Voice Based Email System for Blind

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Abstract: *The communication among people is sharing of information. The Internet is widely used in almost all communication applications. E-mails are the most widely used and reliable way to communicate with each other. The usage of email is quite easy for regular users but when it comes to the visually imapired persons they are unable to access the system. for those visually impaired people, we are presenting the voice based email system under the principle of voice controlling. The mails which are present in our Gmail accounts those all text mails are converted into speech (Voice) and spoken by the assistant in our systems. The system is totally based on voice reaction which will make it easy to use and effective to utilize. The people who are visually impaired persons are easy to access this voice based email system and can able to listen the all mails present in the inbox in form of voice. This will provide easy accessibility to the visually impaired persons in the world. The Contribution made by the research has enabled the blind people to send and receive voice based email messages in their native languages with the help of computer.*

Keywords: Speech Recognition, Text to Speech, Voicemail, Visually Impaired people

I. INTRODUCTION

The most common mail services that are used in our day to day life cannot be used by visually challenged people. To make these systems convenient for these people who are visually impaired. There are various technologies provided to them like screen reader, google assistant ,automatic speech recognizer, speech to text and text to speech, braille keyboard etc. However, these technologies are not that useful for those people as it could not give the proper response like a normal system. The objective of Voice Based email System for visually impaired people is to help challenge one's access to mail easily and efficiently. This application is based on using speech-to-text and text-to speech converters, thus enabling everyone to control their mail accounts using their voice only and be able to read, send, and perform all the other useful tasks. The system will prompt the user with voice commands to perform certain actions and the user will respond to the same. So here put to use are the Speech-to-Text and Text-to-Speech technologies using python. The Speech-to-Text also known as Automatic Speech Recognition converts spoken speech into text, which helps compose emails as an easy task. The Text-to-Speech module gives audio output of the mail received, the sender, the subject and the body of the mail is read out by the system.

II. PROPOSED SYSTEM

The complete system is primarily based on speech to text and text to speech commands. Once the application is started the voice assistant speak out using some commands and as well as user reply to specific action with voice commands the user needs to speak that command. This application makes use of IMAP (Internet Message Access Protocol).It is an Internet standard protocol used by email clients to retrieve clients to retrieve email messages from a mail server over a TCP/IP connection.

The system uses mainly two technologies are:
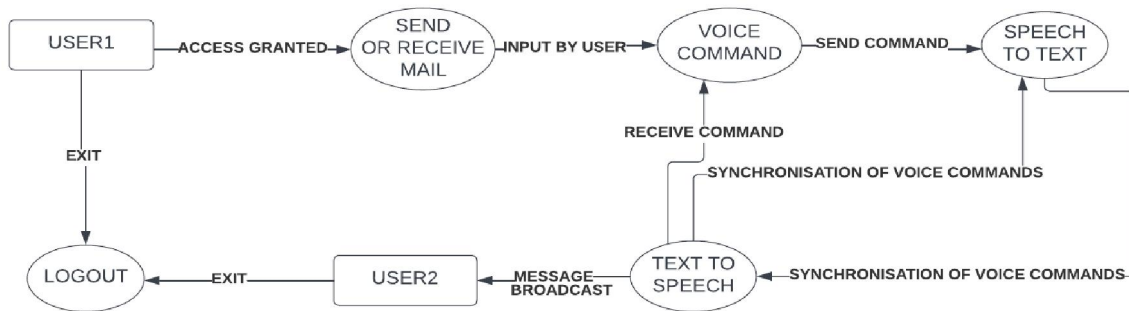- Speech to text
- Text to speech

Figure: System Architecture Diagram for Voice Based Email System

2.1 Modules

User login from imap by two step verification and the modules are

- Send
- Read
- Exit

III. LITERATURE SURVEY

In paper [2], a voice based email system is proposed which will help blind people to access email. The existing system is not user friendly for blind people as it does not give any audio to read out contents for them. The proposed system makes use of Speech Recognition, Interactive Voice Response and Mouse Click events. Also, for additional security purposes voice recognition is used for user verification. In this system, Registration is the first module. This module will collect complete information of the user by prompting the user to what details need to be entered. The second module is the login module in which the system will ask the user to provide user name and password. This is done through voice commands. Another voice sample is asked for performing the voice verification. Then the user is redirected to the inbox page once login is done. After login, users can perform normal operations of a mailing system. System options are: Compose, Inbox, Sent Mail, Trash. The user can switch between these using voice commands.

In another paper they are developing application using some modules and those are text to speech, speech to text, Interactive voice responses etc. So that based on their application we have taken those modules and working based on python libraries such as speech_recognition,pyttsx3 and those are used to convert speech to text and text to speech and we are justifying read, compose and exit objects based on referred papers.

