

# Arduino Based Automatic Engine Locking System for Drunken Drivers

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**Abstract** -The main purpose behind this project is “DRUNK DRIVING DETECTION”. Now a day’s many accidents happening thanks to the alcohol consumption of the motive force or the one that is driving the car. The drunk driving could be a major reason of accident in most countries everywhere the planet. Alcohol detection in car project is intended for the protection of the people seating inside the car. drunk driving could be a major reason of accidents in most countries everywhere the planet. Alcohol detector in car project is intended for the security of the people seating inside the car.

**Key Words:** Arduino UNO Board, 800C GSM module, NEO6M GPS module, LCD 16x2 Display, Buzzer

## 1. INTRODUCTION

We hear lot of accidents because of drunk driving and it'll not be in stable condition. So it rash driving is that the in convenience for other road death for the drunk driver and not for others. during this system uses a compact Arduino Uno board. Programs are developed in embedded C. the most purpose for this project is “Automatic Engine Locking System Through Alcohol Detection using Arduino”. Most of those days many accidents are happening became of the alcohol detection of the driving force or the one that is within the vehicle.

## 2. METHODOLOGY

### BLOCK DIAGRAM

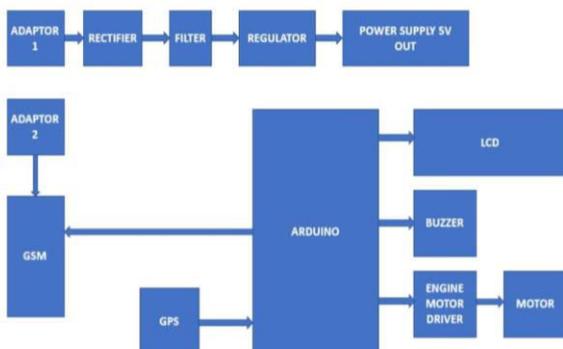


Fig- 1 : Block Diagram

The block diagram shows all outputs data coming from Arduino is given to LCD, Buzzer Engine Driving Motor, GPS and GSM Module. That means the data which fed from sensor is read by Arduino and then passes to respective output ports. For continuous 5V DC supply the bridge rectifier circuit is provided. Refer fig.1

The Adaptor 1 consist of Rectifier filter and a Voltage Regulator LM358 whose output will be stable as our requirement for supply the Arduino board. 16x2 LCD display type is used here to display all command and actions to be done. we have used a MQ3 sensor to detect present alcohol level within the breath. A 16x2 LCD is employed for displaying the PPM Value of alcohol. A buzzer is additionally place for indicating high alcohol level.

## 3. CIRCUIT DIAGRAM

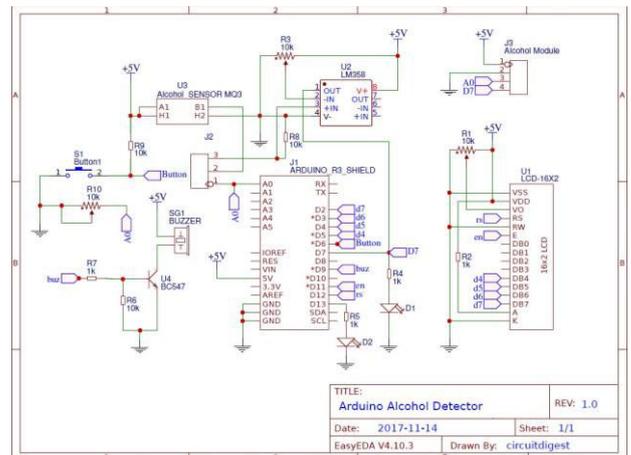


Fig- 2 : Circuit Diagram

The Above Circuit Diagram (fig.2) Shows Working of Alcohol Detector by Arduino. The connection for LCD and GPS, GSM Module with UNO board is also shown in diagram. The DC supply is provided with the help of bridge Rectifier Circuit. The LM 358 is voltage regulator which will help for supply of voltage without any interruption. we've got a comparator circuit for comparing output voltage of Alcohol Sensor with preset voltage (output connected at pin D7). Alcohol sensor output is additionally connected at an analog pin of Arduino (A0). Buzzer is connected at Pin D9. And LCD connections are same as Arduino LCD examples that are available in Arduino IDE (12, 11, 5, 4, 3, 2). A electric switch also used here for start taking reading from Alcohol Sensor connected at digital pin D6 of Arduino. Remaining connections are shown within the circuit diagram.

