

# SIMPLE SMART BLIND STICK USING ARDIUNO NANO

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## ABSTRACT

The main aim of this paper is to help blind persons while not human want. Notably, the visually impaired people convey a hand that stays with them at no matter purpose they have facilitate. Once in a very whereas in any event, once they utilize this stick, there's no assurance that the visually impaired folks are protected and find in inbound at their destinations. There could be a deterrent in their approach nevertheless isn't practiced by the individual with the help of the stick. Notably, the visually impaired people convey a hand that stays with them at no matter purpose they have facilitate. Once in a very whereas in any event, once they utilize this stick, there's no assurance that the visually impaired folks ar protected. There could be associate obstruction in their approach but is not practiced by the individual with the help of the stick. Thus, the folks could also be dislocated if the obstacle is sufficiently big or dangerous. Thus, during this paper, a blind stick is intended and developed to help the blind man and supply them a transparent path. The system consists of associate inaudible sensing element fastened to the user's stick. whereas the user moves the stick within the forward direction, the inaudible sensing element with Arduino nano fixed to the stick tries to discover the obstacle if any gift within the path. If the sensing element acknowledges the obstacle, the output of the recipient are going to be given through the buzzer and also the person are going to be alert.

**Key words:** *obstical, arduino nano, buzzer, sensing*

## 1. Introduction

visually impaired persons have problem to move and feel their surroundings. they need very little contact with surroundings. physical movement could be a challenge for visually impaired persons, as a result of it will become difficult to differentiate obstacles showing before of them, and that they aren't ready to move from one place to a different. they depend upon their families for quality and funding. their quality opposes them from interacting with individuals and social activities. within the past, totally different systems square measure designed with limitations while not a solid understanding of the useable perception. researchers have spent the decades to develop associate intelligent and good stick with assist and alert visually impaired persons from obstacles and provides info concerning their location. over the last decades, analysis has been conducted for brand new devices to style a decent and reliable system for visually impaired persons to observe obstacles and warn them at danger places. good walking stick is specially designed to observe obstacles which can facilitate the blind to navigate care-free. the audio messages can keep the user alert and significantly cut back accidents. a voice enabled automatic switch is additionally incorporated to assist them privately area additionally. this method presents a plan to produce a wise electronic aid for blind individuals, each publically and personal area the projected system detects the obstacle pictures that square measure gift in outside and indoor with the assistance of a camera. the stick measures the space between the objects associated good walking stick exploitation an unhearable sensing element. once associateeey objects or obstacles are available vary of an unhearable sensing element and it build buzzer sound.

### 1.1 Short working

This Smart stick will have an Ultrasonic sensor to sense distance from any obstacle, LDR to sense lighting conditions All the feedbacks will be given to the blind man through a Buzzer. Also we attached it a rechargeable battery of 4.1V. we is charged using our USB port charger.

### 1.2 Required components

1. Arduno nano



The Arduino Nano is a small Arduino board based on ATmega328P or ATmega628 Microcontroller.

2. Ultrasonic sensor



and ultrasonic sensor is used to sense the object at the distance

3. Buzzer



a buzzer is used to send a sound signal to alert a person from a threat.

4. Male to male and female to male jumper wire.



male to male wire are used to connect the connection in breadboard to arduino and buzzer.and male to female wire is used to connect the ultrasonic sensor.arduino,breadboard etc.

### 5. rechargeable battery



Our product range includes a wide range of 4v 2.0ah sealed lead acid rechargeable battery, 4v 1.0ah lead acid rechargeable battery, 4v 2.5ah sealed lead acid rechargeable battery, 4v 0.4ah sealed lead acid rechargeable battery, 4v 4.5ah amptek sealed rechargeable battery and 4 volt 4.5 ah smf vrla rechargeble batteries.

### 6.Push button



The power button could be a spherical or sq. button that powers associate device on and off. Nearly all electronic devices have power buttons or power switches.

### 7.LED bulb



An diode circuit or diode driver is AN electrical device accustomed power a semiconductor diode (LED). The circuit should offer adequate current to lightweight the diode at the desired brightness, however should limit this to forestall damaging the diode

#### 8. bread board



The board is that the bread-and-butter of DIY physics. Breadboards enable beginners to urge aware of circuits while not the requirement for attachment, and even seasoned tinkerers use breadboards as beginning points for large-scale comes.

#### 9. pipe polycab



Used to attach all the componets to it.

### 1.3 Conclusion

1. The process of detecting objects using ultrasonic sensors works well and stable by having twodistance conditions, 0 to 60cm.
2. The maximum distance of object detection on a smart stick reaches 60cm
- 3.The buzzer send an accurate sound alert when it receive the signal.
- 4.The battery works very well and long lasting as it is rechargeable.
- 5.All the components are in good condition and are giving proper signals while using stick.

### 1.4 Future scope

In future, we'll be modifying the projected model in higher means . Initiating with the addition of Bluetooth module for correct on and off functioning. Integration of GPS module for police investigation location of user , just in case of Associate in Nursing emergency. GPS module are integrated together of Bluetooth Module of Arduino Nano connecting it to the itinerant for higher and sleek location detection. And additionally will we will we are able to can use transmitter and receiver to find the stick if not close finally , so as to enhance the sound notification we tend to area unit reaching to implement sound module which can offer instruction in voice kind. The stick system conferred within the paper uses computing along side numerous sensors in real time to assist the visually disabled folks to navigate their surroundings severally. Image recognition, collision detection and obstacle detection area unit the 3 tasks performed by the system.

### 1.5 Reference

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