

Voice Based E-Mail System for Blind

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Abstract — In today's world communication has become much easier because of the integration of internet communication technologies. However, visually impaired people find it very difficult to use this technology because using it requires visual acuity. Although new advances have been made to enable them to use computers properly, no inexperienced user who has the challenge of visualizing them can use this technology as well as the average user can do that unlike ordinary users who need to get used to using available technology.

This paper aims to create an email system that will help even the visually impaired to use these services to communicate without previous training. The program will not allow the user to use the keyboard but will only work on speech processing and text conversion.

And this program can be used by any ordinary person and for example one who can read. The program is based entirely on interactive voice response that will make it easy to use and efficient.

Keywords: Text-to-speech, Speech-to-text, SMTP, e-mail service for blind person.

I. INTRODUCTION

The Internet is considered to be the largest repository of information in today's world. There is no work that can be done without their help. It has even become one of the most widely used means of communication. And of all the ways available email is one of the most common forms of communication especially in the business world. However, not everyone has access to the Internet.

So we came up with this project where we will develop a voice-based email system that will help visually impaired people who are unfamiliar with computer systems to use email services without any hassle. Users of this app will not need to have basic information about keyboard shortcuts or where the keys are located. All functions are based on simple mouse click functions which makes it very easy for any type of user to use this program. And the user should not have to worry about remembering what mouse clicking job he or she needs to do to get the service provided as the system itself will be commanding which clicks will provide the functions. The Voice mail system can be used by a visually impaired person to account for mail services properly and often therefore, in order to access emails a visually impaired person does not need to get help with third-party applications because they are not secure. This program is a python language based on visually impaired people who use speech to text and speech text modules so that everyone can manage their accounts using only voice input. This program will always encourage the user to perform the desired functions based on the corresponding instructions. The main reason for developing this project is because keyboard usage has been slowed down and mouse functions are not used very often, most tasks will be based on voice only.

1.1 OBJECTIVES

This program is designed to help the blind or visually impaired as well as the illiterate. This is a major and important motivation for this program. This project is a python program for the visually impaired or illiterate user who wishes to use email services like any other normal person. This program will help you overcome some of the

obstacles that blind people face in the past in receiving emails.

The main purpose of designing this unique python program is to create a framework with the necessary tools to help visually impaired people to browse the web easily.

II. LITERATURE SURVEY

In this section, we provide a comprehensive review of the literature on the existing related technical issues.

Year	Author/Authors	Title	Result
[1]December 27,(2012)	Tirthankar Dasgupta, Aakash Anuj, Manjira Sinha	“Voice Mail Architecture in Desktop and Mobile Devices for the Blind People”	Inbox and compose mail options are made. This project is built to record voice and which will be decoded in the receiver’s side.
[2] (2013)	Gaurav Anand,Geethamsi S, Mr. R V R Chary, CH. Madhu Babu	“Email Access By Visually Impaired”	Uses web accessibility, text analysis module and uses screen magnification module for the visually impaired people to read the details correctly.
[3]January (2015)	T.Shabana, A.Anam, A.Rafiya, K.Aisha	“Voice based email system for blinds”	The system will promote the user to perform the required actions and will give certain function
[4](2017)	K.Jayachandran, P.Anbumani	“Voiced Based Email for Blind People”	Uses speech to text converter, text to speech converter and word recognition for sending and receiving the mails.
[5]April (2018)	Pankaj Kumar Maurya, Prince Kumar, Mukesh Kumar, Pramod Nath	“Voice Based E-mail System”	Voice recognition for sending and reading received mails.it also has login feature for user authentication.

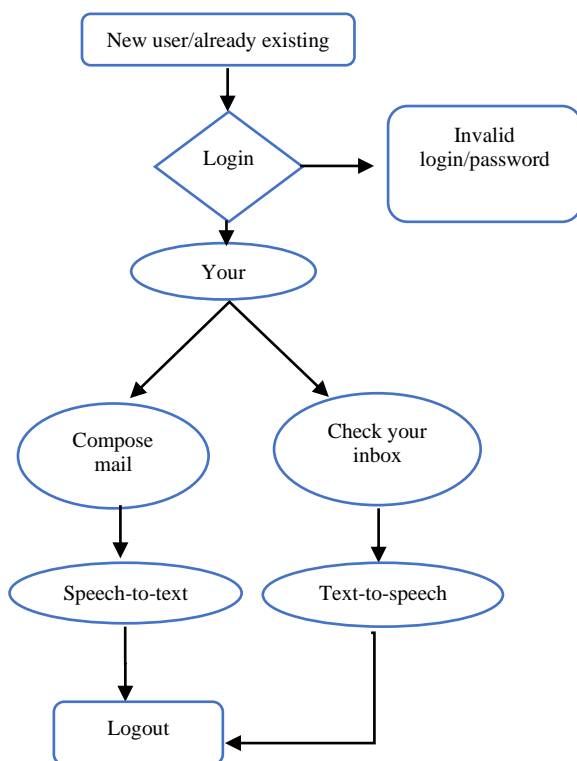
Table 2.1 Literature survey of Voice Based E-Mail System For Blind

III. METHODOLOGY

This program is designed to help the blind or visually impaired as well as the illiterate. This project is an application for the visually impaired or illiterate user

who wishes to use email services just like any other normal person. This program will help you overcome some of the obstacles that blind people face in the past in receiving emails.