#### 4. WORKING PRINCIPLE

When we give supply of 9V to the circuit then we get output of 5V and 1amp, This output voltage is used to run the Arduino which is the main component used. In the power supply the bridge rectifier is used to convert AC Voltage to DC Voltage And Input capacitor is used to filter the output of bridge rectifier and provides Voltage Regulator 7805 and this voltage regulator converts 12v DC Voltage to 5v and 1AMP output to run the circuit. The output Filter capacitor is used to filter the output given by the voltage regulator and LED is used to show that the power supply is ON. The 5v and Ground is apply to the controller called Arduino .The IC of the Arduino is ATMEGA328p.MQ3 alcohol sensor is connected to the Arduino. This MQ3 sensor has Three terminals Connected to Vcc and Ground and the Analog pin is connected to the A0 of the controller. The LCD Display is used to show the output of MQ3 Alcohol level. If the Alcohol level is below 30% The motor will be running if the limit exceeds above 30% the motor will hstop. To run the motor L293D Module is used. Once the motor is stopped the GPS sends the locations of the Driver and the GSM will send the Alert message to the drivers family.

#### 5. WORKING MODEL

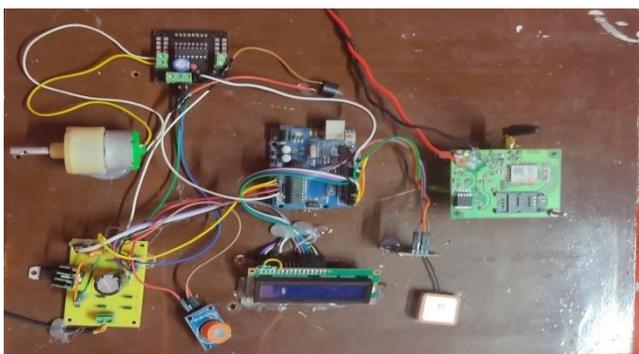


Fig-3

Here is our complete interfacing of Alcohol detector with of all respective components and sensors And a small DC motor is used for testing ,i.e. starting and stopping will be exactly same as with respect to actual driving motor.

#### 6. RESULT

Case 1 :when at initial stage no alcohol detected i.e. the level is not exceed which is 30 percent as per programmed data Refer Fig. 4



Fig-4

Case 2 : when a alcohol consumed person enter in and the level is detected by sensor and level is goes beyond 30 percentage cars Engine will be automatically OFF. Refer fig.5



Fig-5

Output :Then finally a emergency text message with an live location will be send to the respective Family members for information purpose.Refer fig.6 and fig.7



Fig-6

the fig 7 shows the message received in mobile

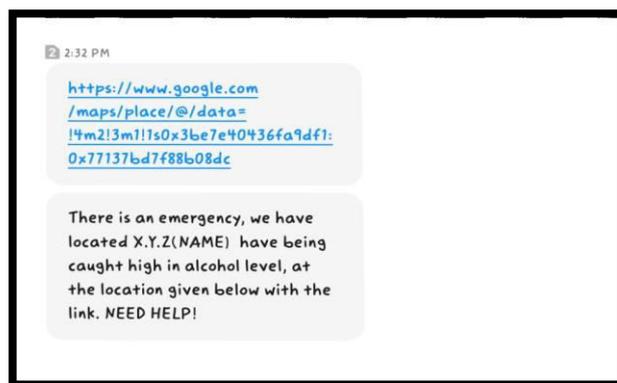


Fig-7

#### 7. CONCLUSION

In this project, we've got developed an efficient system to tackle the menace of drunken driving. Our main aim is to attenuate the loss of lives and property which happen because of drunken driving. this technique once implemented on an oversized scale will persuade be really helpful by shutting

down the vehicle's engine and alerting the nearby people before any mishap takes place.

## 8. FUTURE SCOPE

We can add drowsiness detection so alert will generate when driver feels sleepy, This process include image processing which detect face of driver and check his eyes moment for detection of sleepy posture. We can implement Heart Rate

Pulse Variability to find accurately identify the driving behavior of drivers and to assist them.

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