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Soundscape For Visually Impaired

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Abstract - *With the out bust of Smartphone, the market bang with various mobile applications. The Smartphone help the people by providing easy access and basic functionalities to them. The visually impaired people can use the Smartphone easily but due to incapability to read information on the screen, they face some difficulties in using Smartphone. The aim of this paper is to provide basic constraint for the visually impaired people. In this paper, we propose a mobile application to read message, calling, knowing date, time and battery level, and location tracing system. We use tap senses as input and output through Speech to easy the usage of Smartphone for visually impaired.*

KeyWords: Short Message Service, Visually impaired, Location, Android, Smart phone, Tap senses.

1. INTRODUCTION

Today's mobile phones have become a slice of our daily lives. It is difficult to think of a day without our mobile phone, the world is progressing with various Smart phones. These Smart phones help the people by providing easy access to information and providing much basic functionality to them. The sighted people can use smart phones easily but due to the incompetence to read information on the screens, the blind and visually impaired come upon serious problems in leading an independent life due to their reduced observation of the environment. New environments pose a huge task for them to perceive their surroundings without pursuing help from others. Current training programs for blind and visually impaired people require them to memorize a large amount of information for numerous points of interest leading to an increase in personal obstruction. Consequently, a current trend in high technology production is to develop adaptive tools for blind people to contribution them with self-learning and personal development, and lead more independent lives. The System, which we are developing, is in need for blind people to use the touch screen Android based mobile phones. This system is very helpful for blind person. Using this system, they can interconnect like a sighted person. Empowering the knock out is the current need. The blind people may be able to know the status of the system, know the time and date, read and write the SMS, system alert as well as they can use many other services by using the proposed android communication interface system. With technology promptly escalating and the size of the computing devices shrinking day by day, it is necessary to ensure that the disabled sections of people are not gone behind in the entire procedure. The solution to this lies in the form of our design that we aim to implement. This helps them to activate applications on their screen. Whatever is presented on the screen would be read out to the person so that he gets the same feel of the screen as a person who interpretations it with his eyes. There are numerous applications designed to assists the visually impaired person but existing applications available are built for navigation purposes, these applications are not able to help the user with basic structures such as calling and messaging. All these applications provide precise operations such as messaging and GPS indifferent application. Hence, it needs to implement such applications to provide ease of user-friendliness to the basic functionalities to the visually impaired persons in single application.

1.1 LITERATURE STUDY

Blind Design application created a new world of culture for blind people where they can attraction whatever shapes them sensation according to their knowledge and their thoughts. First, they learn what a shape it is according to their familiarity and then they can implement it according to their resourcefulness. Alphabets, numeric and words are all shapes, which can be learnt effortlessly through this software.

Android Text Messaging Application: The messaging can be absolutely voice based. The proposed application is a messaging system, which is voice, empowered. The application attends to your messages and then reacts with voice commands by conversation. The application converts your text into voice and speech into text. For android, it is voice to text technology to listen to what you send and gets you attached with people.

Voice Assistant Embedded Navigation System: Visually impaired people may not be able to perceive and avoid complications while walking. Using electronic sensors trace sensing and micro controlling technology the system supports the visually impaired in navigation via audible messages and response, helping them to focus where they are and to increase their flexibility.

1.2 MOTIVATION AND OBJECTIVES

There are many applications built in android for the visually challenged, but maximum do not motivated on the basic

problems faced by them. The applications are moral but they do not address the basic requirements of a blind person. Some of the numerous applications available for the visually challenged are as follows

1. Most Of the applications offered are built for navigation purposes for example GPS navigation system. However, these applications are not able to help the user with basic mobile phone structures such as calling and messaging.
2. Application like Voice for Android, which is also intended for visually challenged, is a universal decoder for mapping images to sounds. There is need for a new application that would empower visually challenged to use the simple actions of Smartphone,

The project overcomes the drawback of the applications providing a single application to help visually challenged user

a Status of the system.
b Alert For Battery.
c Messaging.
d Current Time and Date.
e Location Retrieving.

The operator will be able to know the current time by double tapping on the home screen. The battery alert is affected were the user gets voice about battery status. The user will be able to send message via speech-text and to read the received message via text-speech. And also help them to concentrate where they are and to develop their mobility.

