

Voice Based Email for Blind

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Abstract - The internet has now become one of the most important tools for everyday life. Every human being uses the internet to gain access to knowledge and information, as well as to communicate. During this modern technological era, there are numerous ways to communicate with others over the internet. Many of them are opting for the most effective mode of communication, which is email correspondence (Email). However, blind persons have difficulty accessing these internet-based resources, as well as using any internet-based service. Audio-based virtual environments, including screen readers and a slew of voice-based search engines, have made it much easier for blind persons to use the internet. This study tries to explain the architecture of a Voice-based mail system that a blind person can use to access emails rapidly and effectively. This research's contribution has enabled blind persons to send and receive voice-based e-Mail messages with the aid of a computer.

Key Words: Email Assistance for visually challenged, Speech to Text Converter, Text to Speech Converter.

1. INTRODUCTION

People are becoming increasingly used to digital life and communication as technology advances. In this highly evolved era, there are several ways to contact others over the internet. The internet has become the bedrock of modern society. The most important component of daily life is email, or electronic mail. Email is a piece of software that allows users to communicate with others by sending emails and aids in corporate communication.

According to a survey, there are around 260 million persons worldwide who are visually impaired. Access to the Internet and its services is difficult for people with disabilities. Many of them are unable to access and are uninterested in using the Internet's services due to their inability, and there is no alternative option for them to use the services on their own. The remedy to this difficulty is to enlist the help of a third party who is not disabled; however, this may not be the greatest option to ensure the user's privacy. The proposed solution was created to eliminate the need for a third party to send the emails. Our system is built with Speech-to-Text and Text-to-Speech technology, allowing the disabled to send and receive emails without having to know keyboard shortcuts or key locations. We can access our email simply by utilizing voice commands.

2. LITERATURE REVIEW

It is proposed in [1] that it aids blind individuals in accessing email. The existing system is not effective for blind people since it does not provide a sound perspective on how its material should be viewed. Speech recognition, interactive voice response, and a mouse click are all used in the proposed system. Additionally, the device is utilized to authenticate the user for extra security. In the system, the first module will be registered. This module will gather all of a user's data and advise them of what data you will be entering. The system prompts the user to input a username and password in the second module, the login module. Use voice commands to accomplish this.

You'll need additional tests and voices to execute the voice of the check. After completing the registration, the user is forwarded to the mailbox page. The user may now use the mail system normally after logging in. System Preferences:

Email, It's Trash, How to Create an Email Account With the use of voice commands, the user may switch between them.

In contrast to the present email system, the study [2] suggests a system that is based on a system with a voice command. In essence, the entire system is predicated on turning numbers to words. Once activated, the system will prompt the user to voice instructions in order to access the appropriate services. It is vital to declare that this command will function if the user wishes to access the appropriate services. This software makes advantage of the IMAP protocol (Internet Message Access Protocol). An email uses this standard Internet protocol to send an email from a mail server via TCP / IP. From the start of the year, the major sort of activity, the screen, will be exhibited first. The device will begin to hear your voice instructions after the user presses a single button on this screen. It's a single large button that may be tapped anywhere on the screen. After that, the user may send an email and read it using voice commands. In [3], the system uses three main technologies:

- To convert the number to text
- Text-to-speech.
- Interactive Voice Response.

When you visit the site for the first time, it will ask you to register using voice commands. Additionally, after you register, the database will retain the user's audio data as well as a remark. In such a system, the user will be given a user id and password after logging in to receive an email. The user interface was created using Adobe Dreamweaver CS3 software. The focus of the site is focused on efficiency and effectiveness. There is also a "Contacts" page where the user may send any suggestions or assistance if needed.

At the time, [4], one of the E-Systems for the blind was suggested. The Viterbi algorithm and the voice-to-text converter can be used. The computational rule that works with the technology does not determine it to be the most acceptable word; yet, as soon as the user speaks it, it is spoken as your predicted word for a particular word. The person creates an account on the site, which is their first visit. Some of the existing system's drawbacks will be mitigated by this system.

