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# Voice Based Emails for Visually Impaired People

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**ABSTRACT:** Because this technology requires visual awareness, it is exceedingly difficult to utilize for visually challenged people. However, not everyone has internet connection. This is because, in order to access the internet, you must comprehend what is displayed on the screen. It serves no purpose if it is not seen. As a result, the internet is completely useless to the visually impaired and illiterate. This system primarily employs three types of technology: Everything we say is transformed into text using STT (Speech-to-text). There will be a small microphone button on which the user must click to speak, and his or her speech will be converted to text format.

**KEYWORDS:** Speech to text, Voice based, Email System

## I. INTRODUCTION

For the visually impaired people, the navigation system employs TTS (Text-to-Speech) technology to give voice navigation. As an independent program, the suggested system is quite inexpensive and may be installed on a blind person's smartphone. This makes it easier for blind persons to use the program. A growing number of studies have employed technology to assist blind persons in fully integrating into the global environment. We demonstrate software that allows blind people to utilize mobile devices. The software considers an instant messenger system to facilitate interaction between blind users and any other user on the network. Today's advances in computer technology have created new opportunities for visually impaired persons all around the world. INDIA is home to over 60% of the world's entire blind population, according to estimates. We discuss the voice mail architecture used by blind individuals to simply and efficiently use E-mail and multimedia functionalities of the operating system in this study. The cognitive load placed on the blind to recall and enter characters on a keyboard will be reduced as a result of this architecture. It also aids the crippled and illiterate.

## II. PROBLEM STATEMENT

Because the previous system had a noisy audio interface, it was impossible for blind people to access E-mail and computer operations with the help of screen readers. These methods necessitate the use of a keyboard, which is extremely difficult for blind persons to recognize and recall. As a result, we construct a voice-based E-mail system for blind individuals, which also benefits the crippled and illiterate.

## III. MOTIVATION

A voice-based E-mail system design that allows a blind person to simply and efficiently access E-mails. With the use of a computer or a mobile device, this research has enabled Blind persons to send and receive voice-based Mail messages in their original language.

## IV. LITERATURE REVIEW

Tirthankar Dasgupta, Aakash Anuj, Manjira Sinha, Ritwika Ghose, Anupam Basu Bandyopadhyay, Sanjay Chatterji, "VoiceMail Architecture in Desktop and Mobile Devices for the Blind People" [1] The growth of computer-based accessible technologies has provided many opportunities for the visually impaired around the world. Audio feedback based virtual environments, such as screen readers, have greatly aided blind people in gaining access to online

applications. However, such methods would not serve a vast number of visually handicapped people in various nations, particularly in the Indian subcontinent. This was due to the fact that the technology required for Indian languages differed from that required for other popular languages around the world. We explain the VoiceMail system architecture in this paper, which may be utilized by a Blind person to access e-Mails quickly and effortlessly. With the use of a computer or a mobile device, this research has enabled Blind persons to send and receive voice-based e-Mail messages in their local language. The GUI of our proposed system was compared to that of a typical mail server. We discovered that our proposed architecture outperforms existing GUIs significantly.

Paulus A. Tiwari, Pratiksha Zodawar, Harsha P. Nimkar, Trishna Rotke, Priya G. Wanjari, Umesh Samarth, "A Review on Voice based E-Mail System for Blind" [2]. The Internet is widely employed in practically all communication applications due to its ease of use and accessibility. In recent years, a number of internet-based applications have been developed to make communication more dependable and efficient. E-mail is the most extensively used and dependable method of communication among these countless applications. The use of e-mail is quite simple and clear for typical users, but for users with visual impairments, the system is still very tough to use. The existing approach is ineffective for those with visual impairments because it is based on visual perceptions. There has been a significant advancement in technology in recent years, particularly for persons who are visually impaired. The current email system has yet to be modified for the use of the visually impaired. As a result, there is a substantial need to modernize the present system in order to make it more usable for the visually handicapped. As a result, in this study, we provide an email system based on the voice controlling principle for people with visual impairments in order to provide simple and quick access to the email system. Along with the visually challenged, this framework will be beneficial to persons with various deficiencies.

