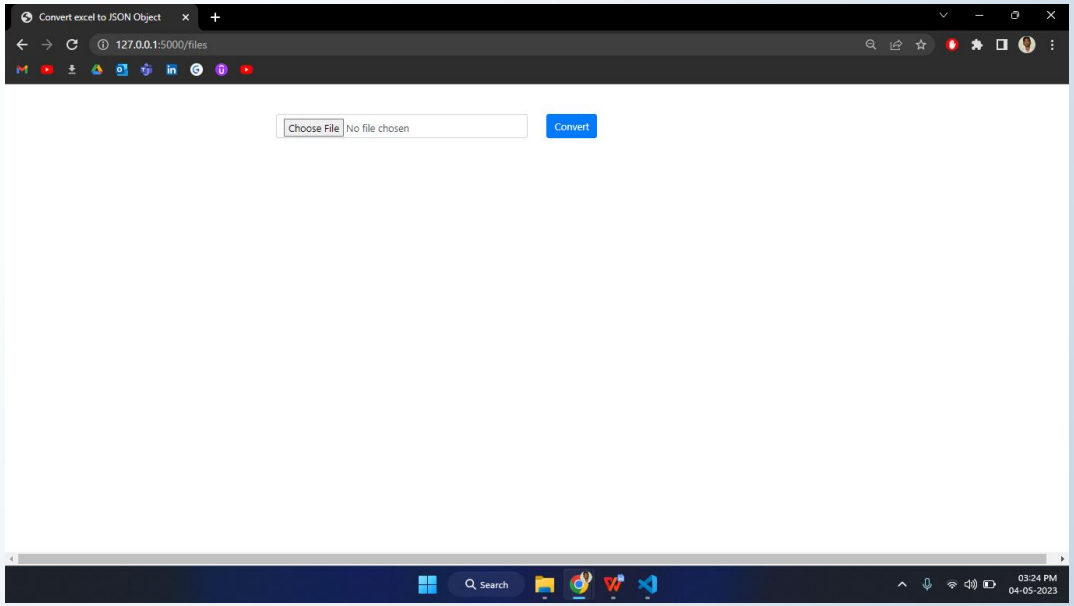
Multi-Language

Content Translation

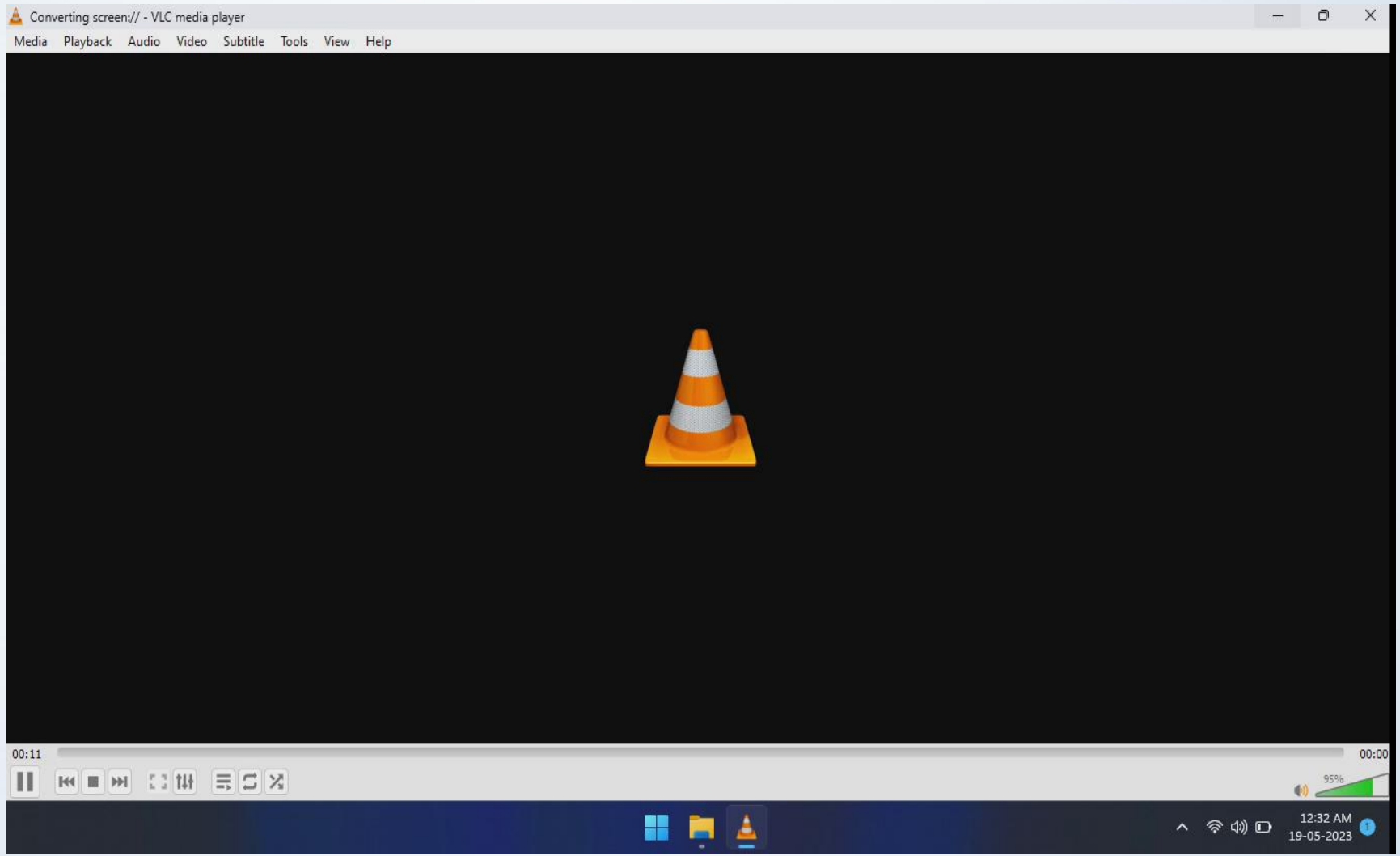


Admin Module





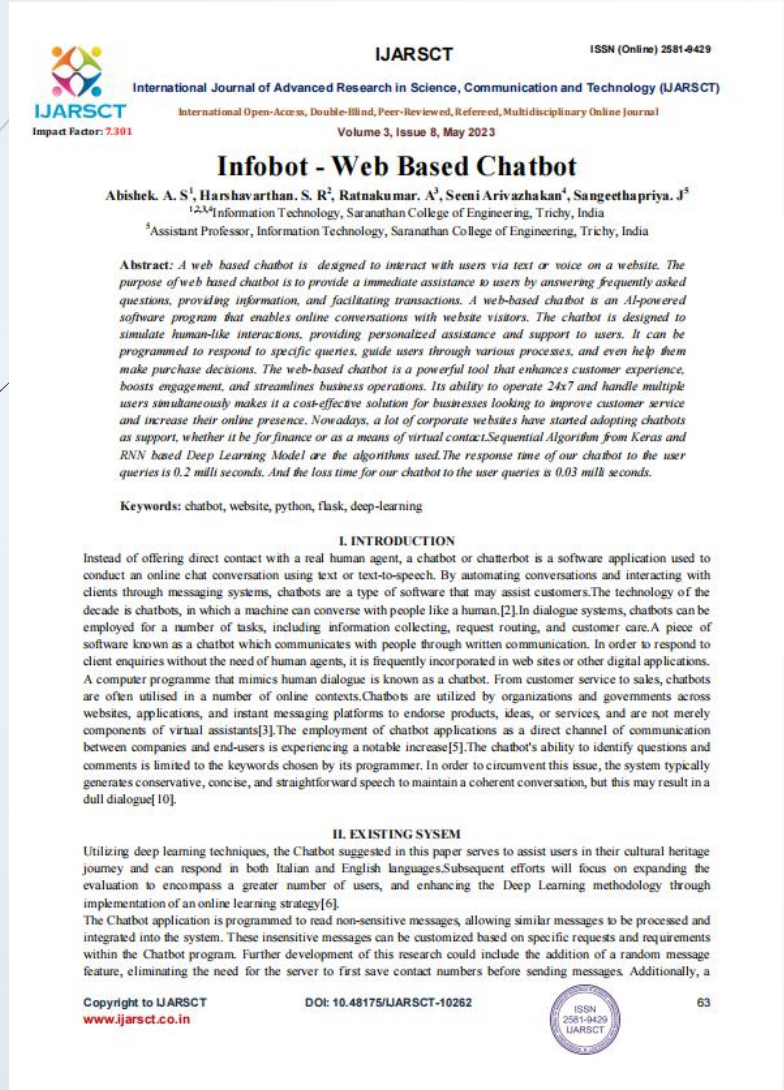
CHATBOT WORKING VIDEO



CONCLUSION AND FUTURE WORK

- This Web Chatbot is user friendly in nature.The chatbot will be available 24x7. So the user can use the chatbot at any time. When the user asking the questions the chatbot fetches the answer and provides in the web page. Now the user will get a response and Easy navigation too. The response time of our chatbot to the user queries is 0.2 milli seconds. And the loss time for our chatbot to the user queries is 0.03 milli seconds.
- While we saw how chatbots evolved and performed as of now, the future of chatbots is even more exciting. The enhancement that makes the chatbot even more unique as well as well performing are,Integrating the chatbot with other services like a CRM system, customer support ticketing system, or social media channels can improve the user experience by streamlining workflows and providing more personalized responses.

JOURNAL PUBLICATION



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Infobot - Web Based Chatbot

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Abstract: *A web based chatbot is designed to interact with users via text or voice on a website. The purpose of web based chatbot is to provide a immediate assistance to users by answering frequently asked questions, providing information, and facilitating transactions. A web-based chatbot is an AI-powered software program that enables online conversations with website visitors. The chatbot is designed to simulate human-like interactions, providing personalized assistance and support to users. It can be