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REVIEW ON: Email System Using Speech Recognition

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Abstract - One of the most used forms of communication among people is Email. A lot of confidential and urgent information is exchanged over emails in today's time. There are about 253 million visually impaired people worldwide. These visually impaired people are facing a problem of communication. Since technology is growing day by day, these visually challenged people feel that they are more challenged. So, we proposed a Voice-based Email System using AI that will make the email system very easily accessible to visually challenged people and also help society. Accessibility is the most important feature that is considered while developing this system.

***Key Words*: -** *Screen readers; Audio Based environment; Voice Based Technology*

1.INTRODUCTION

The technology is evolving very rapidly, day by day, that is the full life of the people, that light, we can say that of all the business can be carried out with high precision and efficiency for a long period. The connections present in the areas have risen to a new level with the development of technology. In this era, the Internet has made communication so easy that everyone can communicate easily, and distance is just a marginal distribution of communication. [9], We have to think about communication over the Internet; the first thing that comes to mind is communicating with them via email. The mail is considered the most reliable way to share important information and an email, and it is used all over the world, but to have access to the Internet, an individual must be able to see. Accessible to millions of blind and visually impaired people who cannot see the screen, and thus, there is no internet connectivity on your keyboard, you may have to [12]. So, they are a long way away from email and the world of the Internet. The blind can use the mail system. You can send, receive emails, and read the information sent through email; therefore, the existing system may not be easily accessible. It is a common misconception that to access the Internet, and one must be able to read what is printed on the computer. This is not the case, and Internet technology is useless for individuals with bad eyesight. There is only one way for a visually impaired person to send you an email message, and that is to pass through all the contents of the email address to any third party for the third party to be prepared to send an email on their behalf when it comes to copyright, as well [10]. However, this approach has meant that we have to solve this problem. A third party could be found for a visually impaired person, and sometimes the content can also be personalized to preserve the integrity of the products. Therefore, to help the people, and for the development of the society, and the author came up with this idea to assist the person with a vision problem, and that provides the ability to send and an email to initiate(start) they only need to speak up what they want and do not need any visual object.

2. Body of Paper

2.1 Speech Recognition using Artificial Intelligence

Artificial intelligence (AI) is a technology used for the intelligent management system to create machines that mimic human intelligence and take actions as a human does. Some AI applications in various systems, natural language processing (NLP), computer vision, etc. Understanding and analyzing human languages, such as English and many other languages, with the extraction of metadata, keywords, sentiments, attitudes, by using the concept of deep learning and concepts of natural language processing.

2.2 Project Description

Earlier, blind people does not send email using the system. The multitude of email types along with the ability setting enables their use in nomadic daily contexts. But these emails are not useful in all types of people such as blind people they can't send the email. Audio based email are only preferable for blind peoples. They can easily respond to the audio instructions. In this system is very rare. So there is less chance for availability of this audio based email to the blind people. This mainly helps the physically challenged people like handicapped and blind people. A voicemail system architecture provides a way for visually impaired to access e-mails in most easy and efficient manner. Friendliness in Graphical User Interface can be understood easily. The user no need to remember any keyboard shortcuts. This application can be used by both normal people and physically impaired people.

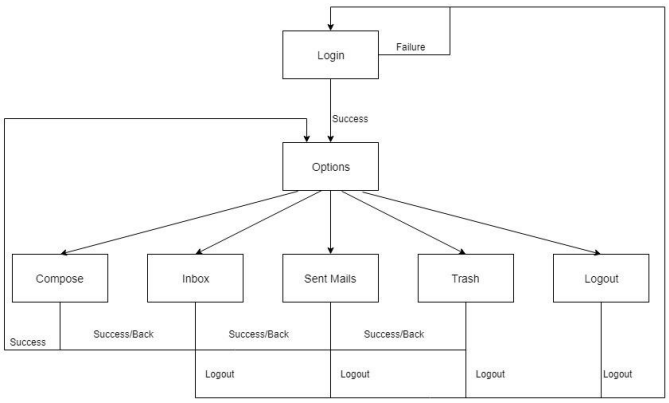

Chart -1: Block Diagram

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2.3 Technologies used

- Operating system: any version of Windows NT family(4.0 and above)
- Frontend: HTML5, CSS3, Javascript, Bootstrap
- Backend: Python
- Framework: dj Django

3.ALGORITHM

3.1. User Login

The login module used in our project is purely voice based where the user need to tell their email id and password. The login system in turn tells email id and password that the user told and asks whether it is correct or not if the user says correct, the user can proceed with the further operations using the email id and password that he/she told. If the user says not correct, the login system again asks for the email id and password for the login purpose. We used python to recognize voice using Speech recognition module and used Google text-to-speech module to convert text to speech. The recognized email id and password through speech will be shown in corresponding text boxes.

