VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Santhibastawad Road, Machhe

Belagavi - 590018, Karnataka, India

MINI PROJECT (18CS33) REPORT

ON

"Alcohol Detection System in Vehicle"

For the Academic Year 2021-2022

Submitted by

Student Name	USN
Nikhil S	1JS20IS059
D Vignesh	1JS20IS031
Ghanashyam Umesh	1JS20IS038

Under the Guidance of

Guide Name
Dr. Rekha P M
HOD
Dept. of ISE, JSSATE

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

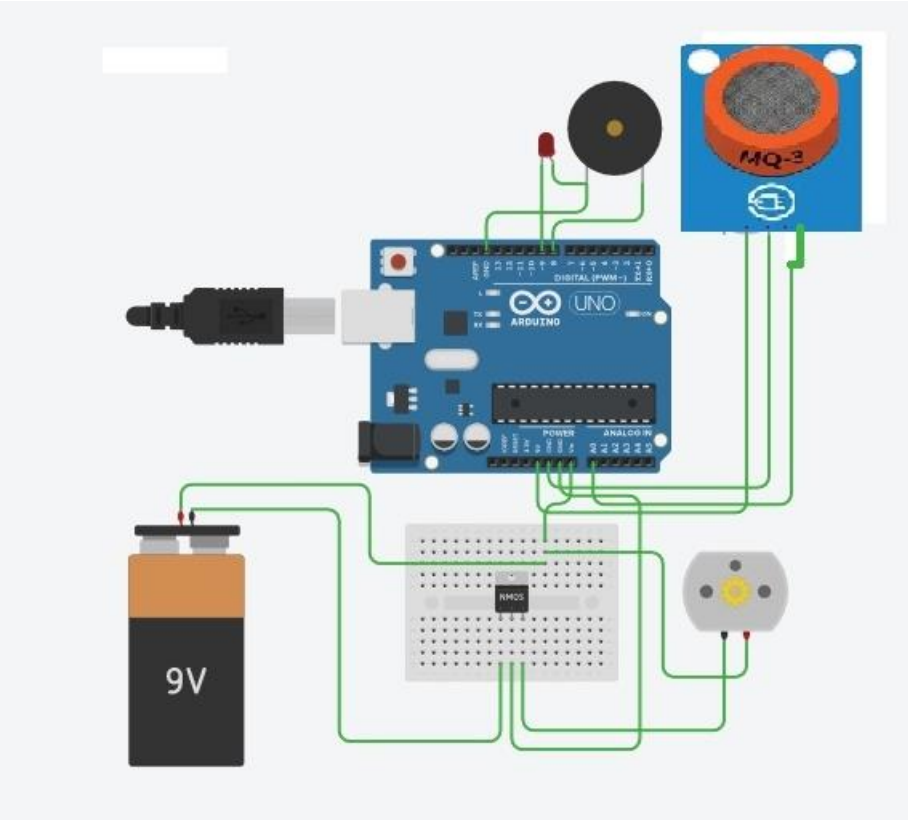
JSS ACADEMY OF TECHNICAL EDUCATION

JSS Campus, Dr.Vishnuvardhan Road, Bengaluru-560060

INTRODUCTION

The project comes into existence due to the inseparable habit of drinking alcohol and then driving the vehicle which is a serious offence in the eyes of law. The issue is also a serious public health problem and can arise as a important hitches in near coming days. The arrangement developed targets to lower down the risk of driving and also reduce the misfortune on road in the coming days due to drunken driver. The work done in this area uses different application of electronic sensors and microcontroller. The investigation discusses the development in alcohol sensor that read a change in the alcohol particle present in the air. Such kind of detector is known as a breath analyzer, as it used to finding the analysis of the alcohol content present in human breathe. The product incorporates detector, microcontroller and other electronic components find the existence of alcohol nearby instantly block the fuel and hence the engine stop working. This activity will not permit drunken driver to run the engine and thus the arrangement enables passengers to be safe

Circuit Diagram



HARDWARE/SOFTWARE REQUIREMENTS

HARDWARE REQUIREMENTS:

- Arduino UNO
- Alcohol Sensor (MQ3)
- Buzzer
- 5V Motor
- Connecting Wires
- Power Supply
- UBS to ARDUINO Cable

SOFTWARE REQUIREMENTS

- Arduino IDE Software

LIST THE TASKS INVOLVED

The alcohol sensor first senses the presence of alcohol content present closely in the atmosphere and then it will go to Arduino board where it is compared with preset voltage.