Iglesias, S. Casado, T. Gutierrez, J.I. Barbero CA. Avizzano, S. Marcheschi, M. Bergamasco," Iglesias, S. Casado, T. Gutierrez, J.I. Barbero CA. Avizzano, S. Marcheschi, M. Bergamasco", [3] This study describes a new Haptic Audio Virtual Environment that allows visually impaired people to interact with a three-dimensional graphic computer world via touch (through a new dual-finger haptic interface) and audio output, as well as spoken commands. A system like this was created as part of the European project "GRAB." The new system offers an integrated platform for designing and developing audio-haptic applications in a variety of disciplines (architecture, art, aeronautics, medicine,). The project was especially focused on the construction of three applications for visually impaired people: an adventure game, a city map explorer, and a chart explorer, in order to demonstrate the validity of the methodology. To evaluate the usability and potential of these advancements, visually impaired people with various profiles (congenitally blind, advantageously blind, partially sighted, etc.) were asked to test both the environment and the applications. The validity of the system is confirmed by the validation results. Overall, it appears that the GRAB system is suitable for these applications. Although some aspects will need to be tweaked in order to make future tools usable.

Dr. Arun Pande, Karuna Sirkar, Avinash Kanade, Peter Gracias, Nayana Pandit, K Raj Kumar and Hema Krishnamachari, PC BASED VOICE MAILING SYSTEM, [4] In this paper, we describe the design and development of a low-cost IBM PC/AT-based Voice Mailing System (VMS). This system, designed for small to medium-sized businesses, can take and store incoming telephone communications. Later, the phoned person can use a standard touch tone phone to access his own private area on the system and do tasks such as message playback and deletion. Our VMS is made up of cards that fit into PC/AT bus slots and master software that runs the OS/2 operating system on the PC/AT. In its most advanced version, the system can handle four EPABX subscriber lines at simultaneously, with a total capacity of about 150 people.

Sherly Noel," Human computer interaction (HCI) based Smart Voice Email (Vmail) Application - Assistant for Visually Impaired Users (VIU)" [5] Communication growth is producing a revolution in today's digital world. Email is now utilised for both formal and informal conversations. Because of advances in digital technology, those who are blind or visually handicapped now have a plethora of opportunities. This application was designed to make email writing easy for everyone, not just the visually challenged. Human voices can now be utilised as input instead of typing on a keyboard. As a result, additional typing abilities will no longer be required. Before performing the voice command, this application recognises the user's voice and compares it to a database pre-sample voice. Everyday spoken words are used to create command language. It aims to reduce the amount of strain on the human memory. The proposed work's purpose is to provide a system for converting Speech to Text (STT) for email creation and Text to Speech (TTS) for email reading. For speech recognition, this application makes use of the Google Web Kit API (Application Programming Interface). The application's utility is proved by its outstanding performance in various parameters such as audible distance, accent, tempo, words per minute (WPM), accuracy, and homophone terms. The graphical analysis illustrates the accuracy of word recognition.

Jingyang Wang, Peng Ren, Min Huang and Liwei Guo,” The Design and Implementation of Voice Mailbox System Based on VoIP” [6] With the rapid progress of CTI and VoIP technology, VoIP-based voice mailboxes, which are a form of important telecom value-added service, are gaining popularity. This paper presents a voice mailbox system based on digital voice cards and VoIP to reduce the cost of establishing a voice mailbox system and shorten the development cycle. The system architecture of a VoIP-based voice mailbox system is explained in detail in this article, as well as the system function and the schedule delivery message and manual service implementations. The system's effect after it has been operational is positive. It could be useful in the development of related efforts based on digital voice cards.

Stephan Gamm, Reinhold Haeb- Umbach, Detlev Langmann, Anupam Basu,” Findings with the Design of a Command-Based consumers would perceive voice control as a clear benefit versus touch-tone control. It is shown how the speech interface was designed in a top-down approach Speech Interface for a Voice Mail System”, [7] The design of a command-based speech interface for a voice mail system is described in this work. In order to allow remote questioning of messages in a speech-only discourse, speech recognition was included into the voice mail system. That was our design aim. We started with a concept and put it to the test with a Wizard of Oz simulation. The design was realized in a high-fidelity prototype after parallel design was used to refine the concept. It was improved in three iteration cycles using qualitative user testing. With tests in two nations, we were able to confirm that our design goal had been met.

