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A Review on Third Eye for Blind Ultrasonic Glove Vibrator

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ABSTRACT: This High-tech era, technology made it possible that everyone can live a comfortable life. But somehow the physically challenged people need to depend upon other sing their daily life which ultimately makes them less confident in an unfamiliar environment. But nowadays the explosion of innovative technology provides many opportunities for them to live confidently without feeling as a burden so, in this paper, an intelligent device is represented for visually challenged people to grid them to reach place safely without facing any difficulties.

KEYWORDS: Technology, Confident, Opportunities

I. INTRODUCTION

The “Third Eye for Blind with Vibrating Ultrasonic Glove, is designed to help the blind to Overcome the lack of visual sense, by using other senses like sound and t once notify the user about Upcoming hurdle. As the distance between glove and obstacle decreases, frequency of both audio And vibration signals increases. Thus, the system helps to ease the navigation process for the needy. The present machine includes the gadgets or the helps like white cane for supporting them to detect The limitations and tour to places and smart gadgets like imaginative and prescient a torch for blinds. But there were many obstacles and troubles on these present systems like within side the white cane, It can without problems destroy or crack. The white cane may also get caught on the pavement Cracks of the distinct objects.

Literature Survey:-

Over the years, there has been an evolution various techniques of guiding visually Impaired persons, thus, toward attach their find dent by freely moving around their Environment without guidance from others; some of these are: Haptic shoe for the Blind. A haptic device that can be installed in a shoe vibrating alert feature Benefit for deafness. This device receives GPS information from a smartphone and Provides vibration feedback at the right, left, front and back for the shoe in order to Provide guidance to destination. A proximity sensor in the front the shoe can detect Objects up to 3 meters and provide vibrational feedback. Multi-dimensional walking Aid by Ola-kami. 0. Ola dad you: This system uses ultrasonic detection technology and

The voice module, the obstacle is detects by the ultrasonic sensor and the direction of to The user through voice output 3D ultrasonic stick for the blind by the Osama Bader Al-Bram. The System uses ultrasonic sensor for detecting the obstacle in three directions (i.e.) Front, left and the right sides of the visually impaired), and the vibration motor Which vibrate with the intensity depending on the obstacle distance. It also uses GPS and GSM for of the visually impaired in this paper, design and Development of intelligent electronic travelling aid for visually impaired is presented. The device employs ultrasonic detection.

Problem Statement:-

Around the world, Blind people face real problems. Their major problem lies in their sense of Disability and sees what around them. Also, they face a problem with other people hesitate in their Service or assistance to them. In addition, people do not know how to deal with blind person. A blind person needs a boost of confidence in their self and their ability to achieve anything and rely On their self without the needs of others. Many countries developed many

Mechanisms of services that contribute to make life easier for the blind, where they developed some Rules and laws in the art of dealing with the blind without notifying disability and some Companies and organizations are training and recruiting people with the ability to deal with blind. In Addition, there are a lot of companies Have developed special equipment used by the blind to help them There are a lot of emotions a Blind person hides behind his eyelids that we cannot see them. Many of them feel embarrassed to Talk about their suffering in front of others or feel upset at their inability to see because of their Illness or old age or the events that he suffered and caused him to lose sight. Some diseases that Cause weaknesses in sight are listed, according to the World Health Organization in 2012 for the Most common reasons of blindness (except for refractive errors):

1. Cataracts (47.9%),
2. Glaucoma (12.3%),
3. Macular Degeneration (8.7%),
4. Corneal opacities (5.1%),
5. Diabetic retinopathy (4.8%),
6. Childhood blindness (3.9%),
7. Trachoma (3.6%),
8. Onchocerciasis (0.8%) .

