A Compact Voice Recognition for Visually Impaired People for Messaging and Interaction

Jeeva.i[1]
1UG Scholar , Department of
Information Technology
IFET College of Engineering, Villupuram
jeevaifet@gmail.com

Hemalatha.P[2,] **S.Giridharan[3]**
2&3Assistant Professor, Department of
Information Technology
IFET College of Engineering, Villupuram
Hemadec4@gmail.com

Abstract - **Texting that is SMS is important function of any Mobile phone and we know that the mobile phone usage in the World is spreading rapidly and has gone through great changes due to new developments and innovations in mobile phone technology. This paper is based on creating a messenger for the Differently-Abled set of Humans, who may not be in the position of using mobile phones for messaging or any other kinds of communicating devices, with the required comfort, we called it as application. In other words, messaging can be completely voice based. The proposed Application is a Messaging System, which is Voice enabled. The application listens to your messages and then responds with voice commands by talking. The application converts your text into voice and voice into text. For Android it is Voice- to- Text technology to listen to what you send and gets you connected with people. It Support Calling also they can easily call any people in their contact list.**

Keywords - **The blind; visually impaired; partially sighted; android; smartphone.**

I. INTRODUCTION

Cell phones are very important part of modern life. Many of us need to make a call or send a message at anytime from anywhere. For visually impaired users voice based contact list are provided with many cell phones, they can select contact through voice and make call when required. Also various screen reader software's are available that guide them while using cell phones. But for that they have to remember keys because these software's provide guide for navigation only.

Now let's limit our focus towards short message system, it is text messaging service component of phone, using standardized communications protocols that allow the exchange of short text messages between mobile phone devices. SMS text messaging is the most widely used data application in the world, with 3.4 billion active users, or 84% of all mobile phone subscribers.

Speech Recognition and Conversion will be the integral part of the Application. Android actually provides support for those groups which are quite not noticed by many. Coming to differently abled humans they face more troubles than the usual being. It will be always a delight for them to enjoy as normal being with all such factors. The Application is targeted at the **Differently-Abled set of Humans**, who may not be in the position of using mobile phones for messaging or any other kinds of communicating devices, with the required comfort. Basic operation performed by the application is SMS sending and SMS reading and it is built for these kinds of people.

The application converts your voice message in to text format while sending message and text message into the voice format when it receives message, with the required embedded intelligence in the given context. Proposed application is a must carry through for all those who are visually impaired.

II. NEED OF APPLICATION

The current software's which are in the market for differently abled people, are generally screen reader software's which force them to use the keys on keyboard. For sending the message they need to type the message manually and remember the keys. This practice makes it very difficult for them to use those soft wares.

Now days may smart messengers are available in Android market which are based on voice to text transmission. Sometimes we call it as instance messenger in that, if you want to send message, speak that message, message will be converted into text and sent as SMS. In many cases these messengers provide option for sending message, not for received messages. These applications can be used by visually impaired people but many a times they find it difficult to interact. To use this they have to remember so many things such as voice commands or keys.

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Another important thing in this context is that, these applications are not available in multiple language platforms.

The aim is to help the differently abled people to interact with other's through our application. The visually impaired people, many times find it difficult to interact with other people through current messaging system. The application provides with better user interface and interaction is completely through voice, where the user does not need to use the physical touch or press any key for interaction. As the application is built on top of the SMS layer, so there is no need of installing application at both the ends. Also, the application provides facility to read message in multiple languages.

