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VOICE BASED E-MAIL SYSTEM FOR BLIND PEOPLE

Omkar Kulkarni[1], Akshay Alhat[2], Namdeo Tejankar[3], Madhuri Patil[4]

UG, Computer Science Engineering, Dr. D. Y. Patil School of Engineering & Technology, Lohegaon, Pune
omkarkulkarni173@gmail.com[1], alhatakshay65@gmail.com[2], namdeo422@gmail.com[3]

Abstract: **Voice mail architecture helps blind people to access e-mail and other multimedia functions of operating system (songs, text). Also in mobile application SMS can be read by system itself. Now a days the advancement made in computer technology opened platforms for visually impaired people across the world. It has been observed that nearly about 60% of 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 operating system easily and efficiently. This architecture will also reduce cognitive load taken by blind to remember and type characters using keyboard. It also helps handicapped and illiterate people.**

Keywords: *Microsoft Speech Recognition, Voice Mail, RSS (Real Simple Syndication) Microsoft Speech SDK.*

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I INTRODUCTION

The present digital era is witness to a rapid and overwhelming growth in the interactive product designing sector. Digital devices like computers, smart phones, and tablets along with internet technology are getting cheaper and more accessible to the common people. As a result they are no more only technologies, rather, have become a part of our daily lives. The inhabitants of this virtual world are across all stratum and classes of society; all having their specific needs and an array of choices to fulfill. For a long time, the differently abled people were deprived from getting the benefits, but now the advent of state of the art assistive technologies has opened up many avenues for these persons. People with vision difficulty or Blindness have been benefited immensely from different computer based systems like automatic text-to-Braille transliteration systems [1], [3], and audio feedback based virtual environments using automatic speech recognition (ASR) and text to speech (TTS) converter. These systems have enabled Blind people to explore the power of the cutting edge technologies and also to communicate effectively with other people with flexibility and accessibility as enjoyed by their sighted counterparts.

One of the revolutionary electronic technologies in present day is the electronic mail or e-mail. E-mails have become the primary means of communication and productivity to almost all groups of people. They offer a quick and easy sharing of ideas of information and at the same time is cheaper than traditional telephone communication methods, especially over a long distance. E-mails also provides a sense of privacy as the access to ones account is restricted and many other functionalities like

II PROBLEM DEFINITION

In the previous system with the help of screen readers it is difficult for blind person to access E-mail system and computer operating easily because it has noisy audio interface. These available systems require use of keyboard which is very difficult for blind people to recognize and remember characters of keyboard. So we implement voice based E-mail system for blind person and it also helps handicapped and illiterate people.

III MOTIVATION

Voice based E-mail system architecture that can be used by a Blind person to access E-mails easily and efficiently. The contribution made by this research has enabled the Blind people to send and receive voice based e-

Mail messages in their native language with the help of a computer or a mobile device.

IV LITERATURE SURVEY

[1] Tirthankar Dasgupta, "Voice Mail Architecture in Desktop and Mobile Devices for the Blind People", 2012.

The advancement in computer based accessible systems has opened up many avenues for the visually impaired across a wide majority of the globe. Audio feedback based virtual environment like, the screen readers have helped Blind people to access internet applications immensely. However, a large section of visually impaired people in different countries in particular, the Indian sub-continent could not benefit much from such systems. In this paper, we describe the Voice Mail system architecture that can be used by a Blind person to access e-Mails easily and efficiently.

[2] Ummuhanysifa U., "Voice Based Search Engine and Web Page Reader", 2013.

This paper aims to develop a search engine which supports Man-Machine interaction purely in the form of voice. A novel Voice based Search Engine and Web-page Reader which allows the users to command and control the web browser through their voice, is introduced. The existing Search Engines get request from the user in the form of text and respond by retrieving the relevant documents from the server and displays in the form of text.

[3] Tharani K. K., "Voice Based Mail Attachment For Visually Challenged People", 2017.

