SYNOPSIS FOR
THIRD EYE FOR THE BLIND

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ABSTRACT

According to estimates from the World Health Organization (WHO) Prevention of Blindness and Deafness Program: About **285 million people** are visually impaired worldwide: 39 million are blind and 246 million have low vision. Now a days there are so many instruments and smart devices for visually impaired peoples for navigation but most of them have certain problems for carrying and the major drawbacks is those need a lot of training to use. So the aim of the project is to develop a cheap and more efficient way to help visually impaired to navigate with greater comfort, speed and confidence.

Existing Systems & their problems

1. Blind sticks- May easily crack/break; the stick may get stuck at pavement cracks of different objects.
2. Smart devices (eg: Vision a torch for blinds) - Cannot be carried easily, needs a lot of training to use
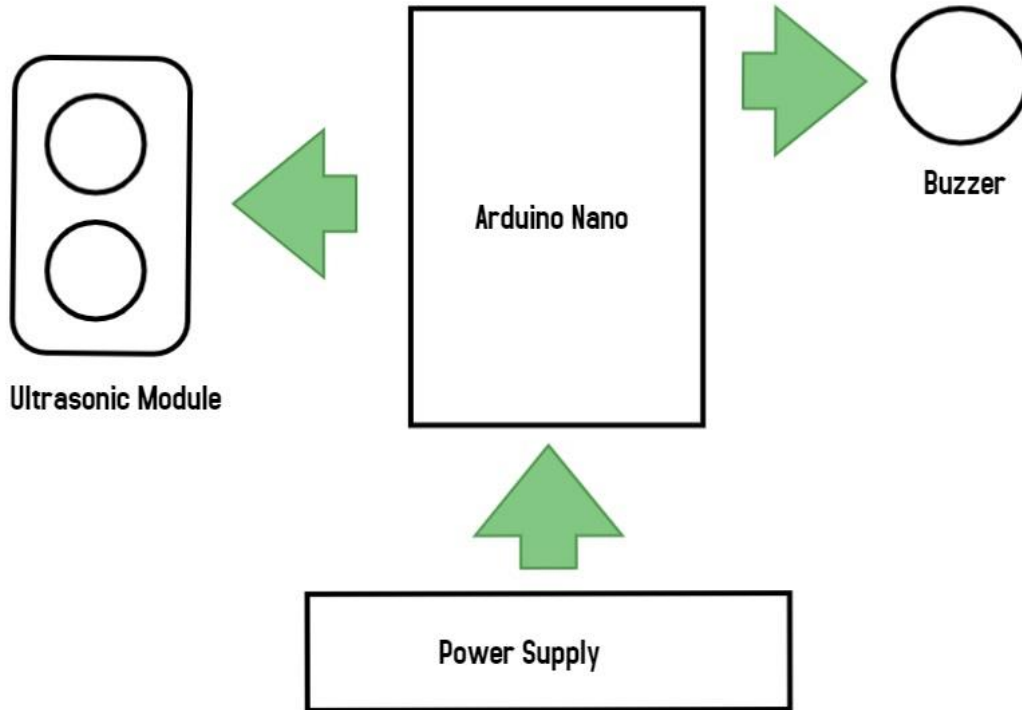
Solution

To solve this problem we are going to make one of the best wearable technologies based innovative device which will detects nearby objects or obstacles and notify with buzzer & vibrators.

This devices is called "*THIRD EYE FOR BLIND PERSON*"

This technology will resolves all the problems of existing technologies. This device will help the blind to navigate without holding a stick. Simply wear it as a band or cloth and it can function very accurately and they only need a very little training to use it.

BLOCK DIAGRAM

REQUIREMENTS

Hardware

- Arduino Nano -1
- Ultrasonic Module- 1
- Buzzer – 1
- Slide switch- 1
- DC socket & DC pin with battery cap- 1
- Resistor – 470 ohm & LED - 1
- Handmade Branding less printed circuit board- 1
- DC Battery 9v
- Female header

Software

- Express PCB
- Arduino IDE
- Fritzing

BENEFITS:

Third eye for blinds is an innovation to help blind people to navigate with greater comfort, speed and confidence, while making use of ultrasonic waves to detect nearby obstacles and to notify the user through vibration.

This is the first wearable technology for blinds which resolves all the problems of existing technologies. Now a days there are so many instruments and smart devices for visually impaired peoples for navigation but most of them have certain problems for carrying and the major drawbacks are: Those need a lot of training to use.

The one of the main peculiarity of this innovation is, it is affordable for everyone, the total cost being less than $25 (~1500INR).

There are no such devices available in the market that can be worn like a cloth and having such a low cost and simplicity. When used on a large scale, with improvements in the prototype, it will drastically benefit the community.

CONCLUSION:

Thus, this project proposed the design and architecture of a new concept of Arduino based Virtual Eye for the blind people. A simple, cheap, efficient, easy to carry, configurable, easy to handle electronic guidance system with many more amazing properties and advantages is proposed to provide constructive assistant and support for the blind and visually impaired persons. The system will be efficient and unique in its capability in specifying the source and distance of the objects that may encounter the blind. It is able to scan and detect the obstacles in the areas like left, right, and in front of the blind person regardless of its height or depth.

With the proposed architecture, if constructed with at most accuracy, the blind will be able to move from one place to another without others help.

The project as a whole was successful in developing a more durable navigation technique apart from the existing ones. This was just a prototype of the original idea that had to be presented here. The project, if used on a wider scale and distributed to blind people, really has the ability to make an impact to the community.

Future Scope

This is first technology for blind to resolve all the problems of exiting system. This system works like radar, this system use ultrasonic waves to find distance between person and object.

The entire project can be made in the form of jacket, so that the device doesn't need to be wear one by one. By specifically suing the specialized boards that are designed, using them instead of Arduino and also by using high quality ultrasonic sensors makes and gives faster response which make the device capable of working in crowded places and thus this will be implemented in the future enhancement of this device.

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