IV. IMPLEMENTATION

4.1 Output Page for Send an Email

Assistant speak out what do you want and speak as "SEND","READ","EXIT" objects based on that user also respond in the form of voice and perform particular operation based on user response. So here user want to compose an email and speak the recipient mail id , subject, body of an email.
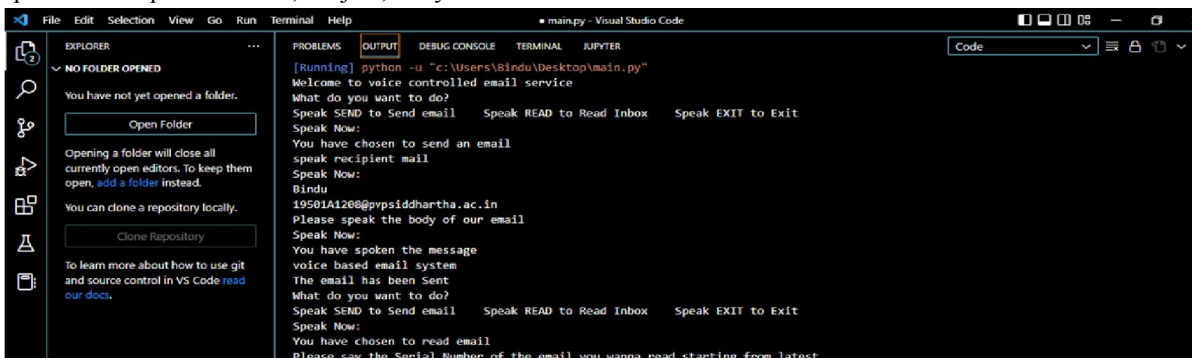

Figure 4.1: "SEND" module output

Here the email is successfully sent to specific recipient mail within fraction of seconds the email sent to the receiver based on internet bandwidth to that particular user. The process of while sending email is user want to speak everything clearly if the assistant unable recognize the voice then it gives as Sorry could not recognize what you said and Invalid choice you said displayed and as well as spoken by the voice assistant.
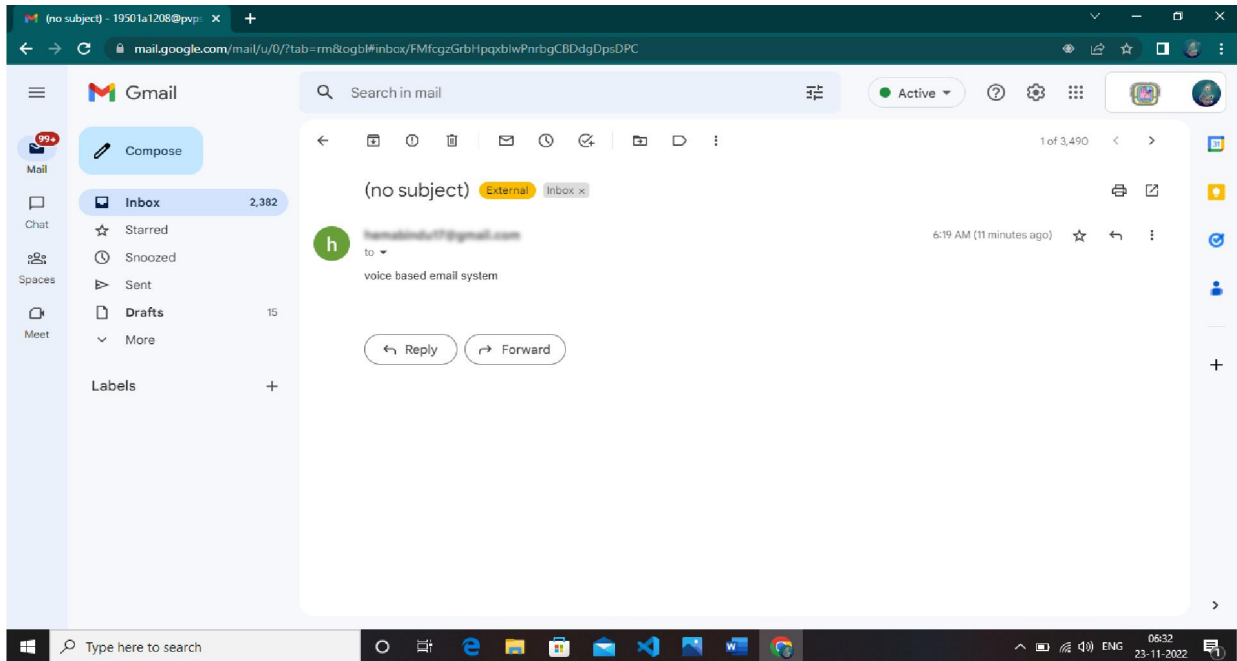

