



VOCAL BASED E-MAIL FOR PURBLIND

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1. Introduction

Internet plays a vital role in today's world of communication. Today the world is running on the basis of internet. No work can be done without use of internet. Electronic mail i.e. email is the most important part in day to day life. But some of the people in today's world don't know how to make use of internet, some are blind or some are illiterate. So, it goes very difficult to them when to live in this world of internet. Nowadays there are various technologies available in this world like screen readers, ASR, TTS, STT, etc. but these are not that much efficient for them. Around 39 million people are blind and 246 million people have low vision and also 82%

of people living with blindness are 50 aged and above. We have to make some internet facilities to them so they can use internet.

Therefore, we came up with our project as voice-based email system for blinds which will help a lot to visually impaired peoples and also illiterate peoples for sending their mails. The users of this system don't need to remember any basic information about keyboard shortcuts as well as location of the keys. Simple mouse click operations are needed for functions making system easy to use for user of any age group. Our system provides location of where user is prompting through voice so that user doesn't have to worry about remembering which mouse click operation, he/she wants to achieve.

2. Literature survey

Every Software development requires the survey process. The Survey process is needed to get the requirement for the software. The Survey also consists of studying the present system and also studying about the tools needed for the development of the software. A proper understanding of the tools is very much essential. Following is an extract of the information of the material collected during literature survey.

In today's world communication has become so easy due to integration of communication technologies with internet. However, the visually challenged people find it very difficult to utilize this technology because of the fact that using them requires visual perception.

Even though much new advancement has been implemented to help them use the computers efficiently no native user who is visually challenged can use this technology as efficiently as a normal aim at developing an email system that will help even a native visually impaired person to use the services for communication without previous training. The system will not let the user make use of keyboard instead will work only on 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. Email is considered as one of the most pervasive form of communication. However, all these technologies can be of no use to the people who are visually impaired as all activities that can be performed on the computer are based on visual perception. With the advent of technologies in mobile phones, many technological solutions have been implemented for visually impaired so that they can utilize them, and get benefited by them. Considering it as a key idea application will be built that will help blind people to send and read emails as ordinary people do. Speech has not been used much in the field of electronics and computers due to the complexity and variety of speech signals and sounds. However, with modern processes, algorithms, and methods, the processing of speech signals easily and recognizes the text. Internet has become one of the

basic amenities for day-to-day living. Every human being is widely accessing the knowledge and information through internet. However, blind people face difficulties in accessing these text materials, also in using any service provide through internet. The advancement in computer based accessible systems has opened up many avenues for the visually impaired across the globe in a wide way. Audio feedback based virtual environment like, the screen readers have helped Blind people to access internet applications immensely. We describe the Voicemail system architecture that can be used by Blind person to access E-Mails easily and efficiently. The contribution made by this research has enabled the Blind people to send voice-based e-Mail messages in their native language with the help of a computer.

3. Existing System

Simple e-mail systems are available which give only voice recognition & text-to-speech systems are accessible. The most common mail service that we use in our day to day life cannot be used by visually challenged people this is because they do not provide any facility so that the person can hear out the content of screen. The main disadvantage of this is that they cannot be aware of key locations and not much user friendly. They are also not accurate in taking the voice commands.

3.1 Disadvantages

If the user is blind or purblind accessing mail is very difficult not only to blind even for other person also, because if they are very busy with other work they have take time to enter the user credentials which is a tedious task for a user .To overcome with these issue we have a new application.

4. Proposed System

The proposed system is based on existing system. The most important part in our system is that the system can be able to use by both the persons whether they are normal persons or handicapped. The current system is not able to do this so we are developing a new system which will help a lot to disable peoples and also illiterate peoples. Current system focuses more on normal users but our system is friendly to all types of users whether they are normal, visually impaired or else illiterate. When using this system, the computer will guide the user for performing the operation which he/she wants to perform. The most important advantage of this system is that the user doesn't have to worry about how to use keyboard because all the operations are based on simple mouse clicks and the computer will guide the user according to mouse pointer about his location. User clicks on which button and that button will perform which operation will be specified by IVR. One more advantage of this system is that user has to give speech inputs he/she doesn't need to remember keyboard shortcuts. Also, for illiterate peoples those who cannot read or write the system will also help them a lot.

4.1 Advantages

This Application is very easy to access not only for blind and purblind, It is very much useful for every person to access without typing the user credentials it's a hands free application .If we compared this application with normal application the response time is less . Everything is in user's tongue tip rather than fingertip.

