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Voice Based E-mail System for Visually Impaired People

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ABSTRACT: Everyone requires communication technologies in the current environment in order to reach with one another. Modern communication technologies are important for enhancing social and personal engagement. Communication is simple thanks to technology and the internet. Due to visual and physical challenges, however, a physically challenged person suffered greatly when using this device. Many technological advances have been made, yet they cannot be used by regular consumers. This paper aims at creating an email system that helps even new users or physically impaired people to use the system for communication without any previous practices. There is no use of keywords, only with the help of mouse actions and voice conversion the email system works. The person who is not literate can also send emails as it is based on speech recognition and text to speech. The system is completely based on responsive voice interaction to utilize the technology easy and hassle-free manner. The system is well designed to send the mails quickly. There are all the options available to send emails and perform all the functions for the email system.

KEYWORDS: Email, Internet, Voice, Speech recognition, Physically challenged, Text to speech.

I. INTRODUCTION

Nowadays everybody is connected to the internet. It is an inseparable part of our life. It contains all the information of individuals and day to day history. Communication and interaction are possible mainly through the internet. Out of many technologies E-mail is the most common way of communication primarily for business and educational perspective. Although not all use net and have access. This is due to lack of facilities, knowledge and money. The users should have vision to see and read the screen. For the physically and visually challenged people net is like a useless and unfamiliar thing. However, there are technologies like TTS (text-to-speech), and ASR (automated-speech recognition) screen readers, but they do not provide full accuracy and efficiency to the impaired people to use the internet. As communication is needed in everyone's life, net facilities should be available for everyone. That's why this project is based on voice email which will help impaired people to communicate. Even the naïve users can access and send emails to anyone. It is completely based on the voice response. There is no prior knowledge required to use this. Everything is automatically prompting the only thing is to give the responses of the voices to perform the actions.

II. LITERATURE SURVEY

In [1] to enhance the accuracy of speech recognition process, noise elimination techniques are used. The input voice may contain noise or unwanted information. The web speech API has a built-in event handler which detects and eliminates the noise when it detects any sound. This application is tested for noise elimination with different environmental surroundings.

In [2] When the users interact with the system it will automatically generate the voices to do the actions. There is a step by step process to perform the actions. The users have to hear the voices and respond for the desired actions. The main advantage of the system is that there is no application of keywords, only one mouse button operation is required at the beginning.

In [9] Interactive voice response (IVR) is an innovation that enables a PC to associate with people using voice and DTMF tones input through a keypad. In broadcast communications, IVR enables clients to connect with an organization's host framework by means of a phone keypad or by speech recognition, after which administrations can be asked about through the IVR exchange. IVR frameworks can react with pre-recorded or dynamically produced

sound to additionally guide clients on the best way to continue. IVR frameworks sent in the network are measured to deal with large call volumes and furthermore utilized for outbound calling, as IVR frameworks are cannier than numerous prescient dialer frameworks.

