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## AI BASED FAQ CHATBOT WITH VOICE ASSISTANCE

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### Abstract :

This project introduces a groundbreaking AI-based FAQ Chatbot with Voice Assistance, transcending conventional text-centric FAQ systems. Our chatbot not only adeptly handles textual queries through natural language processing but also extends its functionality to interpret and respond to user inquiries based on uploaded images. This multi-modal approach enriches user engagement and satisfaction. The chatbot boasts a dual-mode interaction, seamlessly addressing both text and image-based queries with precision. Furthermore, the incorporation of voice assistance enhances user accessibility, allowing them to pose questions verbally, which are then translated and responded to by the system. This accommodates users with diverse communication preferences. Recognizing the paramount importance of user satisfaction, our chatbot includes a feature that facilitates a smooth transition to a human agent if users are dissatisfied with automated responses. The human agent not only provides a personalized solution but also contributes to the chatbot's knowledge base, ensuring continuous learning and improvement. The dynamic nature of the chatbot is underscored by its capacity to update its knowledge base in real-time. When a user hands over control to the human agent, the provided solution becomes an integral part of the chatbot's database, fostering continuous evolution based on user interactions and agent interventions. In summary, our AI-based FAQ Chatbot with Voice Assistance aims to redefine user interactions by offering a versatile and user-centric platform that seamlessly integrates text, image, and voice recognition technologies. This innovative approach ensures a comprehensive and dynamic system for addressing a wide spectrum of user queries.

## **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

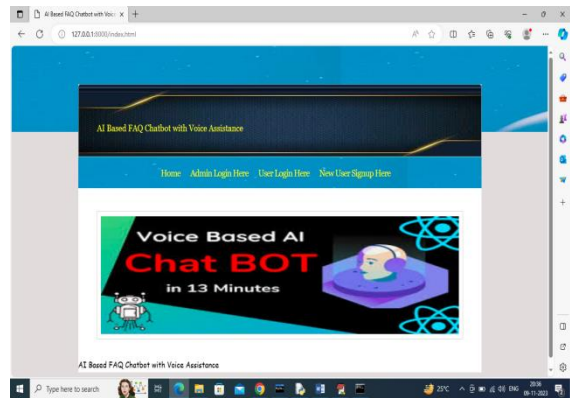
- 2) User: user can sign up and login to system and then can start Voice based Chatbot and then record and send his question and then AI will analyse question to predict best answer and reply to user with recommended questions.
- 3) Extension Concept: in this project as extension we are making Chatbot 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

```

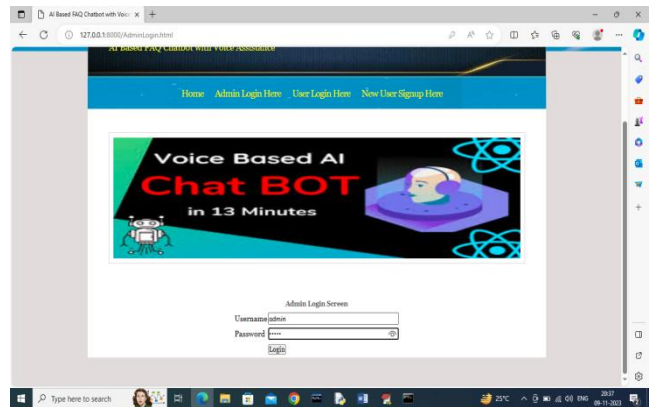
1 create database AIChatbot;
2 use AIChatbot;
3
4 create table register(username varchar(30) primary key,
5 password varchar(30),
6 contact varchar(12),
7 email varchar(30),
8 address varchar(40));
9
10 create table faq(question varchar(350),
11 answer varchar(350));
12
13 insert into faq values('What is your working hours', 'We worked 9A.M to 6PM in all working days');
14 insert into faq values('How can i contact or reach you people', 'You can use hour 24X7 Toll Free NO: 1800 049 12');
15 insert into faq values('Where are you located or where is your office location', 'Our address is Ghinohar Apartment
16 comunt
    
```