A strategy for the blind and illiterate to better their engagement with the email system is presented in [5]. This technique eliminates the need for screen readers and Braille keyboards while utilizing IVR technology. Speech-to-text and text-to-speech conversions were utilized there. Voice instructions are also employed for a variety of different tasks.

Your identity, email address, and password can all be used to register. This is the ability to utilize the function that instructs PHP to send an email. This is the email library from which you can send an email. The IMAP server is used to get the user's email. To find email collecting boxes, the Lash-Morris-Pratt algorithm is employed. As a result, the system's environment is clean, and each phase is voice-controlled by a feedback mechanism. For the blind, a voting mechanism based on PCs and mobile devices was proposed. In the note below, these are the most crucial aspects discovered in the system's work [6].

1. Messages from the Gmail system (refer to the buyer's email address).
2. RSS (Real Simple Syndication) is a type of news syndication that is very easy to use.
3. Let's listen to some music together.
4. The red book and reader of the system
5. Use the bridge's Browser to look for your discs and folders.

It's a blind-friendly software design that integrates email and MMS messaging features into the operating system. Voice instructions and a mouse can be used to create a graphical user interface design, but a keyboard is required. RSS feeds are also used in conjunction with email to disseminate a list of headlines, as well as new product and service announcements. An application has also been produced for

you. Voice commands may be used to access other programs in addition to email [6].

To overcome the favorability and convenience of email activities, the authors suggest the Tetra-Entry, a blind friendly email client, in [7].

3. PROPOSED SYSTEM

The voice-based email system project is a web-based programme that allows blind individuals to simply utilize the email system. The suggested system focuses on delivering fundamental features such as email composition, reading, sending, and receiving, as well as voice-based interaction. This makes it easier to use all the above functions, as well as the ability to send text and voice-based emails.

The suggested system will be accessible via email to persons with low vision and will assist the community. It will be simple for any of the current persons in this system, according to the creators. A thorough application is completely accessible, regardless of where it is employed in human eyesight, and ineffectual.

As a critic of the existing system, they would desire the system's features to be the ease of use of traditional users, the attention to ease of use by all sorts of people, both traditional and visually impaired. This system requires the user to take some action in order to utilize the services, and if the user has access to several services, this activity will be required.

The user must first complete the registration form in order to use the programme. The user must be filled out using voice commands and all the appropriate fields, and it will be scanned in from the site; as soon as the user speaks, it will be instantly recorded. After the user logs in, the system will prompt for an email id and password, convert audio to text, and then approve the user by validating the database's credentials. After a successful session, you may ask the users in the various parts to record your incoming and sent messages.

The application is completely voice-activated, allowing blind people to swiftly send and receive emails. Converts the user's spoken voice to text, then converts the text to speech before acting.

4. DESIGN OF PROPOSED SYSTEM

4.1 User Interface

This section will enhance the user interface, or project user interface. The initial point of contact with a user through a software programme is the design of a web page with which he or she may interact. Front-end technologies are used to create the user interface.

4.2 Database

Because it maintains all storage-related data and references, a database is essential to each project. Furthermore, it is a database that contains, for the most part, the users, authentication, and environmental protection of any email user.

As a result, the design and databases will entail the establishment of an email database.