Internet has become one of the basic amenities for day-to-day living. Every human being is widely accessing the knowledge and information through internet. However, blind people face difficulties in accessing these text materials, also in using any service provided through internet. The advancement in computer based accessible systems has opened up many avenues for the visually impaired across the globe in a wide way.

[4] D. Kiran Kumar, "User Interface for Visually Impaired People"

The research work deals with the design and implementation of Speech recognition device using Raspberry Pi for essential usage to visually impaired people. Now a day's blind people are increasing enormously so, the main objective of the research is to provide a simple, cheap, friendly user, and compact device for visually impaired people to use multimedia applications of operating system like text, music player and dialing system by interfacing GSM module. All the above are implemented in a low cost Raspberry Pi board. Thus a goal of producing a compact device has been designed at low cost using offline speech recognition.

[5] "Voice Based System in Desktop and Mobile Devices for Blind People", 2014.

Today in the information age computer has become an integral part of every body's life. We use a computer to hear songs, read something, accessing information from the internet. We use computer everywhere. But the information access and computer handling has to be done with the mouse and keyboard and by reading all the things present on the screen and then deciding what to do making it a visual process means we need eye sight to handle the information on the computer i.e. if we want to read news from the internet we have to first open a browser and then open a website to read news and then follow the links to read specific news.

V PROPOSED SYSTEM

The architecture of our proposed system is shown in figure.

The diagram shows the major components of the present system, which are:

- User selection module
- Mailing options: Compose or Check Inbox
- Accessibility options: text based messages or Voice based messages
- The Interactive GUI framework: An interactive GUI with voice based feedback to key press operations that supports a Blind person to access G-Mail efficiently.
- Mouse click based accessibility for the desktop framework.
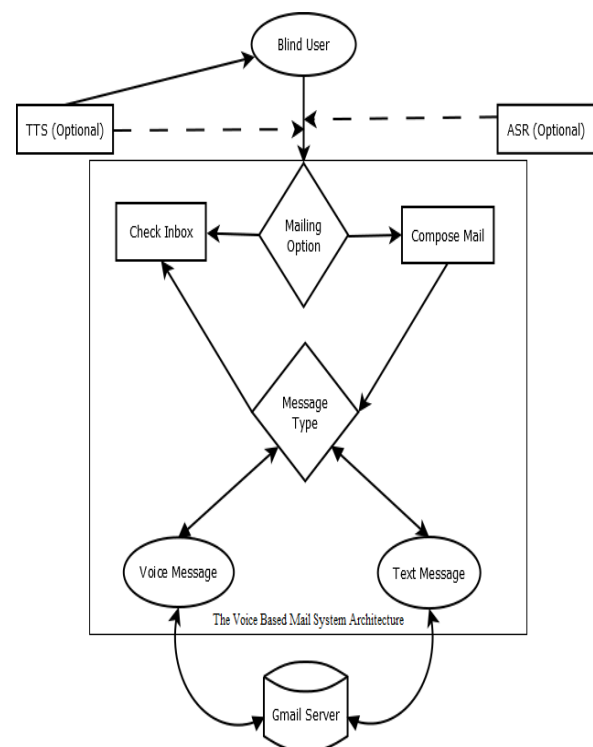
VI SYSTEM ARCHITECTURE

Figure 1: Architecture Diagram

VII CONCLUSION AND FUTURE WORK

1. Conclusion

This paper is an attempt to bridge the gap between the Blind populations to access essential electronic communication modes like e- Mail. We present both desktop as well as mobile based architecture for the same. The system allows a Blind person to send voice based e-Mails messages. This will reduce the extensive cognitive load taken by a Blind to remember and type characters using a keyboard or a mobile keypad. Further, as messages are sent via voice, it eliminates the lack of English language proficiency of a Blind person.

2. Future Work

In future work, blind person can associate a voice based nick name corresponding to each recipient mail id and during composing a mail, the mail ids of the recipients can be searched through the list of these voice based nick names.

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