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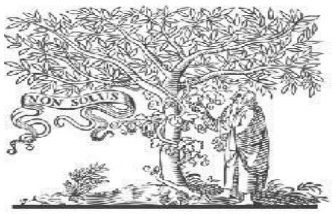

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IJIEMR Transactions, online available on 29th Aug 2021.

Link :http://www.ijiemr.com/downloads.php?vol=Volume-10&issue=ISSUE-08

DOI: **10.48047/IJIEMR/V10/I08/19-10**

Title:- **EMAIL SYSTEM FOR BLINDS THROUGH VOICE BASE**

Volume 10, Issue 08, Pages:189-194

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EMAIL SYSTEM FOR BLINDS THROUGH VOICE BASE

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ABSTRACT:
In today's world communication has become so easy due to integration ofcommunication 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 many new advancements have been implemented to help them use the computers efficiently no naive user who is visually challenged can use this technology as efficiently as a normal naïve user can do that is unlike normal users they require some practice for using the available technologies. This paper aims at developing an email system that will help even a naïve 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 mouse operation and speech conversion to text.

1.INTRODUCTION

The project is a python-based application for visually impaired persons usingspeech to text voice response, thus enabling everyone to control their mail accounts using their voice only and to be able to send, Read, Exit. The system will prompt the user with voice commands to perform certain action and the user will respond to the same. The main benefit of this system is that the use of mouse is completely eliminated, the user will have to respond through voice only. Internet is considered as the most important means of information and has become factor methods used in communication. Email is one of the most common form of communication.However,

It is completely useless for visually impaired and illiterate people. Currently available systems like screen readers TTS (Text-To- Speech) And ASR (Automatic Speech Recognition) does not provide full efficiency to the blind people to use internet. As nearly 285 million people worldwide are visually impaired so it is necessary to make internet facilities for communication usable for them. This paper deals with "Voice Based System in Desktop and Mobile Devices for Blind People". Voice mail architecture helps blind people to access e-mail and other multimedia functions of operating system (songs, text).Also in mobile application SMS can be read by system itself. Now a days the advancement made in computer technology opened platforms for visually impaired people across the world. The improvement and accesibility alone in the field of speech recognition are worth considerable. It allows the physically and the elderly and visually challenged people to collaborate with state of the art products and services quickly and naturally no graphical user interface is needed. If you want to use speech recognition or simply convert speech to text in your python it is very easy to use.

2.RELATED WORK

Interactive voice response(IVR)

Voice Response(IVR) Interactive voice response (IVR) is a technology that allows acomputer to interact with humans through the use of voice and DTMF tones input via a keypad. In telecommunications, IVR allows customers to interact with a company's host system via a keypad or by speech recognition, after which services

can be inquired about through the IVR dialogue. IVR systems can respond with pre-recorded or dynamically generated audio to further users on how to proceed. IVR systems deployed in the network are sized to handle large call volumes and also used for outbound calling, as IVR systems are more intelligent than manypredictive dialer systems. IVR systems can be used for mobile purchases, banking payments and services, retail orders, utilities, travel information and weather conditions. A common misconception refers to an automated attendant as an IVR. The terms are distinct and mean different things to traditional telecommunications professionals—the purpose of an IVR is to take input, process it, and return a result, whereas that of an automated attendant is to route calls. The term voice response unit (VRU) is sometimes used as well. DTMF decoding and speech recognition are used to interpret the caller's response to voice prompts. DTMF tones are enteredvia the telephone keypad. Other technologies include using text-to-speech (TTS) to speak complex and dynamic information, such as e-mails, news reports or weather information. IVR technology is also being introduced into automobile systems for hands-free operation.

TTS is computer generated synthesized speech that is no longer the robotic voice traditionally associated with computers. This project proposes a python based , designed specifically for visually impaired people. This provide a voice based mailing service where they could read and send mail on their own, without any guidance through their g-mail accounts. Here, the users have to use certain keywords which will perform certain actions for e.g. Send ,Read, Exit Mail etc. The VMAIL system can be used by a blind person to access mails easily and adeptly. Hence dependence of visually challenged on other individual for their activities associated to mail can be condensed. This will be a python-based for visually challenged persons using IVRInteractivevoice response, thus sanctioning everyone to control

Speech Synthesis(TTS)

Speech synthesis is the synthetic production of speech. A automatic data handing out system used for this purpose is called as speech synthesizer, and may be enforced in software package and hardware product. A text-to-speech (TTS) system converts language text into speech, alternative systems render symbolic linguistic representations. Synthesized speech can bepeech synthesis is the synthetic production of speech. A automatic data handing out system used for this purpose is called as speech synthesizer, and may be enforced in softwarepackage and hardware product.