II.METHODOLOGY

This proposed system consists the abovementioned equip and their connection in the following Manner. The Ground of LED buzzer and vibration The positive of the LED and the middle leg of Switch is connected to the Adriano pin 5. The positive of there is wired to the first leg of the switch and The positive oft Numbers to Computing with Words From Manipulation of Measurements to Manipulation of Perceptions” IEEE Transactions on Circuits and Systems I: Fundamental Theory And Applications, IEEE Computer Society, 1999, pp. 105 – 119. The Vibration motor is wired To the third leg of the switch. The US- ultrasonic sensor is a transducer which is used in pairs a trans Receiver. The transmitter emits the Ultrasonic waves and if obstacles are present in the path. Then the Ultrasonic waves hits the obstacles and gets reflected back. The reflected wave established By the receiver. The Ultrasonic sensor is a combination set of one transmitter receiver. The time gap Between sending and receiving of the Ultrasonic signals is calculated and evaluated and then this Time interval is used to calculate the distance between prebuild is cut in required demand and Soldering of the female headers for the audio to the board is done. Then soldering of buzzer is Carried out next. Then using the glue, we would connect the vibrating motor to the rest and solder The wires too making sure the soldering is proper. Then connection of the LED is what comes next. Then connect the switch and the pins for US sensors and for the battery input. Then all the things are Soldered and the Adriano and ultrasonic sensor to the preload. Should be connected. Also, One Should connect the elastic band to every module required.

Ultrasonic Sensor:-

Ultrasonic sensors emit short, high-frequency sound pulses at regular intervals. These propagate in The air at the velocity of sound. If they strike an object, then they reflected back as an echo signal to The sensor, which itself computes the distance to the target based on the time-span between emitting The signal and receiving the echo. Ultrasonic sensors are excellent at suppressing background interference. Virtually all materials Which reflect sound can be detected, regardless of their color. Even transparent materials or thin Foils represent no problem for an ultrasonic sensor. Micro sonic ultrasonic sensors are suitable for Target distances from 20 mm to 10 m and as they measure the time of flight, they can as certain a Measurement with pinpoint accuracy. Some of our sensors can even resolve the signal to an Accuracy of 0.025 mm. Ultrasonic sensors can see through dust-laden air and ink mists. Even thin Deposits on the sensor membrane do not impair its function.

Features:-

- 1) Supply voltage: 5V (DC).
- 2) Supply current: 1 5mA.
- 3) Modulation frequency: 40Hz.
- 4) Output: 0 – 5V (Output high when obstacle detected in range).
- 5) Beam Angle: Max 15 degrees.

- 6) Distance: 2 cm – 400 cm.22
- 7) Accuracy: 0.3 cm.
- 8) Communication: Positive TTL pulse.

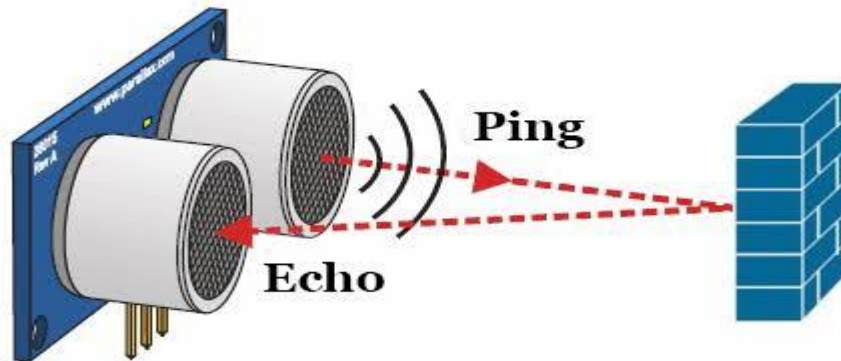


Fig:- Ultrasonic Sensor

Microcontroller:-

The Arduino UNO is categorized as a microcontroller that uses the ATmega328 as a controller in it. The Arduino UNO board is used for an electronics project and mostly preferred by the beginners. The Arduino UNO board I type of Arduino board only. The Arduino board is the most used board of all Arduino boards. The board contains 14 digital input/ output pins in which 6 are analog input pin, one power jack, USB connector, one reset button, ICSP header, and other components. All these components are attached in the Arduino UNO board to make it functioning and can be used in the project. The board is charged by USB port or can be directly charged by the DC supply to the board.