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

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

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

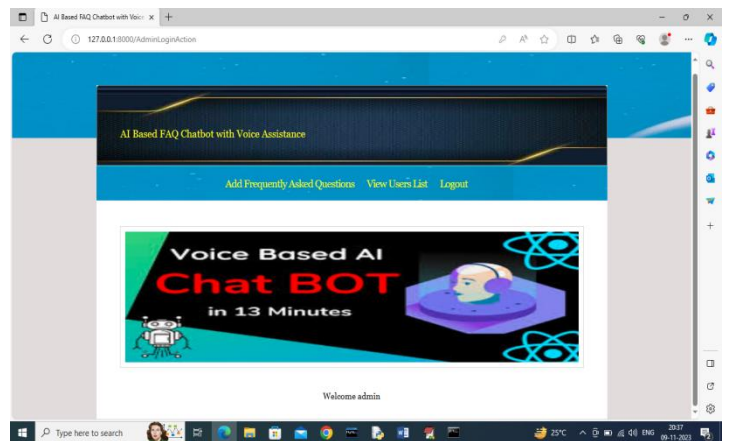


```

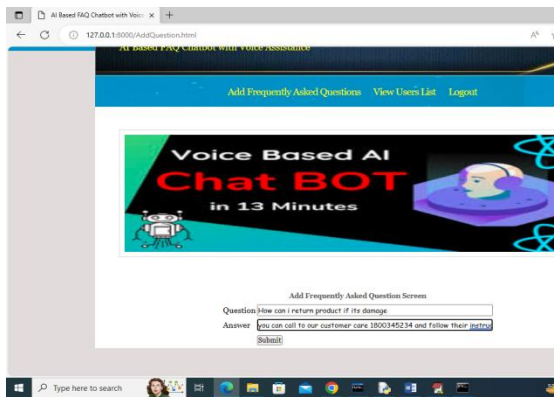
C:\Windows\system32\cmd.exe
C:\manoj>cd 123\AIChatbot;python manage.py runserver
C:\Users\ADMIN\AppData\Local\Programs\Python\Python37\lib\site-packages\pymysql\__init__.py
C:\Users\ADMIN\AppData\Local\Programs\Python\Python37\lib\site-packages\pymysql\__init__.py
Performing system checks...
[0, 0, 0, 2.09861229 0, 1.48546511]
0, 0, 0, 0, 0, 0,
2.09861229 0, 2.09861229 0, 1.48546511]
0, 2.09861229 2.09861229 0, 2.09861229 0,
0, 1.48546511 2.09861229 2.09861229
0, 1.48546511 0, 1
[2.09861229 0, 0, 0, 1.48546511
2.09861229 2.09861229 2.09861229 1.48546511 0, 0,
0, 4.19722458 0, 1.48546511 1.48546511]]
