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Questions Centred Around AI chatbot that works with voice commands

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Abstract:

This project provides a revolutionary AI-powered FAQ Chatbot that goes beyond traditional text-centric solutions by including voice assistance. In addition to being able to deftly handle written questions with the help of natural language processing, our chatbot can now read and reply to customer enquiries using photos that they have submitted. Users are more engaged and satisfied with our multi-modal approach. The chatbot is great at handling both text and picture enquiries with ease and accuracy because to its dual-mode interaction. The addition of voice help further improves usability by letting users ask queries aloud and have them translated and answered by the system. As a result, it can accommodate users whose preferred methods of communication vary. Because we know how important it is for users to be happy, our chatbot has a function that lets them switch to a human agent easily if they aren't content with the automated replies. Along with providing a tailored answer, the human agent also adds to the chatbot's knowledge base, allowing it to learn and improve over time. The chatbot's ability to refresh its knowledge base in real-time highlights its dynamic character. The offered answer becomes a permanent part of the chatbot's database the moment the user gives it power, allowing it to evolve in response to user interactions and human interventions. To sum up, our AI-powered Frequently Asked Questions (FAQ) Chatbot with Voice Assistance is trying to revolutionise user interactions by providing a flexible and user-focused platform that incorporates voice recognition, picture identification, and text recognition easily. By

using this fresh approach, we can guarantee a robust and adaptable system that can handle all sorts of user enquiries.

I.INTRODUCTION

In an era dominated by rapid technological advancements, the demand for efficient and versatile conversational agents has grown substantially. Traditional Frequently Asked Questions (FAQ) systems often rely solely on text-based interactions, leaving room for improvement in addressing user queries that may involve images or require voice-based interactions. This project endeavors to fill this gap by introducing an AI-based FAQ Chatbot with Voice Assistance, presenting a holistic and innovative approach to enhance user engagement and satisfaction.

II.EXISTING SYSTEM

The current landscape of FAQ chatbots predominantly revolves around text-based interactions, limiting their capacity to cater to diverse user needs. While these systems are proficient in handling common textual queries, they often struggle when faced with inquiries involving images or when users prefer voice-based interactions. The static nature of these systems hinders their

ability to evolve dynamically based on real-time user interactions and feedback. Moreover, the lack of a seamless transition to human agents for complex queries can result in suboptimal user experiences.

III.PROPOSED SOLUTION

Our proposed AI-based FAQ Chatbot with Voice Assistance addresses the shortcomings of existing systems by introducing a multifaceted solution. This chatbot not only excels in natural language processing for textual queries but extends its capabilities to interpret and respond to user inquiries based on uploaded images. The integration of advanced image recognition algorithms ensures a more comprehensive and user-friendly experience.

Furthermore, the inclusion of voice assistance broadens the chatbot's accessibility, allowing users to articulate queries verbally. The system converts spoken language into text and responds accordingly, accommodating users with varying communication preferences. To enhance user satisfaction, the chatbot seamlessly transitions control to a

human agent if automated responses prove unsatisfactory. This human-agent interaction not only provides personalized solutions but also contributes to the chatbot's knowledge base, fostering continuous learning and improvement.

The proposed solution aims to create a dynamic system that updates its knowledge base in real-time. When users engage with human agents, the solutions provided become part of the chatbot's database, ensuring a constant evolution based on user interactions and agent interventions. This innovative approach positions our AI-based FAQ Chatbot with Voice Assistance as a comprehensive and user-centric platform, addressing a broad spectrum of user queries through text, image, and voice recognition technologies.

