Voice Email Based On SMTP For Physically Handicapped

Sunny Kumar[1], Ms. Yogitha. R[2], Ms. R. Aishwarya[3]

[1]Student, [2,3]Assistant Professor

[1,2,3,4]Department of CSE

[1,2,3,4]Sathyabama Institute of Science and Technology

Abstract

In the present scenario, everybody needs communication technology to connect with each other. Communication technologies are significant these days for the betterment of social and personal interaction. The combination of technologies with the internet makes communication easy. However, the person who is physically challenged suffered a lot to utilize this technology due to visual and physical difficulties. There are many technologies advancements have come though it is not possible to use like normal users. 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 Email 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. EXISTING SYSTEM

Email is the most common way of communication around the world. There are more than 6 billion email accounts are there and this is still counting. But these services cannot be used by physically challenged people. This is because of the lack of facilities to know the procedure and use the system. There is no system to hear the actions of the email system. The impaired person cannot visualize the content present on the screen. They cannot read or see the content on the screen. They cannot perform the required actions to have the desired interaction.

For physically challenged people it is quite difficult to use the computer in a convenient way for the first time. There are various screen readers available in the market, but they suffer some problems to encounter the system. The screen readers read out the content on the screen and it requires keywords input to perform the actions. The screen readers do not take the mouse actions. This creates the main problems for them. The available solutions can be the users should be well versed with the shortcuts of keywords and the location of the keywords. But for the new users it is also difficult to use because they do not know the key locations. Fig1 shows the conversion of speech into text and processes by which voices are synthesize into recognisable text by speech recognizer.
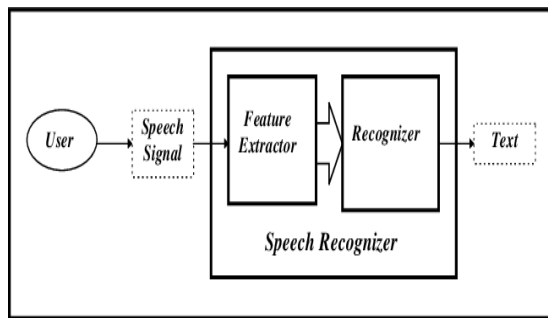
Fig1. Speech Recognizer

III. PROPOSED SYSTEM

There can be many proposed systems for the above problems. The present proposed system is completely based on the user's accessibility and easiness of the email system. It is completely useful for both types of people whether they are able or disable. The current system is not available for both types of people in the market. This system is focused on the user's behaviour and their perspective view. It is accessible to all types of people including illiterate people and even new users. The system uses IVR (interactive voice response) in order to interact with the users. It makes the system realistic and natural way to impart the messages and feelings.

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. Once the system is started every step is voiced based the users have to wait and respond for the desired actions. The users do not have to worry to have the mouse operations. Every functionality is voiced based if one action is performed it conveys the message of completion to the users. Whether it is successful or not it will tell everything with reason.

IV. LITERATURE REVIEW

The content of this paper is based on a command voice email system built to interact with the client. It is integrated with speech recognition to allow the voices to recognise and respond. The system is to give the users voice control mail rather than touch control. It is based on top-down model.

This paper intent to associate with client ends on the basis of theoretical and implementation details. It involves voice exchange with an Asterisk i.e. voice mailing, paging, conferencing. It is developed in C language and uses all Linux versions, provides relevant PC to Pc data and communications voices.

There are several modules involved in this project, Mediastreamer2 is a module of video streams and sound processing mainly used for RTP packets, processes incoming, encode and decode. It utilizes the interface functions to implement the voice mail and to design the framework for code with specific quality and efficiency.

The project is made by medium access control (MAC) protocol. It is used for the mobile wireless-based communications, MPEG-4 videos and email-data packet traffic. There is a quality assurance of each traffic enabled requirement. It plays a major role to establish the transmission of signals to the end of the users.

There are several models discussed like SIR(signal interference ratio) constraints of voice, VMS (video monitoring system) calls, VMS buffer size etc. All the models are organised into the system in order to run the designed system conveniently. To give users a good platform to interact, it contains no signal disturbance. At every stage performance of the system is evaluated.

With the rise in the demand of communication technologies, the email system is acquiring more attention. This project works on VoIP and CTI technology which is a type of value- added service. There is a vital use of digital voice integrated-card to guide the users. The delivery of the message is quite fast.

The voice enabled messaging system consists of external acoustic noise that runs on DFT (discrete Fourier transform) method. It filters the speech signals by the method of secure adaptive linear multichannel. Human beings and hearing use signal of this kind to encode the speech.

