

Mind For Blind: Revolution Towards Visually Impaired

Antariksh Patil¹, Annmay.M.M.Kadve², Kanishk Vig³, Prof. Shrikant Bagewadi⁴

¹⁻³ Department of Computer Engineering, Padmabhushan Vasantdada Patil Prathisthan's College Of Engineering, Mumbai, Maharashtra, India

⁴Professor, Department of Computer Engineering, Padmabhushan Vasantdada Patil Prathisthan's College Of Engineering, Mumbai, Maharashtra, India

Abstract - The main aim of this project is to implement the wireless communication method and use it effectively as a completely new travel aid for the blind and visually impaired pedestrians by emerging into the use of an android application. The project represents an innovative project design and implementation of an wireless communication. This guidance/navigation system is safe, reliable and cost effective as well.

Key Words: visually impaired, safety, wireless communication.

1. INTRODUCTION

Blindness being the most quotidian disability, every year more than half a million babies turn blind or are born blind which causes great problem for them to pull through in society.

The Information Technology industry has revolutionized the way we use are day to day modern instruments. Our project idea mainly focuses on an android software used for betterment of visually impaired people all around the world. MIND FOR BLIND allows visually impaired to travel around without any restrictions. It allows user to identify moving/immovable object around without the help of old method of stick. the software which we have created just needs one android device and an user who can assist the blind to move ahead in there day to day life, to choose/verify essential products. Our method is fully automated, free of cost, user friendly. We have developed an cutting edge way to communicate and guide with visually impaired around the world.

2. SOFTWARE/HARDWARE REQUIREMENTS

As this is software is totally android based we will need various android functions , Knowledge of programming Language, Database, Biometric Analysis. We will be using Android Studio, Java as development language, Jitsi meet plugin, Android Biometric Authentication 1.0.1, Speech-to-text and various UI designs.

2.1 JAVA

It is a programming language used for development of various softwares through which we can implement various lines of code to get desired output.

2.2 JITSI MEET PLUGIN

Jitsi is a free open source platform used to establish communication between two users. In our case two users like the visually impaired and user with proper eyesight.

2.3 ANDROID STUDIO

Android studio is an environment where a developer can develop various android software using various programming languages. It is an open source platform, free to use, user friendly.

2.4 ANDROID BIOMETRIC AUTHENTICATION

As security of user remains the main concern we will be using biometric for registration purpose. One time registration will be mandatory for both side user like the one with full eye sight and one visually impaired.

2.5 SPEECH TO TEXT

As one of the user is visually impaired he/she can't see anything on device so we have added speech to text so that user can easily type code or password.

2.6 ANDROID SMARTPHONE

Basic Android Device is mandatory as the software will be installed in it on both ends.

3. EXISTING SYSTEM

There are many old existing systems like the blind stick method, guided dog method, on road human communication.

3.1 DISADVANTAGES OF EXISTING SYSTEM

In this old ancient method the visually impaired uses stick to get recognition of nearby objects but stick can only allow user to get recognition of objects upto knee level. It is prone to injuries. Old stick method cannot protect face of user. It does not protect obstacle at torso and face level.

In guided dog method the keeping and training cost can be high and also the training period is from six months to one year. the maintenance cost of dog is high.

4. PROPOSED SYSTEM

To Overcome disadvantage of existing system we have proposed new software which allow the visually impaired to communicate with his own user sitting anywhere in world via wireless communication. MIND FOR BLIND aims to provide end to end communication with visually impaired and the user with full eyesight. MIND FOR BLIND can be used in travelling to avoid obstacle, navigation purpose, to choose different product in grocery or other shops, visually impaired person can ask user who has full eyesight to read out names, expiry dates, navigation boards etc via using our modern technology software.

4.1 ADVANTAGES OF PROPOSED SYSTEM

MIND FOR BLIND can be used from anywhere around the world to guide the visually impaired. It uses highly modern technology to communicate with the user.

This software can allow user to buy product check its quality date of expiry and manufacturing while in store. No outside user can fake price and name of product if this software is used.