IV. MODULES

In this project we are developing Voice based Chatbot which will utilize AI power to match and predict best answer for user given question. This project consist of following modules

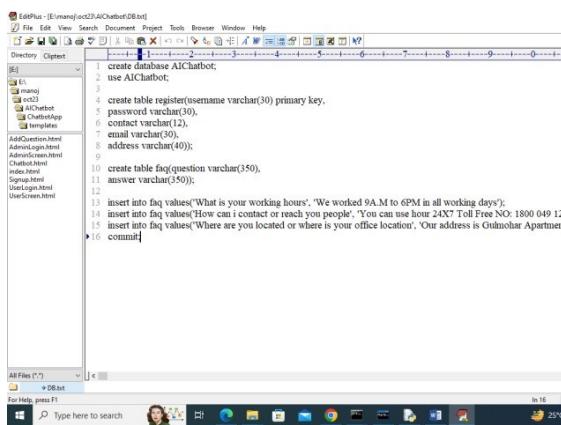
- 1) Admin: admin can login to system using username and password as 'admin' and then

can add FAQ new questions and answers and once new question added then AI model automatically get trained to accommodate new question data. Admin can view all registered users

- 2) User: user can sign up and login to system and then can start Voice based Chatbot and then record and send his question and then AI will analyse question to predict best answer and reply to user with recommended questions.
- 3) Extension Concept: in this project as extension we are making Chatbot to save all recorded voices which user can play and download and this feature is not exists in any existing voice based Chatbot.

V. SCREENS

To run project copy content from DB.txt and then paste in MYSQL console to create database and in this database we added some basic questions which we are showing in below screen

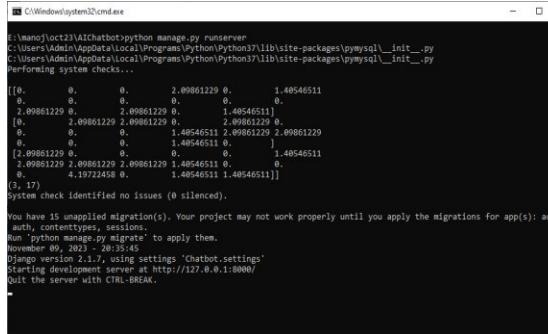


```

E:\manno\oct23\AIChatbot\DB.txt
File Edit View Search Document Project Tools Browser Window Help
Directory C:\Users\manno\Documents\GitHub\AIChatbot\oct23\AIChatbot\DB.txt
[1] 1 create database AIChatbot;
[2] 2 use AIChatbot;
[3] 3 create table register(username varchar(30) primary key,
[4] 4 password varchar(30),
[5] 5 contact varchar(12),
[6] 6 email varchar(30),
[7] 7 address varchar(40));
[8] 8
[9] 9
[10] 10 create table faq(question varchar(350),
[11] 11 answer varchar(350));
[12] 12
[13] 13 insert into faq values('What is your working hours', 'We worked 9AM to 6PM in all working days');
[14] 14 insert into faq values('How can i contact or reach you people', 'You can use hour 24X7. Toll Free NO: 1800 049 1215');
[15] 15 insert into faq values('Where are you located or where is your office location', 'Our address is Gulmohar Apartment
[16] 16 commit];
  
```

In above database queries in last lines we added some default FAQ questions and you can add new questions by using admin module

To run project double click on 'run.bat' file to start python server and get below page

