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Design & development of an third eye for the blind personnels

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Abstract
In this paper, we present the design & development of an third eye for the blind personnels, which serves as a boon for all the people who are handicapped and cannot see with their human eyes and hence they have to make use of a device which will help them to see what is there in the front of them. One of the biggest difficulties faced by people who are blind in daily life is mobility. Loss of vision severely limits their quality of life and range of activities. They often navigate utilising a blind navigation system or by employing their long-term exploration memories. The main goal of the current effort is to create an efficient navigational solution that is low cost, dependable, portable, user-friendly, low power, and sturdy. The work presented here is the mini-project work of the 2nd sem students of electronics & communication engineering department of dayananda sagar college of engg., bangalore.
Keywords—Blind, Third Eye, Handicapped, Device

1. Introduction
A brief introduction about the related work that is being done is presented in this introductory note. Blind mobility is one of the biggest obstacles that people with vision impairment face on a daily basis. The loss of their eyesight severely limits their quality of life and activities. In their long-term exploration, they typically use a blind navigation system or their stored recollections. The major goal of the current effort is to provide a strong, dependable, user-friendly, portable, low-power, low-cost solution for efficient navigation. As stated in this study (Smart Glasses for Blind People), the intended audience is those who are visually handicapped. It includes a built-in sensor that emits ultrasonic waves in the direction the user is moving while scanning a maximum of 5–6 metres over a 30 degree angle. The sensor recognises the impediment and transmits a signal to the buzzer, which alerts the user with a beeping sound.

2. Overview of the Work
According to WHO figures from 2011, there are around 285 million visually impaired persons in the world, of which 39 million are blind and 246 have limited vision. Around 90% of the world's visually impaired persons reside in low-income areas, and 82% of those who are blind are 50 years of age or older. The majority of blind people in the world currently reside in India.

3. Summary of the Mini-Project Problem
In this section, we present a brief summary of the problem statement that has been taken up by us & solved to get the outcome. One of the difficulties that those who are blind or visually impaired must overcome in order to live is having to deal with sight loss or low vision. In order to improve their

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ability to live independently, blind people need more care and attention from society as a whole. The largest issue, though, is how safe it is to live a blind life.

4. Proposed Methodologies Adopted

The mini-hardware project's and software tools include various devices such as –
Ultrasonic Sensor, Piezo Buzzer, 1000mAh Battery, Switch, Jumper Wires, Arduino Nano.

Fig. 1 : Photographic view of the Arduino Nano used in mini project

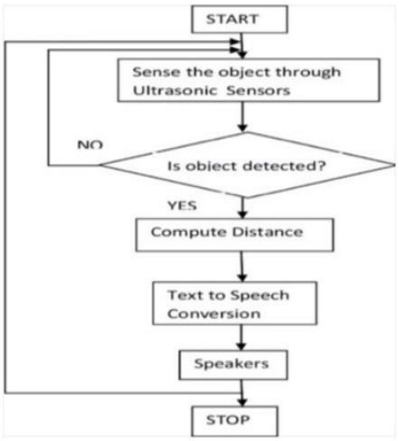

Fig. 2 : Proposed flow chart of the bomb detection robot system

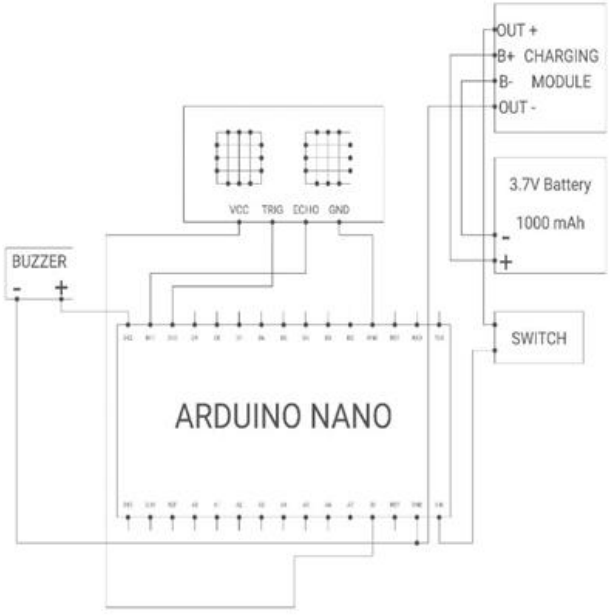

Fig. 3 : Proposed block diagram of the Arduino Nano for implementation of the hardware system

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5. Making the POV display

The proposed system includes components like an Arduino nano, an ultrasonic sensor, a buzzer to alert the user to obstacles, a switch, jumper cables, and a charging module. The device is wired in the way described below:

The Buzzer's positive terminal is attached to the Arduino's Digital Pin 12 and its negative terminal is connected to the ground.

6. RESULTS

Here, the results of the experimental works are presented in a nutshell. The rotating LED display, often known as the POV display, uses the straightforward idea of lighting LEDs in different patterns to create the appearance of displayed text. The POV display, displays the specified message without any errors or fluctuations. POV LED displays are better than other displays in terms of power savings, less complexity, easy configuration, attractiveness etc. POV LED displays may draw a sizable crowd and aid with marketing.

7. Conclusion and Next Works

The final conclusive remarks of the mini-project that has been developed is presented in a nutshell here. The solution that is being shown is set up and created with blind and visually impaired users in mind. The sight challenged can experience a variety of states thanks to this technology. Using ultrasonic sensors and an Arduino board, this device responds to the user in all situations that affect blind individuals.

8. Applications

The applications of the mini project that has been developed are presented here in this context.

Movement

Identifying difficulties

Soldering the wires, Buzzer not buzzing owing to loose connections, and creating connections were issues encountered during building.

Difficulty with the Arduino Nano board's programming.

Photograph of the Model Developed

In this section, the photographic view of the model that has been developed by the mini-project team is presented, one can see the ultrasonic sensors, etc…

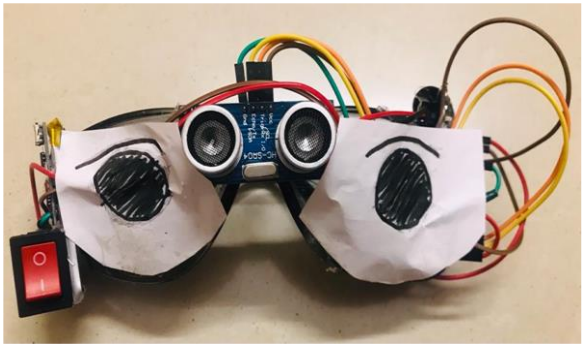

Fig. 3 : Photographic view of the ultrasonic sensor system developed

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