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MopDop – A Device for Deaf, Speech Disorder, Patients and Old Age Peoples

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Abstract: Independency is the putting up blueprint in attaining fantasy, final cause, and destination in life. Deaf persons find challenging to go out independently. In this world of busy people's lots of deaf peoples in counting of millions are eternally in need of helping hands or use their sign language to make communication. American Sign Language or chirognomy becomes a conventional trait for disabled populations. Deaf peoples have big problems when they have to communicate with others or they are at new place. The MopDop will help them by providing more convenient means of life and a new device to share their views. The final cause of writing this paper is to forward my knowledge and services to the peoples of deaf society.
Keywords: Arduino, deaf, sign language, speech disabled and technology.

I. INTRODUCTION

We all are well aware that we have lots of deaf and speech disabled persons in the world. Some of them are by birth but some becomes after some incident. Whatever the reason was, it cause very challenging for them to survive in this world. They become dependent on the others by which they feel disappointed always at some moment. According to a data, the 37 million people across the globe who are blind, over 15 million are from India. Due to this problem they become dependent on another person for almost all their activities. Disabled Population in India as per census 2011 (2016 updated) – In India out of 121 Cr population, 2.68 Cr persons are disabled which is 2.21% of the total population. Among the disabled population 56% (1.5 Cr) are males and 44% (1.18 Cr) are females.

During the old age a person also feels similar problem. At that age the body is not too much energetic and it was surrounded with lots of diseases and weakness. The truth is that this affects the relationship to an extent in most cases. The persons start ignoring to the old age peoples because they start finding problems similar to deaf and speech disabled persons at a low level they lies at starting phase of it.

If the deaf peoples or the speech disabled persons have to communicate they have to use the sign languages. But if some person is aware about the sign languages he/she can communicate to those persons. But what about those persons who is not having any knowledge of sign language. Here main question arises how he/she will communicate? Similarly if some person is not in condition so that he can express his/her feelings either he/she is a patient or an old age people. Same situation occurs with them, if they have to express their feeling how they will share with other peoples?

Hence a need occurs to develop such a system that will help such types of peoples to become some dependents so that others can't think them as burden on them. And today's era is of technology, it is that era where impossible things are also to make possible.

II. PROPOSED MODEL THEORY

As per the mentioned above problems keeping them all in mind a solution was trying to find out which results into MopDop. MopDop is a device which will seems more beneficial for patients, old age persons, speech disorder persons and deaf persons. It is a device and an android mobile application that helps such persons to express their views among other peoples. To use this person have to connect it with their mobile phone using mopdop android application and by using Bluetooth connectivity. The power supply to the device can be given either by mobile phone or by using a power adapter.

When the mobile phone will get connected with the device now one can touch any touch points and the mobile phone will sound a message along the similar image of that type. Each touch points will display different image and sounds, this is due to programming. All the touch marks or touch points are linked with different messages. In this prototype all the messages have a common content that help in doing the general discussions. Each message is linked with a special code that was observed used the observations of the mopdop.

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III. MATERIALS AND METHODS

The hardware and the software used to develop this device are discussed as follows:

A. Hardware

All the hardware parts of the MopDop are describes follows.

1) *Arduino:* Arduino is an open source microcontroller which is used to perform the desired task by programming it. There are numerous arduino boards available in the market. Each board has its importance and as per the task one can choose any one of it. In the MopDop arduino nano microcontroller is used.



Fig. 1 Arduino Boards

2) *Bluetooth Module:* To provide the connectivity between the mobile phone and the device some connectivity is required. This connectivity can be provided by using either WiFi connectivity or bluetooth connectivity because these two are the most easily available connectivities founded in mobile phones. In MopDop bluetooth connectivity is used by using HC-05 bluetooth module is used in the mopdop device.



Fig. 2 Bluetooth Module

B. Software

The softwares used in development of MopDop are as follows.

1) *Arduino IDE:* The arduino provides its own IDE that helps to write and upload the sketch into the arduino boards. It is free to download from the official website of the arduino. The arduino IDE is shown in figure 3.