In [10] To enable multiple users to use this application a client server module is developed. A client-server application is a distributed system comprising both client and server software.
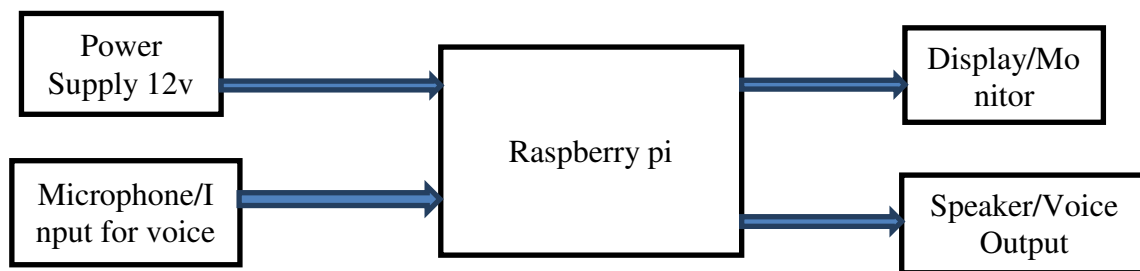
III. METHODOLOGY
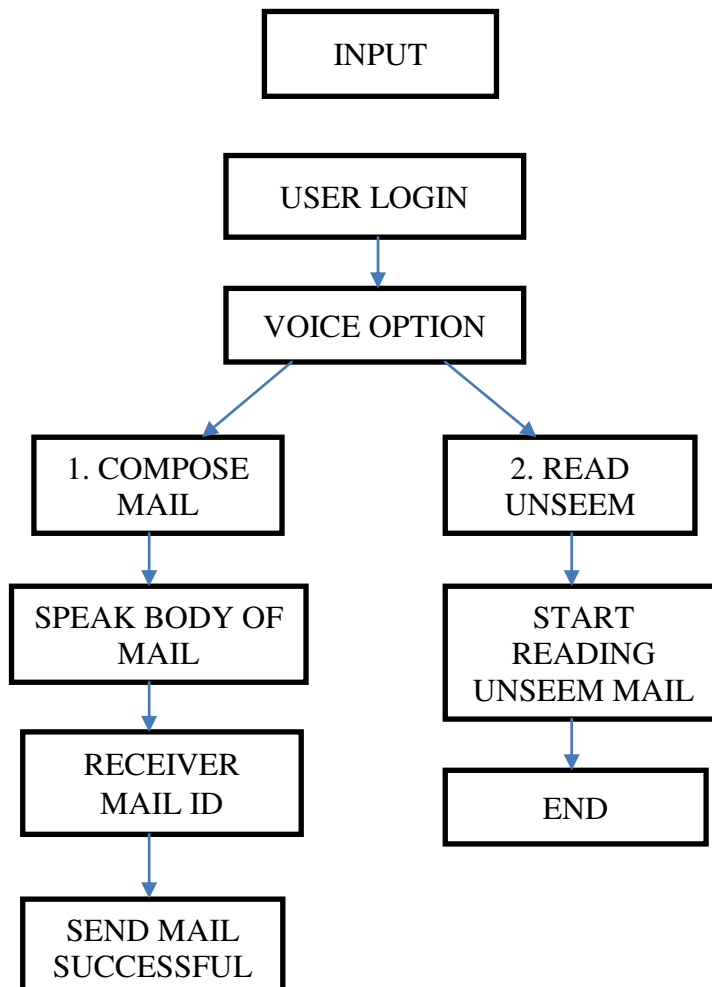

Fig.   HARDWARE DIAGRAMOF SETUP.

Fig. FLOW DIAGRAM OF VOICE BASED EMAIL SYSTEM

In this voice based email system we have used the raspberry pi, one speaker for output sound, monitor as display and microphone to provide voice command by the user. In this system have to provide login credentials of user to signing in to the system. After that if the credentials are correct. it will login the user to the system successfully than it will ask the two option i.e. speak "1" to compose your mail else speak "2" to read the unseen mails of userinbox. If the system is not able to understand the voice it will show or tell that didn't understand speak again. After getting proper command from the user like you said 1 to compose your mail than it will process further to compose your by taking input from user like it will ask to speak the body of mail, receivers mail id after taking all inputs correctly it will send the mail successfully to the receiver. But if the user said 2 as choice than it will starting reading the unseen mails of user mail id.

Step 1: In this systemfirstlywe have to provide the sender mail id and password to login.

Step 2: In the second step after login to the system it will ask two choices to user that is 1 for compose your mail and2for read the inbox.

Step 3: In third step we have to provide choice as 1 or 2.

Step 4: If user has said choice as 1 than it will ask the body of the mail.

Step 5: In the fifth step it will ask the receivers mail id.

Step 6: In this step it will deliver the mail to receiver successfully.

Step 7: If the user said their choice as 2 than it will start reading the unread mail received on the user mail id.