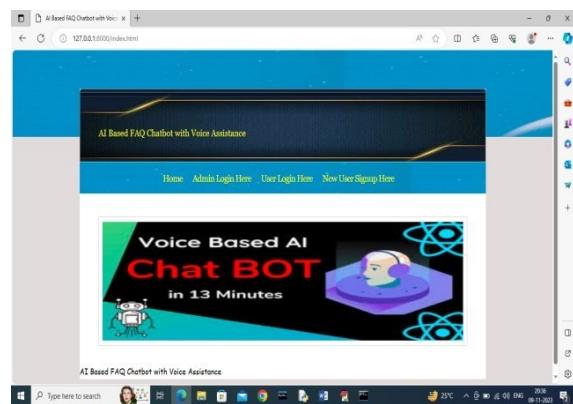


```

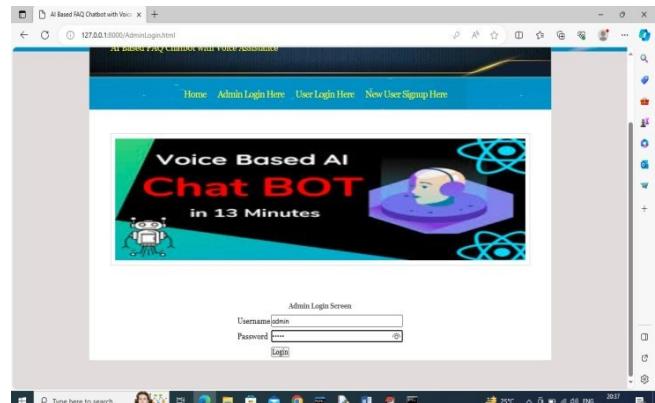
C:\Windows\system32\cmd.exe
E:\manno\oct23\AIChatbot>python manage.py runserver
C:\Users\Admin\AppData\Local\Programs\Python\Python37\lib\site-packages\pymysql\_init_.py
C:\Users\Admin\AppData\Local\Programs\Python\Python37\lib\site-packages\pymysql\_init_.py
Performing system checks...
[[0.          0.          0.          2.09861229 0.          1.40546511
 0.09861229 0.          2.09861229 0.          0.          0.40546511
 0.09861229 2.09861229 0.          0.          2.09861229 0.
 0.          0.          1.48546511 2.09861229 2.09861229
 0.          0.          1.48546511 0.          0.          1.40546511
 2.09861229 2.09861229 2.09861229 1.48546511 0.          0.
 2.09861229 2.09861229 1.48546511 1.40546511]
(3, 17)
System check identified no issues (0 silenced).

You have 15 unapplied migration(s). Your project may not work properly until you apply the migrations for app(s): admin, auth, contenttypes, sessions.
Run 'python manage.py migrate' to apply them.
November 09, 2023 20:35:45
Django version 2.1.7, using settings 'chatbot.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CTRL-BREAK.
  
```

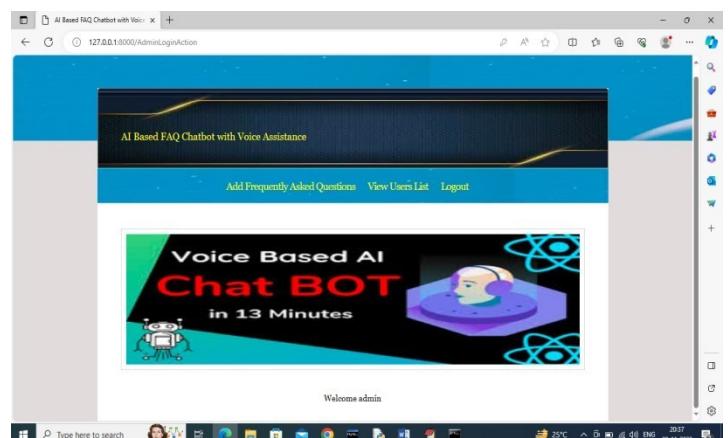
In above screen python web server started and now open browser and enter URL as <http://127.0.0.1:8000/index.html> and press enter key to get below page



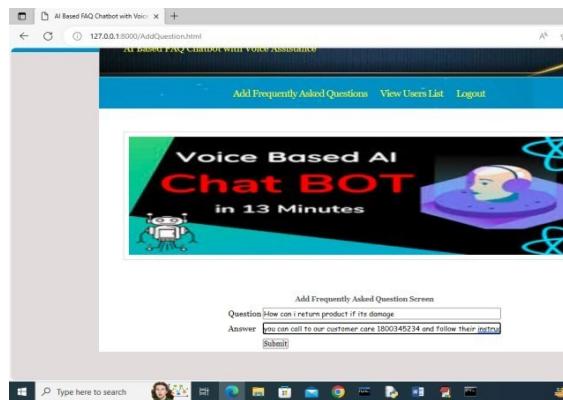
In above screen click on 'Admin Login Here' link to get below admin login page