5. Methodology

The project is implemented in modular approach. Each module is coded as per the requirements and tested and this process is iterated till the all the modules have been thoroughly implemented.

5.1 JSON

JSON, or JavaScript Object Notation, is a minimal, readable format for structuring data. It is used primarily to transmit data between a server and web application, as an alternative to XML. Square space uses JSON to store and organize site content created with the CMS.

Ex:

Append format=json-pretty to the URL of any page on your Squarespace site and you'll be able to view the JSON data for the site.

Keys and Values

The two primary parts that make up JSON are keys and values. Together they make a key/value pair.

Key: A key is always a string enclosed in quotation marks.

Value: A value can be a string, number, Boolean expression, array, or object key/Value Pair: A key value pair follows a specific syntax, with the key followed by a colon followed by the value.

Key/value pairs are comma separated

Types of Values

Array: An associative array of values.

Boolean: True or false.

Number: An integer.

Object: An associative array of key/value pairs.

String: Several plain text characters which usually form a word.

5.2 Speech API

The Web Speech API aims to enable web developers to provide, in a web browser, speech-input and text-to-speech output features that are typically not available when using standard speech-recognition or screen-reader software. The API itself is agnostic of the underlying speech recognition and synthesis implementation and can support both server-based and client-based/embedded recognition and synthesis. The API is designed to enable both brief (one-shot) speech input and continuous speech input. Speech recognition results are provided to the web page as a list of hypotheses, along with other relevant information for each hypothesis.

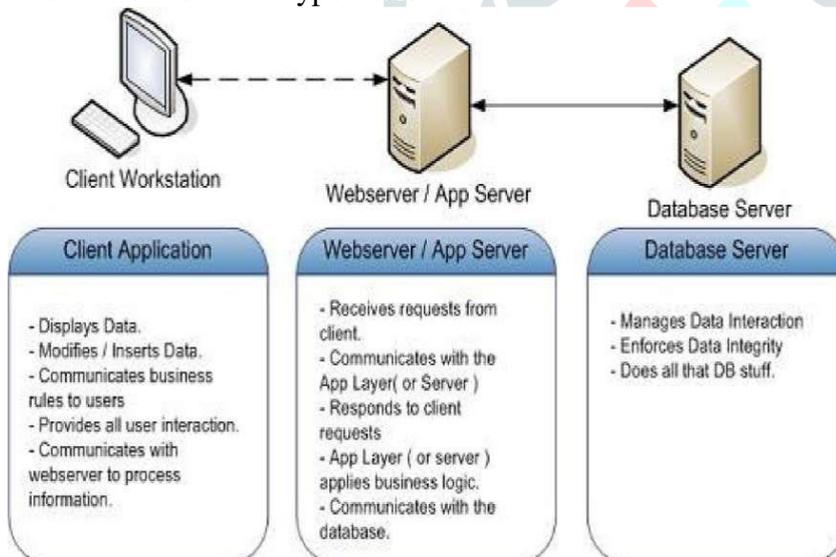


Fig 1:3 -Tier Architecture

6. Conclusion

In this application people to access email services efficiently. This 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. Also, any naive user who does not know the location of keys on the keyboard need not worry as keyboard usage is eliminated.

7. Future Enhancements

In future this can be created with android application so that all user can easily access the details of application.

References

- [1] Jagtap Nilesh, Pawan Alai, Chavhan Swapnil and BendreM.R. “Voice Based System in Desktop and Mobile Devices for Blind People”. In International Journal of Emerging Technology and Advanced Engineering (IJETA), 2014 on Pages 404-407 (Volume 4, issue 2).
- [2] Ummuhanyifa U., Nizar Banu P K, “Voice Based Search Engine and Web page Reader”. In International Journal of Computational Engineering Research (IJCER). Pages 1-5.
- [3] G. Shoba, G. Anusha, V. Jeevitha, R. Shanmathi. “AN Interactive Email for Visually Impaired”. In International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE), 2014 on Pages 5089-5092(Volume 3, Issue 1).
- [4] The Radicati website. [Online]. Available: <http://www.radicati.com/wp/wpcontent/uploads/2014/01/EmailStatistics-Report-2014-2018-Executive-Summary.pdf>.
- [5] The WHO website. [Online]. Available: <http://www.who.int/mediacentre/factsheets/fs282/en/>