Figure 4.2: "Email Sent Successfully"
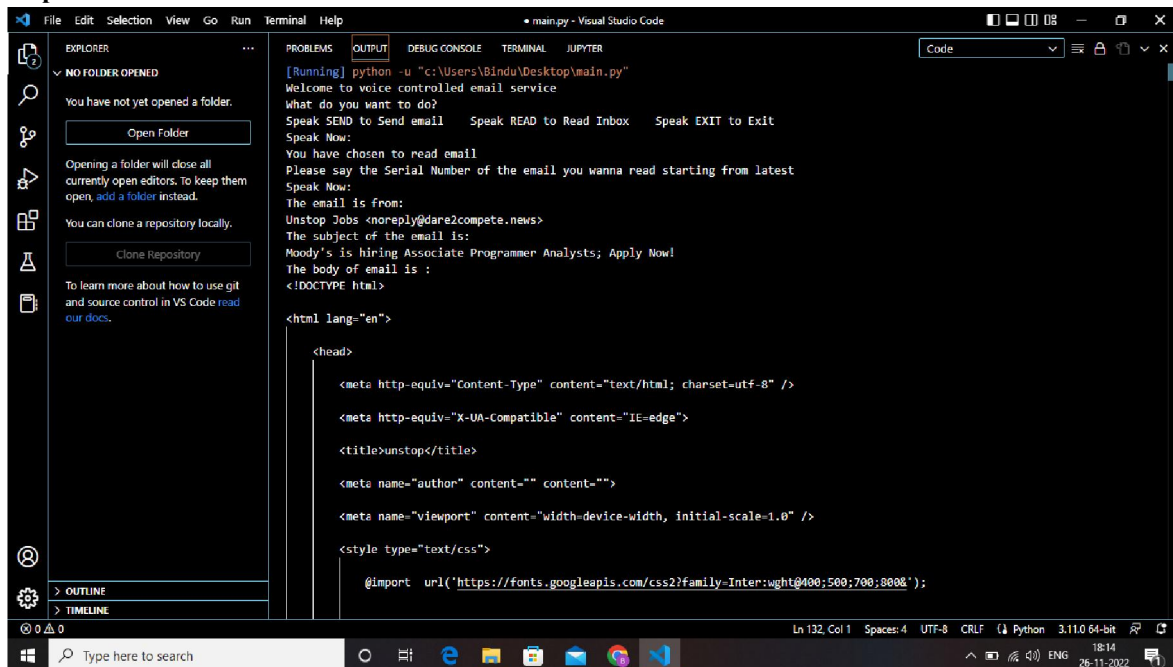
4.2. Output for read an Email

Figure 4.3: "READ" module output

Here we are going to speak the serial number of the email which will be displayed in the form of last in first out mechanism and read everything coming in the mail. It reads senders mail, subject of the email, body of an email. If the email consists of images then it reads title first then it can also able to read background html code.
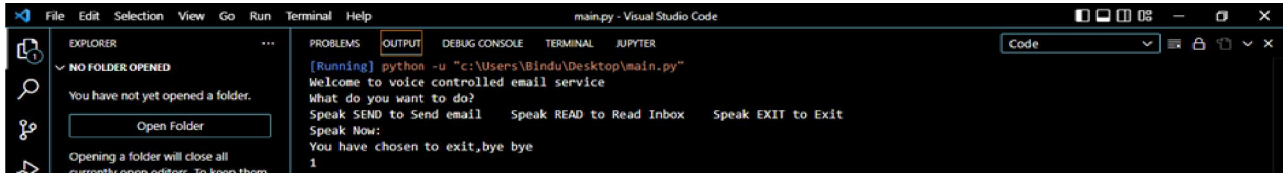
4.3 Output for Exit from Application

Figure 4.4: "EXIT" module output

This will terminate from the application once you speak "Exit" and if you want to know or listen to more mails then again open as many times as you want to listen to them.

V. SCOPE OF FUTURE USE

The application can be developed further to include the emails some of them all not known previously and those are getting and we want to send back some documents to that particular mail id. Visually impaired people cannot know the specific emails and we want to extend this application. This application may be improved and used for various services in addition to email, such as messaging, taking notes, and voice-operated operation of other applications. Furthermore, the voice disturbance and listening or detecting a word in many ways correctly based on users way of pronunciation to find it by the assistant with the help of high-tech tools. In the future, voice's capabilities could be expanded to include picture attachments and other features included in regular Email, including indentation and font selection.

VI. CONCLUSION

This paper is the proposed Voice based Email system for visually impaired people, which helps blinds and handicapped people to access mail easily. It provides a voice-based mailing service where the visually impaired person could read and send mail on their own. It builds confidence and the user gets independent as they do not need help from others. System has eliminated all the concepts and overcome all difficulties that were in traditional methods that were faced by the visually impaired people. These voice-based e-mail systems can also be used by illiterate and handicapped people as the TTS & STT technologies benefit them. The paper gives an outline about the various technologies used in different papers and marks the advantages and disadvantages of the technologies used so that the paper gives view to new technologies.

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