Voice based E-mail for Visually Impaired

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Abstract – *The internet is the best example for technological development. But for visually impaired, it is almost difficult to access the information via Internet. An audio response based environment will help them to access the Internet properly. To develop a voice primarily based email system that will facilitate visually impaired to access E-mail in a problem free manner. This page presents a project that will allow Visually Impaired to send and receive E-mail message with the help of an Internet and Computer.*

Key Words: Google API, IVR (Interactive Voice Response), Speech to text convertor, Text to speech convertor, Microphone.

1. INTRODUCTION

The main usage of the internet is to improve the communication. Electronic mail i.e. E-mail is the most reliable communicating media through the Internet, especially for sending or receiving certain important information. But there is a group of people who are not able to use these communicating media, i.e. by Visually Impaired, because they cannot see the things in the screen or monitor. They need third party to send or receive E-mail. The reason is normal email has no voice based options.

So it is difficult for them to browse and send their own mail, without any guidance. The only way to solve this problem is to provide them a voice based E-mail environment, for communication.

Therefore, to better serve our community and provide them to send mail using voice commands without the need of a keyboard or other physical objects. This project idea will help them to send and receive message perfectly.

2. EASE OF USE

2.1 Speech to text

The main feature of this program is to translate the word into the appropriate text. This process is known as speech recognition. There is a microphone that captures voice as input, and the speech recognition software and API converts the voice into text.

2.2 Text to speech

Another function of this program is to say what is written so that the blind can hear the message. It will guide the user through the entire website by using voice-based commands, commands like tell me username and password for login, send recipient Id and content to attach the mail, say sent to send the mail.

2.3 Mail Compose and Send

The user can compose the mail through the voice-based detection method where the speech is converted to text and the commands are saved in the server. Thus the email is composed using text to speech conversion method. Based on the command the voice is recognized and it will be converted into the text and understood by the application and finally the mail is sent through the mail server to the specified recipient.

3. LITERATURE SURVEY

3.1 Existing System

The most common mail services are inaccessible by 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 things that appear on the screen, they cannot specify where to click to perform the required tasks. Although there is a lot of screen reading software out there, but 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 Drawbacks in Existing System

- Existing applications focus more on the GUI for interaction.

- This system becomes inefficient to use by the visually impaired.

- 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

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. The implementation of this system is completely different form the existing system. It aims to test the acceptance of voice commands on Easy Voice Recognition module by using the default language of the module.

The two important parts in speech recognition are recognizing the series of sounds and then identifying the word from those sounds. 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 user will be provided the following services:

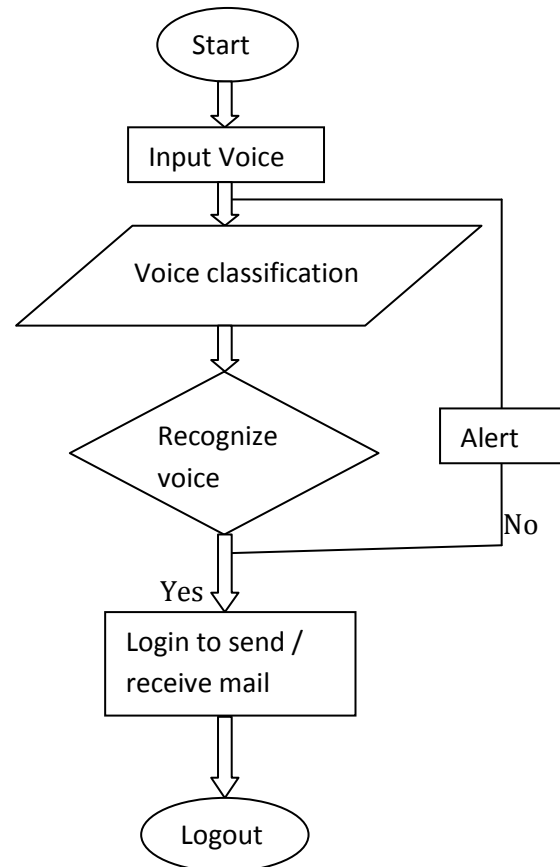1. Inbox 2. Write mail 3. Sent mail

3.5 Dataflow Diagram

Fig 1: Showing the Data flow Diagram

4. CONCLUSION

In this paper we have developed an application that will help visually impaired people to access email services efficiently. It has a feature of speech to text as well as text to speech with speech reader which makes the designed system. We've eliminated the usage of keyboard shortcuts and screen readers that will help to reduce the remembering keyboard shortcuts. And also user can load the message or content through their voice instead of typing.

5. FUTURE SCOPE

- Future work includes adding more features to developed mail systems such as attaching audio files and rar files.

- The proposed system includes only features such as composing mail, sending an email and receiving an email through voice detection, which is a basic feature.

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

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