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Voice-Based E-Mail System for Visually Challenged People

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Abstract. In today's global verbal exchange has turn out to be so easy because of the integration of conversation technologies with the internet. But vision impaired people discover it extremely tough to utilize this technology because considering the device it needs visual perception. This paper ambition to create an electronic mail system that will support even visually challenged people to use these service areas to communicate without earlier exercise. By which machine will no longer permit the client utilize the console alternatively will work best on mouse operation and speech conversion to text. Even, the present device could be utilized by anyone too as an instance the one like the person who can't even study. The device is totally primarily reached from cooperative voice feedback to be able to make it clear and efficient to apply.

Keywords: Artificial Intelligence, Speech Recognition, Text to speech, **Voice** E-mails**.**

1. Introduction

Technology is developing quicker each day and this made the lifestyle less difficult for human beings as all work can be achieved in less time with authenticity with effectiveness. Communication is one of the parameters that has extend to the following degree with high-tech advances and the arrival of the Internet. Technology construct communication extremely easier else distance has become an ignored parameter in communication. While we consider communicating online the primary thing that comes to our mind is communication through electronic mail. Email is one of the most consistent ways to exchange data or details and email is used all over the globe, but to get a connected person has to be able to see[1]. There are lots of blind or partially sighted people who are not able to see the screen and consoles, therefore, do not have contact with the internet. In this way, they are far-off from communicating via electronic mail and the world of cyberspace. These blind peoples are incapable to use the existing email system and unable to send emails and cannot study information shared through electronic mail; consequently, current structures never simply reachable themselves.[1]

2. Existing System

In earlier project, unsighted person will not able to dispatch the mail through devices. So, multiplicity of email types has power situation that allow them to be used in everyday navigation situations They are able to easily reply to audible instruction. In this, machines its far very uncommon. So, there is little risk of getting this audio-based email from impaired users.[4].The voice-based machine proposed by T.Shabana, A.Anam, A.Rafiya, K.Aisha has made use of IVR, Speech to text converter, Mouse click event and display Screen reader. Input is based totally on speech & mouse clicks to give result[5].

Current structures of now are essentially program that offer having access to and copying with of emails advantages to its customers via a internet offering. Making an email extensively used communique shape. The prevailing structure don't able to take voice instructions and audio facilities and consequently it isn't not compatible for visually challenged people.

3. Objective and Motivation for this Research

The main objective of this research is to provide an email platform to visually challenged peoples and the only motivation for this research is to help the visually challenged society. This Voice-based Email will make the email system very easily accessible to visually challenged people. The most important aspect that has been kept in mind while developing the proposed system is accessibility. A web system is said to be perfectly accessible only if it can be used efficiently by all types of people whether able or disabled.

4. Problem Statement

Blind people cannot read the information and cannot view the mouse cursor to give commands to the computer. They cannot access their mail and cannot send mail as they cannot visualize what is already present on the screen they cannot make out where to click to perform the required operations. Therefore, the computer becomes an impractical thing for blind people and information retrieval a tedious job. For a visually challenged person using a computer for the first time is not that convenient as it is for a normal user even though it is user-friendly.

5. Proposed System

The Present application that constructs the electronic mail structure more easily accessible to prominently the impaired furthermore helpful to the community. The authors suggested that the system keep one view within remember it should be easily accessible to all types of people, whether able or disabled. Any web-based application designed is considered exist excellent accessible, if used by any person, visually impaired or normal person. As critical as the current system puts its first friendliness to conventional end users, the proposed gadget makes a speciality for user interaction for

every type of people and indigenous peoples, and vulnerable populations moreover as uneducated people.

The primary advantage of this software is that using of the keyboard is finished, the consumer could be required to interact only with the aid of voice. The utility is completely voice-based totally permit blind human to dispatch and acquire emails easily.

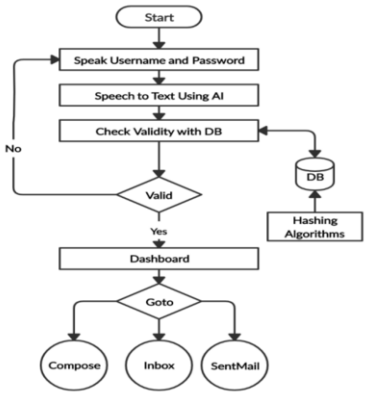

Figure1. Schema Chart of proposed system.

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6. Methodology

On this device particularly four sort of technologies are use particularly:

6.1 Speech-to-text: Speech to textual content is application program that deals with the aid of playing sound and delivering an editable, literatim transcript on a specified device. The application done these through voice recognition. Because the signal in this time is deemed stationary, the period is usually 20 milliseconds[7]. The generation of uniformly spaced discrete vectors of speech features is required for speech feature extraction. The parameters of acoustic models are estimated using feature vectors from the training database[8].