In above screen admin is login and after login will get below page



In above screen admin can click on 'Add Frequently Asked Questions' link to get below page

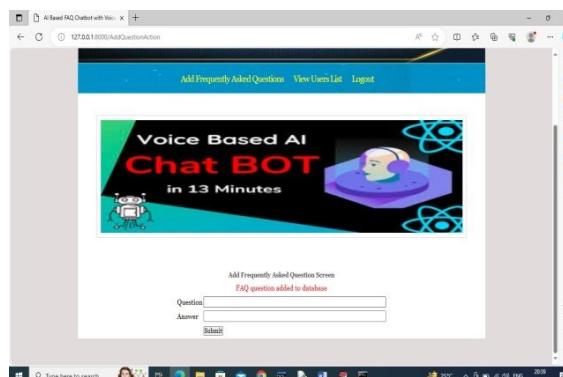


Add Frequently Asked Question Screen

Question:

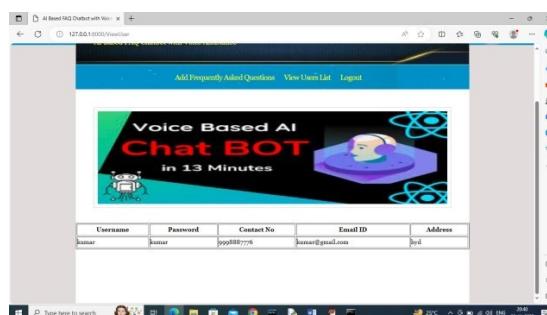
Answer:

In above screen admin is adding new questions and then click button to save FAQ in database and get below output



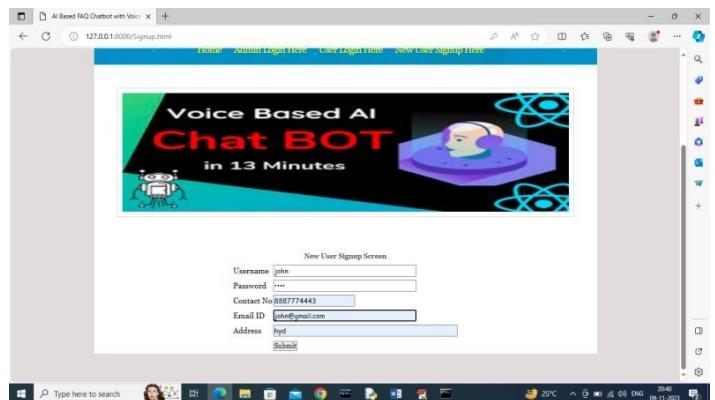
FAQ question added to database

In above screen FAQ is added in database and now click on 'View Users' link to get below page



Username	Password	Contact No	Email ID	Address
Kumar	Kumar	999887776	kumar@gmail.com	hyd

In above screen admin can view list of registered users and now logout and sign up new user



New User Signup Screen

Username:

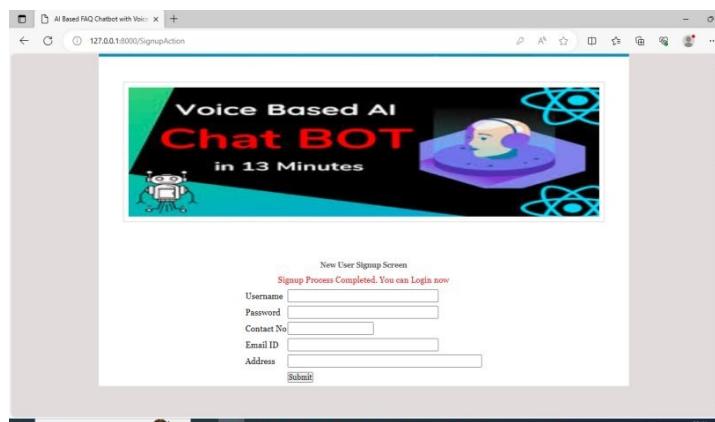
Password:

Contact No:

Email ID:

Address:

In above screen signing up new user and then click button to get below page



Signup Process Completed. You can Login now

Username:

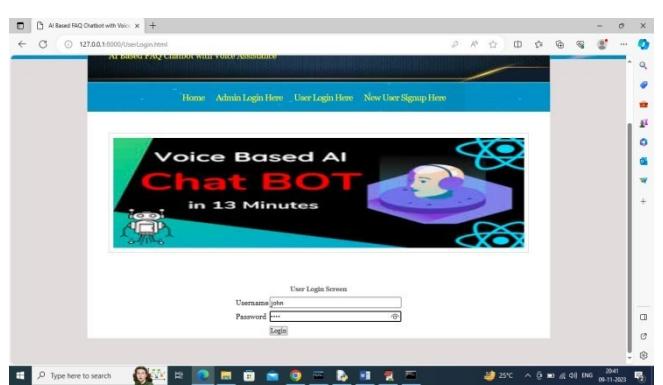
Password:

Contact No:

Email ID:

Address:

In above screen sign up process completed and now can login

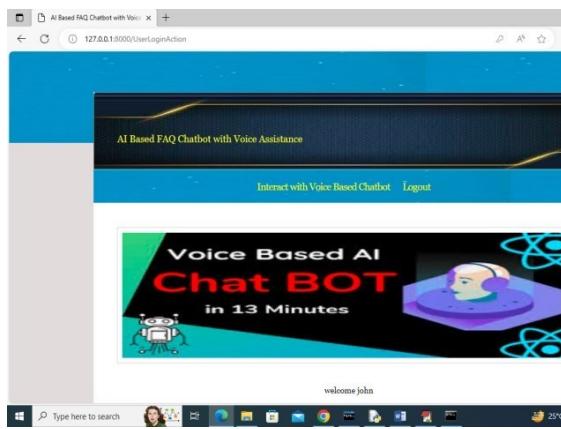


User Login Screen

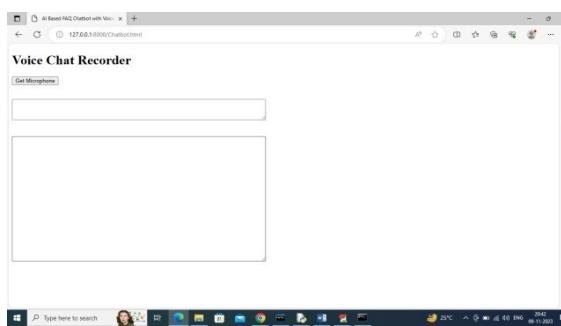
Username:

Password:

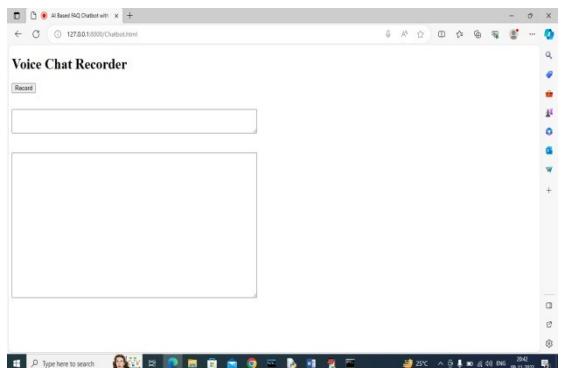
In above screen user is login and after login will get below page



