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VOICE BASED EMAIL FOR BLIND USING MACHINE LEARNING TECHNIQUES

1st Priya Ashok Nagbhidkar
apriyanagbhidkar01@gmail.com
Department of Computer Science And Engineering
Shri Sai College of Engineering and Technology,Chandrapur ,India

2nd Prof Pushpa Tandekar
p.tandekar@yahoo.in
Department of Computer Science And Engineering
Shri Sai College of Engineering and Technology,Chandrapur ,India

3rd Prof Ashish Deharkar
ashish.deharkar@gmail.com
Department of Computer Science And Engineering
Shri Sai College of Engineering and Technology,Chandrapur,India

ABSTRACT: The Internet has become an important tool for students to obtain information. Visually impaired students have no access to this tool at all and cannot be taught easily as they are unable to see online. So we develop software for the visually impaired for vision systems based on machine learning. The proposed project is to convert text to speech and speech to text I think definitely useful for a visually impaired person. The text typed is sent to the blind person in an email where he can hear the speech. The speech said by blind person is sent to the other person where text in an email is read. Architecture of a voice e-mail system that a blind person can use to access e-mail easily and efficiently. The contribution of this research enabled blind people to send and receive voice e-mail messages in their language using a computer device. Helping people with visual impairments to engage in communication with others without external assistance. The speech-to-text and text-to-speech process makes the system more interactive and easier for the visually impaired. The system makes blind people feel like normal users . This system would be a better aid for visually challenged people to access the mail services without the help of a third person.One of the main objective of this system is that it provides more privacy.Also the system does not require the use of keyboard..Instead, it works only on mouse operations and speech conversions to text.

KEYWORDS : - Voice Recognition, Text-to-Speech (TTS), Speech-to-Text (STT), Visually challenged people

INTRODUCTION: The navigation system uses TTS (Text-to-Speech) for blindness in order to provide a navigation service through voice. Suggested system, as an independent program, is fairly cheap and it is possible to install onto Smartphone held by blind people. This allows blind people to easy access the program. An increasing number of studies have used technology to help blind people to integrate more fully into a global world. We present software to use mobile devices by blind users. The software considers a system of instant messenger to favour interaction of blind users with any other user connected to the network. Nowadays the advancement made in computer technology opened platforms for visually impaired people across the world. It has been observed that nearly about 60% of the total blind population across the world is present in INDIA.

In this paper, we describe the voice mail architecture used by blind people to access E-mail and multimedia functions of the operating system easily and efficiently. This architecture will also reduce cognitive load taken by the blind to remember and type characters using the keyboard. It also helps handicapped and illiterate people. The goal of voice-based email for the visually impaired people is to develop an application that will benefit the visually

impaired to take advantage of every utility a regular person uses to send and receive emails effectively. The system will prompt the user with voice commands, users must use some keywords that will perform some actions. Example: Read, Send, Compose, etc. The voice mail system can be used by someone who is blind to easily access the emails. This application is based on the use of speech to text and text to speech translators, allowing everyone to control their email accounts through voice. The system will ask the user with voice commands to do certain actions and the user will reply to the same. Speech to Text, also called Automatic Speech Recognition, converts speech into text, allowing you to compose emails as an easy task. The Text to Speech module provides audio of the incoming mail, the sender, the subject, and the body of the outgoing mail. The information will be read out by the system. This makes it possible to condense the dependence of people with visual impairments on email-related activities.

A voice email system is a fully computerized system that allows users to share and communicate messages without typing. It is primarily beneficial to the blind because all official information and documents are only transmitted via email. The primary benefit of this system is that the need of the keyboard is totally eliminated, and the user will only react through voice. This approach aims to assist partially sighted people in promoting the development of digital India through the use of the internet, as well as to make their lives simpler.

IMPLEMENTATION: The following method is made in three simple steps.

A. User interface design

The user interface or project user interface will be upgraded in this section. The design of a web page with which a user can interact is the first point of contact with the user through the software program. The user interface is built with the help of front-end technologies.

