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E-Mail Reader for Blind People

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Abstract: ***To develop a voice primarily based email system that will facilitate visually impaired individuals to access email in a problem free manner. Together with providing usage of mail services simply and with efficiency, the system also will cut back the psychological feature work that must be unremarkably taken by the visually impaired to recollect and sort characters using the normal Braille keyboards, which are accessible to them.***
The graphical user interface of this method has been evaluated against the interface of the traditionally accessible mail system. Not only for visually impaired, but also for people who are illiterate might have the benefit of this technique. The foremost crucial facet which will be thought of developing this technique is that the users of this technique does not have any basic information regarding the keyboard shortcuts used or wherever the keys are used for. All functions to be utilized in this technique are supposed to be easy mouse click operations creating the system very user friendly.
This application proposes an android application, designed specifically for visually impaired individuals. This application provides a voice primarily based mailing service which provides them to browse and send mail on their own, without any guidance. The users ought to use certain keywords which can perform certain actions for e.g. Read, Send, and Compose Mail, Address Book etc. This EMAIL system is utilized by a visually handicapped person to access mails easily and with efficiency. Therefore reliance of visually impaired on others for his or her own activities associated with mail are often reduced
Keywords: GUI, Android Application, Visually Impaired, Email System

I. INTRODUCTION

This web application will be solely based for people with impaired visions, and hence enabling everyone to control their mail accounts using their voice only and to be able to read, send, and perform all the other useful tasks. The application would also prompt user using voice commands so the user thus know that he/she is going right on the process
The main advantage of this system is that the use of keyboard is reduced to a greater extent; the user would mostly be responding over voice and mouse click only. Until now you must have been flooded with several questions like how can the impaired person see the correct position of buttons/pallet on the screen for doing mouse clicks? Answering your question this system will perform actions based on the number of clicks, it does not depends on the portion of the screen where the cursor is placed before the click giving user the freedom to click blindly anywhere on the screen.

II. LITERATURE SURVEY

It is estimated that there are a total of 4.92 billion email accounts existing in 2017 and there will be approximately 6 billion accounts by the end of 2020. It is also estimated that there are a total of 340.2 million smartphone users in India in the year 2017. 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. 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. 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. 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.

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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 system

III. OBJECTIVES

A. The aim of the project is to develop a system which is extremely easy and comfortable to use for a blind person.
B. The things to keep in mind would be that, the access should be via voice or with minimum guided clicks on the user interface.
C. Whatever mail is been read by the respective blind person should be secured with a login account.
D. The Visually impaired person should also be able to access the complete system via voice commands

IV. PROBLEM STATEMENT

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.

V. IMPLEMENTATION DETAILS OF MODULE

The diagram given below depicts the detailed flow of events in the system. All the operations are performed by tapping inputs.

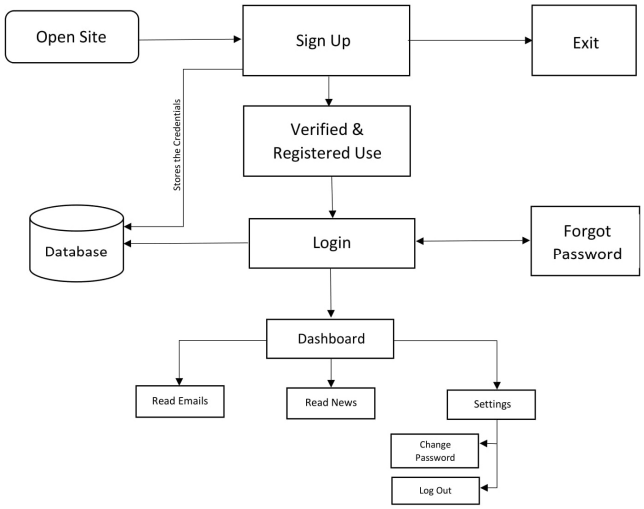

Fig: - System Architecture

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

A. 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.

B. 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.

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C. *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.