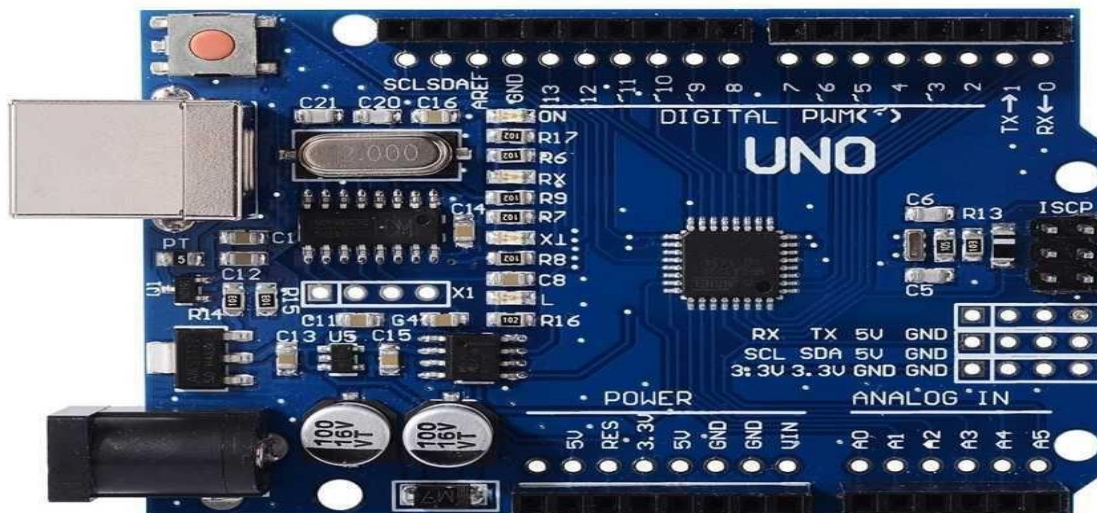


Fig:- Microcontroller

Features:-

- 1) Microcontroller: ATmega328
- 2) Operating Voltage: 5V
- 3) Input Voltage (recommended): 7-12V

- 4) Input Voltage (limits): 6-20V
- 5) Digital I/O Pins: 14 (of which 6 provide PWM output)
- 6) Analog Input Pins: 6
- 7) DC Current per I/O Pin: 40 mA
- 8) DC Current for 3.3V Pin: 50 Ma
- 9) Flash Memory: 32 KB of which 0.5 KB used by boot loader
- 10) SRAM: 2 KB (ATmega328)
- 11) EEPROM: 1 KB (ATmega328)
- 12) Clock Speed: 16 MHz

