

## ALCOHOL DETECTION ENGINE LOCKING SYSTEM WITH DRIVER HIRING SERVICE

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### ABSTRACT

Nowadays a major reason for deaths occurring on Indian roads is because of accidents happening due to drunken driving. The total number of deaths occurring is high mainly in urban cities. According to the survey done in 2019, we came with the result that in these road accidents Tamil Nadu ranks first with 57,228 accidents then Madhya Pradesh ranks in the second position with 51,641 Accidents and Maharashtra ranks in the Sixth position with 27,286 accidents So, the advanced alcohol detection is used to analyze for use in the engine locking system Internet of Things has been composed by many industry researchers but likely had emerged in the public in this recent time. So basically IoT is the network that connects to the internet objects can be Smart devices, Home appliances or it can also be a fitness tracker. So, in this paper, we have composed an Alcohol Detection Using Engine Locking System With Driving Hiring Service, and in which we have used an Alcohol Sensor to detect alcohol consumption and a microcontroller to convert the alcohol reading into breath sample. This system is used for the overall automobile engine system so if the alcohol detection will prohibit the starting of the engine. The system which we are using for driver booking is getting tremendously well-liked and popular. today the majority of folks (public) desire effortless traveling with drivers. they want to travel with a driver rather than asking for auto-rickshaws or taxis.

### I. INTRODUCTION

One of the major reasons for car accidents is due to alcohol consumption. This is just because even after getting drunk the person takes control of driving a vehicle. So in our project, we have solved the problem by implementing a circuit that will detect alcohol from the human body

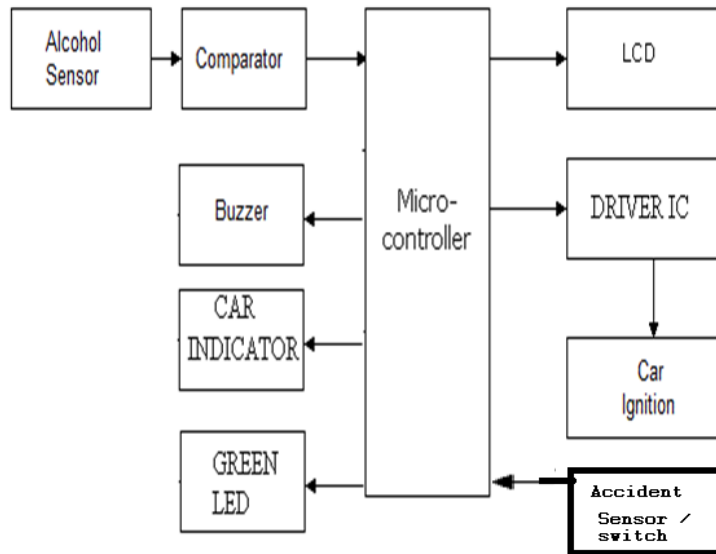
Internet of things or IoT is a system of interrelated computing devices, Mechanical, and digitals machine with unique identifiers and the ability to transfer data over a network without requiring human to humans or human to computer interactions, IoT consists of web-enabled that use embedded systems such as sensors

An alcohol sensor detects the presence and the concentration of alcohol present in the air. When the person is drunk and breathes near the alcohol sensor it will detect the ethanol in the breath of a person and provide an output based on alcohol concentration and if more alcohol is consumed the Red led would light. A microcontroller will convert the reading of alcohol which is detected by the sensor into a breath sample. This will analyze the overall part and will stop the ignition of the vehicle only when the operator is drunk

This system is implemented inside the vehicle which is directly connected to the engine to avoid the deaths so as soon as the alcohol gets detected, the microcontroller will convert the alcohol value in the human breath analyzer and then in the sensor, this will display in the LCD with "ALCOHOL DETECTED" and it will give the buzzer with red indicator and the engine will get stop after getting stop

And same as if alcohol is not consumed by the person the engine will start running. If alcohol gets detected, the user will get an SMS on his/her mobile phone. SMS includes "Alcohol is detected, please hire a driver or leave the car" with the android app link. After Clicking on the link, the System will allow you to hire a driver near him. There have been a lot of applications that supply a driver on demand to the customer wherever he requires. To give an example, car drivers and cabs, swift partners, hopp on-demand driver. These applications supply suitable and incredible service to customers. however, there have been some issues like the current system is not transparent with the customer. With the current system some difficulty occurs while searching for the location of the customer, also sometimes the customer is not able to track the location of the driver, so they have to face a lot of problems. that is why we plan to make some changes and additions to the current system which will benefit the customer. They could easily find drivers in their own neighborhood. it's going to save a lot of time for customers.