6.2 Text-to-speech: In this approach, it will convert the textual content layout of the emails to complex speech. It does not work properly far from any personal digital device, including computers, smartphones. For better response user have to speak loudly the text and text files.

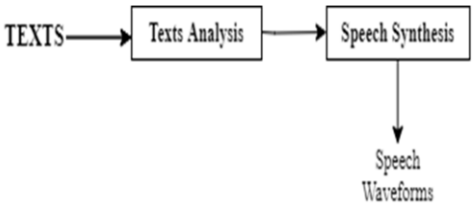

Figure.2 TTS System

6.3 Interactive voice response: IVR is sophisticated technology which define reciprocity with in the person and the machine by way of the replying by using keyboard for the respective voice message. It is nothing but a pre-recorded voice that interacts with humans over a voice call. The purpose of an IVR to collect a response from the receiver or the caller and then based on the response create a certain outcome. All of this is done without human intervention. The responses are collected in the form of numeric inputs from the dial pad.

6.4 Speech Recognition: Speech recognition is the tool or the program of any system to identifying text and expression in spoken language and translated into machine language. Speech recognition is also known as automatic speech recognition, computer speech recognition, which means understanding voice by the computer and performing any required task.

6.5 E-Mail Prearrange Segment: Electronic mail seems like one of the precious resource must available www today. Many the web applications utilize the electronic mail system to covey mail belonging to single consumer to one more. simple mail transfer protocol is a email ending protocol and is used to transfer email while post protocol or IMAP_Internet message access protocol which will access these faxes from recipient corner.[13]

6.6 List of packages and modules used in this system

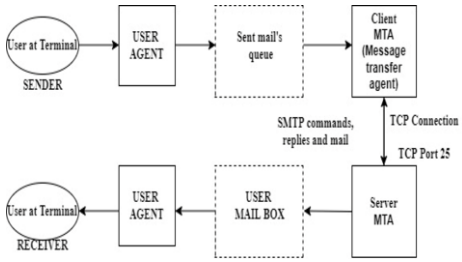

Figure 3. Work Flow of SMTP[13]

Table 1. Comparison table of Proposed system with Traditional system

S.NO	TRADITIONALSYSTEM	PROPOSEDSYSTEM
1.	This System totally depends on the keyboard mainly.	The entire structure is based on IVR-interactive voice response.

2.	These systems have slow processing.	Proposed system is faster and more efficient than older.
3.	These systems are not able to provide mail services to blind persons, as there a need of keyboard and mouse.	Proposed system is easily accessible by blind persons, as they totally work on the voice commands.
4.	Blind people are not being able to interact with the web-based email system.	They will be able to interact with the web-based email system.
5.	Difficult to understand interface.	Easily understand by user.

6.7 ALGORITHM USED:

Voice Based Email system

Step-1 Start

Step-2 Speak your choice

1- Compose an email

2- Check your inbox

#If user wants to send an email

Step-3.1 If text ==’1’ or text ==’One’ or text ==’one’ ==’Two’

Step-3.2 Print(“Speaks Your Message”)

Speaks the message which user want to send.

Step-3.3 Print(“Speaks the mail address to send the”)

Speaks the Mail Id of receiver.

Step-3.4 Validate the Mail Id of receiver

Step-3.5 If Correct:

- Sends the Mail
- Print(“Congrats your mail has been send”)

Step-3.6 If Not Correct:

- Mail address is incorrect, try again
- Print(“Mail not sent”)

Step-3.7 Exit()

#If user wants to check our inbox

Step-4 f text ==’2’ or text ==’Two’

Step-4.1 Login the Mail-Id of user

Step-4.2 total=mail.select(‘Inbox’)

#Speak the total no of mails in Inbox

Step-4.3 Reads and speaks the detail of recent mail in inbox.

1. Speaks the mail-id of sender.
2. Speak the subject of mail.
3. Speak the time and date of mail.
4. Speak the content of mail.

Step 4.4 Exit()

7. Efficiency & Comparison of Proposed System

The proposed system is more efficient than traditional system as the proposed system is faster and secure than the existing system and more than that, system is totally works on the voice commands of the user that clearly show our objective and solve the problem of visually challenged people i.e., not able to use the existing email system.

8. Conclusion

The mail structure will utilize by any physically challenged person easily by enabling one to one chat with another physically challenged person or any normal person. This system aids to reduce the obstacles that were earlier faced by physically challenged person by avoiding the use of keyboard. This arrangement furthermore turndown rational stack decease by unsighted to recall or type word with the help of keyboard. So, the device is very useful for blind or physically challenged people to move one step forward towards their betterment. This system is tested and it show a great transparency in sending the emails and reading the emails for blind person. In this system there is no use of keyboard and mouse, it totally works on voice commands, this is the main advantage for blind persons.

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