iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** XI **Month of publication:** November 2022

DOI: https://doi.org/10.22214/ijraset.2022.47449

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue XI Nov 2022- Available at www.ijraset.com

Voice Controlled Email System Using Speech Recognition

Mrs. Rupali Umbare[1], Parnika Pawar[2], Nisha Hirani[3], Sanket Ghodke[4], Rohan Dongare[5]
[1]*Assistant Professor,* [2, 3, 4, 5]*B.E, Department of Information Technology, Rajarshi Shahu College of Engineering, Tathawade, Pune*

Abstract: ***We have seen that the inception of the Internet has incredibly revolutionized many fields. One of the major fields that the Internet has revolutionized is communication. And talking about communication, the first thing that comes to our mind is Email. Emails are considered to be the most reliable way of communication over the Internet, for sending or receiving some important information. But there is a special condition for humans to access the Internet and it is that you must be able to see. But there are some visually challenged people or blind people who cannot see a computer screen or access a simple keyboard. According to a survey there are more than approximately 250 million visually challenged people around the globe. The only way by which a visually impaired person can send an Email is, they have to dictate the entire content of the mail to a third person (not visually challenged) and then the third person will compose the mail and send it on the behalf of the visually impaired person. But this is not the correct way to deal with such a problem. It is very less likely that every time a visually challenged person can find someone for help. Although for these reasons the specially abled people are criticized by our society. So, for the betterment of society and giving equal status to such specially abled people we have come up with this project idea which provides the user with the ability to send email using voice commands without the need of a keyboard or any other visual things. Voice technology can make powerful contributions to society, especially where hands-free technology is needed in hospitals and care centers. This can be used in writing emails as well! The base idea behind our project is to give us a voice for email.***
Keywords: Speech Recognition, Voice-based, Visually Impaired/Challenged Person, Email, Communication, System.

I. INTRODUCTION

In today's world, when we think of communication using the internet, the first thing that comes to our mind is communication via email. Email is being used worldwide and hence it has become one of the most reliable ways for exchange of some important information. A survey found that by the start of 2019, there were an estimated 3.8 billion email accounts around the world indicating that almost half of the population uses email. However, there are millions of visually challenged people who face difficulties in accessing the existing email systems. They are very far away from email systems and the internet. Every time they want to send an email, they will have to seek help from a third person asking him/her to compose and send emails on the behalf of the visually impaired person. But this approach will not help in maintaining the integrity of the mails. Hence, we can say that the existing systems are not easily accessible to them. We identified this problem to be very important and came up with an idea that will help visually challenged people to write emails through voice commands without using a keyboard.

II. PROBLEM STATEMENT

Email systems must be accessible to everyone but due to various barriers and difficulties faced by visually impaired people these email systems are not convenient for them. Therefore, we have proposed a system that uses Artificial Intelligence to create a Voice-Based Email System that will take the voice of the user as an input and convert it into text format which will be used as commands to compose and send emails. Also, the system will read emails by converting the text into speech .

III. LITERATURE SURVEY

1) *Human Computer Interaction (HCI) Based Smart Voice Email (V mail) Application - Assistant For Visually Impaired Users (VIU):* In this paper, they have designed an application for visually impaired users. They have used human voices as input instead of typing on the keyboard. It focuses on reducing the load incurred in human memory. Also they have used GSTT for conversion of audio to text and recognizing commands which will control flow of the system
2) *Voice Email Based on SMTP For Physically Handicapped:* In this paper, the system is focused on the user's behavior and their perspective view. This system should be accessible to all types of people including illiterate people and even new users. Their system uses IVR (interactive voice response) in order to interact with the users.

©IJRASET: All Rights are Reserved

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.

