

Assistive tool for visually impaired Using mobile application

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Abstract:- At present there are 2.68 cores persons with disabilities in India constituting 2.21% of population, according to the census 2011. There is a no proper solution to require that kind of problem. The main concept of the paper is to provide an electronic aid with mobile application as guidance to overcome the lacking of their visualization power by proposing a simple, efficient, configurable electronic guidance system for blind and visually impaired person. With the outburst of smart-phones today, the market is exploding with various mobile applications. These smart phones help the people by providing easy access to information and providing many basic functionalities to them. The basic aim was to propose a new technique within a mobile app for visually impaired persons. Our proposal have focused on four main purposes for visually impaired persons, 1).Guide direction to go for their desired place. 2).Indication of vehicles when it comes. 3).Overcome obstacles 4).Communication Purposes.

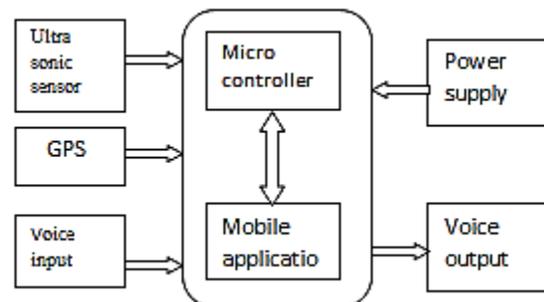
I. INTRODUCTION

The world health organisation (WHO) fact reported that there are 285 million visually impaired people worldwide. Among these individuals there are 39 million who are totally blind. The work we present in this paper is based on the use of new technologies to improve visually impair people mobility. Our research focuses on obstacle detection in order to reduce navigation difficulties for visually impaired people. The best travel aid for the blind is the guide dogs. Based on the symbiosis between the disabled owner and his dog, the training and the relationship to the animal are the keys to success. The dog is able to detect and analyze complex situations: cross walks, stairs, potential danger, know paths and more. Most of the information is pass through tactile feedback by the handle fixed on the animal. The user is able to feel the attitude of his dog, analyze the situation and also give him appropriate orders. But guide dogs are still far from being affordable, around the price of a nice car, and their average working time is limited, an average of 7 years. The main concept of the paper is to provide an electronic aid as guidance to overcome the lacking of their visualization power by proposing a simple, efficient, configurable electronic guidance system for blind and visually impaired pedestrians. Ultrasonic Sensor is the proposed electronic aid which senses the obstacles in its path by continuously transmitting the ultrasonic waves. When an obstacle appears in its vicinity then the ultrasonic waves gets reflected to the system immediately. And then ultrasonic receiver senses these ultrasonic waves. This method supports the microcontroller to obtain the information from ultrasonic waves and then it alerts the blind pedestrians through voice message. The advantage of our proposed system is its voice based announcement for easy navigation

which can assist a blind pedestrian to pass through a busy road. Moreover, this system is an auditory guidance system for the visually impaired pedestrians using ultrasonic-to-audio signal transformation. The main issues for the blind people is that, they cannot read messages displayed on the smart phones or cannot use the basic functions like calling, messaging etc. of the phone. The solution for these issues are solved through our project.

II. HARDWARE

Hardware system is constructed with power supply unit, Microcontroller –Arduino-UNO. It is based on Atmega 328 8-bit microcontroller. It consists of 14 digital (input, output) pins and 6 analog pins. Ultrasonic Sensor: It emits an ultrasound at 40 000 Hz which travels through the air and if there is an object or obstacle on its path it will bounce back to the module. Considering the travel time and the speed of the sound you can calculate the distance. The Ultrasonic Sensor sends out a high-frequency sound pulse and then times how long it takes for the echo of the sound to reflect back. The sensor has 2 openings on its front. One opening transmits ultrasonic waves, (like a tiny speaker), the other receives them, (like a tiny microphone).



III. SOFTWARE

Platform–Android Studio. Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.

There are multiple ways to approach Android Development but by far the most official and powerful is to use Android Studio. This is the official IDE (Integrated Development Environment) for the Android platform, developed by Google and used to make the majority of the apps that you probably use on a daily basis.

Android Studio was first announced at a Google I/O conference in 2013 and was released to the general public in 2014 after

Res: Different resource files, Anim: Animation resource files, Drawable: Images, Drawable-X dpi: Image depending on screen display, Layout: App layout files, Menu: Layout menu files, Values: Value files (strings, arrays, various beta versions). Prior to its release, Android development was handled predominantly through Eclipse IDE, which is a more generic Java IDE that also supports numerous other programming languages.

Android Studio makes life significantly easier compared with non-specialist software, but it still has a little way to go before it can claim to be a completely intuitive and smooth experience. For complete beginners, there is an awful lot to learn here and much of the information available – even through official channels – is either out of date or too dense to make head or tails of.

In this post, we'll explain what Android Studio does in a little more detail and go over the basic functionality that you need to get started. I'll try and keep everything as easy as possible and hopefully this will serve as the first step on your journey to Android Development.

In System Programmer – Java: Java class files containing app logic, colors, etc...), Values-vx: value files depending on API level, Values-Xdp: value files depending on screen display, XML: XML files, Android Manifest, XML; app metadata file, Build gradle : Build related settings.

IV. FUTURE RESEARCH

In mobile application currency identification are also included along with this purposes. If ultrasonic sensors are manufactured in small size it can be integrated with smartphones. Depends on the different disabilities different features can be added in mobile application

V. CONCLUSION

The main focus of the paper is designing a system to help the visually impaired person to survive in their routine life without other guidance. The project will be very useful for

blind pedestrian where Ultrasonic sensors are used to detect the object or obstacle in path and navigate the blind person by the use of audio instructions with mobile application help to communicate with other people. mobile application is used to read and send messages, voice call, and GPS maps for their navigations.

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