(0, 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, 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 admin is login and after login will get below page

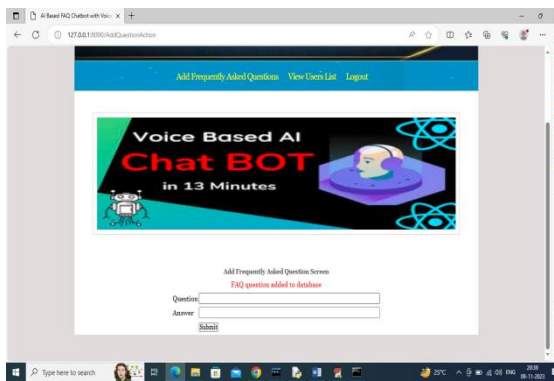
In above screen python web server started and now open browser and enter URL as <http://127.0.0.1:8000/index.html> and press enter key to get below page



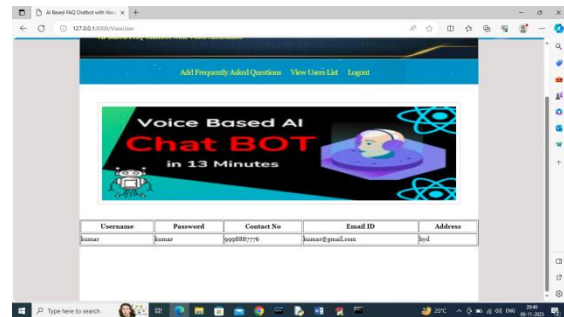
In above screen admin can click on 'Add Frequently Asked Questions' link to get below page



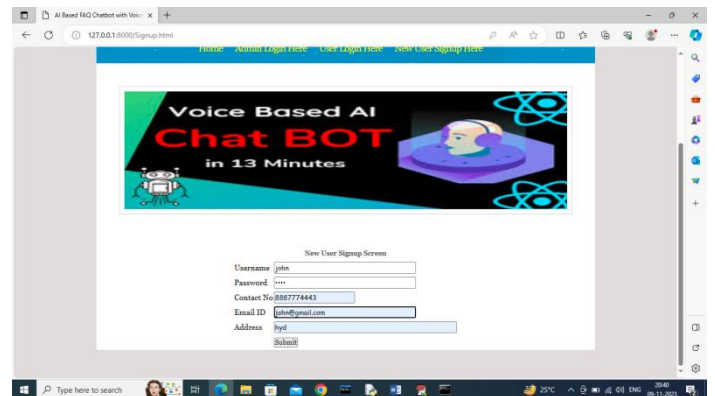
In above screen admin is adding new questions and then click button to save FAQ in database and get below output



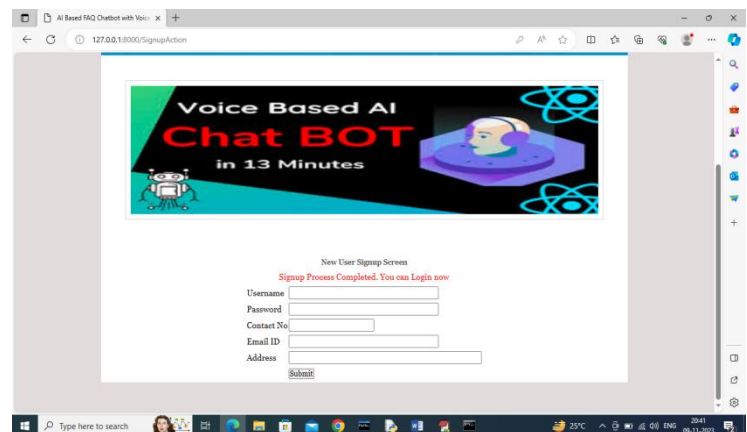
In above screen FAQ is added in database and now click on 'View Users' link to get below page



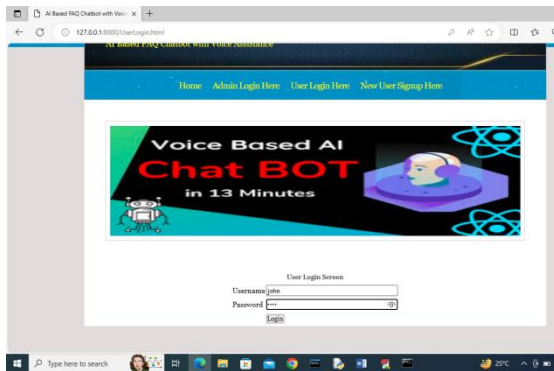
In above screen admin can view list of registered users and now logout and sign up new user