3) *Controlling Email System Using Audio with Speech Recognition and Text to Speech:* This paper provides a summary of the speech recognition technology as well as the most recent developments. This paper is based on methodology and Architecture of voice interaction starting from sender name, subject and body of email which makes it audio controlled email bot. This work proposes a system in which the sender will login to own email account and with the help of voice commands and speech that individual will manage to context and send email to a particular person available in the sender's list. This study focuses on ASR systems with a broad vocabulary that can enable speaker-independent activity and continuous speech in multiple languages.
4) *Design, Development and Implementation of (a Voice Email System using Next Generation Networks Technology - A Case Study:* This paper presents a Voice Email application which was built on Siemens' state-of-the-art Next Generation Network Technology we SURPASS. Further enhancements to the system are possible. The Voice Email system will become a starting point for the future of voice browsing technologies over the phone where there will be wide spreading of applications and services from different areas.
5) *Discovery of Activities' Actor Perspective from Emails Based on Speech Acts Detection:* This paper first formalizes the knowledge we may discover from emails related to actors' perspectives. Then, it introduces an approach based on speech act detection from textual content of emails for discovering such knowledge. Approach is validated using a public email dataset. Results are publicly provided to be a first step towards ensuring reproducibility in the studied area.

IV. PROPOSED SYSTEM

We have developed a web application where we are using the user's voice as a driving unit for the system. It will decide the course of the site's working. It can be used by any person, visually challenged or having restricted movements with less computer skills.
In the system, the PC is going to be prompting the user to perform specific operations to avail services and if the user has to access the various services then he/she has to perform that operation. Firstly, the user will have to register in the application system through the registration form. The user will be assisted through voice commands, then the user has to give voice commands for everything. With the help of the user's voice system will gather all information and then write that into the database for further requirements. Users can access various sections like Send Email, Read Email sections from the dashboard. System will contain different which will act accordingly to specify the need of every service which can be used by the user.

A. Voice Processing

The web application is built with Google WebKit API which is used for voice recognition and voice processing. The input provided by microphone is fed into the API and it primarily performs the conversion of voice to text. Web speech API is the speech synthesizer used in the proposed system. The voice is processed by recognizing its distance, pace, continuity and language.

B. Recognising Commands

The speech synthesizer recognizes the voice commands when commanded. System will flow according to the commands given by the user. Following are the commands which system will recognise:

"Write email"	Open the email composer window.
"Send email"	Will send the email with the input taken from the user's voice.
"Read email"	Read the latest mail received by the user.

Figure 1: Commands table

C. Send Email

The voice command “send email” sends the composed email.. The application takes the user domain address (e.g. abc@xyz.com) registered during sign-in as sender address and sends the email to the email address recognised from speech.

D. Read Email

The voice command “read email” reads the received email. Here our system will read the whole content of the email. The email can be heard through the speaker or headphone connected to the device.