Fig 3.1 Flow Chart of Voice Based e-Mail System for Blind



3.1 MAIN PAGE

This is the primary and primary module of the system. Any user who wishes to use the program must first register to obtain a username and password. Once the login has been successfully completed, on the home page the user can perform the tasks waiting to be performed. The options available are as follows:

1. Compose mail
2. Check your inbox

3.2 LOGIN DETAILS

As the registration is done the user can log into the system. In this section we will ask the user to provide a username and password. This will be received verbally. Voice modification will be done in text format and the user will be prompted to ensure that the details are entered correctly. If the entry is done correctly, the database will be considered installed, and if the entry is incorrect it will also request a password. As the

user will speak the details the system will also confirm by asking alphabetically. As the authorized user will be redirected to the homepage.

3.3 CHECK INBOX (OPTION-1)

This option enables the user to view all the emails received from his or her account by providing instructions in the system. The user can listen to the emails or whatever they want to listen to by performing the click function specified by this information. Whenever email is detected the system will read the sender and the title of the latest mail. Accordingly, the user will decide whether the email needs to be read or not or should go to the next e-mail.

3.4 COMPOSE MAIL (OPTION-2)

This is one of the most important and important options offered by the mail services to the user. Since the system is visually impaired and keyboard functionality is reduced, email writing will only be done in speech input. The user can provide the appropriate message

3.5 SPEECH TO TEXT CONVERSION

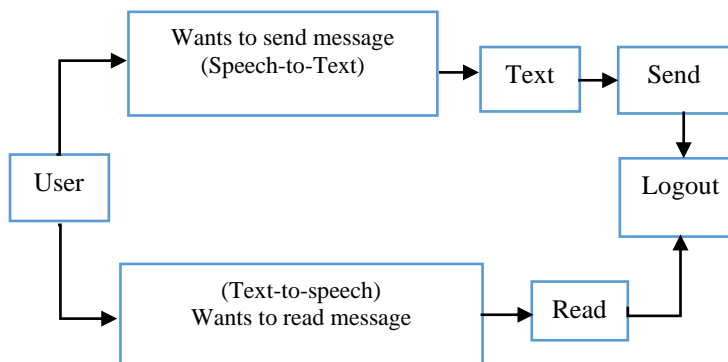
Speech-to-text converter helps detect system input. When a person speaks through a microphone and is recognized by the system, the speech is then translated into text. Our speech-to-text system automatically detects and converts speech into text. It helps visually impaired people to control the entire system by providing input as speech and no need to worry about keyboard shortcuts or screen readers. In a Word-based email system, users speak the username, login passwords and when users select actions to be performed such as inbox, email sent, email writing etc. , 'acoustic' models' website created based on training data, dictionary, language model and speech recognition algorithm.

3.6 TEXT TO SPEECH CONVERSION

Text-to-speech converter helps to get output to the system. In the event of any operation of the system the output, output is in text format but is not helpful for visually impaired people. Therefore, the text is then translated into speech and heard. It is very useful as it does not require pressing keyboard shortcuts or anything else to show results. In a voice-based email system, where the user provides instructions to read emails in the inbox or emails sent by the text-to-speech converter converts text into emails into speech and understood by the user. Text-to-speech is also used on

devices such as portable GPS units to announce street names when providing directions.

Fig 3.2 Methodology of Voice Based E-Mail System For Blind



IV.OUTPUT

The following is the output we get by running our code and when you choose to read the inbox option.

Fig 4.1 Output Screen of Voice Based E-Mails System For Blind

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Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\addep\deploycheck> python -u "c:\Users\addep\Desktop\VBEmail.py"
You are logging from : addep
1. compose a mail,
2. Check your inbox
Your choice:
You said : Tu
ok done!!
Number of mails in your inbox :10']
Your Unseen mail is'10']
From: [REDACTED]
Subject: Re: this
Body :--00000000009ed08705cde85038
Content-Type: text/plain; charset="UTF-8"

I am good, how about you?

On Sat, Oct 9, 2021, 15:11 wrote:

> hi how are you

--00000000009ed08705cde85038
Content-Type: text/html; charset="UTF-8"
Content-Transfer-Encoding: quoted-printable

I am good, how about you?=C2=A0on Sat, Oct 9, 2021, 15:11=
<vbemailtest3@gmail.com&=
gt; wrote:hi how are you

--00000000009ed08705cde85038--
  
```

V. CONCLUSION

The python program was developed with the aim that it can be used by both visually challenged and normal sighted people. Screen readers, Braille keyboards, etc., were useful for their studies. But when it comes to searching or using an application, it is bit difficult. Hence this application can be used to send and receive mail from the sender.

To ensure privacy of sending message, a hardware to identify the presence of human has been arranged. This will be very useful in comparison with the other applications of visually challenged.

This system will help in overcoming certain issues that the visually impaired people had to face earlier in using email systems. Also we have completely eliminated the concept of using keyboard shortcuts and also the use of screen readers which may help in reducing the stress load of remembering the location of the keys on the keyboard and so that user can use this system efficiently.

VI. REFERENCES

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