

VOICE BASED E-MAIL SYSTEM FOR THE BLIND

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Abstract - The visually challenged people find it very difficult to access the technology because of the fact that using them requires visual perception. Unlike normal users they require some practice for using the available technologies. This application aims at developing an email system that will help even a visually impaired person to use the services for communication without prior training. 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. This architecture will also reduce cognitive load taken by blind to remember and type characters using keyboard. It also helps handicapped and illiterate people. The system will not let the user make use of keyboard instead will work only on mouse operation and speech conversion to text. Also this system can be used by any normal person also for example the one who is not able to read. The system is completely based on interactive voice response which will make it user friendly and efficient to use.

Key Words: ASR (Automatic Speech Recognition), IVR (Interactive Voice Response), TTS (Text To Speech), Voice mail, Keyboard Independent.

1. INTRODUCTION

We have seen that the introduction of Internet has revolutionized many fields. Internet has made life of people so easy that people today have access to any information they want easily. Communication is one of the main fields highly changed by Internet. E-mails are the most dependable way of communication over Internet, for sending and receiving some important information. But there is a certain norm for humans to access the Internet and the norm is you must be able to see. But there are also differently abled people in our society who are not gifted with what you have. There are some visually impaired people or blind people who can't see things and thus can't see the computer screen or keyboard. A survey has shown that there are more than 240 million visually impaired people around the globe. That is, around 240 million people are unaware of how to use Internet or E-mail. The only way by which a visually challenged person can send an E-mail is, they have to speak the entire content of the mail to another person (not visually challenged) and then that third person will compose the mail and send on the behalf of the visually challenged person. But this is not a right way to deal with the problem. It is very unlikely that every time a visually impaired person can find someone for help. The aim of this project is to make differently abled use the system efficiently and pave a way for differently abled to easily access their emails. This system

aims at developing an email system that will help even a visually impaired person to use the services for communication without previous training. The system is completely built on interactive voice response which will make it user-friendly and efficient to use. The entire project is based on voice interaction which means speech recognition and synthesis. Voice technology is being used in recent times proving to help users to have easy access to their respective applications or websites. We understand how vulnerable the visually impaired are in today's digital world. Hence, by this project, we will strive to develop a useful project by using speech recognition and synthesis and thus providing a better solution to their crisis. The study has found that generally there are limited resources for the disabled. Hence, our project will be efficient and productive for the differently abled.

2. PROBLEM STATEMENT

Internet has made life of people easy by providing access to information, communication with others, expand business. To communicate over internet E-mail is considered to be most reliable way for sending or receiving some important information. There is a special criterion for humans to access the Internet and the criterion is you must be able to see. But there are some visually challenged people or blind people who cannot see things and thus cannot get the benefit of technology. So, for the betterment of society and giving an equal status to such specially abled people we have come up with this project idea.

3. PURPOSE

This project is proposed for the betterment of society. This project aims to help the visually impaired people to be a part of growing digital India by using internet and also aims to make life of such people quite easy. Also, the success of this project will also encourage developers to build something more useful for visually impaired or illiterate people, who also deserve an equal standard in society.

4. PROPOSED SYSTEM

The proposed system we are developing is completely different from the current system which emphasizes more on user friendliness of normal users, our system focuses more on user friendliness of all types of people including normal people, visually impaired people as well as illiterate people.

One of the major advantages of this system is that user won't require the use of keyboard. All operations will be based on mouse click events. Now the question that arises here is that how will the blind users find location of the mouse pointer. Since the particular location cannot be tracked by the blind user, the user is given a free will to click blindly anywhere on the screen.

The complete system is based on IVR- interactive voice response. The function specified by the IVR, will depend on which type of click is performed. When using this system the computer will be prompting the user to perform specific operations to avail respective services and if the user needs to access these respective services then he/she needs to perform that operation. Thus user need not worry about location of the mouse at all.

This system will be perfectly accessible to all types of users as it is just based on simple mouse clicks and speech inputs and there is no need to remember keyboard shortcuts. Also because of IVR facility those who cannot read need not worry as they can listen to the prompting done by the system and perform respective actions.