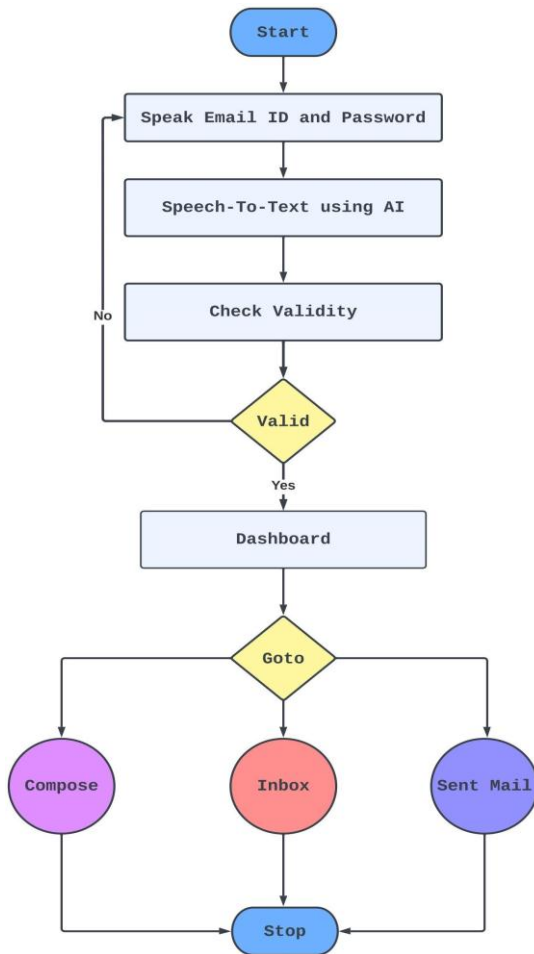


Fig. 1. Proposed System Flowchart

4.3 Design of the system

The Item-oriented programming module of your choosing (Text-to-Speech) and the single-unit (Speech to Text) (how to Create an Email Account).

4.4 Mail Programming Module

Email is the most important service accessible on the Internet today. SMTP is a mechanism for sending email addresses to other users over the Internet. From the client side, POP (post office protocol) and IMAP (Internet message access protocol) are used to receive email, and SMTP is used to send email.

Sending Email: An email will have a header and a body when it is forwarded. The shopper and the server queue up a succession of replies requested messages while sending an email. When there is a null row, the header will cease, which is how the two differ.

The body of the message contains the same data that was searched for reception. Each data point in the body is gathered after the one before it. As a result, the exact data searched for reception is contained in the message's body. Each data is taken after the null line in the body.

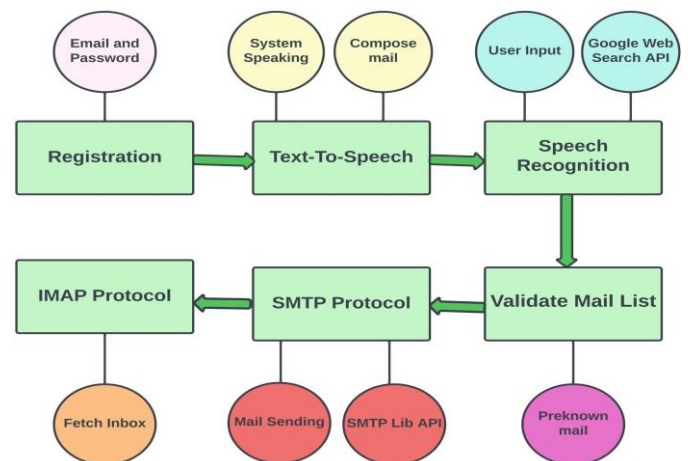


Fig. 2. User Login and System Access Flowchart

Receiving Email: At a specified time, the server's user agent checks the mailboxes. If any data is found within this period, the user is notified instantly. Additionally, when a user opens an email, specific information, such as the subject line, is examined.

5. FUTURE SCOPE

This system has a lot of promise in the future, with a lot of improvements; perhaps it was a system that had email access and spam email capabilities in any language. This method may also be improved to transmit an attachment, which is very beneficial for persons with weak vision. It may be made available to all residents in the region, and it is popular and will continue to be offered in different languages; the system is simple and straightforward to use. In addition, the system makes use of sign language and may be added into it to make it more scalable and dependable.

5. CONCLUSION

The project's major goal is to develop email communication for blind individuals using voice commands due to their incapacity to utilize the internet and its functionalities. We were successful in receiving unseen messages and providing the sender's mail Id, topic, and message as a voice output. We succeeded in developing text-to-speech and speech-to-text modules, as well as implementing a voice assistant to

facilitate effective communication between the user and the system; it can not only establish email conversation but also respond to the user's inquiries. We designed a registration module to make it easier for users to access information while also offering some protection and privacy.

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