VOICE BASED MAILING TECHNIQUES FOR VISUALLY HANDICAPPED USING TRADITIONAL BRAILLE KEYWORDS

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ABSTACT:- *To develop a voice based email system which can facilitate visually impaired individuals to access email during a drag free manner. Together with providing usage of mail services simply and efficiently , the system also will crop the psychological feature work that has got to be unremarkably taken by the visually impaired to remember and type characters using the traditional Braille keyboards, which are accessible to them. The graphical interface of this method has been evaluated against the interface of the traditionally accessible mail system. Not just for visually impaired, but also for people that are illiterate may need the advantage of this system . The foremost crucial facet which can be thought of developing this system is that the users of this system doesn't have any basic information regarding the keyboard shortcuts used or wherever the keys are used for. All functions to be utilized during this technique are alleged to be easy click operations creating the system very user friendly.*

Keywords:-Voice based, Visually handicapped, Email System, Braille Keywords ,Speech-to-Text Conversation, Text-to-Speech Conversation, Voice Recognition.

Introduction

A voice mail system may be a computer-based system that permits users and subscribers to exchange messages without typing. These systems are designed to convert a caller's recorded audio message in to text then it'll be sent to a recipient[1][2]. It is mainly useful for blind people, as every official messages are only sent through mail they can't text the message so our application helps them tons. A voice mail system is additionally called as voice bank. This system acts as an application which contains accessible user interface to select, play, and manage messages; a delivery method to either play or deliver the message otherwise. Normal Gmail doesn't contain the voice recording option. In this paper we are designing a record option and therefore the recorded voice is converted to text and sent to the actual mail[3]. Now a days many people are very busy, so they are interested in recording a message and sending it instead of typing it.

The proposed system helps the blind people altogether positive aspects with advent invent in technologies. This is the first idea for developing android application that helps them to send and skim emails almost like normal people. The application uses text to speech and voice recognizer to send, read, forward and reply to emails using an android application in smart phones[4][5]

Description

Earlier, blind people doesn't send email using the system. The multitude of email types along side the power setting enables their use in nomadic daily contexts. But these emails aren't useful altogether sorts of people like blind people they can’t send the e-mail . Audio based email are only preferable for blind peoples. They can easily respond to the audio instructions. In this system is very rare. So there is less chance for availability of this audio based email to the blind people. This mainly helps the physically challenged people like handicapped and blind people.

A voicemail system architecture provides how for visually im- paired to access e-mails in most easy and efficient manner. Friendliness in Graphical User Interface can be understood easily. The user no need to remember any keyboard shortcuts[6]. This application can be used by both normal people and physically impaired people.

SystemDescription

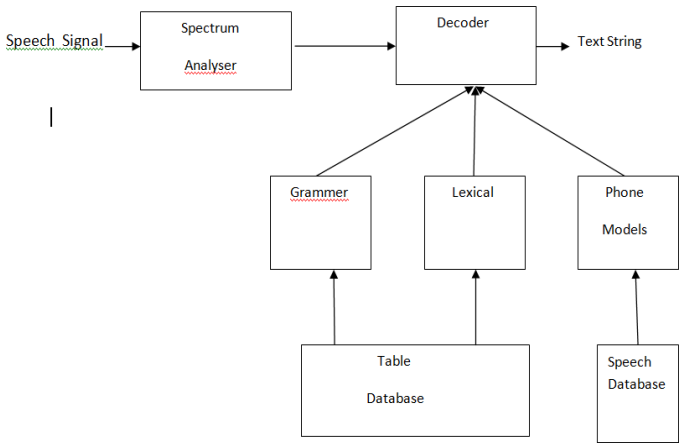

Fig.1: Block Diagram of Speech Recognition

ModulesDescription

Earlier, blind people doesn't send email using the system. The multitude of email types alongside the power setting enables their use in nomadic daily contexts. But these emails aren't useful altogether sorts of people like blind people they can't send the email.They can easily respond to the audio instructions[7][9]. In this system is very rare. So there's less chance for availability of this audio based email to the blind people[8][10][11]. This mainly helps the physically challenged people like handicapped and blind people. A voicemail system architecture provides how for visually impaired to access emails in most easy and efficient manner. Friendliness in Graphical interface are often understood easily. The user no need to remember any keyboard shortcuts. This application can be used by both normal people and physically impaired people.

