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Third Eye for the Blind Person

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ABSTRACT:

God's essential and beautiful gift to all of his creatures, especially humans is vision. But there is more human are lack this beauty and are unable to sew the wonders of the world through their own eyes. Arduino based third eye or extra vision for blind people have a project which include both hardware and the software work and it helps the person to recognize the object by the help of ultrasonic waves which comes from ultrasonic sensor with a vibration which is generated by the buzzer. This Project is influenced by the Stick which is used by the blind people while walking for long term carry the stick is measure issue for weak people. So, this is the wearable invention for the weak and blind people they don't need to carrying anything in hand while walking they should only wear our invention and used to get walking easily.

Keywords: ▪ Arduino Nano ▪ Ultrasonic Sensors ▪ LEDs ▪ Resistors (1000 ohm) ▪ Breadboards ▪ Buzzers

Introduction:

Third eye for blinds is an innovation which helps the blinds people to navigate with speed and confidence by detecting the nearby obstacles using the help of ultrasonic waves and notify them with buzzer sound or vibration. They only need to wear this device as a band or cloth. As per the definition of blindness, we mean the person without sense of sight. A blind person has no ability to see anything. While struggling for the different levels of comforts of the general population, we have reached to a point where we have started to completely ignore the people who are living a miserable life due to lack of vision. They face enormous challenges in their daily lives and hence end up living a dependent life. They experience a completely different life from the normal people and experience detached and uninterested conduct towards them for being physically disabled. They need other individuals for their movement from one place to another. Sight is the basic sense of life and therefore a person's movement from place to place in this condition is a major challenge for the visually impaired . The target of this task , This project for the blind or visually impaired person will provide a gadget that is helpful to them as well as the persons who depend on any individual due to lack of sight. Third eye for people who are blind is an innovation which helps the blind people to navigate with speed and confidence by detecting the nearby obstacles using the help of ultrasonic waves and notify them with buzzer sound or vibration. They only need to wear this device as a band or cloth.

Block Diagram
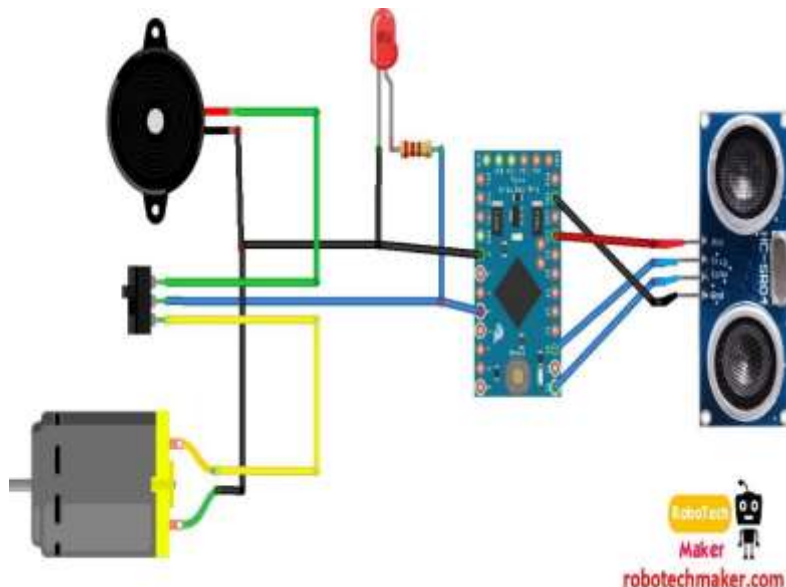
Circuit Diagram:
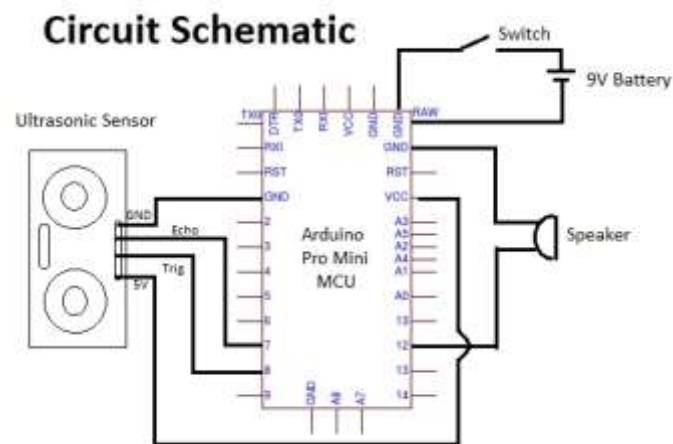
Working:

Wiring Instruction:-

Ground of buzzer and vibration sensor to GND of arduino

+ve of middle leg of switch to Arduino pin 5

+ve of Buzzer to first leg of switch

+ve of Vibration motor to third leg of switch

Ultrasonic Sensor:-

Ultrasonic sensor pin VCC - Arduino pin VCC

Ultrasonic sensor pin GND - Arduino pin GND

Ultrasonic sensor pin Trig - Arduino pin 12

Ultrasonic sensor pin Echo - Arduino PIN 12

Making The Modules:-

This proposed system consists the equipment like Arduino mini pro, ultrasonic sensor, pref board, vibrating motor, buzzers for detecting the obstacles and letting the user know about the obstacle, Red LEDs, Switches, Jumper cable, power bank, Male and female header pins, 3.3 volt old mobile battery which is unused or discarded, some elastic and stickers to make the device wearable as a band for wearing for the users. The wiring of the device is done in a following manner.The Ground of LED, buzzer and vibration motor are connected to GND of the Arduino. The +ve of the LED and the middle leg of switch is connected to the Arduino pin 5. The +ve of the Buzzer is wired to the first leg of the switch and the +ve of the Vibration motor is wired to the third leg of the switch. The Ultrasonic sensor are wired accordingly. The Ultrasonic sensor pin VCC is connected to the Arduino pin VCC, Ultrasonic sensor pin GND is connected to the Arduino pin GND, Ultrasonic sensor pin Trig is attached to the Arduino pin 12, Ultrasonic sensor pin Echo is connected to the Arduino PIN 12. The switch used here is for selecting the mode. (Buzzer or vibration mode.) We first cut the pref board in 5 X 3 cm dimension and solder the female headers for the arduino to the board. Then soldering of the buzzer is carried out. Then using the glue connect the vibrating motor and solder the wires to it. Then connection of the LED is done. Then connect the switch. Connect the header pins for ultrasonic sensors and for the battery input. Then solder all the things and connect the arduino and ultrasonic sensor to the board.

Application :

Security Systems ,Interactive Animated exhibits .Parking assistant system .Robotics Navigation

Conclusion :

This device will help the blind person be more alert above the obstacles .This project is mainly for blind people to avoid obstacles by themselves .This project provides efficient and economical security system. Thus, design and architecture of the project is a new concept of Arduino based Virtual Eye for

the blind people. It is able to scan , sense and detect the obstacles in the areas like left, right, and in front of the blind person regardless of its height or depth. so, with the help of our device the blind person can walk with confidence and without any problem.

Future Scope :

The wearable technology for blinds resolves the existing technical problems One of the main peculiarities of this innovation is that it is affordable for everyone. There are no such devices available in the market that can be worn like cloth and have such a low cost and simplicity. When used on a large scale, with improvements in the prototype, it will drastically benefit the community.

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