Block Diagram:-

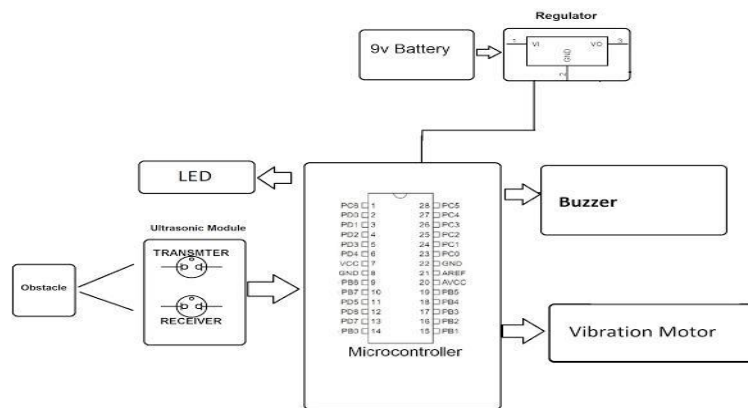


Fig:- Block Diagram of Third Eye for Blind Ultrasonic Glove Vibrator

Circuit Diagram:-

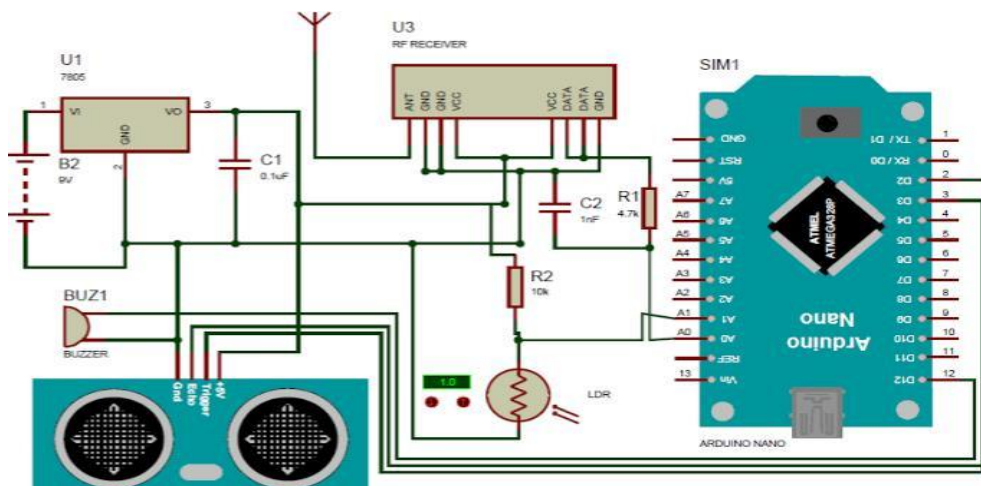
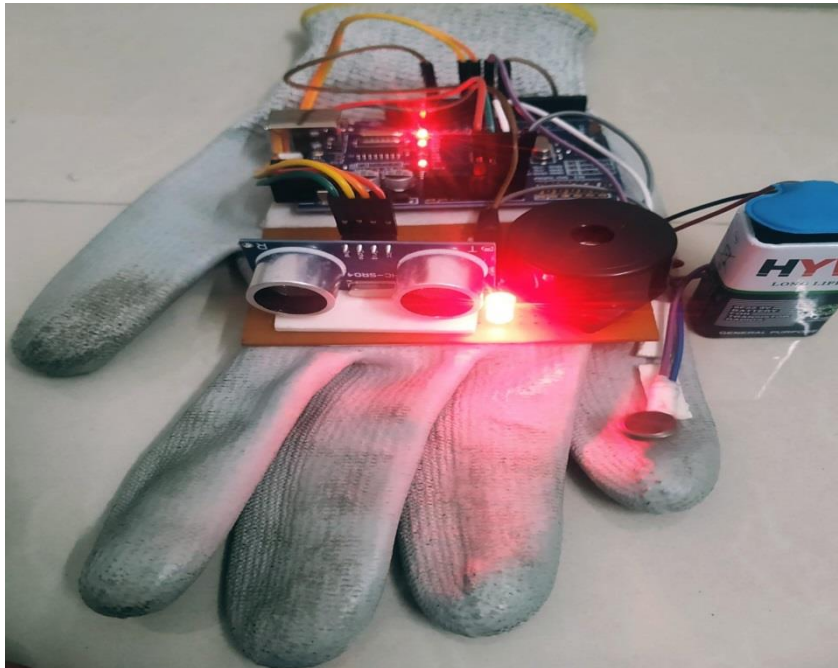


Fig:- Circuit Diagram of Third Eye for Blind Ultrasonic Glove Vibrator

Actual project view:-



Advantages:-

- 1)The benefit of having your third eye open is that you become more aware of the existence of other realms, which can motivate you to continue your spiritual practice.
- 2) They can completely avoid using a white cane or other similar gadgets by using this device. This device will assist the blind in navigating without the use of a stick, which is inconvenient for them. They can simply wear it as a ring or a cloth, and it will perform quite accurately with very little training.
- 3)Help blind people to easily walk to destination.
- 4)Help blind people for obstacle detection Alert blind people about it.
- 5)They are also used to focus during routine and emergency care.

III. CONCLUSION

It is worth mentioning at this point that the aim of this study which is the design and Implementation of a Third eye for the blind has been fully achieved. The ultrasonic sensor acts As a basic platform for the coming generation of more aiding devices to help the visually Impaired to navigate safely both indoor and outdoor. It is effective and affordable. It leads to Good results in detecting the obstacles on the path of the user in a range of three meters. This System offers a Low-cost, reliable, portable, low power consumption and robust solution for navigation with the obvious short response time. Though the system is hard-wired with sensors and other Components, it's light in weight. Further aspects of this system can be improved via wireless Connectivity between the system components, thus, increasing the range of the ultrasonic Sensor and implementing technology for determining the speed of approaching obstacles.

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