V. SYSTEM ARCHITECTURE

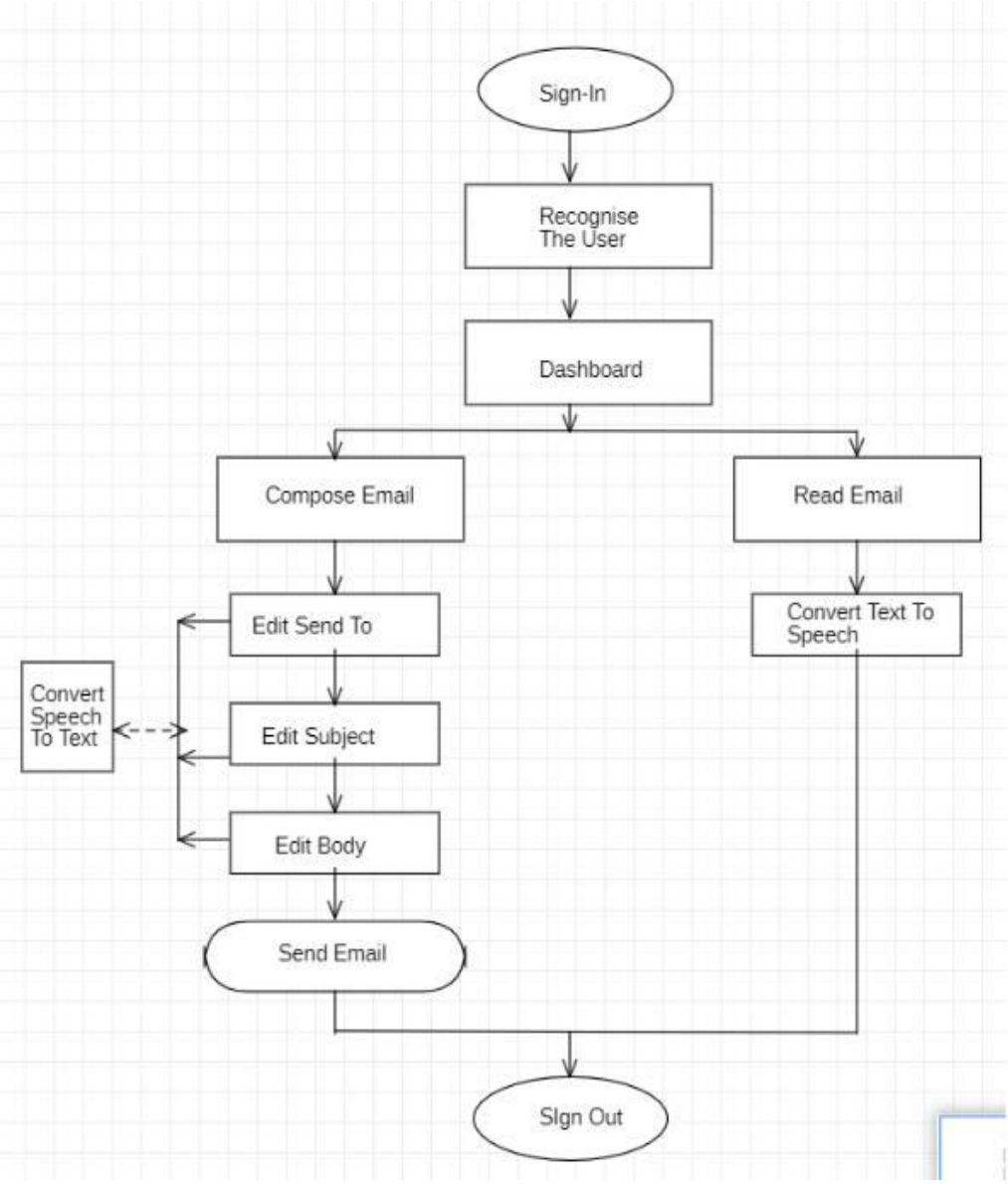


Figure 2: System Flow

System Advantages

1) Easy to use for a person with visual aid
2) Can be accessed using voice only
3) Available to anyone
4) Cost Effective

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue XI Nov 2022- Available at www.ijraset.com

VI. RESULTS

We have used the built-in microphone of a laptop or computer for the input to our website. Users will be prompting everything through that mic only.

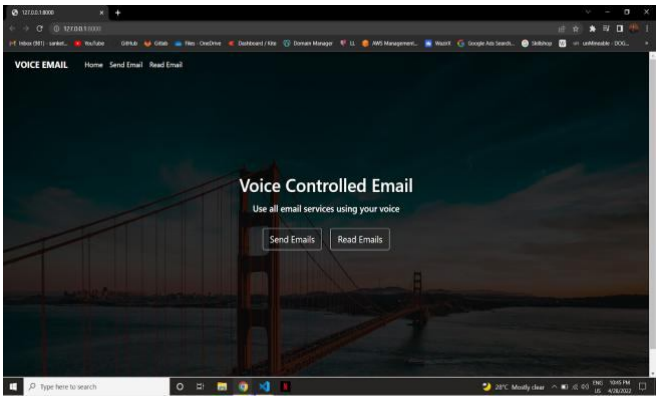


Figure 3: Landing Page

All the content of the email will be prompted to the user in “Read Email” section. Details such as the sender's email address, subject, body, date, time will be sent as an audio output and the user will be able to hear it with speakers.

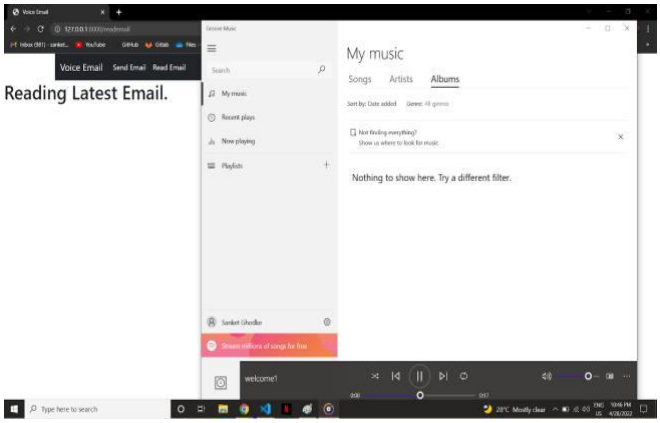


Figure 4: Reading Email

Writing an email will be done by taking input from the microphone. User have to speak necessary details such as email address, subject and body of the email to be composed.