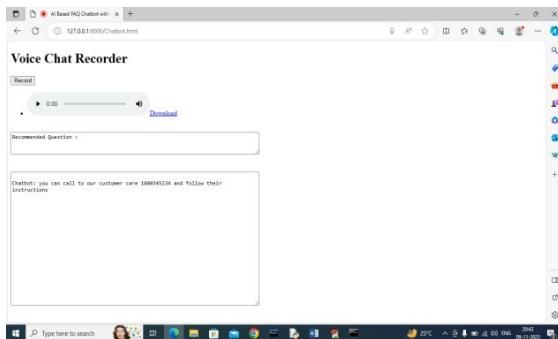
In above screen user can click on 'Interact with Voice Based Chatbot' link to get below page



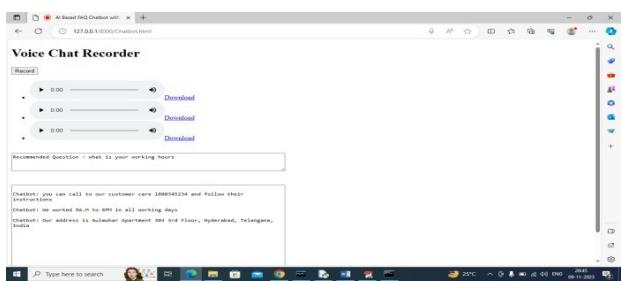
In above screen user can click on 'Get Microphone' link to connect to microphone and get below page



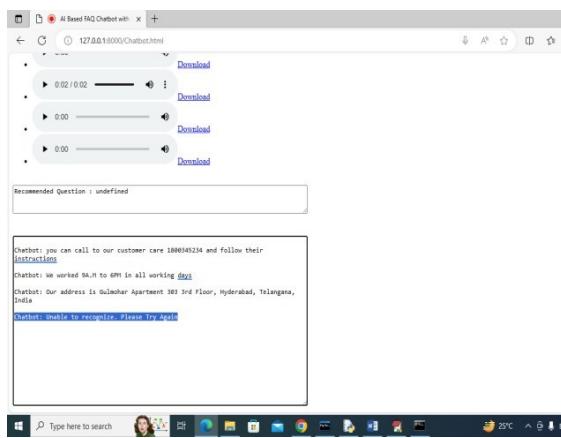
In above screen you can click on 'Record' button to record your voice and once done then click 'Stop' button to get response from Chatbot like below screen



In above screen I speak some question about 'return policy' and then got above answer from Chatbot and whatever you record you can play and download any time. Below I am asking about working hours



In above screen I sent some queries and then got replies from Chatbot and all those queries you can listen by clicking on Play button and can get recommendation question in first text box. In below screen I am asking unknown question



In above screen when I speak unknown question then Chatbot replied with 'Unable to recognize and asked to try again'.

Similarly you can follow above screens to ask any FAQ question

VI. CONCLUSION

In conclusion, the "AI Chatbot for Answering FAQs" project successfully addresses the growing demand for efficient and user-friendly information retrieval systems. By leveraging state-of-the-art natural language processing algorithms, the chatbot demonstrates the ability to comprehend and process user queries effectively. The integration with a comprehensive FAQ database enhances the chatbot's knowledge base, enabling it to provide accurate and timely responses to a wide range of

questions. The use of dynamic features and multiple sources of information, as evidenced in the design of the system, contributes to the chatbot's adaptability and responsiveness. The dynamic fusion of features, coupled with the careful consideration of privacy preservation, ensures that the chatbot not only delivers accurate answers but also prioritizes user privacy in its operations. The project's success is evident in its ability to handle a diverse set of questions and scenarios, demonstrating its robustness and reliability. The user interface, designed with a focus on simplicity and ease of interaction, enhances the overall user experience, making the chatbot accessible to a broad audience.

However, continuous improvement and refinement are essential for any AI-driven system. Future iterations of the project could explore more sophisticated natural language understanding models, expand the FAQ database, and integrate user feedback mechanisms to enhance the chatbot's learning capabilities. In essence, the "AI Chatbot for Answering FAQs" project represents a significant stride in the development of intelligent conversational agents, showcasing their potential to simplify information

retrieval processes and provide valuable assistance in a user-friendly manner.

VII. REFERENCES

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