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

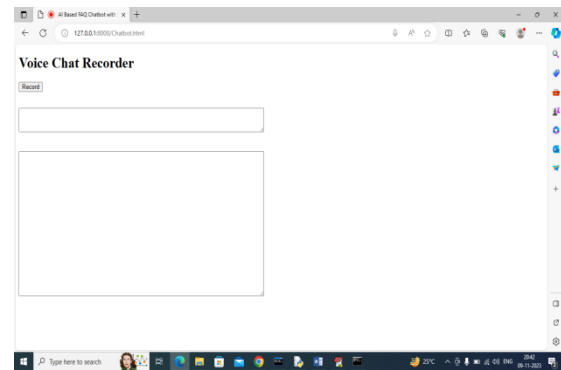


In above screen sign up process completed and now can login

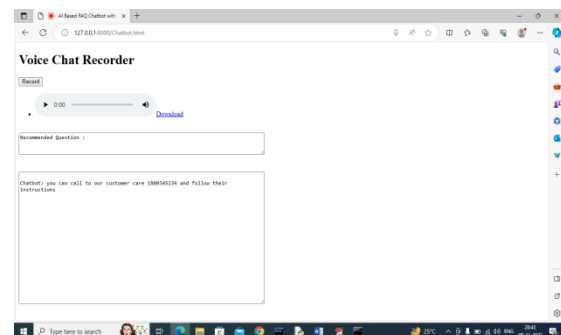
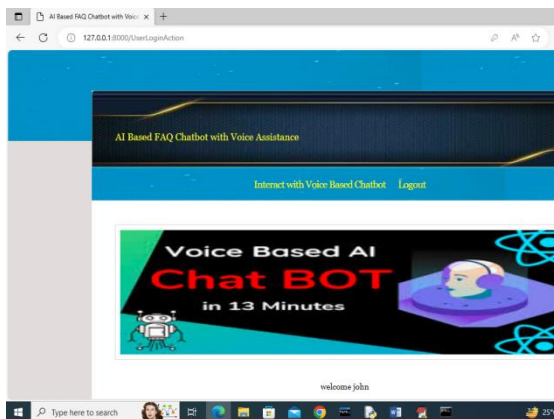


In above screen user can click on 'Get Microphone' link to connect to microphone and get below page

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

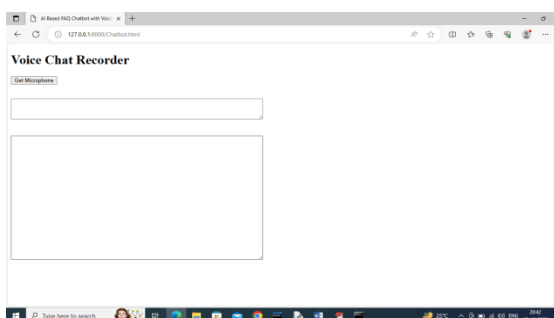


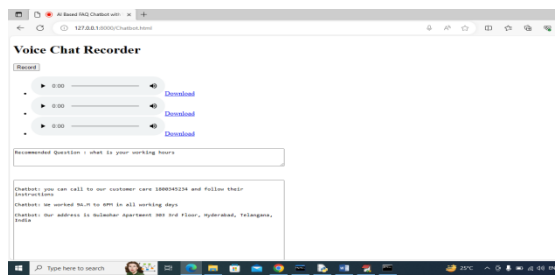
In above screen you can click on 'Record' button to record your voice and once done then click 'Stop' button to get response from Chatbot like below screen



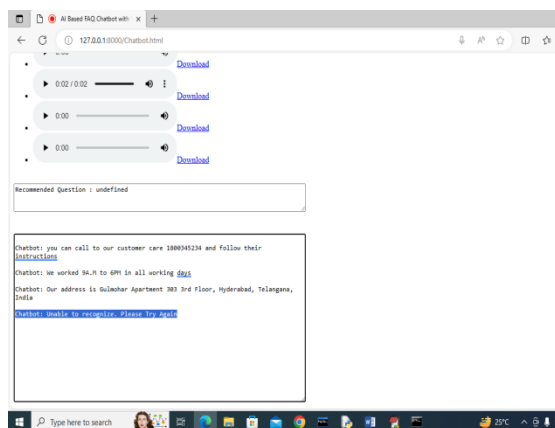
In above screen user can click on 'Interact with Voice Based Chatbot' link to get below page

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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