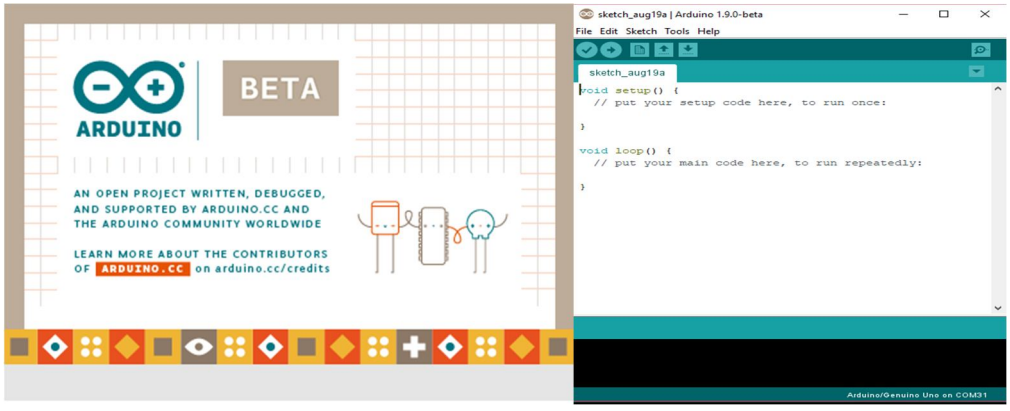


Fig 3 Aduino IDE Interface

2) *MIT APP Inventor 2:* It is an open platform from where we can create the android applications. It is easy to use and provides a good User Interface (UI).

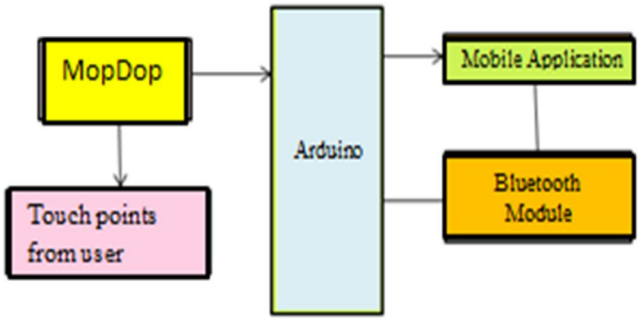
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C. Other Supporting Materials

To achieve this some other materials also used like jumper wires, breadboard, breadboard power supply module and a power adapter.

IV. BLOCK DIAGRAM

The block diagram of the MopDop is shown below.



Fig, 4 Block Diagram of MopDop

V. OBSERVATIONS

As discussed that to link a message with a particular touch point a unique code word was used. These code words were obtained by observing the data when the input pullup pins were grounded and with the help of the bluetooth connectivity and android application we get that code word on the android application. The code word and the message associated with particular touch points are shown in table 1.

TABLE I
The decimal and relevant action of choosing each touch point

Touch Point	Touch Point Text and Audio	Decimal Value	Text (ASCII/ANSI)
1	I am feeling good	49 13 10	1
2	How are you	50 13 10	2
3	I want to go home	51 13 10	3
4	I want to go Washroom	52 13 10	4
5	I want something to eat	53 13 10	5
6	I Want some water	54 13 10	6
7	Call Doctor	55 13 10	7
8	Good Bye	56 13 10	8

VI. WORKING AND RESULT

The touch points of the mopdop are connected to the digital pins of the arduino nano. All the pins are setup as INPUT_PULLUP which means all the pins are having 5V respectively. The point which is used to mark the other fingers is connected to the ground. Hence when the ground pin comes in contact with any of the touch points the 5V gets grounded. When such a circuit formed a decimal value is generated which is shown in table 1 for each touch points.

The HEX value can be read on the serial monitor of the screen of Arduino IDE and with the help of bluetooth module and mopdop mobile application the decimal value can be observed on the mobile screen. Decimal values are used to make the mobile application, for each decimal value an image with a text and virtual voice had been designed.