B. Database A database is critical to any project because it manages all storage-related data and references. Moreover, it is a database containing most of the time, mostly the users, authentication, and protection of the environment, of any user of the email. Hence, the design and databases to include the creation of a database to store the email.

C. The Design of the System is that the system is going to consist of all of the modules The module of your choice (Text-to-Speech), and the SINGLE-unit (Speech to Text), Item-oriented programming module (how to Create an Email Account, and the SentMail).

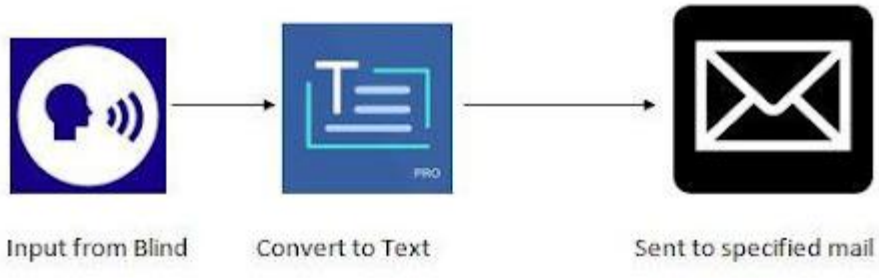

Fig No.1 Implementation method

TYPES OF COMMUNICATION

Speech to Text Converter Speech-to-text converter helps as to obtain input for the system. When a person speaks through microphone and is recognised by the system, the speech is then converted to text. Our speech to-text system directly obtains and converts speech to text

Text to Speech Converter Text-to-speech converter helps in obtaining output from the system. When any operation occurs in the system the resulting output is in text format but it is useless for visually impaired people. So, the text is then converted to speech and is heard by them. It is very useful as it does not require pressing keyboard shortcuts or anything else for outputs displaying

IVR(Interactive Voice Response) Interactive Voice Response (IVR) is an advanced technology that shows the interaction between the user and the system which responds by using keyboard for the respective voice messages.

Speech Recognition Speech recognition is the ability of a machine to recognize words and phrases that are in spoken language. Then it converts those words and phrases into machine-readable format.

Speaker Recognition :Speaker recognition has generally been viewed as a problem of verifying or recognizing a particular speaker in a segment of speech spoken by a single speaker. But for some applications of interest the problem is to verify or recognize particular speakers in a segment of speech in which multiple speakers are present. Automatic systems need to be able to segment the speech among the speakers present and/or to determine whether speech by a particular speaker is present and where in the segment this speech occurs. Speaker recognition process encompasses three terms identification, verification. In automatic speaker identification, there is no priori identity claim, the system decides who the person is, or the person is known or unknown.