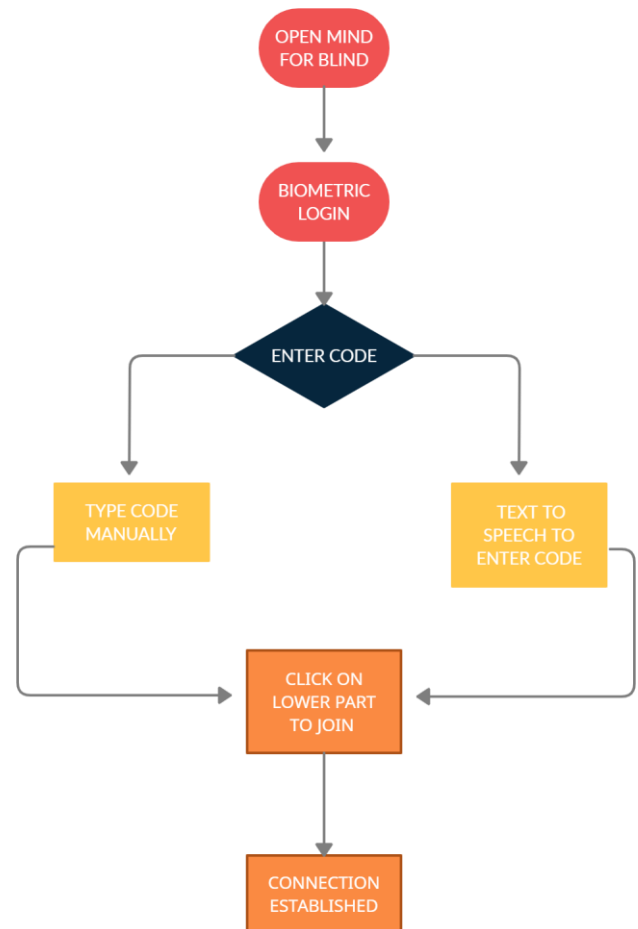
4.2 DISADVANTAGES OF PROPOSED SYSTEM

As such there are no disadvantages of MIND FOR BLIND. In case if the user breaks or is in place where internet connection is not sufficient this software won't work. But problem of internet connection can be overcome in future scope.

5. WORKING

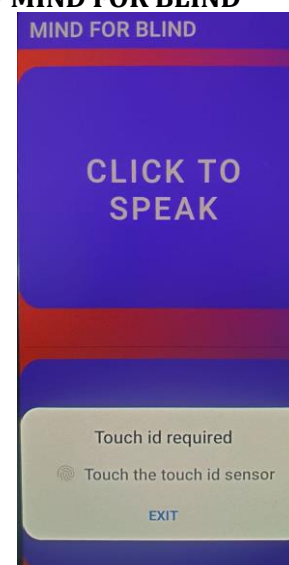
Mind for Blind works as mediator between visually impaired and one with full eyesight. The below given flowchart can give brief information about the working of highly modern software.

According to flowchart the first step is to open software (Mind For Blind) using Google assistant on device of visually impaired then moving to second step the visually impaired has to enter code either manually or using speech to text assistant. In third step the user has to click on join the app. Same has to be done on device of user who has full eyesight and once the connection is established now the user with full eyesight can guide the visually impaired.



1. FLOWCHART DIAGRAM

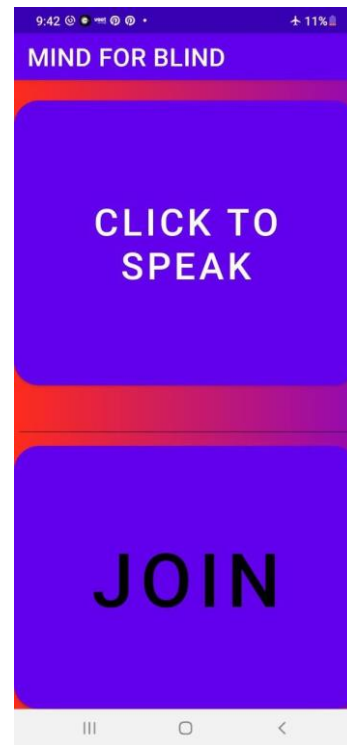
6. RESULT OF MIND FOR BLIND



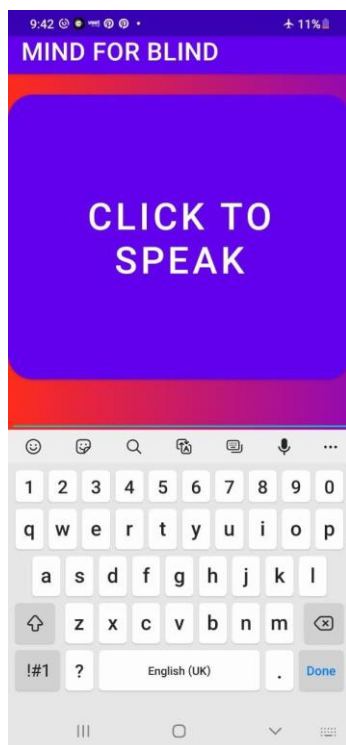
2. BIOMETRIC VERIFICATION



3. SPEECH TO TEXT TO TYPE CODE



5. CLICK ON JOIN



4. TYPE CODE MANUALLY



5. JOINED



6. JOINED

3. CONCLUSIONS

The main focus of the paper is designing a system to transform visual information to auditory information from helper which will be aid for blind pedestrian. The authors expect that the project will be very useful for blind pedestrian where to detect the object or obstacle in path and navigate the blind person by the use of instructions.

It is well-estimation from our project will ease the road crossing for blind pedestrian as well. There is plenty of room for future scope of this project. A wireless camera can be fitted to blind persons cap which will skip the use of hands to hold mobile and pointing towards surroundings continuously.

REFERENCES

- [1] Android Application Development: A Brief Overview of Android Platforms and Evolution of Security Systems
- [2] Implementation of IEEE 802.15.4g wireless communication platform for smart utility service
- [3] Design and implementation of video system based on Flex and J2EE
- [4] International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181(2019)
- [5] International Journal of Engineering and Technology (IJET) ISSN (Online) : 0975- 4024 (Nov 2017)
- [6] World Health Organization. Blindness facts