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Fig 5 MopDop Device

When a person wants to communicate with speech disabled persons, deaf peoples, patients or old aged peoples they just simply have to connect their mobile phones with the MopDop device (shown in figure 5) using mopdop mobile application (shown in figure 6). Once the mobile phone gets connected they can now start a communication or conversation. The disabled persons choose a relevant touch point after that an image shown on the mobile phone screen with a message and virtual voice. In this manner they can make a conversation between themselves and with other persons also.



Fig. 6 MopDop Mobile Application

Similarly in this manner the other messages can be programmed into the MopDop as per the requirement of the peoples.

VII. CONCLUSION

Before the design of the mopdop some points are kept for the considerations and later all were tested. All the things worked as per the expectations and found best. All the module's components are working effectively either when mopdop is attached with 9V and 12V power adapter or when it is powered by mobile phone through USB cable.

A. Advantages

The advantages of the mopdop are as follows

1) It will help the speech disabled and deaf peoples to communicate with other persons.
2) It will also help the old aged peoples to share their views.
3) It will be very effective.
4) It is easy to use
5) It is cost efficient
6) It consumes less power
7) It can be easily operate and powered by mobile phone
8) It also helps the patients to communicate with doctor and relatives

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B. Future Work

This idea is easy to commercialize but to do so active participation of the industries is required. The more features can be added into that or by using the machine learning and artificial intelligence. It can be design in such a way so that it can automatically take appropriate action as per the situation occurring with the disabled persons in real life.

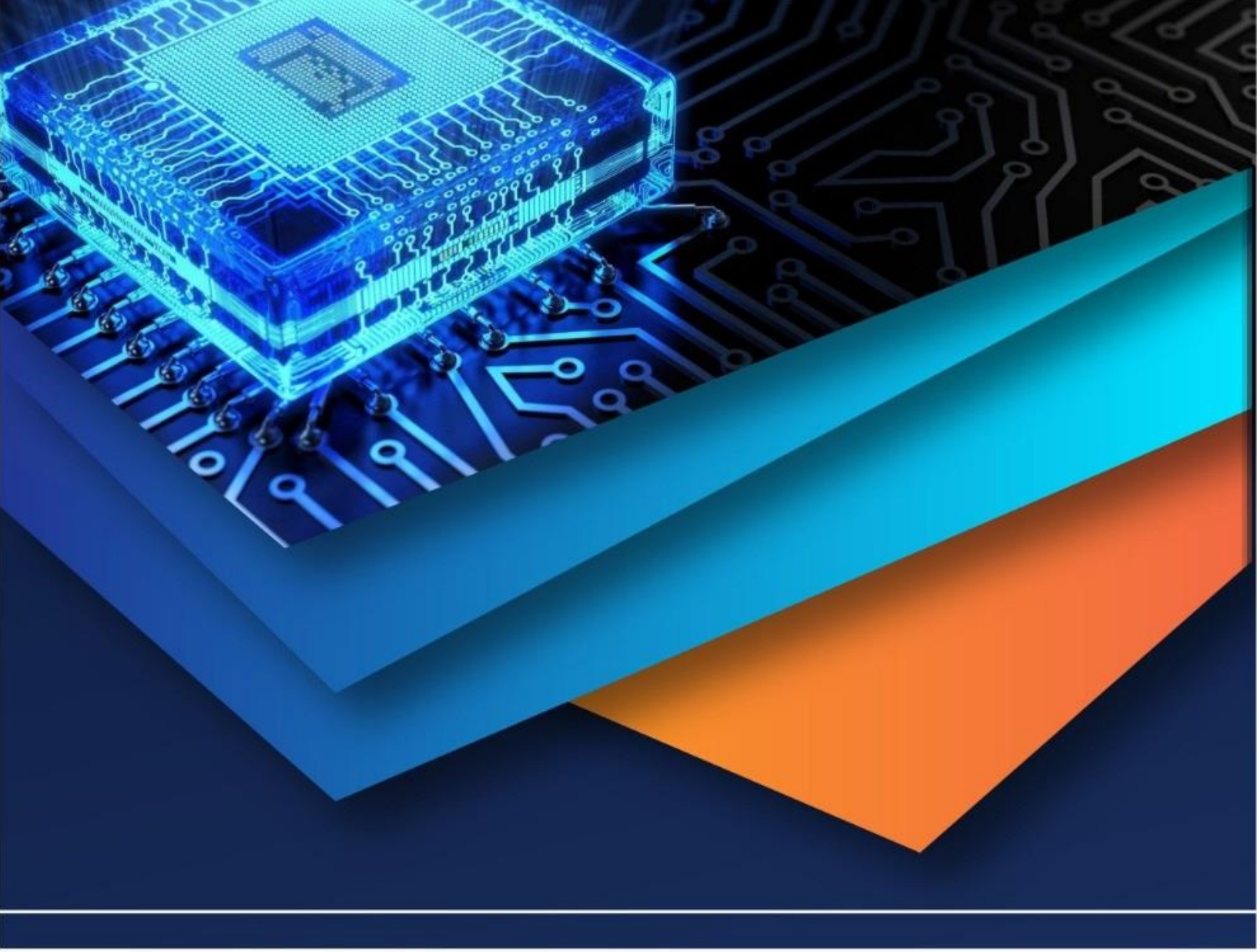
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REFERENCES