A text-to-speech (TTS) system converts language text into speech, alternative systems render symbolic linguistic representations. Synthesized speech can be RCEE , CSE Department 19 created by concatenating pieces of recorded speech that are stored in a database. Systems differ in the size of the stored speech units; a system that stores phones or diphones provides the largest output range, but may lack clarity. For specific usage domains, the storage of entire words or sentences allows for high-quality output. Alternatively, a synthesizer can incorporate a model of the vocal tract and other human voice characteristics to create a completely "synthetic" voice output. The quality of a speech synthesizer is judged by its similarity to the human voice and by its ability to be understood clearly. An intelligible text to speech program permits

individual with ocular wreckage or reading disabilities to concentrate to written words on a computing device. Several computer operational systems have enclosed speech synthesizers since the first nineteen nineties years. The text to speech system is consist of 2 parts:-front-end and a back-end.

Existing System :

For a visually challenged person using a computer for the first time is not thatconvenient as it is for a normal user even though it is user friendly.Although there are many screen readers available then also these people face Some minor difficulties. Screen readers read out whatever content is there on the screen and to Perform those actions the person will have to use keyboard shortcuts as mouse location cannot be traced by the screen readers.

This means two things, one that the user cannot make use of mouse pointer as it is completely in convenient if the pointer location cannot be traced and second that user should be well versed with the keyboard as to where eachand every key is located. Auser is new to It becomes difficult for blind people to access E-Mail since the screen reader is containing noisy audio interface. Automatic Speech recognizer performance degrades if it contains noisy environment. One of the main drawbacks is that both automatic speech recognizer and text to speech are language dependent.

Proposed System :

The proposed system is based on a completely novel idea and is nowhere like theexisting mail systems. The most important aspect that has been kept in mind while developing the proposed system is accessibility. A web system is said to be perfectly accessible only if all can use it efficiently types of people whether able or disable. The current systems do not provide this accessibility. Thus the system we are developing is completely different from the current system. Unlike 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.

The complete system is based on IVR-interactive voice response. The disabilities of visually impaired people are Thrashed. This system makes the disabled people feel like a normal user. They can hear the recently received mails to the Inbox, as well as the IVR technology proves very effective for them in the terms of guidance. The visually impaired people can advance from.

3. METHODOLOGY:

Our System is voice oriented. it will receive voice messages where user is right now. Ifnormal people don't want this feature they can turn it off. The system work flow is defined in DFD diagrams.

Smtplib :

Automation of sending mails using Python can be done by using the smtplib module of

Python. Smtplib contains the class SMTP which is useful to connect with mail servers andcan be used to send mails. It defines a SMTP client session object which is used to send mail to any internet connected machine that depends on SMTP format. SMTP is normally used to connect to a mail server and transmit the messages.

The mail server host name and port can be passed to the constructor, or you can use connect() explicitly. Once connected, just call send mail() with the envelope arguments and body of the message. The

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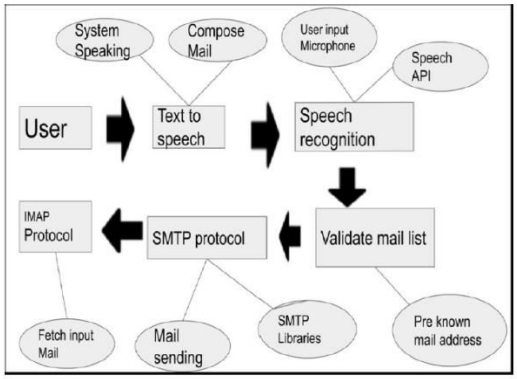
message text should be a completely created RFC 822-compliant message, since smtplib does not alter the contents of headers.We have to add header and sender mail and receiver mail by ourselves.

Architecture :



We describe the Voicemail system architecture that can be used by a Blind person to access e-Mails easily and efficiently. The contribution made by this research has enabled the Blind people to send and receive voice based e-Mail messages in their native language with the help of a computer.

UML Diagrams

The Unified Modeling Language (UML) is a general "purpose modeling language in the field of software engineering, which is designed to provide a standard way to visualize the design of a system". It was created and developed by Grady Booch, Ivar Jackson and James Rumbaugh at Rational Software during 1994-1995 with further development led by the through 1996.

Use case Diagram :

A use case diagram is used to represent the dynamic behavior of a system. It encapsulates the system's functionality by incorporating use cases, actors, and their relationships. It models the tasks, services, and Functions required by a system/subsystem of an application.UML Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration.