IV. RESULTS

A voice-based email system using Raspberry Pi and Python is a useful and convenient tool for individuals who may have difficulty accessing and managing their emails through traditional methods. This system can be developed with the help of various libraries such as PyAudio, SpeechRecognition, and smtplib. The system will begin by prompting the user for their email login credentials and logging in to their email account. Once logged in, the system will present the user with two options - "compose" and "read" - and ask the user to speak their choice. The user can respond with a voice command, and the system will process the response accordingly. If the user selects the "compose" option, the system should prompt the user for the recipient's email address, subject, and body of the email. The user can provide this information through voice commands, and the system can use the smtplib library to send the email on behalf of the user. On the other hand, if the user selects the "read" option, the system should retrieve the user's unread emails and read them out loud to the user. The system can use the email library to fetch the user's emails and convert them to speech using a text-to-speech engine such as Google Text-to-Speech.
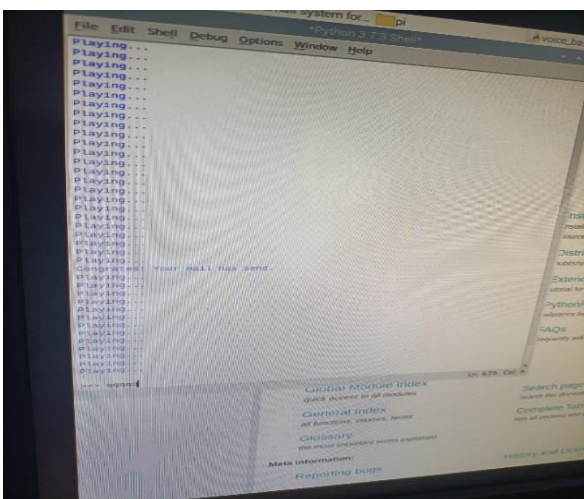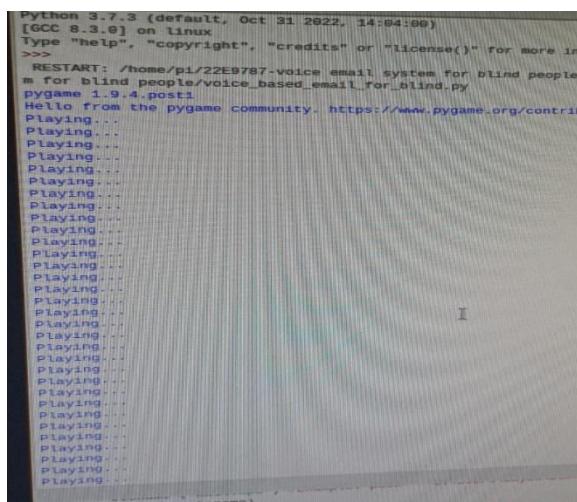

Fig. 1 shows Email send successfully.

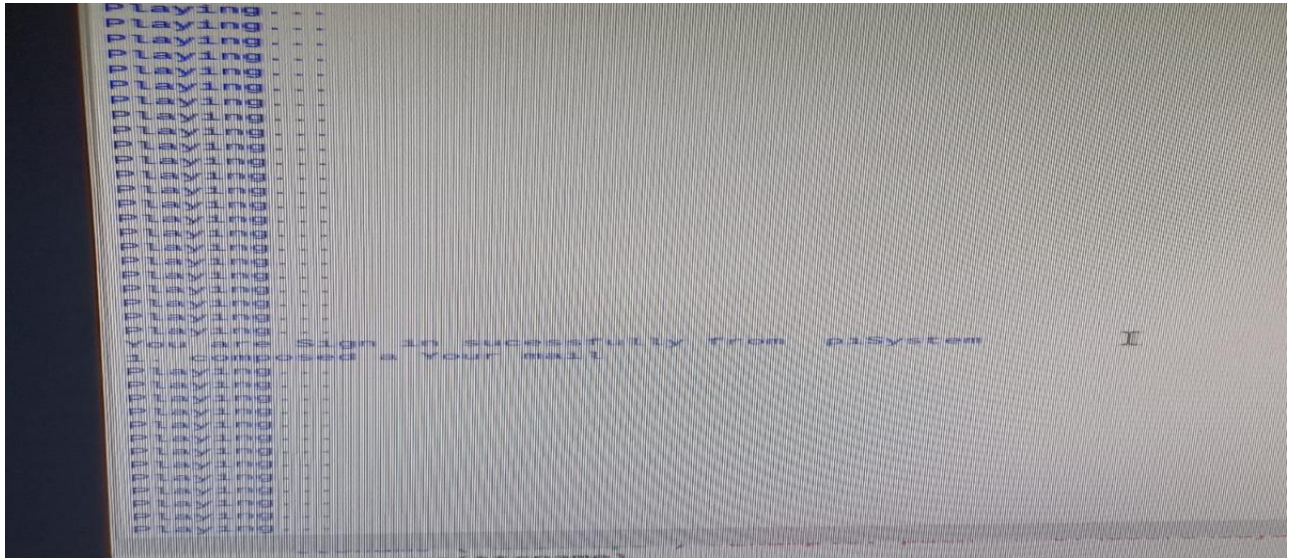Fig. 2 shows that system playing sound of commands.

Fig. 3 shows that Email Account login successfully.

V. CONCLUSION

The voice-based email system implemented using SMTP, TTS, and speech recognition libraries is an efficient and simple solution for visually impaired individuals. The system enables users to compose, send and receive emails through voice commands, making it easier and more accessible for visually impaired people to communicate. The integration of TTS and speech recognition libraries improves the user experience and ensures accurate transcription of voice commands. Overall, this system can significantly improve the lives of visually impaired individuals by providing a more accessible and efficient means of communication.

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