3.2 Option Choosing

After the successful login, the email system asks for the option whether the user wants to compose a mail or wants to check the inbox. To compose a mail user need select compose option. To check Inbox user need to select inbox option.

3.3 Composing Mail

This module first asks the " sender mail address" to which the subject and the contents to be sent. Then it asks for the " subject" of the mail to be sent and then asks the " content" of the mail to be sent. Finally the composed mail is sent to the destination mail address using SMTP and the acknowledgement of the sent mail will be provided by the voice commands. All these inputs were got from the user through voice commands. Then SMTP is used to send mail to desired mail address.

3.4 Checking Inbox

The user can check the inbox of the logged in mail. First the user is asked for the specific user whose message need to be read. Then the subject and content of the message is read by the system. For reading mechanism Google text-to-speech(gTTs) is used. All these inputs were got from the user through voice commands.

3.5 Text to Speech

This module is almost used in all other modules. This function converts the text given to that function to the .mp3 file .And plays the .mp3 file created. To use this function first import the gTTs (Google text to-speech) module. This function converts the text given to that function to the .mp3 file. And plays the .mp3 file created.

3.6 Speech to Text

This module is almost used in all other modules. This function converts the speech recognized through system microphone to the text and stores it in the variable. If not recognized it would rise an exception. This function converts the speech recognized through system microphone to the text and stores it in the variable. If not recognized it would rise an exception.

4. LITERATURE SURVEY

Pranjal Ingle et al. (2016) [1], used three types of technologies to create the application namely STT (speech-to text) where the speech is converted to text, TTS (text-to-speech) to convert the text to speech,and thirdly IVR(interactive voice response) which describes the interaction between the user and the technology in many ways like keyboard or voice message. It also allows the user to interact with the mail system. The main disadvantage includes the usage of high sensitive mics which are mostly not available to all the users

Jain. V. et al., (2021) [2], this research proposes a voice-based email system that visually impaired people can use to easily access email. With the aid of technology, this initiative aims to assist people who are blind in sending and receiving voice mails. The advancements in text-to-voice email delivery for people who are blind or visually impaired are the main topic of this study. This study offers a text-to-voice and voice-to-text email access method for those who are blind. This enables persons who are blind to send mail using voice control instead of a keypad.

Divesh Jethani et al (2018) [3] proposed a voice based system for the visually blind with multi-lingual facility,the system provides a good GUI for all types of users. The user will be able to send, receive, read, delete the mail from the mail system. But the main disadvantage includes the usage of mouse clicks, which is necessary at some places of the proposed application. Dr.S.Brintha et al.[4], proposed a system with TTS and STT to read and record symbolic linguistic representations like phonetic transcriptions. The architecture of the system includes two modules namely interface selection and mailing option, the first module selects the type of users that is blind user or sighted user. And the second module includes the simple mailing options to perform all tasks.

Parkhi Bhardwaj et al (2016) [5], uses an extra speech recognition technology along with all other converters and IVR to develop the application. The proposed system provides more features than existing GUI. Java was the core programming language used. The application can be used by all types of handicapped people and illiterate people. B. Summary of the Literature survey.In literature survey various technology to develop a voice based E-Mail system was discussed. Since the existing system like screen readers and so on, has some disadvantages. The proposed work in this model takes the best advantage of technology to use features which has the highest accuracy in capturing voice and displaying contents which are needed by the visually impaired people

5. CONCLUSIONS

We have designed a method that will make it easier for those with visual impairments to use email services effectively. This approach may assist in overcoming several obstacles that blind people previously encountered while trying to access emails. Screen readers, which might lessen the cognitive strain of memorising tasks, have been removed. The major goal of developing the kind of system outlined in the study is to increase the sense of community among those who are blind in this little environment. The decision tree takes a distinct path since each operation has a distinct consequence, making the system considerably more compatible. People who are physically disabled will be able to access the world with the aid of our system. Anyone may use this email system with ease, regardless of their age group. It contains features of speech to content as well as content to speech with discourse reader, making planned structure manageable for those who are externally disabled as well. Now, visually challenged individuals may send and receive mail with ease using only voice instructions and very little keyboard or mouse use. It has helped eliminate the challenges that blind people experience and transformed them into more typical persons. It has eliminated the notion of deploying screen readers in addition to console shortcuts, which would have lessened the cognitive load associated with remembering console shortcuts. In the future, this programmer can be improved and used for additional services in addition to email, such as messaging, taking notes, and using other voice-activated applications.

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