The modules are

1.Applock.
2.Signup/Registration.
3.Signin/Login.
4.A Textbox used for sender mailid.
5.A Textbox used for recipient mailid.
6.Subjectbox.

1.APPLOCK:

As there should be privacy for the application applock should be maintained compulsory. But the applock available in each mobile by default, so they can use it.

2.SIGNUP/REGISTRATION:

First the users who are going to use this application should be register with their valid email id, password and they should keep a 5digit numerical code as password.

3. SIGNIN/LOGIN:

When the user opens the application then it will ask the registered mail id and numerical password only. As it is mainly for blind people or visually impaired, we will be maintaining a numerical password.

4. A TEXT BOX USED FOR RECIPIENT MAILID:

System asks the user to enter the recipients mail id. In the same way when the user speaks, it will automatically enters the mailid.

5. SUBJECTBOX:

A message box is available in which the user can enter the message what they want to convey to the recipient.

System Architecture

The system is designed in Python and Tkinter, OpenCV is used for face recognition process, Google

Web Speech API is used for speech recognition process and Pyttsx3 is used for TTS (Text to Speech).

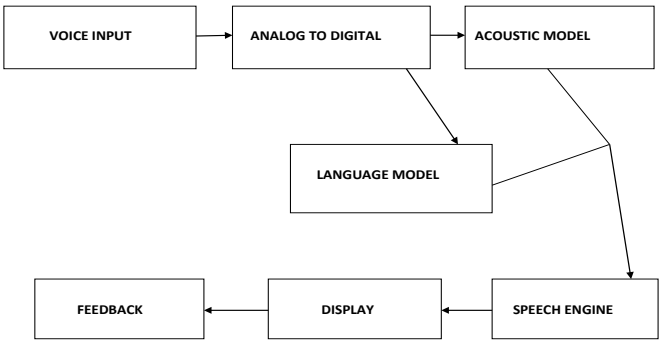

Fig. 2: System Architecture

Experimental Results

CYCLOMATIC COMPLEXITY:

We are calculating the cyclomatic complexity for home page. .Cyclomatic Complexity is software metric that provides a quantitative measure of the logical complexity of a program. It has a foundation in graph theory and is computed in this way.

The number of regions corresponds to the Cyclomatic Complexity is 3.

Cyclomatic Complexity, V(G) for a flow graph G, is defined as V(G)= A – B + 2

where A is the number of flow graph edges, and B is the number of flow graphnodes.

V(G)= 7 – 6 + 2 = 3

V(G) = P + 1= 2 + 1= 3

FLOWCHART FOR TESTING CYCLOMATIC COMPLEXITY:

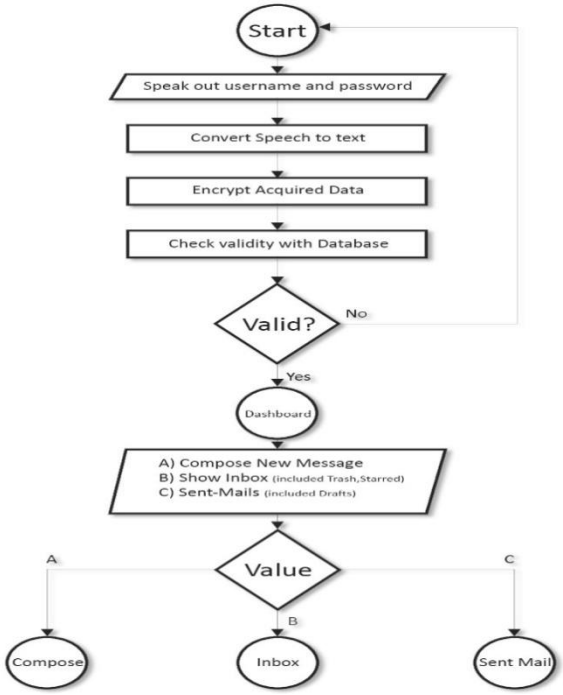

Fig. 3: Flow chart for cyclomatic complexity

REGISTER PAGE:

Here the user has to register with their username, gmail and password. It is one time registration. After registering, this will be fixed as their default fromaddress.