In all the communication applications, email is the simplest and easy accessible. It uses Internet for the operations to perform in reliable and efficient way. The current system is not designed for the blind people to interact. The proposed system is mainly designed for them to deliver the messages. The current system is upgraded to the voice control principle for the visual impairment.
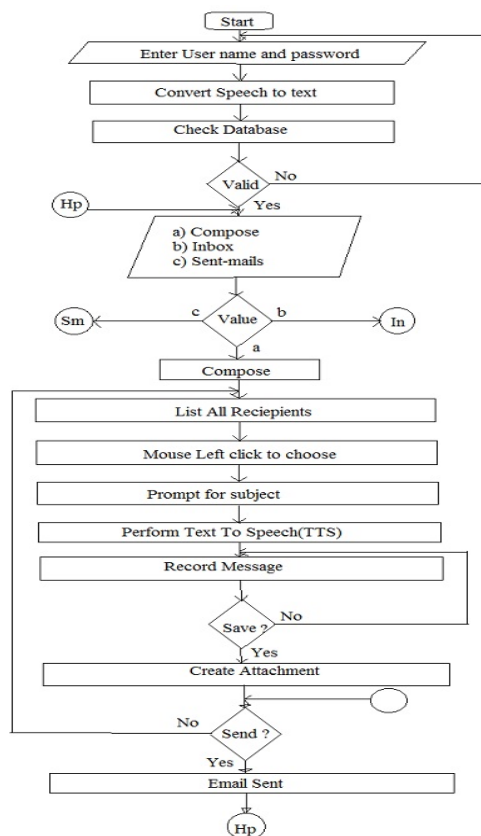
V. SYSTEM ARCHITERATURE

Fig2. Flow Diagram Of Working Of the System

VI MODULE OF THE SYSTEM

In the project there are several packages involved:

a. Speech Recognition
b. Python Pyaudio
c. Python Text To Speech
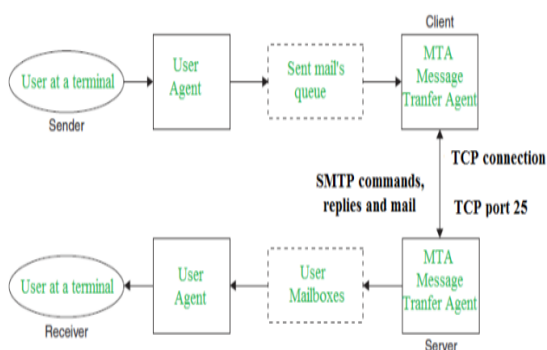d. Simple Mail Transfer Protocol (SMTP) Server

Fig3. Simple Mail Transfer Protocol(SMTP) Model

The main package to run the system is SMTP, without it email sending and receiving is not possible. It acts as an intermediator to both end users. The following steps for the implementation of the system is as follows :

A. Registration:

This module comes first in the system. The users who want to use has to speak up for the registration with proper validation.

B. Login:

Only the registered members can login into the system. They have to mention the username and password once the system asks for it.

C. Home Page:

The user is directed to homepage after the successful login. Here it contains all the options to perform the operations. The options are :

1. Compose

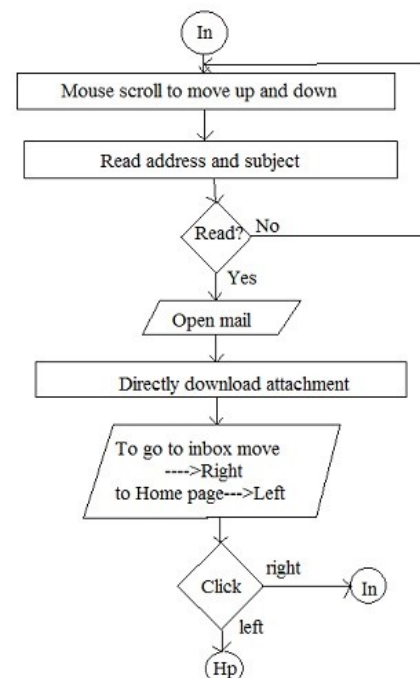2. Sent Mail

3. Inbox

4. Trash

Fig4. Mouse Operations to Navigate Options

VII FUTURE SCOPE

There can be wide scope of the system with its functionalities. It can consist of options for reading deleted and spam emails. The system will be more in demand if it will be accessible in all the regional languages. It will promote interaction at a higher level as it will require nothing special to use the system. It can be designed in more advanced ways by adding options of voice call and short messaging services (SMS). Further adding the proposed functionalities will take it to the global market and also will give facilities to communicate with each other in different ways. The enhancement of the existing system with the proposed ideas will make the system more friendly to use.

