IOT Based Obstacle Detector for Blind

Y. V. S. Durga Prasad[1], B. V. Pavan Kalyan[2], N. Sravani[3], P. Nikhil Reddy[4].

[1]Associate Professor, Electronics and Communication Engineering, ACE Engineering College, Hyderabad, Telangana, India
[2,3,4]IV B.Tech Student, Department of Electronics and Communication Engineering, ACE Engineering College, Hyderabad, Telangana, India
Pavankalyanbanndi@gmail.com, Prasadece.304@gmail.com, Sravaninallabotulla@gmail.com, Pnikhilreddy21@gmail.com

ABSTRACT:

Description: Blind people often face the problem of colliding to walls or obstacles. I have created simple embedded systems that help them. It's an embedded device which will guide blind people about the obstacles and objects nearby as well as warn them of about dangers. This platform will use powerful image processing Algorithms and object detection techniques that will help the blind to survive in real life time based environments.

Need of the Device:

Blind people often tackle with issues such as crossing road in a very traffic based area and often collide with obstacles. This makes them vulnerable to injury or sometimes even death. There is no device to guide these people to cross roads in very congested traffic based environment.

WORKING:

This Arduino Smart Blind Stick Project requires two separate circuits. One is the main circuit which will be mounted on the blind man's stick. The other is a small remote RF transmitter circuit which will be used to locate the main circuit. The main board's circuit diagram to build a blind stick using ultrasonic sensor. The complete board is powered by a 9V battery which is regulated to +5V using a 7805 Voltage regulator. The Ultrasonic sensor is powered by 5V and the trigger and Echo pin is connected to Arduino nano pin 3 and 2 as shown above. The output of the board is given by the Buzzer which is connected to pin 12.

SCHEMATIC DIAGRAM :
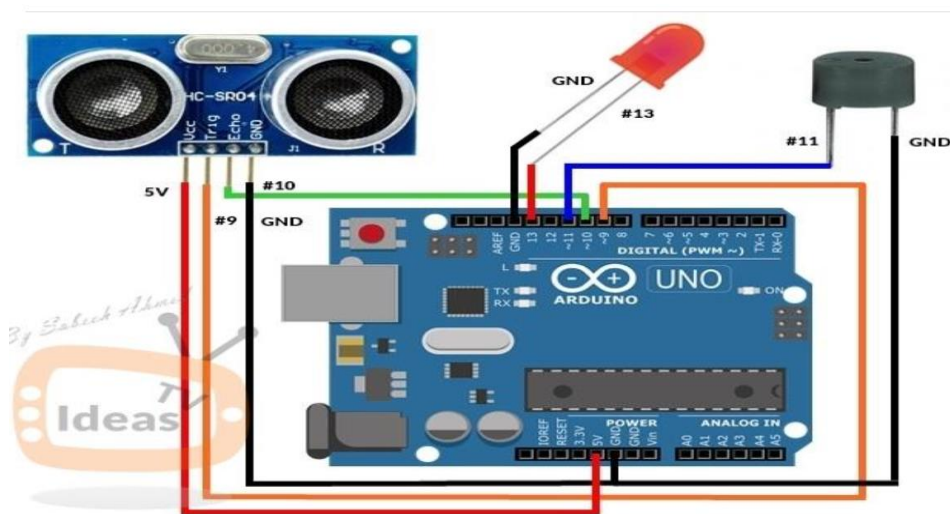
HARDWARE / SOFTWARE REQUIREMENTS:

- ARDUINO UNO
- ULTRASONIC SENSOR
- JUMPER WIRES
- 3V DC BUZZER
- LED
- 9V BATTERY

FLOWCHART:
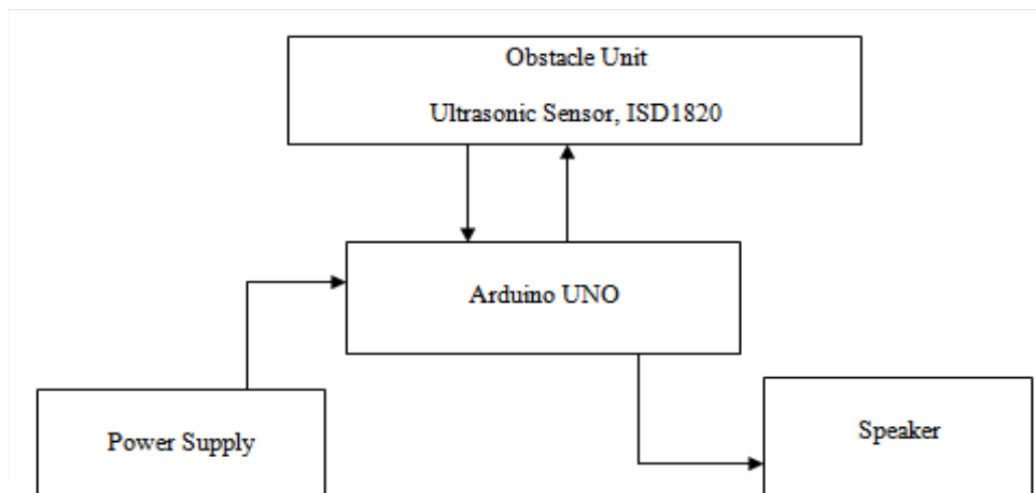
APPLICATIONS:

- Facilitates the visually-impaired people through various user friendly features such as water detection, Navigation, Obstacle alert and communication.
- The gadget will be Portable and can be used in other blind sticks also
- It will detect obstacle coming on the way of blind people
- The gadget will operate to help all the blind people in the world to make them easier to walk everywhere they want.

RESULT:

Case-1: When Object is not detected
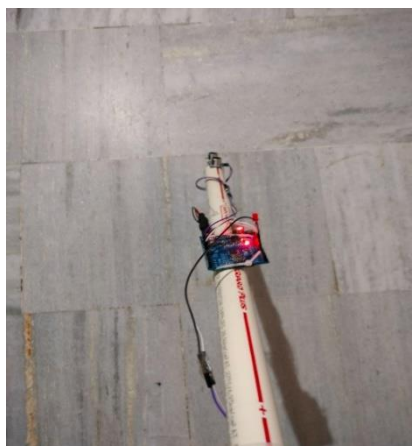
Case-2: When Object is detected

CONCLUSION:

The Smart walking stick, constructed with at most accuracy, will help the blind people to move from one place to another without others help. This stick reduces the dependency of visually impaired people on other family members, friends and guide dogs while walking around. The smart stick detects objects or obstacles in front of users and feeds warning back, in the form of voice messages rather than vibration. The advantage of the system lies in the fact that it can prove to be a low cost solution to millions of blind person worldwide.

ACKNOWLEDGEMENTS :-

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