A Voice Based E-mail System for Visually Impaired People

Aditi Srivastava[1], Anushka Tripathi[2]

[1,2] *Computer Science Engineering/ Institute of Technology and Management, Gorakhpur, Uttar Pradesh, India.*

Abstract: *E-mail is an important source for communication because it allows users to send information. An E-mail is an important part of communication among people. Various confidential information are shared through e-mails in today's time's e-mail are an essential part of modern life, but for the visually impaired people, using e-mail can be very difficult. So, authors proposed a voice based e-mail system using artificial intelligence that will be very beneficial for the visually impaired people. Voice-based mail system architecture that can be used by a visually impaired person to access e-mails easily and efficiently.*
Keyword: *Confidential, Voice based, Visually impaired.*

I.INTRODUCTION

In today's age of communication, internet is very important. E-mail is the most vital aspect of daily living. E-mails are the most dependable way of communication over internet, for sending and receiving some important information. According to a survey, there are around 260 million visually impaired people or blind worldwide. These visually impaired people cannot see the computer screen or keyboard. This also implies that these visually impaired people have no knowledge of how to utilize the internet or e-mail, as well as more technological advancements. This project aims at developing an email system that will help even a visually impaired person to use the services for communication without previous training. The system is completely built on interactive voice response which will make it user friendly and efficient to use .The entire project is based on voice interaction which means speech recognition and synthesis.

So for the betterment of society and giving an equal status to the visually impaired people we have come with this project idea which provides the user with the ability to send mails using voice commands without the need of keyboard or any other visual things .In this project ,the voice mail system architecture that can be used by a blind person to access e-mails easily and efficiently.

This project is proposed for the betterment of the society. This project aims to help the visually imapiared 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 people, who also deserves equal standard in society.

II.EXISTING SYSTEM

In today's world, existing system are the application that allow user to accessing and managing e-mails easily with the help of different web tools.

Earlier e-mails are only available have voice recognition and text to speech system. These are only accessible for recognizing the keyboard shortcuts for accessing it. Earlier e-mails use IVR, mouse click event, speech to text convertor and screen reader.

A small icon of mic was used by which user had to speak and his/her speech will be recognized and converted to text format, by which visually impaired people would able to see and read also, as in the reference.
Inspite the existing web browsers can play audios but visually impaired firstly has to request for typing few text for the search then only user will be able to play audio with the help of Graphical User Interface (GUI).

Disadvantages-
- Existing system uses web user interface & visually impaired people, are unable to use web user interface
- Visually impaired have to use mouse which is connected to computer & user have to conduct mouse click events to send and for receiving e-mails.

III.PROPOSED SYSTEM

Proposed system will make email system very easy accessible for the visually challenged people and also for the society. Authors proposed this system keeping in mind that it can be easily accessible for the various kinds of persons. A

voicemail system provides an easy way for visually impaired person to easily access the e-mails in most easy and efficient manner. The visually impaired person has no need to remember any keyboard shortcuts.

As using existing system, involves visual perception it is very difficult for visually impaired person to use it. Because for accessing the internet user need to know what is written on screen that is not possible for visually impaired person.

In the given proposed system authors mainly focuses on different technologies that are useful and easily implemented .Speech to text (STT) ,this modules gathers the speech given by user and converts it into the text, Text to Speech (TTS) ,this module converts the result or response give to system to speech, Chabot is also used for making the conversation more sense and also for giving responses like human and now finally, email communication module for sending and receiving e-mails in efficient way.

Firstly the user will register in application system by the registration form ,the user assisted by voice commands and registering all the mandatory fields to be stuffed are going to be scan by website; once the user would speak it would get written automatically. After registering successfully, the user log in by speaking his/her Username or Password when prompted by system, this username and password will be converted from speech to text. Then, user will be authenticated by verifying credentials with database.

Visually impaired person can access various component like-
➢ Compose an e-mail.
➢ Inbox an e-mail.
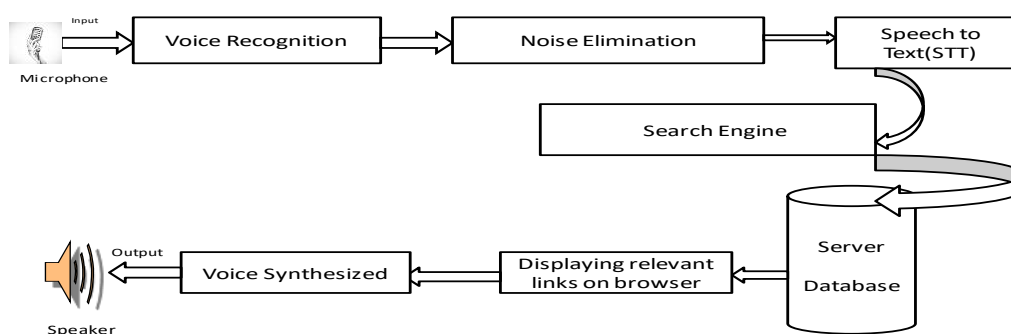➢ Receives e-mail.
➢ Send an e-mail after successful login.

Fig.1: Voice Recognisation Flow Diagram

Advantages-
➢ The main advantage of this system is that the use of a keyboard is completely eliminated and user will have to respond through voice only.
➢ It doesn't need any mouse click events to send and receive e-mails.
➢ Totally based on the voice commands given by the user.
➢ The system is totally voice based allowing blind people to send and receive e-mails efficiently.
➢ It converts user spoken voice into text & the text to voice and perform action accordingly.
➢ Chabot is used to make conversation smooth and more like a human response.
➢ Efficient and robust.
➢ User friendly
➢ This system scales back psychological feature load taken by visually impaired to recollect and characters mistreatment keyboard.
➢ This design provides disabled folks desire a standard user.