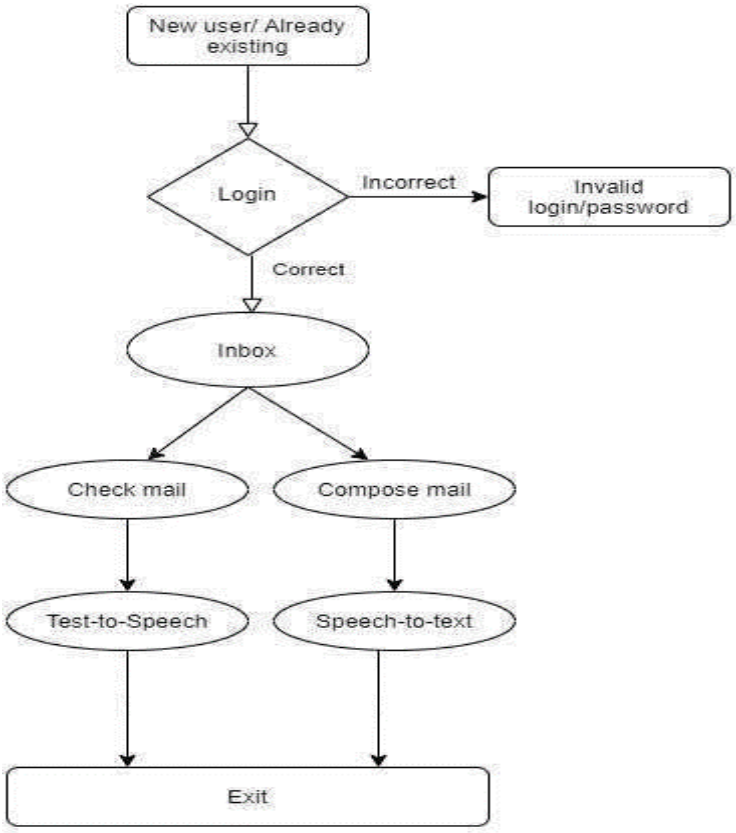

Fig No.1 Flowchart of the system

The above flow diagram explains the complete working of the project and the project can be easily implemented using the above flow diagram. However, the project is currently under development so we are providing details of few modules which are already developed by us:

Login: This is the very first page and will ask user to enter login credentials. It will prompt user with voice command to enter user name. After receiving user name it will prompt again for password. After receiving all of the details from user, it will encrypt and check the validity of the details entered by user. If valid, then user will be redirected to dashboard else will be sent back to login page.

Dashboard: After successful login, user will be redirected to this page and this is the main page from where user can perform all the activities like, compose a new mail, check inbox, save to draft etc.
Below steps specifies the operation that will be executed based on a specific click of mouse button. As the user is supposed to be blind, so it is allowed to click blindly anywhere on the screen:

- Left Click to Compose a new Mail.
- Right Click to Go to the Sent Mails.
- Double Left Click to Go to the Inbox View.
- Scroll Button Click to go to Trash Messages.
- Double Right Click to Log out of the Session.
-

Common Rule:
Left Click = Next Step
Right Click = Back
Scroll Button Click = Dashboard

Inbox: This page will store all of the mails received by user. Below steps explains how to access a mail from inbox:
All the received Mails will be listed sorted in order of date
Double left Click to give voice input to filter Mail, when Satisfied Left click to proceed
In this Stage your mail will be read out , Double Left Click to start/pause

Trash: This folder will store all of mails deleted by the user. Below steps provide detailed explanation about this module:

All the deleted Mails will be listed sorted in order of date
Double left Click to give voice input to filter Mail, when Satisfied Left click to proceed to Read Section.
In this Stage your mail will be read out
Double Left Click to start/pause
Left Click to proceed to Delete the Mail or Right Click to back
If in Delete Section Left Click to Delete the Mail

Sent Mail: This folder will store all of the mails sent from the user. Below steps explains the working of this module:
All the sent Mails will be listed sorted in order of date
Double left Click to give voice input to filter Mail, when Satisfied Left click to proceed to Read Section.
In this Stage your mail will be read out, Double Left Click to start/pause
Left Click to proceed to Delete the Mail or Right Click to back
If in Delete Section Left Click to Delete the Mail

LIBRARIES USED:

1.**GTTS(GoogleText-to-Speech):**Is Google Translate text-to- speech API. The tts.save function allows us to save the converted speech in a format that allows us to play sound using python's OS module to directly run the file from the program.

2.Speech Recognition : Speech recognition is the process of converting spoken word to text. Python supports many speech recognition engines and API's &we are using Google Speech Engine. The Speech Recognition module depends on pyaudio module.

3.**For Mail** :smtplib : This library is used for sending mail

ADVANTAGES : 1. Our proposed framework can also be easily applied in the problem of Text/instance retrieval.

2.This system makes the disabled people feel like a normal user.

3. They can hear the recently received mails to the inbox, as well as the IVR (Interactive Voice Response), technology proves very effective for them in the terms of guidance.

APPLICATION:
This project is proposed for the betterment of society. This project aims to help the visually impaired people to be a part of growing digital India by using internet and also aims to make life of such people quite easy. Also, the success of this project will also encourage developers to build something more useful for visually impaired or illiterate people, who also deserves an equal standard in society.