## II. METHODOLOGY



Using Arduino UNO microcontroller we have designed a system that consists of an alcohol sensor ie. Mq3 sensor will detect the alcohol by analyzing a person's breath and then stop the ignition of the vehicle to prevent any kind of accident that may happen due to a drunken driver taking control.

This system consists of an Arduino UNO microcontroller, MQ3 sensor, LM358 Operational Amplifier, 16\*2 LCD Display, DC Motor, Buzzer, and some LED

Here in this system, the Arduino microcontroller acts as a controller for every component which is used in a system. Then the microcontroller is connected to LCD Display. As the engine gets started it will Immediately display as "NO ALCOHOL DETECTED" with a green LED and as the alcohol gets detected it will give an alarm and will display as "ALCOHOL DETECTED" and then immediately the engine will get a stop

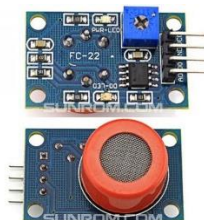
The reason behind nominating the android application is that it is widely admired among end-users. It's not that costly too. It contains two modules, that contain the owner and driver side. The owner is the one that owns a vehicle and drivers are those who drive. For doing this owner and driver both need to register and need to create an account. Since creating an account owner is obligated to provide precise information such as their name, phone number, location, and password, this owner can modify any information about him or the driver. Drivers' login information requires a mobile number and password. The driver's mobile number is used for the registration and the password can be changed or set. After login, they shift directly to the driver's page. So after that, they can pick out the course path they are going to travel and mark obstacles if they are in a problem. When they click the threat button their live location will be stored as latitude and longitude in the owner's database as drivers' data and also it will work as an alert notification to other drivers who travel on the same path, so they prevent the threat from coming towards them and get help. The approached system can be executed by using mobile data services on smartphones.

## III. MODELING AND ANALYSIS

### ARDUINO UNO

Arduino UNO is a microcontroller board on the ATmega328P. It has 14 input-output pins and 6 analog inputs It can program using a PC on the Arduino IDE. Arduino is open-sourced and can make development very conveniently and efficiently in today's community hence it is very cheap as compared to other microcontrollers

### MQ3 Sensor



MQ3 sensor is made using Alcohol gas sensor which we have connected to LM358 Operational Amplifier. It is a low-cost semiconductor sensor that will detect the presence of alcohol gases at concentrations from 0.5 mg/L to 10mg/L. This sensor will detect the alcohol up to 2 meters to make the readings accurate

**16\*2 LCD Display**



A 16\*2 LCD is used to display any kind of messages in the form of text and numbers In which port 0 is connected to the LCD, whatever process is running it will display on the LCD

**BUZZER**



A buzzer is an audio signaling device. Hence it is very cheap and easily can be used to give an alarm if something wrong is happening also it can be changed according to the requirements. It gets activated only when it gets connected to the MQ3 sensor So the buzzer is connected to Port 1.

**Application User Requirements**

**Smartphones with Android OS**

- Internet
- GPS
- Android OS version 2.2 or higher

**Table- I: Requirements of Developer**

Devices	Personal Computer		Android Virtual Device
Hardware requirements	Processor	Pentium IV or higher	Android Virtual Device is an emulator which can be configured with Android Studio. Need to have Android OS.
	RAM	128 MB or higher	
Software requirements	Operating system	Windows – X, Linux or any other OS	

#### IV. RESULTS AND DISCUSSION

When a drunk person tries to start the vehicle, an alcohol sensor will detect the alcohol presence, If alcohol gets detected vehicle won't start and the driver gets an SMS with a link to the android application. On application, drunk users can hire another driver to avoid accidents.

#### V. CONCLUSION

In this project, we created a system to avoid drunk and drive accidents. Our main aim is to decrease the loss of lives as well as properties due to drunken driving. The designed system consists of:

- Alcohol detection system
- A client mobile application for customers
- A mobile application for drivers
- A server with a database.

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