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V-Mail (Voice Based E-Mail Application): Review

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Abstract *--- Our routine is initiated by the Internet. It is the First thing in the morning we do see our Notification and E-Mails. The internet has made human life so much easier, now the biggest and toughest tasks are done in minutes. No matter it is a simple pizza order, shopping or money transfer, and communicates with the help of emails it is so much easier by the use of Internet in life. E-mails are considered to be most reliable way of communication for sending or receiving some important information. But there is a special criterion for humans to access the Internet and the criteria is you must be able to see. But visually challenge people cannot able to access such types of communication and technologies on their own. V-mail helps blind people to access e-mail. Voice-Mail architecture helps blind people to access e-mail and other multimedia functions. Our proposed system, GUI upgraded against the GUI of existing mail server. Our proposed architecture provides more features than the existing GUI which makes a blind person who uses application easily. Along with providing the mailing facility easily and efficiently this system reduced load of remembering keys and typing characters. We implement voice to text, text to voice technique, and used fingerprint scanning technique for security purpose so that blind people can access the application easily.*

Key Words: *Speech to text converter, text to speech converter, speech recognition, IVR, fingerprint scanner.*

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. A survey shows that there are more than 250 Million visually challenged people around the globe. That is, around 250 Million people are unaware of how to use Internet or E-mail. The only way by which a visually impaired person can send e-mail is, they have to dictate the entire content of the mail to a third person (not visually challenged) and then the third person will send compose the mail and send on the behalf of the visually impaired person. But this is not correct way to deal with this problem.

The main feature is that TTS (Text to Speech) mechanism is used in navigation system to provide current location of blind person through voice proposed system as an independent program which is cost effective, affordable and easy to install on a smart phone used by blind people. Internet is considered as a major storehouse of information in today's world. Not even single work can be done without help of it. Because to access Internet you need to know what is written on screen. If that is not visible it is of no use. Hence Internet is useless technology for visually impaired people.

We provide voice mail architectural system that can be utilized by blind people to access multimedia functions of the operation system such as e-mail efficiently. This architecture reduced the complexity to remember and type characters from the keyboard by the blind people. The users of this system would not need to have basic information regarding keyboard shortcuts or where the keys are located. All function are based on simple voice commands making it very easy for any type of user to use this System. We describe the voicemail system that can be used by a blind person to access e-mail easily and efficiently. This system enabled the blind people to send and receive voice based email messages in their own language with the help of this application.

2. LITERATURE SURVEY

It is estimated that there are a total of 4.92 billion email accounts existing in 2017 and there will be approximately 5.59 billion accounts by the end of 2019[2]. It is also estimated that there are a total of 340.2 million smartphone users in India in the year 2017[3]. This makes emails the most used kind of communication. Novel Based System for Visually Challenged people using Beacon and Android Features. This provides novel architecture for visually challenged people using two features mainly beacon and smart phone. This architecture consisted of three parts. The first one being an ESP8266 module which consumes low power and the second one being the configurator application to configure the beacon and the last one is a mobile app to detect the beacon. Microsoft has released LUIS, a natural language understanding service which can extract the intent and entities from the sentence [1]. The main goal of this architecture is to provide visually challenged people got know more about the type of conditions they have to survive. The prevailing email systems don't give any means of feedback or Talkback service [6].

The most common mail services that we tend to use in our day to day life cannot be used by visually challenged

people. This is as a result of they do not offer any facility in order that the person in front will listen the content of the screen. As they cannot visualize what is already present on screen they cannot build out where to click in order to perform the required operations [3]. For a visually impaired person employing a computer or smart phone system for the first time isn't that convenient as it is for a standard user even though it is user friendly. Though there are several screen readers offered then also these individuals face some minor difficulties. Screen readers speak out whatever content is there on the screen and to perform the particular actions the person will have to use keyboard shortcuts because mouse location cannot be detected by the screen readers. This means 2 things; one that the user cannot make use of mouse pointer as it is fully inconvenient if the pointer location cannot be derived and second that user should be versed with the keyboard on wherever each and every key is placed. A user who is new to computer will therefore not use this service as they're not conscious of the key locations. Also there are some difficulties faced by visually impaired people when using smartphone systems.

