Voice based E-mail for Visually Challenged

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Abstract - *The Internet can be seen as the best introduction to technological development. Everyone gains access to information and information online. However, for the visually impaired, it is almost impossible to access this text information and services provided via the Internet. Advances in computer-access programs have paved the way for the visually impaired around the world. An audio response based on a visual environment such as, screen readers help blind people to access the Internet properly. It describes the design of a voice-activated E-mail structure that a blind person can access E-mail in a simple and efficient way. This page presents a project that will allow blind people to send and receive email-based messages with the help of a computer.*

Key Words *Google API, , IVR (Interactive voice response), Microphone, Speech to text convertor, Text to speech convertor.*

1. INTRODUCTION

We have seen that the Internet has become far less accessible and allows people today to have access to any information they want to stay in their home. One of the main fields of the Internet that has improved communication, and to communicate over the Internet, the first thing that comes to our mind is E-mail. Emails are considered to be the most reliable means of communicating through the Internet, sending or receiving certain important information. But there is a special guide for people to access the Internet and a process that you should be able to see. But there is also a group of people who have been driven largely from our society who are not empowered to see. Of course, there are people who are challenged or visually impaired and therefore cannot see the computer screen or keyboard.

Nearly 250 million people do not know how to use the Internet or E-mail. The only way for a visually impaired person to send an E-mail is to put the contents of the email to a third party (not challenged), and that third party will write and send that email.

But this is an ineffective way to deal with this problem. A visually impaired person will find the third person seldom composing email.

Therefore, to better serve our community and to provide impartiality to such especially arrested individuals we came up with a project idea to enable the user to send mail using voice commands without the need for keyboard or other physical objects.

2. EASE OF USE

2.1 Text to speech

The main feature of this program is to say what is written so that the blind can hear. This program will guide the blind through the entire website by using voice-based commands, commands like it, speak your username, password, and it has the benefit of reading aloud the email in the inbox.

2.2 Speech to text

Another function of this program is to translate the word into the appropriate text. This process is known as speech recognition. There is a built-in microphone that captures voice as input, and speech recognition software converts voice into text.

3. LITERATURE REVIEW

3.1 Existing system

There are approximately 8 billion accounts created by 2014 and Radicati says, the average number of E-mail accounts per user was nearly 1.75 in 2018 and the average 1.86 per user by 2022.

The most common mail services are inaccessible to visually impaired people. Mail services do not provide any space to read content on a scale for the frontline to hear. Since they cannot visualize the eagle that appears on the screen they cannot specify where to click to perform the required tasks. For a person who sees the practical challenge of using a computer for the first time it is not as easy as it is for the average user even though it is kind. Although there are a lot of screen reading softwares out there, nonetheless these people face a little difficulty.

Screen readers read whatever content is on the screen and to perform those actions one will have to use keyboard shortcuts as the mouse area will not be followed by screen readers. This means two things; one the user will not be able to use with the use of the mouse cursor as it is completely wrong if the cursor location is not tracked and secondly that user should know exactly where the keyboard is and where the problem is located. The user is new to the computer and is therefore unable to use this service as they are not aware of important areas.

3.2. Disadvantage of Existing system

- Existing E-mail programs do not provide any feedback or service for Talkback.
- Existing applications focus more on the GUI user interface.
- This system becomes inefficient to use by the blind people.
- Use of the keyboard is mandatory which will be difficult for the visually impaired.
- Clicking the mouse here requires a fixed position for the task to be completed

3.3. Proposed System

The proposed system is based on the idea of a novel completely and there is no substitute for existing mail systems. The most important factor to keep in mind while developing the proposed system is accessibility. A web application is said to be accessible only if it is not properly used by all types of people whether it is able or not. Current programs do not provide this access. Therefore, the system we are implementing is completely different from the current system. Unlike the current system which places a great deal of emphasis on general user friendships, our program focuses on user friendliness of all kinds of people including ordinary people, visually impaired and uneducated people.

This program will be best available to all types of users because it uses simple speech input and no need to remember keyboard shortcuts. Those who cannot read do not have to worry as they can listen to the stimuli created by the program and perform certain tasks.

3.4 Modules:

a) Registration: The first module of the program is registration. There is a form that contains specific information required for account creation. The user is able to complete all entries using his voice. Input can be username, contact number, password etc.

b) Login: After successfully registering the user must log in using a valid username and password. Once she provides relevant information, she is allowed access to her account and E-mail system features.

c) Forgot Password: In case an authorized user forgets a password and cannot log in, he or she can select the forgotten password module. In this course the user will be asked to enter some information to verify that you are the owner of the account. Once verification is done, the user is given the option to change the password.

d) Homepage: The user is redirected to the home page if the login was successfully made. From this page the user can perform the tasks they wish to perform. The services provided are:

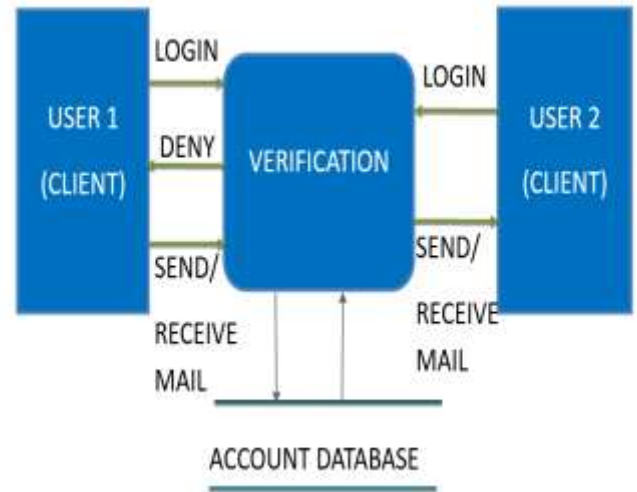1. Inbox 2. Write email 3. Email sent 4. Trash

3.5 Data flow Diagram

Fig 1: Showing the Data flow Diagram

4. CONCLUSION

In this paper we have developed a program that will help visually impaired people to access email services properly. This program will help to alleviate some of the issues previously encountered by blind people when using screen softwares. We've eliminated the idea of using keyboard shortcuts and screen readers that will help reduce the cognitive load of remembering keyboard shortcuts. Also, any mindless user who does not know the location of the keys on the keyboard can continue to use our system as keyboard usage is completed. The user only needs to follow the instructions provided by IVR to access certain services offered. Apart from this, the user may need to feed data through voice input when specified.

5. FUTURE SCOPE

- This free app will have no cost to purchase this program.

- This application can be used on cross platform and technology.

- In the near future this program may be available in many languages.

- Emails can be scanned for many purposes to provide spam protection and malware.

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