

## SMART GLASSES FOR BLIND PEOPLE

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**ABSTRACT :-** smart glass is a wearable device , this device is used for blind people and also for the night blindness , Their life and activities are greatly restricted by loss of blindness.they normally travel by using their memory power from one place to other place. The main objective of the present work is to develop a low cost, reliable, portable, user friendly, low power and robust solution for smooth navigation. . It has an in-built sensor in which it spreads ultrasonic waves in the direction the person is going by scanning at most 5-6 meters of 30° range. As soon as the obstacle is detected by the sensor ,detects it and sends the message to the device which generates an automated voice in the earphone and vibrates with the help of vibrators connected to the person's ear.due to this they can over come from the problems and they can build the confidence.

**KEY WORDS :-** Ultra sonic sensors , raspberry pi , blind people buzzers .

**INTRODUCTION :-** according to the world health organization the count of visually impaired people around the world is 285 million . the past In few decades the number of visual impaired people is growing very high. these device is used for the blind people to detect the objects or pots while walking on the road , the main goal of these device to make the life of blind people easy . it is used to detect the objects distance less than 300 cm the it will detect the objects and gives the sound by the using of vibration motor, the main aim is to protect the blind people from the problems in india we are having 15 million of blind people, The most worst thing is 75% cases of avoidable blindness.in india we are having shortage of eye donation for the blind people. we need 40.000 optometrists but we are having only 8,000 for the treatment of blind people, The glass is built using an Arduino microcontroller with sensors and buzzers. The glass warns the user by making noise with the buzzer when he/she walks in front of an obstacles.

### Literature Review:

In a speedily flourishing country like our unnumberable range of tries has been created for the welfare of particularly ready folks of our society. one in every of such tries is that the project "Project Prakash", associate degree empathic try towards the blind youngsters to assist them gain information of a set of obstacles around them by mistreatment their brains. Sheth et al , worked on however a blind folks can be able to discover any sort of pits, potholes and a number of other ups and downs by employing a good white cane wherever they need used unhearable sensors. during this device a bilingual system for audio feedback can not be used as a result of it will record just for 680 seconds. the concept which will be seen in has associate degree unhearable device, a water device and a pit device. It additionally consists of a GPS system however here the user has to offer this location because the input itself. the tactic of doing thus has not been mentioned herein. In it will be discovered that it consists of a video camera on the frame itself also as a pc process unit precise enough to urge slot in

the pocket and also the software that gives pictures of objects within reach to clear displays on the eyepieces. The major limitation of this device is that it's not in the slightest degree appropriate for fully blind folks. It is recommended just for folks with low vision or visual disorder. there's another new try of assisting the blind folks that is known as as H.A.L.O or exteroception assisted Location of Obstacles . It consists of rangefinders that will take input from the unhearable sensors and output feedback to pulse vibration motors that square measure placed on the blind man's head. once the person gets nearer to the article, the intensity and frequency of the vibration square measure raised. The main limitation is that the use of vibration motor. The vibrations as associate degree output feedback square measure so much means irritating for any visually handicapped person.

#### Implementation:

Smart eyewear style depends principally on the process unit, that is that the raspberry pi2, during this case. the most hardware could be a UNIX system primarily based ARM processor that accepts amicro South Dakota card and so permits U.S.A. to extend the quantity of task functions as we tend to want. A raspberry pi camera was used for image acquisition. it absolutely was connected to the rasp-berry pi employing a employing a, and was fixed on the highest middle of the glasses for optimal image capturing. The raspberry pi has Associate in Nursing audio port that connects to electro-acoustic transducer. The raspberry pi GPIO port was configured to receive input from switch switches. to spot the text easier, the reading is placed at intervals a customly-designed framewith red borders. The general principle of operation for such glasses is by giving directions via switches Associate in Nursing paying attention to the output through an electro-acoustic transducer. equally during this case, the user starts the task mode by a push of the button. For text recognition mode, the glasses will first confirm if the text space is properly positioned and decipherable. Otherwise,

it'll ask the user to alter the orientation of the fabric. once once, the read is processed in real time to urge the image sent to Associate in Nursing optical character recognition(OCR) software package for text extraction and later on forwarded to a text-to-speech synthesizer. The text is then browse through the audio output port. The image process adopted during this work were enforced by mistreatment Simulink(Mathworks, Natick, MA). within the reading mode, the most challenge is that the image quality, text position and orientation within the image. Therefore, the first step is to detect the red borders and therefore the frame orientation. To modify ulterior image process, we propose Associate in Nursing indicator to tell user if the image is inclined or a part of the frame is cropped. Once the text space is localized and cropped, image is increased by noise filtering, distinction improvement (histogram matching technique) and morpho-logical operations. Tesseract OCR engine [9] is employed within the last step to extract the text before changing into audio output.

#### PROPOSED system :-

In the proposed system we are having sensors which detects the object where there are .we are having detect sensors which is used to calculate the height and depth . The proposed system deals with the cheaper and effective obstacle detection with a wide range of coverage. Blind people is consider as the special group in the society . the society must give more importance and attention for these people , so they can leave their life independently can confidently in the society the main problem come when they were walking on the roads to aware of these problem these device is built these device is used while walking and detect the things around them the structure is simple and less in weight easy to carry and easy to use it will encounter many problems using the blind such as poor road conditions , uneven things hanging the objects in-front of them such as serious impact on the safety of blind travelers, The main object in this

device is ultrasonic sensor , which detects the object bellow 300cm and give the instruction to the buzzers these helps to the blind people to recognize something placed in-front of them it also contains Arduino board which place major role and it gives the instructions to the whole device.

### System specifications:

### Hardware Requirements:

⇒ Ultrasonic Sensor.

⇒ Vibration Motor.

⇒ Switch.

⇒ Gsm.

⇒ Power Supply.

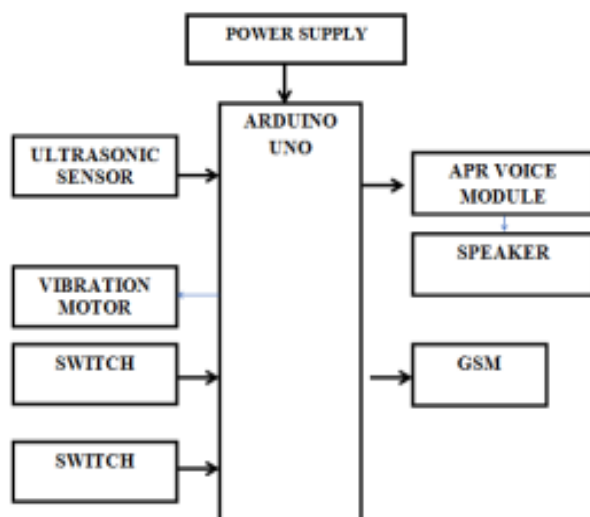
⇒ Apr 9600 Voice Ic

### SOFTWARE REQUIREMENTS

⇒ Arduino Ide.

⇒ Embedded

### Block Diagram:



### RESULT:

The performance of the proposed system has found to be effective. With the press of a button, the user can perform various functionalities. The user can perceive any written information with the press of a button. The proposed model is easy to wear and use and can be used as a portable model for visually impaired people.

**CONCLUSION :-** our team coming with the main concept of this project is to help the blind people , night blindness , for low sight , in the society the main problem come when they were walking on the roads to aware of these problem these device is built these device is used while walking and detect the things around them , these device reduces the treat with road accidents.

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