

# SMART STICK WITH MONITORING IOT FOR VISUALLY CHALLENGED PEOPLE

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**Abstract:** Aim of this research paper is to develop a smart stick for visually impaired people by using IOT. In this process we are going to use three different ultrasonic sensors is to detect any other obstacle in front of user within range of 300 cm. Moreover other sensor is also placed stick. We use here GPS for tracking the location of that blind person thus it is IOT based project. This can detect the location of blind person and send messages to relatives of user. This smart stick is detecting the obstacles at front, right side and left side of blind person. If the user was deaf then vibration motor is attached to that person so if obstacle is on the way of user then motor start vibrating. For programming of raspberry pi Python language is used.

**Keywords:** IOT, Raspberry pi, GPS, ultrasonic sensor, monitoring, python, control

## 1. INTRODUCTION:

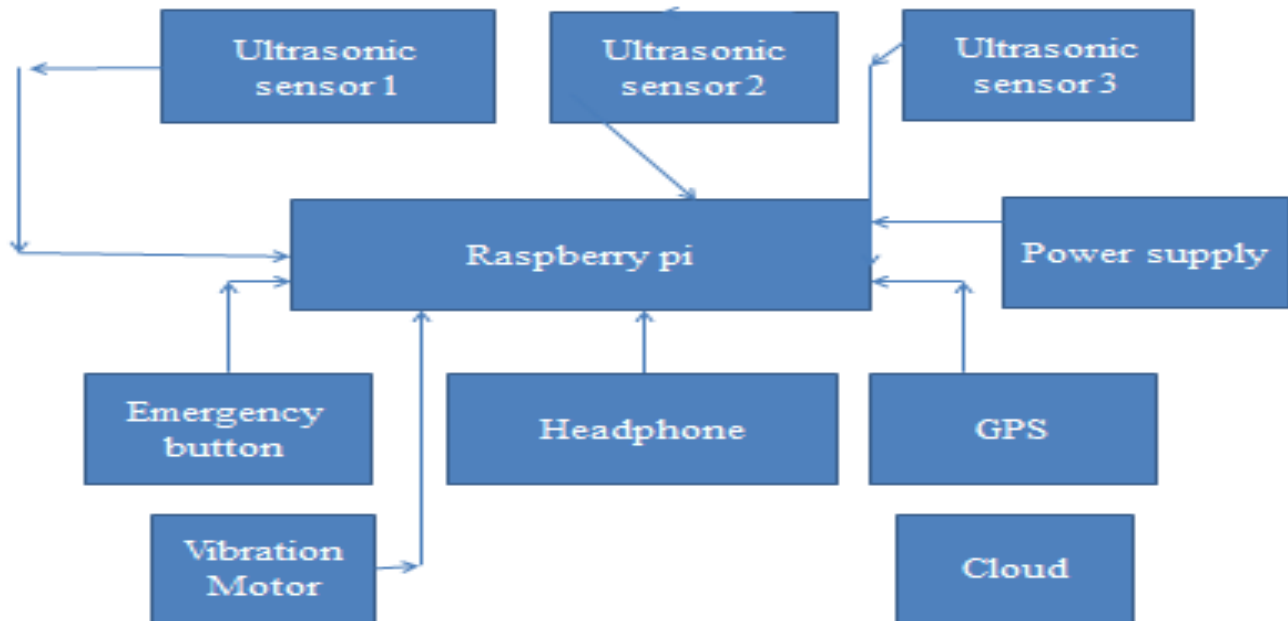
According to research 263million of peoples are visually challenged. For those people who can't go anywhere without others help. Most of we see in news about visually challenged peoples that more accident happened while daily activity. This paper is on solution of this problem. We make such type of model where ultrasonic sensor can detect obstacle an distance of that obstacle heard on headphone using Raspberry pi. GPS sensor is used for send location of that person to their relatives. The purpose of this paper is to resolve problems of blind person. In case of deaf person vibrating motor is attached to it.

Whole system control and monitoring is done with the help of Raspberry pi.

## 2. METHODOLOGY:

Basically our project is divided into 4 steps. Each and every step is connected to next step. This project uses three ultrasonic sensors for detection of obstacle in front of blind person. We can detect in right left and forward side. The distance of obstacles is listened through headphone. Next step GPS is used to send a location to the relative or neighbors of that person. Third step is emergency button is provided for blind person in case of emergency occur. Last step is if the person is deaf the vibrating motor is help to that person by vibrating.

### 3. BLOCK DIAGRAM:



### 4. HARDWARE DESCRIPTION:

#### A. RASPBERRY PI:

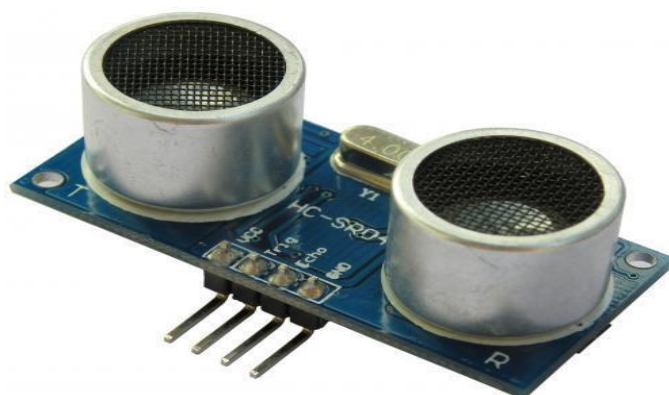
It is the heart of the system, which reads the data from ultrasonic sensor and sends data on cloud. We use Raspberry pi 3b+. It has 40 pin GPIO. We can store data using memory card. Headphone jack of 3.5 mm is provided. Whole control and monitoring can be done with the help of this device.



**B. ULTRASONIC SENSOR:**

There are three ultrasonic sensors are used here.

The first sensor detects the obstacle in forward side of person and when distance between person and obstacle is less than 100cm. Second sensor used to detect obstacle in left side direction. And third sensor detect obstacle at right side.

**C. GPS:**

GPS stands for Global Positioning System. It is used to track the location of person. It's purpose for providing safety.



**D. HEADPHONE:**

It is used for listening distance of obstacle. It has 3.5mm jack.

**5. SOFTWARE DESIGN:**

Python language is used to programming the Raspberry pi. It is high level programming language. Rasp bean OS is used.

1. Rasp bean OS
2. Python 2.7

**6. RESULT:**

1. User can detect any obstacle
2. .user can listen distance of obstacle through headphone.
3. Location can be tracked using GPS.
4. Vibrating using vibration motor give signal to deaf person.

**7. CONCLUSION:**

It is difficult for blind people to move without help in that case this system will helps. Also useful to detect obstacles in front of blind person and also track the location. In case of emergency this system inform person by using IOT. Vibration can give using vibration motor.

## 8. REFERENCES:

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