Sequence Diagram

Sequence Diagrams are time focus and they show the order of the interaction visually by using the vertical axis of the diagram to represent time what messages are sent and when. The sequence diagram represents the UML ,which is used to visualize the sequence of calls in a system that is used to perform a specific Functionality .The collaboration diagram is used when object organization is main focus. The sequence diagrams are better suited of analysis activities.

Implementation :

Send Mail

In this we 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 mailis 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 then the mail is sent through the mail server to the specified recipient.

Description

You must specify a Simple Mail Transfer Protocol (SMTP) server or the Send-MailMessage command fails. Use the SmtpServer parameter or set the $PSEmailServer variable to a valid SMTP server. The value assigned to $PSEmailServer is the default SMTP setting for PowerShell.

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Read Mail

When viewing a list of conversations in your Inbox or, you can open a particular mail to read its messages. A mail is opened and read according to the user's convenience and mostly priority is given to the unread mails. When a user chooses a mail by telling the number of the mail it opens and the text in it is converted into voice and the mail is read. All these activities take place without the use of keyboard This module will handle the request by user to read email through their g-mail account. The python script for this module will prompt the user to enter their credentials and then it will make connection with their account.

After the connection has been done it will start fetching the unread mails for the user and will speak it for them with the help of pyttsx3 library in python The difficulties for the blind to use the voice mail because it decision making depends upon the eye sight and by is not fully voice based in nature. Voicemail involves reading everything that appears on the screen. So the steps like attaching a microphone and opening the sound computer and information age is not for the blind.

4.STUDYOF RESULTS:

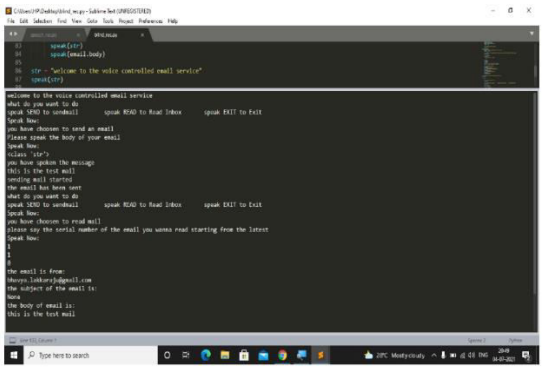

Figure 1:Send Output

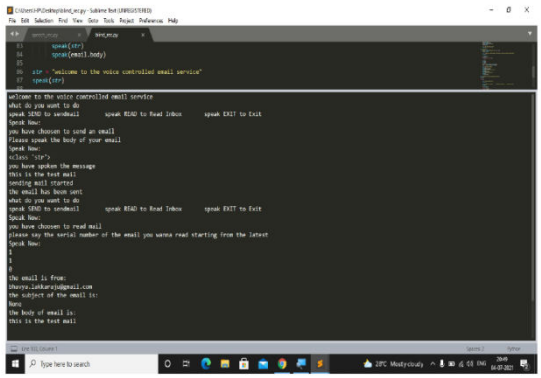

Figure2: Read Output

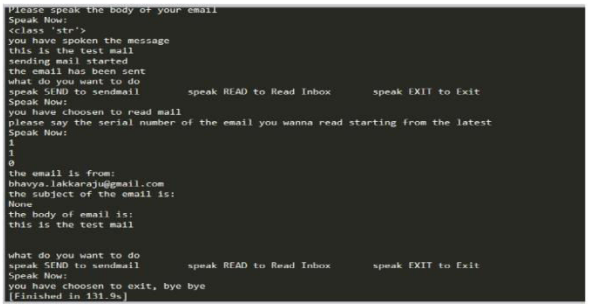

Figure3:Exit Output

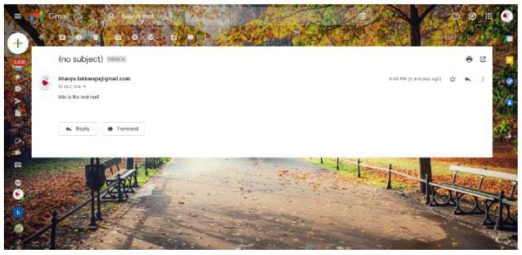

Figure 4: Mail Output

5.CONCLUSION :

The project that we have projected is a system which will help the visually impaired peopleto 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 non-sophisticated user who does not know the position of keys on the keyboard need not bother as keyboard usage is eliminated. Instructions given by the IVR accordingly to get the respective services offered.

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