VIII CONCLUSION

This project is the best applicable for physically challenged people. One who is unable to read and write for the communication. The system is based on IVR voices and there is no use of keywords. Only mouse click operations are performed to initiate the operations. Any users are able to use the system as it does not require any prior knowledge. The only thing to keep in mind is to follow the instructions to do the right actions. The system is quite efficient and accessible to utilize for the communication for the blind people. There is no need to write or type the messages in the inbox of the email only through your voice's communication is possible. The system is completely made for physically challenged people for easy communication. It enhances the path of communication in a fast and interesting way. Even the normal users can utilize the system smoothly. This system will help the blinds to overcome difficulties in accessing the emails.
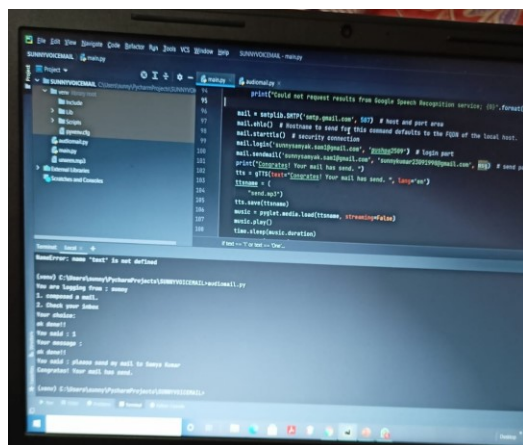
IX. RESULTS
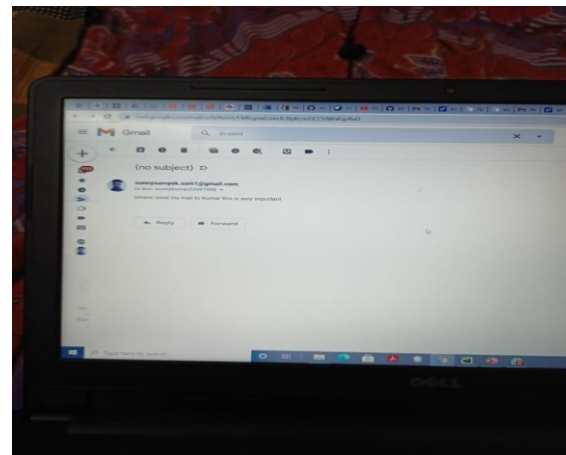

Fig5. Composing and sending mail

Fig6. Mail sent to receiver

REFERENCES

[1] Conferencing, Paging, Voice Mailing via Asterisk PBX – Ale Imran and Mohammed A. Qadeer [2019]

[2] Finding with the design of a command- based speech interface for a voice mail system -S,Gamm and D.Langmann [2018]

[3] Design and implementation of voice mail in IP telephony based on Mediastreamer2- Xu Yue and Xu Bing[2021]

[4] On the integration of MPEG-4 video streams with voice and email data packet traffic over wireless picocell networks- P. Koutsakis, S. Psychic and M. Paterakis[2001]

[5] Performance analysis of Voice message service in CDMA cellular systems"- Song Liu, Zhisheng Niu and Dawei Huang [2020]

[6] The design and implementation of Voice mailbox system based on VoIP- Jingyang Wang, Peng Ren and Min Huang[2015]

[7] Multi-channel adaptive algorithm for acoustic noise suppression of DFT method in systems voice messaging- Y.A Kropotov [2012]

[8]A Voice Communication-Augmented Simulation Framework For Aircraft Trajectory Simulation- Yuhao Wang, Michael Thomas and Yutian Pang[2021]

[9] Transfer Learning From Speech Synthesis to Voice Conversion with Non-Parallel Training Data- Mingyang Zhang, Yi Zhou and Li Zhao [2021]

[10] Email classification via intention based Segmentation-Sanjay Kumar Sonbhadra, Sonali Agarwal and Krishna Adiyarta [2020]

[11] Discovery of Activities Actor Perspective from Emails based on Speech Acts Detection- Marwa Elleuch, Nassim Laga, Walid Gaaloul and Oumaima Alaoui Ismaili [2020]

[12] Human computer interaction(HCI) based Smart Voice Email Application – Assistant for Visually Impaired users (VIU)- Sheryl Noel [2020]