To display the the presence of alcohol, time buzzer will sound and the ignition will be turned off by operating relay.

CODING

```
#define MQ3 A0
 #define Buzzer 8
 #define LED 9
 #define Thres_Val 480
 int value;
 int motorPin=7;
 void setup()
 {
   pinMode(MQ3, INPUT);
   pinMode(Buzzer, OUTPUT);
   pinMode(LED, OUTPUT);
   pinMode(7,OUTPUT);
   Serial.begin(9600);
 }
 void loop()
 {
   value = analogRead(MQ3);
   Serial.println(value);
 if ( value > Thres_Val )
 {
     digitalWrite ( LED , HIGH );
     digitalWrite ( 7 , LOW);
     digitalWrite(Buzzer,HIGH);
 }
 else
 {
     digitalWrite(LED, LOW);
     digitalWrite(7, HIGH);
     digitalWrite(Buzzer,LOW);
 }
 delay (200);
 }
```

Arduino Uno Circuit

MQ-3 Sensor

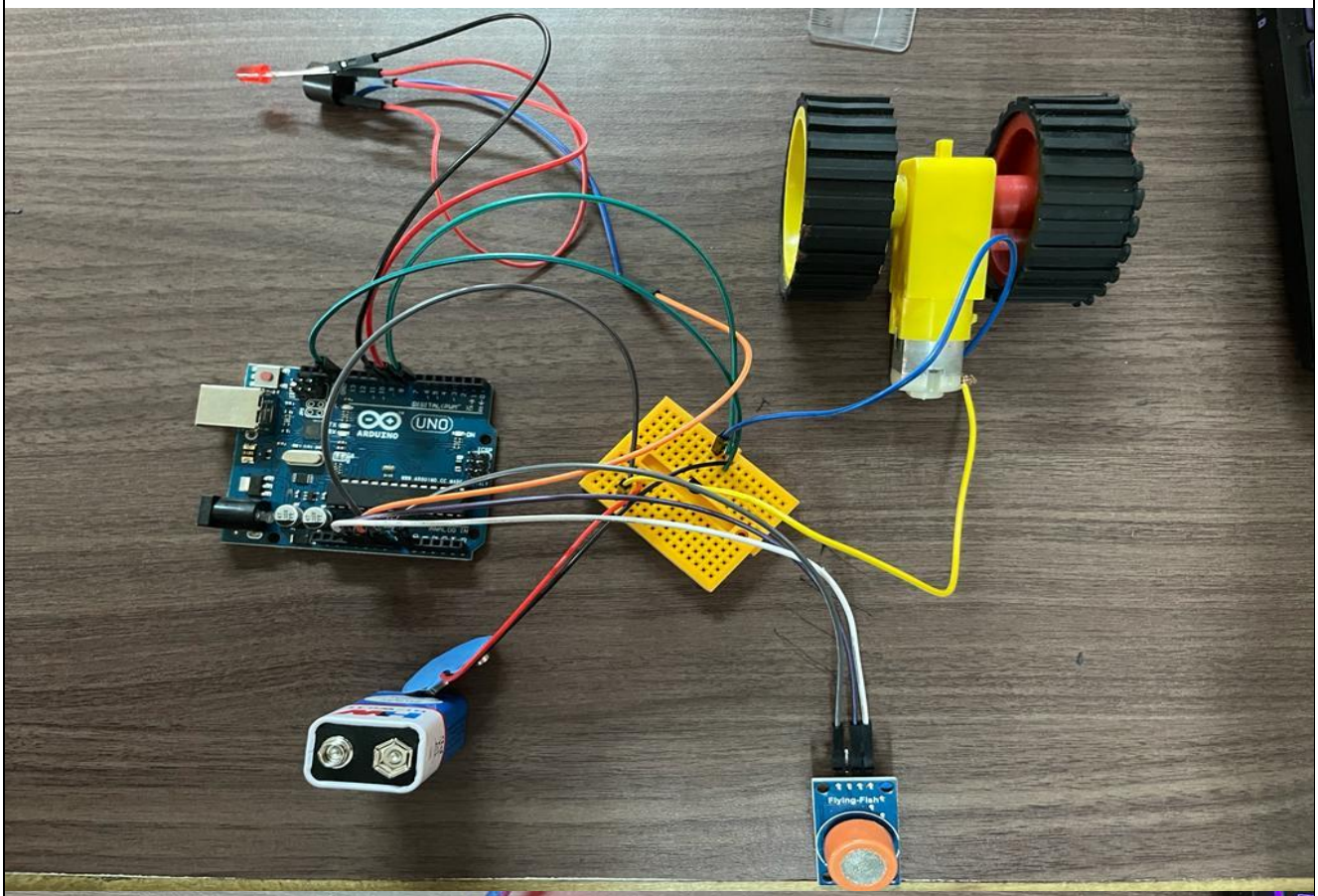
LED

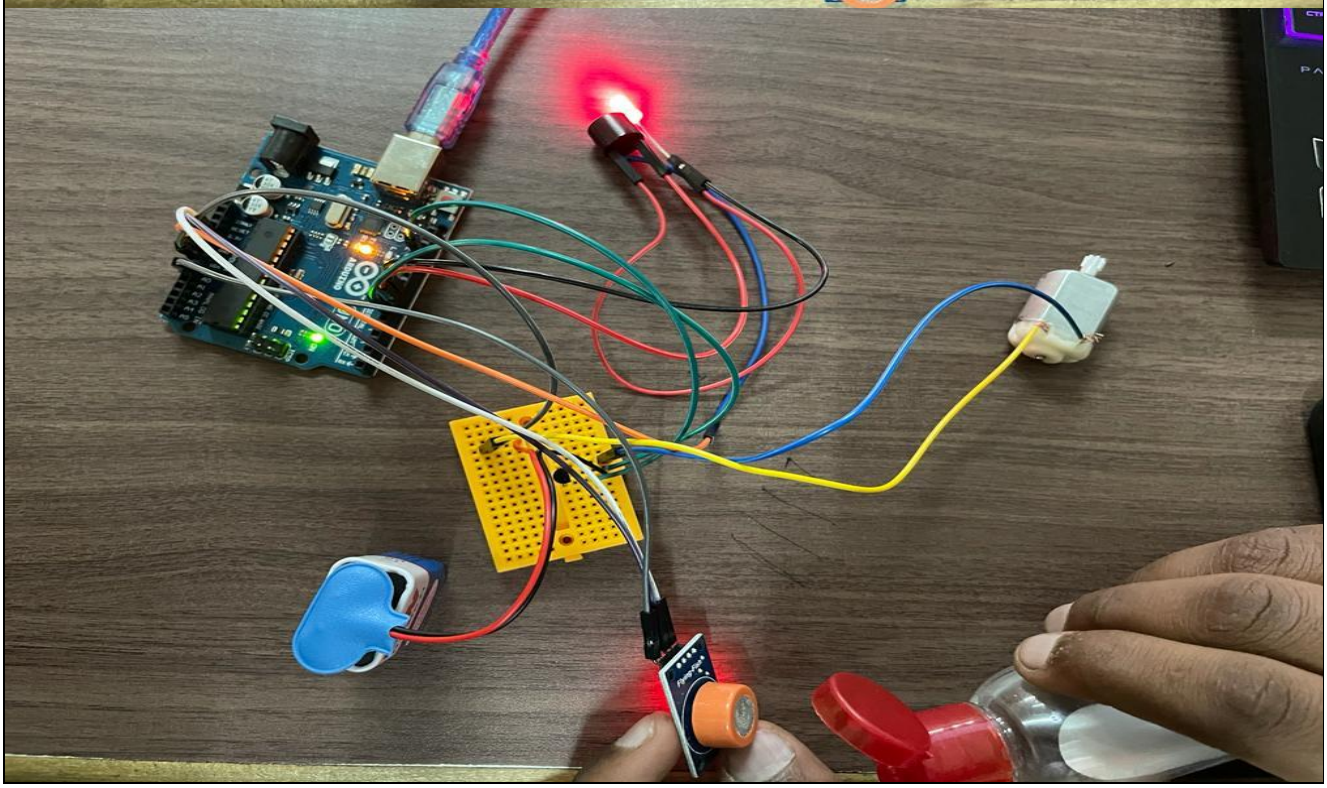
Buzzer

MOSFET

DC Motor

RESULTS:





END USER APPLICATIONS

The designed system has several advantages in terms of easiness, efficiency, safety of the passenger from accidents. It is very much accurate to detect the presence of alcohol inside the vehicle
This device can be used widely like automobile industry,
industries, complex, mall etc.