III.PROPOSED SYSTEM ARCHITECTURE

The design modules of application are shown in figure 1. For application, android device provides platform for execution. Each android device has SMS facility which is dealing with SMS related activities such as sending messages, receiving messages, message notification and alert etc. The application is build on top of SMS i.e. when a user installs the application all messaging is done through application. If user wants, user can open messages from inbox, but when message is received, by default message will open in application. This application uses SMS Manager class which is provided by android to handle SMS related activities.
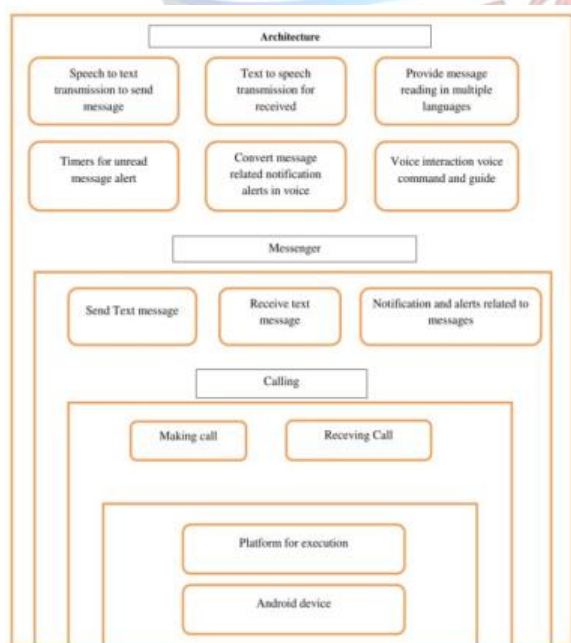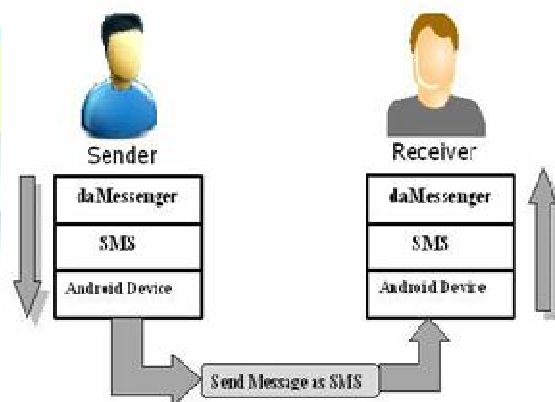

figure :1

The application is divided in to various modules. The main modules are voice to text and text to voice conversion at sender and receiver side respectively. Also when message is received, application provides option to change language to read message in multiple languages. The application provides total voice interaction i.e. application provides guide that consists of voice based instructions, i.e. in that voice commends are explained to user for performing various operations. User will interact with application completely through voice commands, so it will provide better user interface and interaction facility. All notifications and alerts received from SMS are processed in voice by the application. In case, if receiver is not present at time when message is received, message received notification will be repeated over a period of time, for that timer is used for notification of unread messages. calling function are to be supported for making call and receiving call using contact lists.

