ABSRACT

Driving while drunk is hazardous and drivers with high Blood Alcohol Content (BAC) are at expanded danger of auto crashes, roadway wounds and vehicular passing. Anticipation measures assessed incorporate permit suspension or disavowal, appropriating or seizing vehicle plates, implementing open holder bans, expanding fine punishments, imprison, ordering instruction for youth and bringing down legitimate BAC's. In that capacity there is no viable instrument to reduce this. Here, is the basic model of an alcohol detector that is the stepping stone of further improvements in the detection of alcohol.

INTRODUCTION

Drinking and driving is the most common threat to everyone's life. We cannot stop people from drinking but can avoid accidents by verifying whether the person is drunk. We can install small devices in vehicles to assure that no drink and drive can further take place.

The detector built is made from basic components like Arduino Uno, LED, buzzer, MQ3 sensor.
This simple project helps to understand the working of alcohol detection circuits and build the foundation of many more detection devices.

The objective of this project is to give an idea on the principle of an alcohol detector for preventing drunken driving accidents and to broaden this thought with more innovative headways, making it accessible in a financially effective way. Planning a framework which can recognize the alcohol content in cars to prevent the conduct of alcohol driving.

DESCRIPTION OF PROJECT/METHODOLOGY FOLLOWED

Here we propose a framework where the individual is identified for liquor level in his body to prevent accidents. Drivers will be detected by his/her breath before they begin their vehicle by a sensor, once the individual is seated on the driver seat. The sensor is put in the steering wheel to screen the breath level.
Arduino Uno is arranged and associated with the sensor. Additionally, an LED and a buzzer which upon sensing threshold specifications alert the passengers.
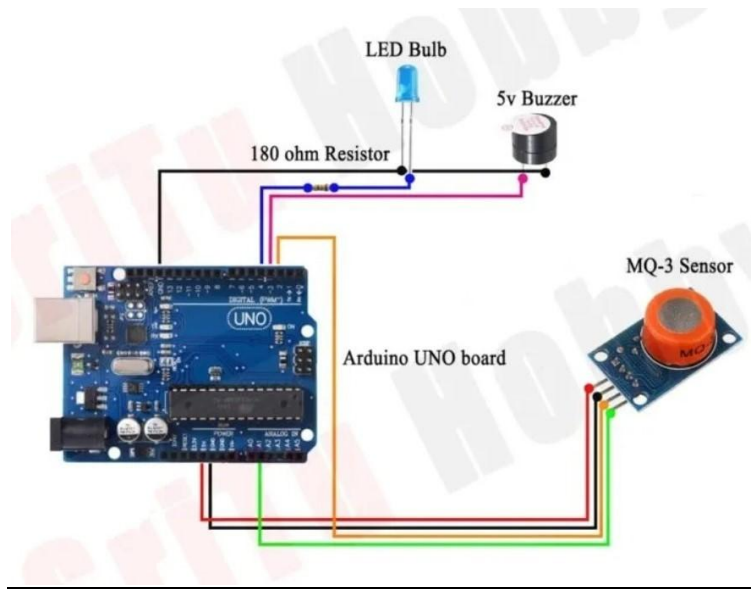
ARDUINO MQ3 CIRCUIT DIAGRAM

Fig.1 Working of Project

Fig.1 shows the circuit connections for the alcohol detector using arduino uno board and MQ3 sensor.
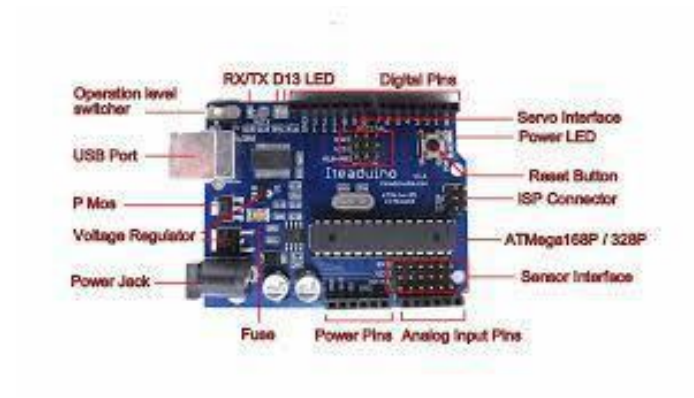
ARDUINO UNO BOARD

Fig.2 Arduino Uno

Fig.2 shows the main part of the system is Arduino board which is microcontroller section based on ATmega328. Because the use of ATmega328 this board has different features. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller. This is a very cheap device and available source and it is very much comfortable to use hardware and software. This can powered by USB connection and DC batteries.

MQ3 SENSOR

Fig.3MQ# Sensor

This sensor is based on MOS and used for alcohol sensing. It has high sensitivity for alcohol sensing and has low sensitivity for the gases like CO and Benzene. The sensitivity can be varied with the use of SnO2 which is good to sense the alcohol. When the concentration of the alcohol is high the resistivity of the sensor will changed and hence the output voltage will change. This can be used to detect the presence of alcohol within 2 meter range. Fig.3. shows the diagram of this type of sensor mentioned above. There are different characteristics of this sensor which is mentioned below. Thus the sensor is very useful component in such type of system which is used in sensing air from breathe.

BUZZER

Fig.4 Buzzer

To alarm the status of the presence of alcohol is done through buzzer. As shown in Fig.4 the buzzer uses piezoelectric crystal type buzzers with small diaphragm attached to it. Piezoelectric crystal will start vibrating when voltage is applied and hence the sound will generate. This type of buzzer consumes low power and can be easily integrated into other circuits. As this is placed externally hence it can be used as musical tone oscillator also.

RESULTS AND DISCUSSION

The MQ3 alcohol sensor first senses the presence of alcohol content present closely in the atmosphere and then it will go to Arduino board where the code runs that connects an LED and a buzzer.

Government must authorize laws to introduce such circuits in each car and manage all car organizations to preinstall such systems. In this system, securely landing of car aside without disturbing other vehicles can also be added as a future extension. This is a simple, and yet cost effective, accurate circuit with low power utilization and low maintenance cost.

CONCLUSION

The project gives a solution to cultivate a smart system for alcohol detection which is mainly based on Arduino. In this project, we have built a real time model that detects alcohol and raises an alarm. This is a developed system to check people intoxicated with alcohol while driving. By executing this outline a safe car travel is possible, decreasing the mishap rate caused due to drinking. The system can be further improved by using more accurate type of sensors, stability systems, temperature sensors, LEDs with better glow and better sound systems. This system has various advantages like small volume, small size, or compact in nature. This advances the care of human being and thereby provides an actual growth in the industry concerning to reduce accidents due to consumption of alcohol.

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