CONCLUSION

This paper defines a very real solution to cultivate an smart system for alcohol detection which mainly based on Arduino. The advantage of this system is its range of detection which can be customized as per the requirement of the vehicle and can be placed without getting noticed from accused. The whole embedded system is connected to the vehicle electronic system which will disable the car ignition system when it is detected that driver is drunk. This is one of the best solutions to reduce number of accidents.

We would like to thank Dr. Rekha P M for giving us this opportunity and for guiding and assisting us for making this project a successful one.

REFERENCES

1. **electronicshub.org**
2. **circuitdigest.com**
3. **en.wikipedia.org**

QUESTIONARE

1. Why do we need IoT (Internet of things)? Is it necessary when our life is fine without it? Why?
Ans: IoT will expand and improve that data by connecting billions of devices capable of

immediately sharing, receiving, and analysing massive amounts of it to better meet business needs and improve decision-making.

2. How many IoT devices will there be in 2020?
Ans: There Will be **20.4 Billion** IoT Devices by 2020.

3. Which Microcontroller has been used in project?
Ans: **Arduino Uno** an open-source microcontroller board based on the **Microchip ATmega328P** has been used in this project.

4. List the Types of Microcontroller.
Ans: ARM , ARM Cortex-M , Microchip Technology Atmel AVR (8-bit), AVR32 (32-bit), and AT91SAM ,Cypress Semiconductor's, PSoC (Programmable System-on-Chip)Freescale ColdFire ,S08 ,Freescale 68HC11 (8-bit), and others based on the Motorola 6800 family Intel 8051, NXP Semiconductors, Infineon: 8-bit XC800, 16-bit XE166, 32-bit XMC4000 , 32-bit TriCore , 32-bit Aurix ,Maxim Integrated ,MIPSMicrochip Technology PIC,NXP Semiconductors ,Parallax Propeller,PowerPC,Rabbit 2000 ,Silicon Laboratories, STMicroelectronics STM8 (8-bit), ST10 (16-bit), STM32 (32-bit), SPC5 (automotive 32-bit),Texas Instruments TI MSP430 (16-bit), MSP432 (32-bit), C2000 (32-bit),Toshiba TLCS-870 (8-bit/16-bit)

5. List Types of Sensors
Ans: Temperature Sensor, Proximity Sensor, Accelerometer, IR Sensor (Infrared Sensor), Pressure Sensor, Light Sensor, Ultrasonic Sensor, Smoke Sensor, Gas and Alcohol Sensor.