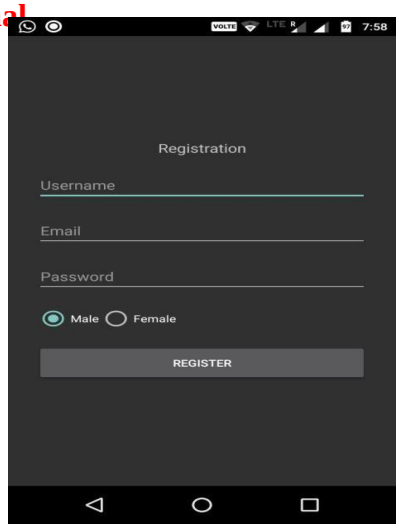

Fig. 4: Screenshot for register page

USER SCREEN:

The user screen consists of the to address, Subject and content of message.

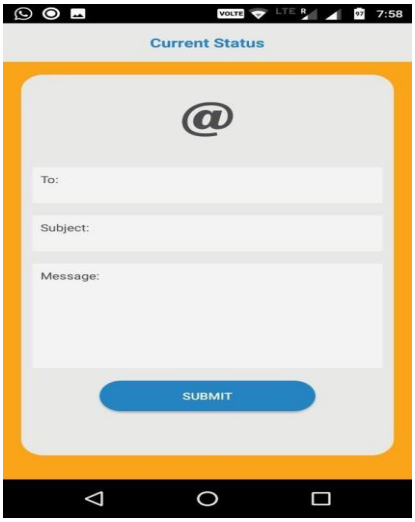

Fig. 5: Screenshot for User screen

USER SCREEN AFTER ENTERING DETAILS USING VOICE:

The user now enters the to address, subject and composed message using voice.

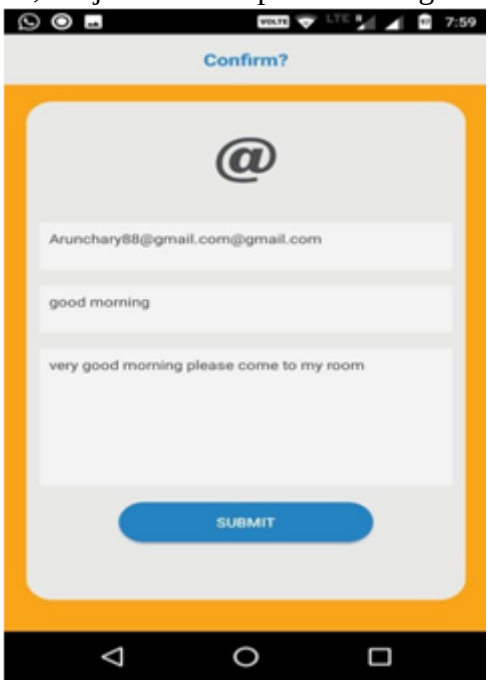

Fig. 6: Screenshot after entering user detail

MESSAGE SENT CONFIRMATION:

Now a small message appears after the message has sent successfully.

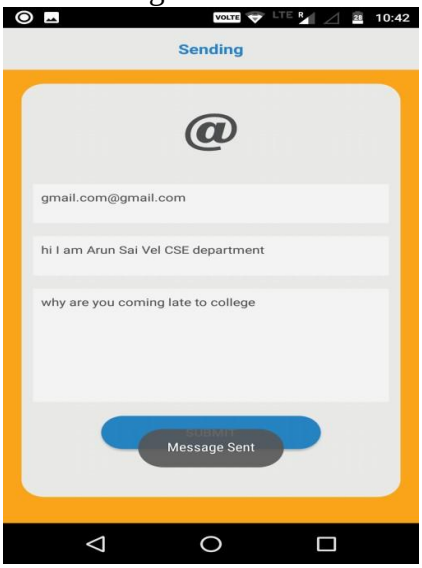

Fig. 7: Screenshot for confirmation message

Conclusion and Future Enhancements

We proposed an android application by designing specifically for visually challenged people. It provides a voice based mailing ser- vice where they could read and send mail on their own, without any guidance. Here the users have to use certain keywords which will perform certain actions for e.g .Read, Send, Compose Mail, Address Book etc. This EMAIL system can be used by a blind person to access mails easily and efficiently. Thus reliance of visually impaired on other people for their activities related to mail can bereduced.

The major drawbacks of the appliance are often used because the future enhancements for this project. There are two major drawbacks in this application i.e, the precise voice recognition and therefore the image or document attachment. So within the future enhancement, we will add the image or document attachment for the sender.

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