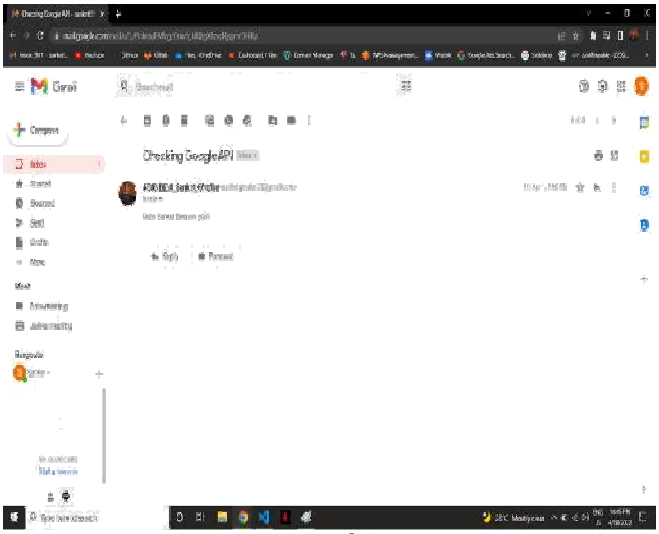


Figure 5 : Email Sent

©IJRASET: All Rights are Reserved

Then we store all the sent emails to our database. Only the admin/ user will be able to see the data. Each database row will contain all details of the email sent.