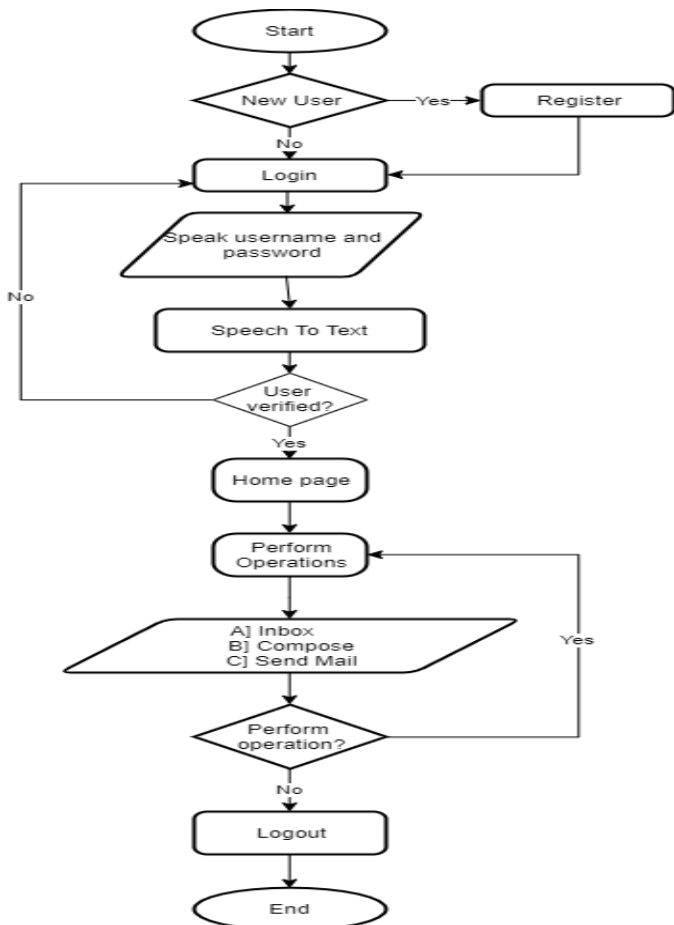


Fig -1: System Workflow

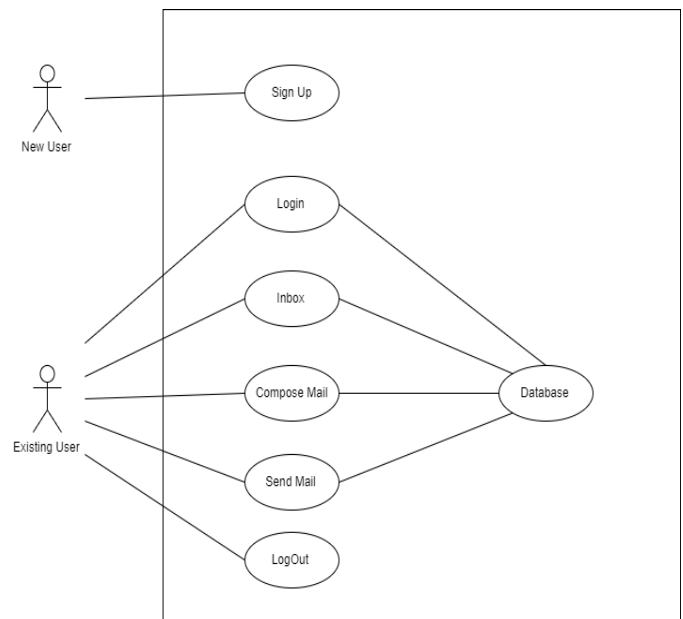


Fig -2: Use case Diagram

5. CONCLUSION

The system will help in overcoming some drawbacks that were earlier faced by the blind people in accessing emails. We have eliminated the concept of using keyboard shortcuts along with screen readers which will help reducing the cognitive load of remembering keyboard shortcuts. This e-mail system can be used by any user of any age group with ease of access. The system has feature of speech to text as well as text to speech with speech reader which makes designed a system to be handled by a visually impaired person as well as blind people. Also, the success of this project will also encourage developers to build something more useful for visually impaired or illiterate people, who also deserves an equal standard in society.

6. REFERENCES

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