3. PROPOSED PLAN OF WORK

3.1 Existing System

In previous work, blind people do not send email using the system. The multitude of email types along with the ability setting enables their use in nomadic daily contexts. But these emails are not useful in all types of people such as blind people they can't send the email. Audio based emails are only preferable for blind peoples. They can easily respond to the audio instructions. In this system is very rare. So there are fewer chances to available this audio based email to the blind people.

3.2 Proposed System

The proposed system relies on voice command based system unlike the existing mail systems. The most important thing that has been kept in mind while developing the proposed system is accessibility. A system is accessible solely if it may be used expeditiously by all varieties of individuals whether or not disabled. The current systems do not offer this accessibility. Therefore the system we are developing is completely different from the current system .Unlike current system that emphasizes a lot on user friendliness of traditional users; our system focuses a lot on user friendliness of all varieties of individuals as well as normal people visually impaired individuals.

The complete system is primarily based on speech to text commands. Once using this system the application will be prompting the user to speak specific commands to avail respective services and if the user wants to access the respective services then he/she needs to speak that command.

4. METHODOLOGY

In this system mainly four types of technologies are used namely:

4.1 STT (Speech-to-text): *Here whatever we speak is converted to text. Their will a small icon of mic on whose clicking the user had to speak and his/her speech will be converted to text format, which the naked people would see and read also.*

4.2 TTS (Text to Speech): *This method is full opposite of STT. In this method, this converts the text format of the emails to synthesized speech.*

4.3 IVR (Interactive Voice Response): *IVR is an advanced technology describes the interaction between the user and the system in the way of responding by using keyboard for the respective voice message. IVR allows user to interact with an email host system via a system keyboard, after that users can easily service their own enquiries by listening to the IVR dialogue. IVR systems generally respond with pre-recorded Audio voice to further assist users on how to proceed. Audio that would be pre-recorded and the system need to have large volumes.*

4.4 Speech recognition: *Speech recognition is the ability of a machine or program to identify words and phrases in spoken language and convert them to a machine-readable format. Rudimentary speech recognition software has a limited vocabulary of words and phrases, and it may only identify these if they are spoken very clearly.*

5. FLOWCHART

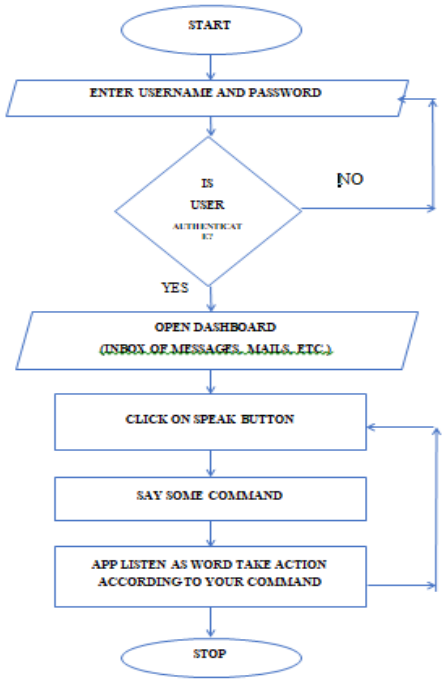

Fig. 1: *Flowchart for Login & Dashboard.*

6. REQUIREMENTS

Hardware Requirements

- *System: Pentium IV 2.4 GHz.*
- *Hard Disk: 40 GB.*
- *Monitor: 15 VGA Colour.*
- *RAM: 512 Mb.*
- *MOBILE: ANDROID.*

Software Requirements

- *Operating System: Windows 7 ABOVE.*
- *Coding Language: Java 1.8.*
- *Tool Kit: Android 4.4 ABOVE.*
- *IDE: Android Studio.*
- *Front End: Android, Java and XML.*
- *Back End: My-SQL, PHP.*

7. CONCLUSION / FUTURE WORK

We have planned a system which can facilitate the visually impaired individuals to access email services efficiently. This system can help in overcoming some drawbacks that were earlier faced by the blind individuals in accessing emails. We've eliminated the thought of using keyboard altogether with screen readers which can help reducing the cognitive load of remembering keyboard operations. Conjointly any user who will not grasp the location of keys on the keyboard would like not worry as keyboard usage is eliminated. The user solely has to follow the directions given by the system and use voice commands consequently to get the several services offered. Other than this the user may have to be requested to feed info through voice inputs whenever required. Our application will help physically challenged people to access the world according to their ability. In future this application can be enhanced and will not only can be implemented for email services but also it can be useful to other services like texting, making notes, operating other application through voice.

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