programmed to respond to specific queries, guide users through various processes, and even help them make purchase decisions. The web-based chatbot is a powerful tool that enhances customer experience, boosts engagement, and streamlines business operations. Its ability to operate 24x7 and handle multiple users simultaneously makes it a cost-effective solution for businesses looking to improve customer service and increase their online presence. Nowadays, a lot of corporate websites have started adopting chatbots as support, whether it be for finance or as a means of virtual contact.Sequential Algorithm from Keras and RNN based Deep Learning Model are the algorithms used.The response time of our chatbot to the user queries is 0.2 milli seconds. And the loss time for our chatbot to the user queries is 0.03 milli seconds.*

Keywords: chatbot, website, python, flask, deep-learning

I. INTRODUCTION

Instead of offering direct contact with a real human agent, a chatbot or chatterbot is a software application used to conduct an online chat conversation using text or text-to-speech. By automating conversations and interacting with clients through messaging systems, chatbots are a type of software that may assist customers.The technology of the decade is chatbots, in which a machine can converse with people like a human.[2].In dialogue systems, chatbots can be employed for a number of tasks, including information collecting, request routing, and customer care.A piece of software known as a chatbot which communicates with people through written communication. In order to respond to client enquiries without the need of human agents, it is frequently incorporated in web sites or other digital applications. A computer programme that mimics human dialogue is known as a chatbot. From customer service to sales, chatbots are often utilised in a number of online contexts.Chatbots are utilized by organizations and governments across websites, applications, and instant messaging platforms to endorse products, ideas, or services, and are not merely components of virtual assistants[3].The employment of chatbot applications as a direct channel of communication between companies and end-users is experiencing a notable increase[5].The chatbot's ability to identify questions and comments is limited to the keywords chosen by its programmer. In order to circumvent this issue, the system typically generates conservative, concise, and straightforward speech to maintain a coherent conversation, but this may result in a dull dialogue[10].

II. EXISTING SYSEM

Utilizing deep learning techniques, the Chatbot suggested in this paper serves to assist users in their cultural heritage journey and can respond in both Italian and English languages.Subsequent efforts will focus on expanding the evaluation to encompass a greater number of users, and enhancing the Deep Learning methodology through implementation of an online learning strategy[6].

The Chatbot application is programmed to read non-sensitive messages, allowing similar messages to be processed and integrated into the system. These insensitive messages can be customized based on specific requests and requirements within the Chatbot program. Further development of this research could include the addition of a random message feature, eliminating the need for the server to first save contact numbers before sending messages. Additionally, a

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[13] https://developer.mozillz.org/en-US/docs/