IV. WORKING OF APPLICATION

Application will always be in running state at the background once it is started The application is built on top of SMS, so that once application is installed on mobile, all SMS related activities are by default performed by application With respect to user perspective, application working is divided in two ways – One application is used for sending messages and other when application is used to read received messages.
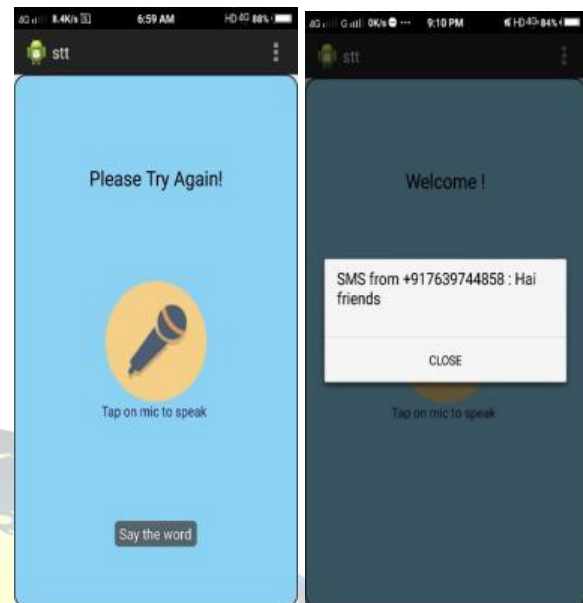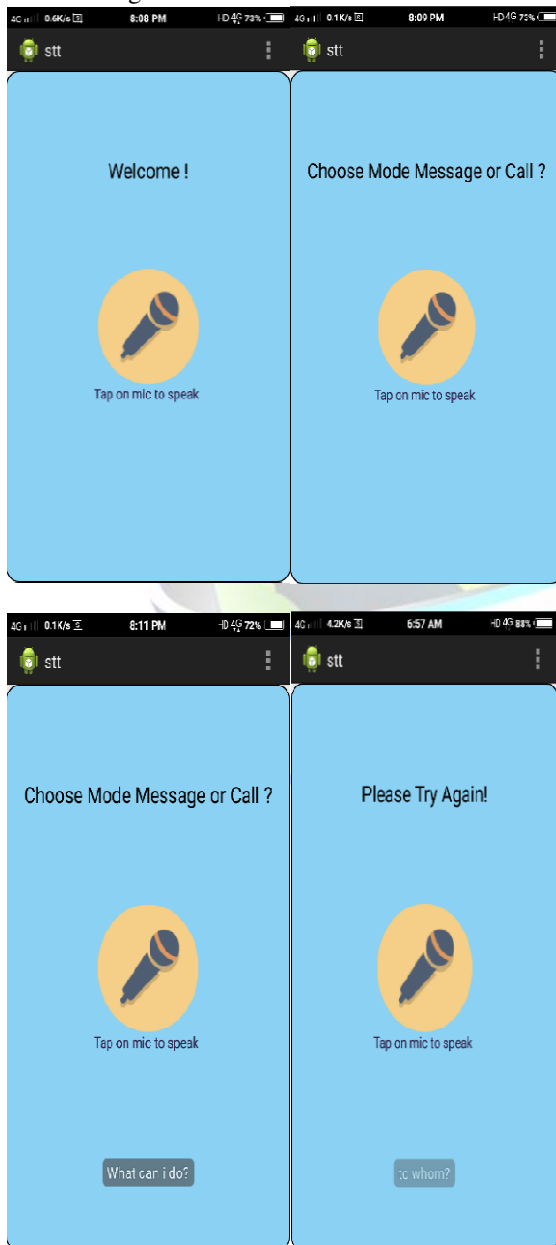

For sending message, voice command is provided to open application to send message .Once application is open, it will ask for contact of receiver, then it will ask for the message to be sent, then it will speak that message to check, after conforming the message it will send it to corresponding receiver. Every time the

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application asks anything, through voice and user also provides response with voice commands that are told by guide.

V.IMPLEMENTATION & RESULTS

The proposed system there four modules are
a. Converting Text MSG into Voice
b. Converting Voice MSG into Text
c. Making call By Hearing the Contact
d. Receiving call

For writing SMS, we provide input by voice commands using this blind and deaf person can write the message .Then person enter the number by voice input able to send messages like sighted person to the intended person.

User can select contact from contact list using voice command or handwritten dialer, and also verify that number and name. Then user will provide CALL command or we also provide call button on screen using which user make call to intended person.

For incoming call, Morse code is vibrated for that particular number and/or name. Then for receiving call, user can touch anywhere on screen and can communicate with calling party in an well-defined manner.

VI. CONCLUSION

This project demonstrates us the idea of messaging and calling system for visually impaired users. Speech synthesis has long been a vital assistive technology tool and its application in this area is significant and widespread. It allows environmental barriers to be removed for people with a wide range of disabilities. In recent years, Text to Speech for disability and handicapped communication aids has become widely deployed in Mass Transit. Text to Speech is also finding new applications outside the disability   market.

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For example, speech synthesis, combined with speech recognition, allows for interaction with mobile devices via natural language processing interfaces.

VII. REFERENCE

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