D. *Tap based Login*

The logic used in this system is “Tap Based Login” where the respective blind person just needs to tap on screen, and need to remember “no of clicks”, for ex: 2 clicks for mails, 3 clicks for news. Etc

VI. CONCLUSIONS

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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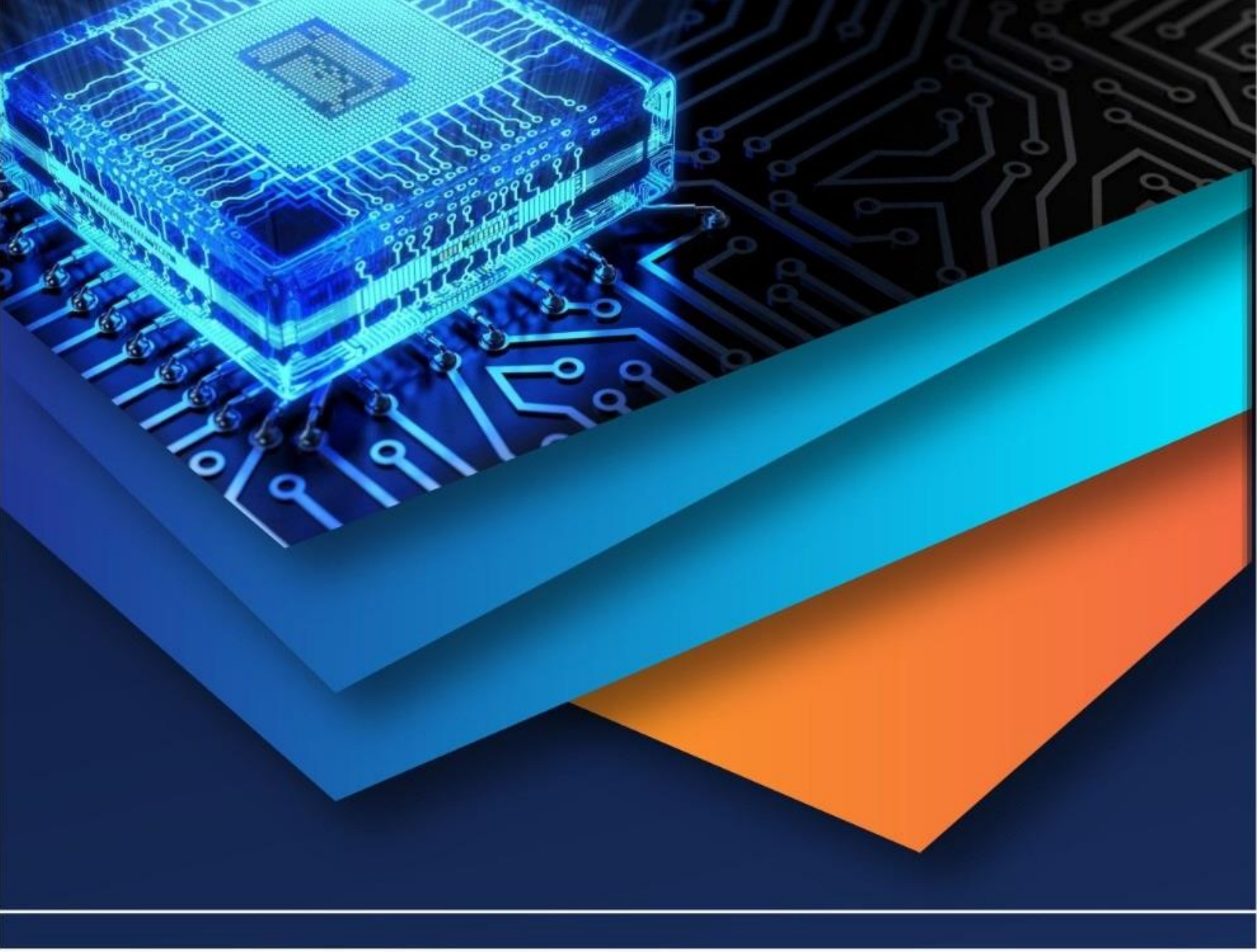

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