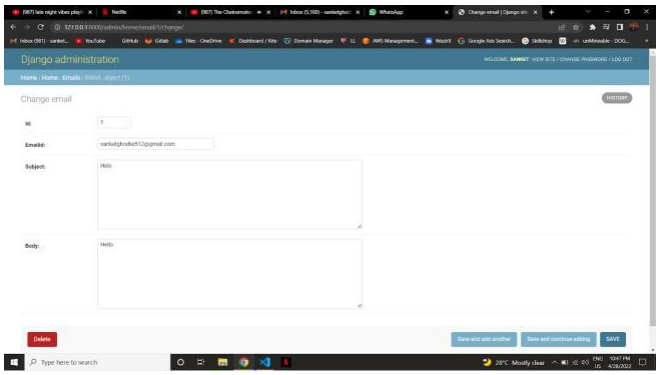


Figure 6 :Data base record of emails

VII. CONCLUSION

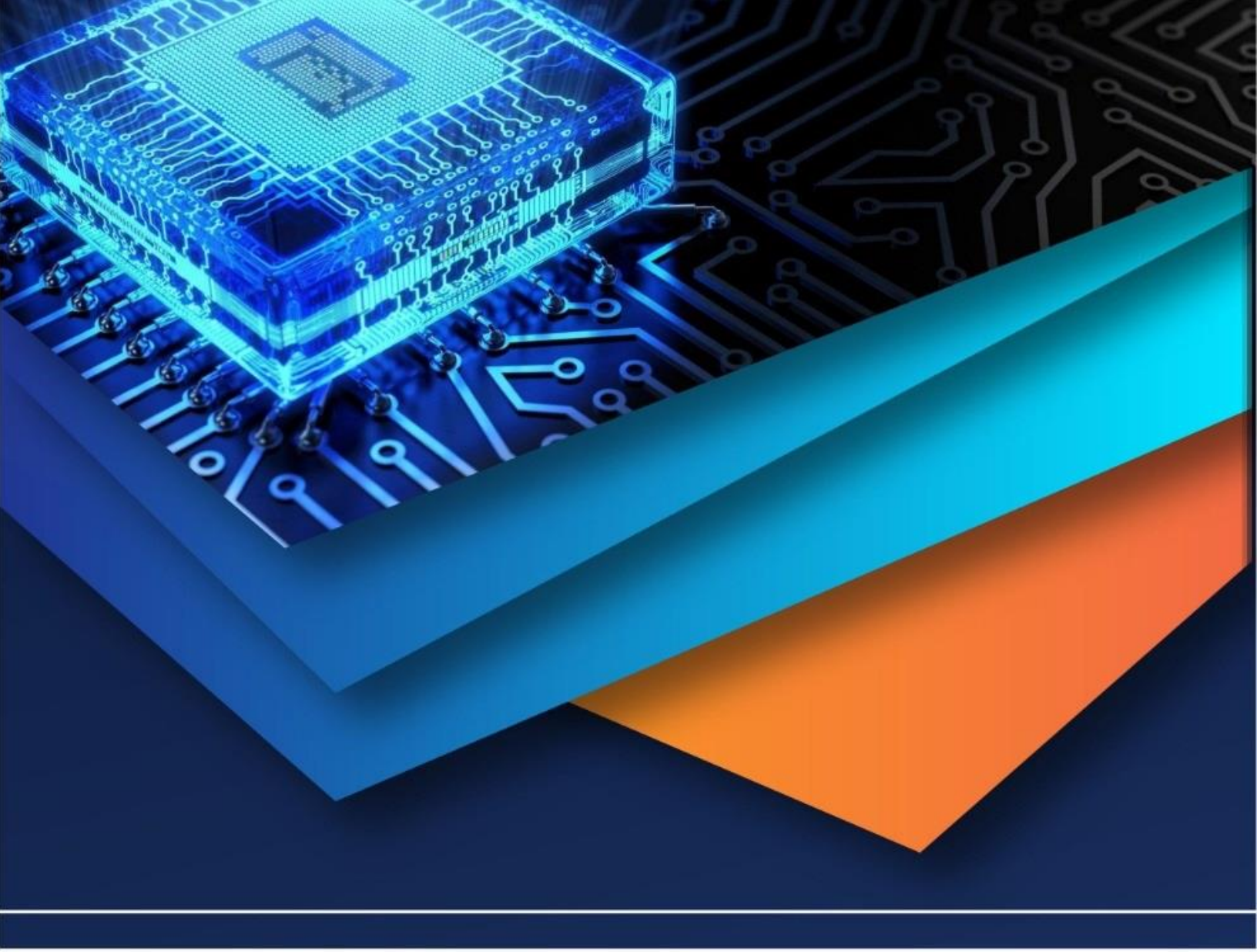
Through this voice based Email System it will become easier for visually impaired people to communicate independently using the mail facility. This will also provide a helping hand for the people unknown to the Email system and the steps to send Emails. Reading, writing and accessing any of the e-mails will be easier than never before, as all of this will just work on instructions given by the users orally.

VIII. FUTURE SCOPE

The proposed project has a wide scope as many enhancements can be done in the system.It can be made multilingual i.e. it can include different languages. The system can be enhanced such that it can also send attachments. It can also include the functionality of accessing deleted and spam mails. The system can be made useful to all regional people by inclusion of different languages which will make it easily accessible.In this manner, we can interpret that the system will have a great scope in the future.

REFERENCES

[1] S. Kumar, Y. R. and R. Aishwarya, "Voice Email Based On SMTP For Physically Handicapped," 2021 5th International Conference on Intelligent Computing and Control Systems (ICICCS), 2021, pp.1323-1326, doi:10.1109/ICICCS51141.2021 .9432206.
[2] G. S. V. R. K. Rao and E. Siew, "Design, development and implementation of a voice email system using next generation networks technology - a case study," The 7th International Conference on Advanced Communication Technology, 2005, ICACT2005.,2005, pp. 462-464, doi:10.1109/ICACT.2005.245903.
[3] S.Noel, "Human computer interaction(HCI) based Smart Voice Email (Vmail) Application - Assistant for Visually Impaired Users (VIU)," 2020 Third International Conference on Smart Systems and Inventive Technology (ICSSIT), 2020, pp.895-900, doi:10.1109/ICSSIT48917.2020.9214139.
[4] H. D. Shah, A. Sundas and S. Sharma, "Controlling Email System Using Audio with Speech Recognition and Text to Speech," 2021 9th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO), 2021, pp. 1-7, doi: 10.1109/ICRITO51393.2021.9596293.
[5] M. Elleuch, O. Alaoui Ismaili, N. Laga, N. Assy and W. Gaaloul, "Discovery of Activities' Actor Perspective from Emails based on Speech Acts Detection," 2020 2nd International Conference on Process Mining (ICPM), 2020, pp. 73-80, doi:10.1109/ICPM49681.2020.00021.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)