USAGE: This voicemail can be used by

•Adults ,Children,Elderly people, People with disabilities

• Adults: The findings show that people refer to technology in a variety of ways and a modest level of sociability.

• Children: Studies show that children use these voice mails to easily access their email.

• Elderly people: Active users with basic computer abilities were described as participants. The authors also emphasize the necessity formore research on how elderly individuals utilize voicemail.

• People with disabilities: A little research looked into how voiceinterfaces can help people with cognitive disabilities or vision problems in their daily lives, as well as how easy it is for them to use voicemail.

CONCLUSION: This project is the proposed Voice based Email system for visually impaired people, which is developed as an application that helps blind and handicapped people to access emails easily and efficiently. It provides a voice-based mailing service where the visually impaired person could read and send mail on their own without the help of others. It requires basic information about keyboard shortcuts. The system has eliminated all these concepts and overcome all difficulties faced by the visually impaired. It uses a speech recognition application that provides an efficient voice input method for mailing devices for the blind. It is also useful for handicapped and illiterate people.

FUTURE SCOPE :There is wide future scope of this system many enhancements can be done in the system such as including different languages, including functionality of accessing the deleted mails and spam mails. Also, this system can be enhanced such that it can also send attachments which are more beneficial for visually challenged people. This system can be made available to all regional people who are not educated enough and inclusion of different languages will make this system easily accessible. Furthermore sign language system can also be integrated with the system to make the system more scalable and robust.

REFERENCES:

[1] A. Harishakar, Kaviya R, Nigilpriya A, Narmatha V, “MACHINE LEARNING BASED VOICE E-MAIL SYSTEM VISUALLY IMPAIREDUSING IMAP PROTOCOL””, International Research Journal of Modernization in Engineering, Technology and Science

[2] Ms. Navya Gupta , Mr. AashishDahran , Mr. Soumalya Ghosh," Voice-based email for blind" ISSN: 2349-6002 INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN TECHNOLOGY

[3] V Jain ,Voice-based Email System for Blinds,ISSN: 2320-2882 International Journal of Creative Research Thoughts

[4]nceRijwan Khan, Pawan Kumar Sharma, Sumit Raj, Sushil Kr. Verma, Sparsh Katiyar, "Voice Based E-Mail System using ArtficialIntellige",International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249-8958 (Online), Volume-9 Issue-3, February 2020

[5] Abhiram J, Amrutha S, Aneetta Susan John , Jinshu Maria John, Midhun V Nair, Alpha Mathew,Voice Based E mail for Visually Challenged",International Journal for Research in Applied Science and Engineering Technology**Publish Date :** 2022-05-29,**ISSN :** 2321-9653

[6]Ms.MUDIGANTI.DEEKSHITH,,Ms.NARAMANENI.BHAVYA,Mr.S.GOKULAKRISHNAN,"VOICE BASED EMAIL FOR BLIND USING PYTHON**",**International Journal of Scientific Research in Engineering and Management

[7] Ajai Verma,"Voice based Electronic Mail System for Visually Challenged Individuals "International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-12S, October 2019

[8] HarivansPratapSingh ,Aman Pratap Kushwaha,, Harendra Singh,"Voice-Based Email System"International Journal of Innovative Science and Research Technology ISSN No:-2456-2165 IJISRT21JUL1171

[9] Prof.Bhushan.S.Chaudhary ,GunjanDhande , Shital Salv , Sanika Lohar , Sonali Sasane ,"VOICE BASED EMAIL SYSTEM FOR BLIND PERSON"Vol-7 Issue-2 2021 IJARIIE-ISSN(O)-2395-4396 14042

[10] Rajini S , Dhivyaa A S , Jananipriya R M , Karthikapriyaa V S,"VOICE-BASED EMAIL SYSTEM FOR VISUALLY IMPAIRED PEOPLE"International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 09 Issue: 06 | June 2022

[11] LowleshNandkishorYadav,"Predictive Acknowledgement using TRE system to reduce cost and Bandwidth", IJRECE VOL7 ISSUE 1(January-march 2019) pg no 275-278