IV.SYSTEM DESCRIPTION
The process of recognizing speech during run time with the help of microphone, which process the speech with sample data to match the text. The final related text will be stored in a folder or file. The proposed system directly receives speech-to-text and converts text-to-speech. It can be easily implemented in vast systems, by providing users various options for entry of the data. A speech-to-text system can be also be used efficiently for enhancing the accessibility of the system with entry of data options for visually impaired people. Apart from that, visually impaired people easily respond to the audio instructions.
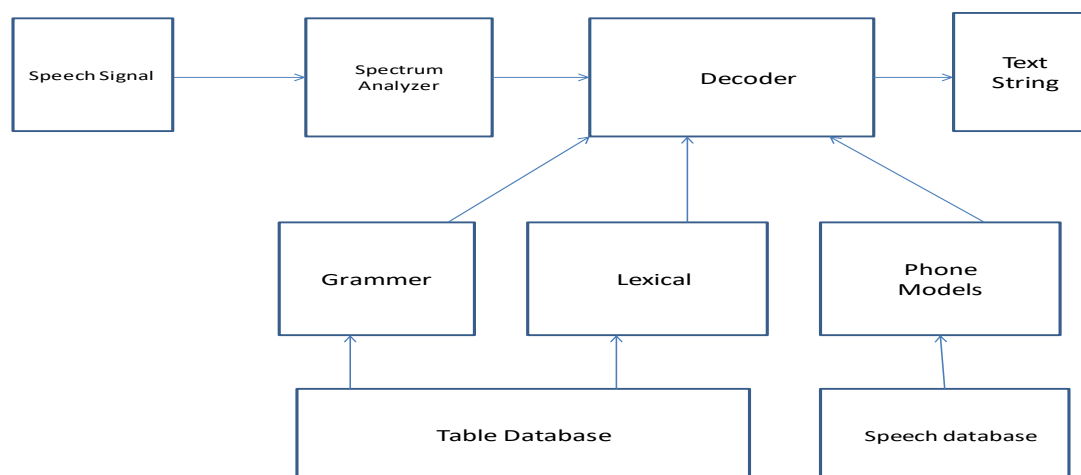
Fig.2:System Recognition Architecture

V.MOTIVATION

It is observed that nearly 286 million people are visually impaired worldwide and author's idea is to provide efficient communication system for them.Basically,the major drawback of the existing system is that all operations are performed and dependable on mouse clicks and keyboard.It is also observed that remembering all keyboard shortcuts are very difficult.The existing system is limited for the visually impaired people as well as illiterate people.Author's idea mainly focuses on facilating basic functionalities like compose,send,receive e-mail including some advanced features like voice based operation,search mail etc.This system mainly design to focus on developing e-mail system which helps visually impaired people to use communication system easily.This system discard the use of mouse and keyboard operation.Internet is vast source of knowledge and information very easily but blind people unware of accessing text material from internet.The author's idea is to develop audio based virtual environment like screen reader,text to speech and speech to text.Idea mainly focuses on helping visually impaired or blind and illiterate people to access technology by reducing intellectual load.

VI.CONCLUSION AND FUTURE ENHANCEMENTS

According to a report about 70% of total blind population acroos world is present in India.Authors proposed a system and designes specially for visually impaired people.This system will provide a speech based(voice based) email system in which user will easily read and send mail without any guidanance.Apart from that this system will decrease intellectual burden taken by blinds to remember and type characters easily.Visually Impaired people will also aware of modern way of technologies and advancements in the society.Speech to Text(STT) and Text to Speech(TTS) will easily manages the whole procedure very efficiently. Chat bot will make communication more sense.

In Future Enhancements, we can add image or document. System can be enhanced to help illiterate people by providing speech recognition possible in native languages.

References

1. *Carmel Mary Belinda M.J, Rupavathy.N and Mahalakshmi NR, "A Voice Based Text Mail System for Visually Impaired"published in International Journal of Engineering & Technology(IJET) on 2018.*
2. *Pawan Kumar Sharma, Rizwan Khan, "A Voice based E-mail System using Artificial Intelligence" published in International Journal of Engineering and Advanced Technology(IJEAT) Vol(9),DOI:February 2020.*
3. *Aishwarya Belekar, Shivani Sunka, Neha Bhawar and Sudhir Bagade, "Voice based E-mail for Visually Impaired" published in International Journal of Computer Applications (IJCA), Vol 175(16),DOI:September 2020.*
4. *Mullapudi Harshari, Manyam Durga Bhavani, and Misra Ravikanth "Voice Based E-mail for Blind" published in International Journal of Innovative Research in Computer Science and Technology (IJIRCST), Vol(9), DOI:July 2021.*
5. *Rahul Kumar, Vaishali Singh, Dr. Nikhat Akhtar , Mrs Versha Verma and Shivam Srivastava " Voice based e-mail system for people with visual impairment" published in International Journal of Advances in Engineering and Management (IJAEEM), Vol (4) DOI: 03 March 2022.*
6. *Abhiram J, Amurtha S, Aneetta Susan John, Jinshu Maria John, Midhun V Nair and Alpha Mathew, "Voice Based Email for Visually Challenged" published in International Journal for Research in Applied Sciences and Engineering Technology (IJRASET) Vol(10), DOI:May 2022.*
7. *M.R Pradhicsha, M.Vasanth,V.Renita and Dr.P.Lakshmi Harika "Voice based mail system for visually impaired" published in International Journal of Engineering Research and Technology (IJERT) Vol(11), DOI : 07 July 2022.*