2. PROPOSED SYSTEM

2.1 PROBLEM STATEMENT

There are many difficulties for visually impaired persons. The first problem is they cannot perceive but all the phones are designed only for people who can see. Visually impaired persons have to use the phone liable on what they hear, it is too challenging. Most of the smart phones have some partial voice based functions, but these are not providing most basic operations such as calling and messaging. IPhone comes with a full version of Voice Over screen reader provides easy convenience for the Apple smart phones. However, these Apple smart phones are very exclusive. So these smart phones cannot reach mid class and poor people's because of their economic inability. Hence some Android smart phones, which are lower in rate providing the Application like Voice for Android, which is also predestined for visually, challenged, is an universal translator for mapping pictures to sounds. The above mentioned applications are incapable to do basic mobile operations such as calling and messaging etc.

2.2 PROPOSED SYSTEM

The purpose of this project is to form an application that would enable the visually challenged to use some basic features of smart phones through voice. This application provides accessibility to commonly used apps, by compelling the input through voice and signals. To find the system preliminary state the user has to use the gesture. To use the specific application or open an explicit application provides an input through voice. Like calling and messaging the user has to provide specific voice commands.
The proposed system architecture follows the scheme presented on figure 1. This architecture is separated into four major modules: voice module, voice input, voice output, system. Each module plays a discrete and fundamental function.

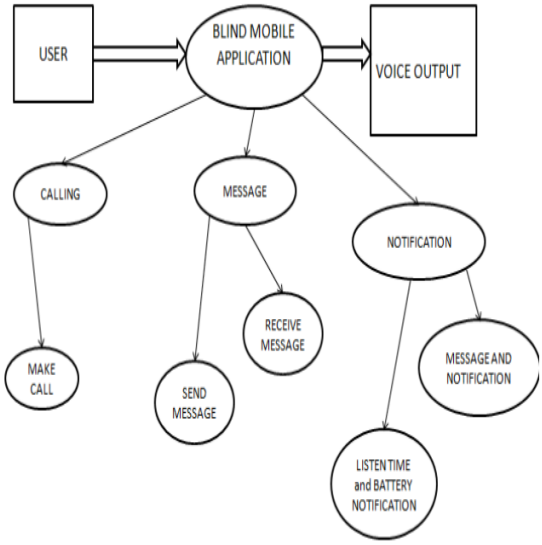

Figure 1: Proposed System

The figure 1 illustrates the architecture of the proposed system. The Input through voice and gesture. The user wants to give voice input. The voice module takes the voice, the specific operation is achieved by the system, and the result is given to the voice module producing voice output. When the user gives gesture, the pattern is taken and output is attained. In call module the application allows the user to make calls and to receive calls. In message module the application sends and receives message. In notification module, all the notification such as battery status, time and recent message and call status are shown.

3. IMPLEMENTATION

3.1 Hardware Implementation and Requirements

The hardware requirements of this application are Android Smart phone should have above API level 20 and Text To Speech Compactable device.

3.2 Software Implementation and Design

As the user tapped on the screen, the system performs functions likes retrieves the battery status, current time and reads. It will read and display the incoming messages, using Speech To Text, it replies for the incoming messages, calling and also it will retrieve the current location.
The designs of the modules in the system are discussed below:

Voice module

The Voice Module is visual independent edges as the system is designed for blind and partially sighted people. The voice interface implemented using Android built in tools, such as Text To Speech for the voice outputs and the Voice Recognizer API. Text To Speech makes speech from text. It is used whenever there are materials to be displayed. A server client approach is followed by voice module, where Voice Recognizer part communicates with the server to developments information and send it back to the user as voice.

Voice input and gesture

The user can give the input through voice and gesture, the voice module accept the input from user and transmissions to voice module.

Voice output

The voice module translates the voice input to text that can be processed by system, the system provides a suitable result to the voice module, which adapts the text to voice and produce as output to the user.

System

The system accepts the input from voice module implement the specific operation and produce the result to the voice module.

4. CONCLUSIONS

An Improved android accessibility application has been expressed for ease of use of smart phones for the visually impaired people in the framework of smart phone usage. Methods using Text To Speech voice recognizer API. The purpose of this project is to generate an application that would enable the visually challenged to use some basic sorts of smart phones through voice. To provide navigation guidance, calling and message reader functionalities, to know current date and timings, battery status from smart phones possible and simpler for visually impaired.

REFERENCES

[1] http://www.androidhive.info/2014/07/android-speech-to-text- tutorial/.
[2] http://stackoverflow.com/questions/848728/how-can-iread-sms- messages-from- the-device-programmatically-in-android.
[3] http://stackoverflow.com/questions/11306150/read-and-display-incoming-message-text- android.
[4] https://material.io/guidelines/style/color.html#.

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