## V. SYSTEM ANALYSIS

### SYSTEM ARCHITECTURE

In this system when the blind peoples want to send mail the they give input as a mail via voice to the system, when system receives the voice mail from the system recognize the speech and converts into text and generate the mail and when mail was sending the it generates voice alert to inform the user mail send successfully.

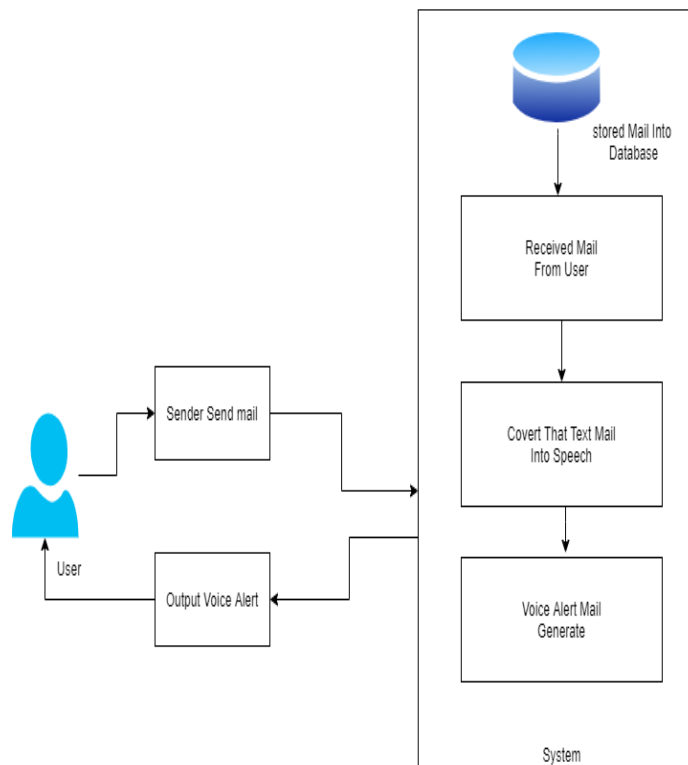


Fig.1.System Architecture



## ALGORITHM

### ASR: Automatic Speech Recognition

Automatic Speech Recognition, or ASR for short, is a technique that allows individuals to use their voices to communicate with a computer interface in a way that, in its most advanced forms, resembles typical human speech. Natural Language Processing, or NLP for short, lies at the heart of the most modern ASR systems on the market today. Though it has a long way to go before reaching its pinnacle, we are already witnessing some spectacular results in the form of intelligent smart phone interfaces like the Siri program on the iPhone and other systems used in commercial and advanced technological contexts.

## VI.RESULTS

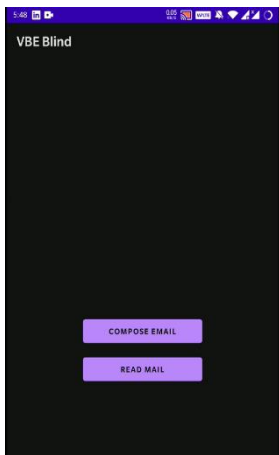


Fig 2 :Interface 1:To Send Emails Or To Check Received Emails

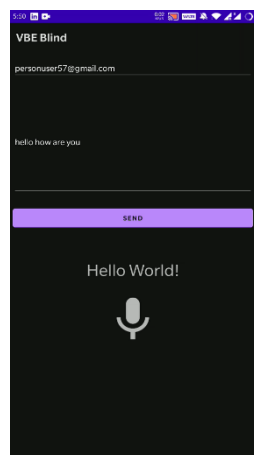


Fig 3 : Interface 2:To Send Emails(Compose Mail)

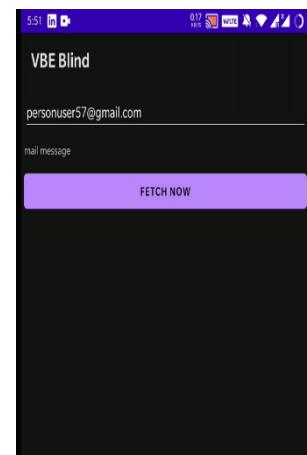


Fig 4: Interface 3: To receive Emails (Inbox)

## VI. CONCLUSION

This e-mail system is simple to use and accessible to users of all ages. It has the ability to convert speech to text as well as text to speech with the use of a speech reader, making it a system that can be used by both visually impaired and completely blind people.

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