[1] Ramya V and Palaniappan B Article: Embedded Home Automation for Visually Impaired, International Journal of Computer Applications 41(18):32-39, March 2012. Published by Foundation of Computer Science, New York, USA. BibTeX.
[2] Van Der Werff M J, Xu W L, Gui X, Activation of Home Automation System via Mobile Technology, In RCO.Ed (Ed.) ENZCon'04: Proceedings of the Eleventh Electronics New Zealand Conference. pp. 235 – 240.
[3] Alice Linsie A, Mangaiyarkarasi J, Hand Gesture Recognition Using MEMS For Specially Challenged People, International Journal of VLSI and Embedded Systems-IJVES, Vol 04, Issue 02; March - April 2013, pp. 238-241.
[4] Ruize Xu, Shengli Zhou, and Wen J. Li, MEMS Accelerometer Based Nonspecific-User Hand Gesture Recognition, IEEE SENSORS JOURNAL, VOL. 12, NO. 5, MAY 2012, pp.1166 – 1173.
[5] Wan S1, Nguyen HT, Human Computer Interaction using hand gesture, Conf Proc IEEE Eng Med Biol Soc. 2008;2008:2357-60.
[6] Yusekkaya B, Kayalar A.A, Tosun M.B, Ozcan M.K, Alkar A.Z, A GSM, Internet an Speech Controlled Wireless Interactive Home Automation System, IEEE Transactions on Consumer Electronics Volume 52 Issue 3, August 2006, pp. 837-843.
[7] Do-Hoon Kim, Chungbuk, Cheongju,, Heung-Gyoon Ryu, Obstacle recognition system using ultrasonic sensor and Duplex Radio-Frequency Camera for the visually impaired person,13th International Conference on Advanced Communication Technology (ICACT), February 2011, 326 – 329.
[8] Arthi.J.E, Jagadeeswari M, Control of Electrical Appliances through Voice Commands, IOSR Journal of Electrical and Electronics Engineering (IOSR-JEEE), Volume 9, Issue 1 Ver. V (Feb. 2014), pp. 13-18.
[9] Kirankumar T, Bhavani B., A Sustainable Automated System for Elderly People Using Voice Recognition and Touch Screen, International Journal of Science and Research (IJSR), Volume 2 Issue 8, August 2013, pp.265-267. [10] Faisal Baig, Saira Beg, Muhammad Fahad Khan, Controlling Home Appliances Remotely through Voice Command, International Journal of Computer Applications (0975 – 888), Volume 48– No.17, June 2012, pp. 1-4.

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