

# ARDUINO BASED AUTOMATIC ENGINE LOCKING SYSTEM FOR DRUNKEN DRIVERS

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## ABSTRACT

The danger of operating a vehicle when intoxicated by "unreasonable" amounts of alcohol is a major contributing factor in more than 60% of accidents around the world. Therefore, it requires quick action because the number of fatalities caused by drunk drivers has increased beyond what is reasonable. The goal of this essay is to investigate the viability of employing technology to stop "very-start" of a motor vehicle by detecting the blood alcohol content. The goal of the prototype device is to deter drunk driving and lower the number of accidents that result from it. A sensor that detects alcohol and an Arduino Uno were used to make the model. The alcohol detecting sensor (MQ-3) analyses the driver's breath to determine the amount of alcohol in their blood when it is connected to an Arduino UNO R3.

## INTRODUCTION

The project keeps an eye on the driver's speed and blood alcohol level. In addition to accounting for a sizeable share of all auto accidents, traffic accidents brought on by drunk drivers and reckless driving frequently result in fatalities. However, a device to stop these kinds of accidents has not yet been created. Instead of turning on the ignition, the equipment's initial goal is to check the driver's blood alcohol level. To determine whether drivers are intoxicated, sweat sensors and straw-like sensors are utilized, but they have the potential to be inaccurate due to reading errors, etc. There is a need for an alcohol detection system that can operate without the restriction of space and time as thousands of road accidents were reported in India in 2016. Scientists developed a novel carbon nanotube based (CNT)-based alcohol sensor with particular focus on the response delay problem is presented in CNT based sensors.

Although the report said that speeding was the primary cause of these collisions, it can be reasonably assumed that practically all of the incidents involved drivers whose conditions were unstable due to drinking before driving.

According to a 2008 study by the World Health Organization, drunk driving is a contributing factor in between 50% and 60% of traffic accidents. Additionally, 1.25 million traffic deaths were reported globally in 2013 according to data from the WHO, with low- and middle-income countries having higher fatality rates per 100K people (24.1% and 18.4%, respectively). Data also revealed that many economic vehicle drivers in Bharat admitted to drinking alcohol throughout their working days.

## LITERATURE SURVEY

[1] Proposed a device for both motor locking and alcohol detection. They employed the MQ-three alcohol sensor and the AT89S51 controller. The AT89S51 controller includes an internal flash memory

That enables quick development and reprogramming in a matter of seconds.

[2] Hired an infrared (IR) alcohol detection device to provide continuous monitoring of pressure BAC usage. An IR sensor (TSOP 1736) installed at the steering wheel must be directed IR power using an IR supply LED-894.

[3] To prevent mishaps, the scientists recommend wearing a smart helmet. The design has a lot of problems. The fact that it can only be applied to two-wheelers, which are impractical to use while driving, especially over short distances, is a significant drawback. Another negative aspect of the method is that it makes the helmet extremely heavy, which is bad for driving. Additionally, whilst we are employing open source Hardware, which is really affordable, they have chosen a pricey micro controller.

[4] The authors talk about sophisticated health monitoring systems and alcohol detection using infrared sensors. The potential for a false alarm with this method is a significant flaw. The system is set up in such a way that even a tiny change in a specific state can cause false alarms to sound, even when everything was in fact fine. In our project, we are simply utilizing the necessary technologies, making the system more dependable and economical when it is implemented.

[5] The authors have put out a plan to stop accidents brought on by drunk driving. This system's primary flaw is that it makes use of the same PIC16F877 A microcontroller that we use. Additionally, they made the system more expensive overall, which limits its applicability to specific groups of society and results from the adoption of an outdated design system that is not useful. As a result, our method is more affordable and cost-effective.

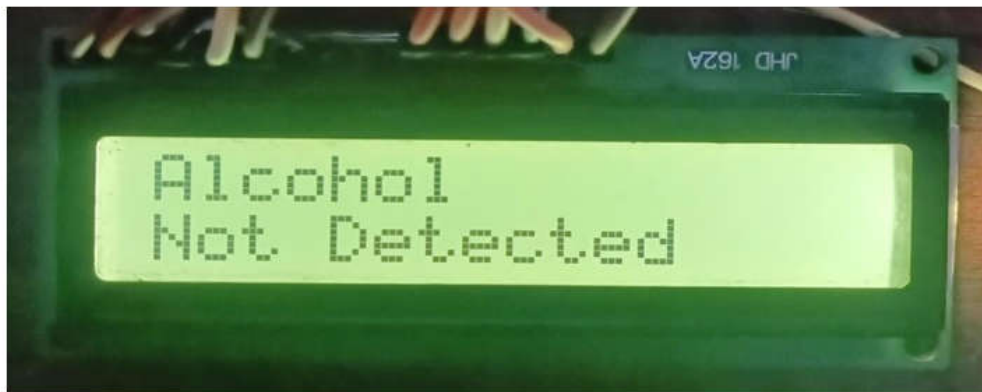
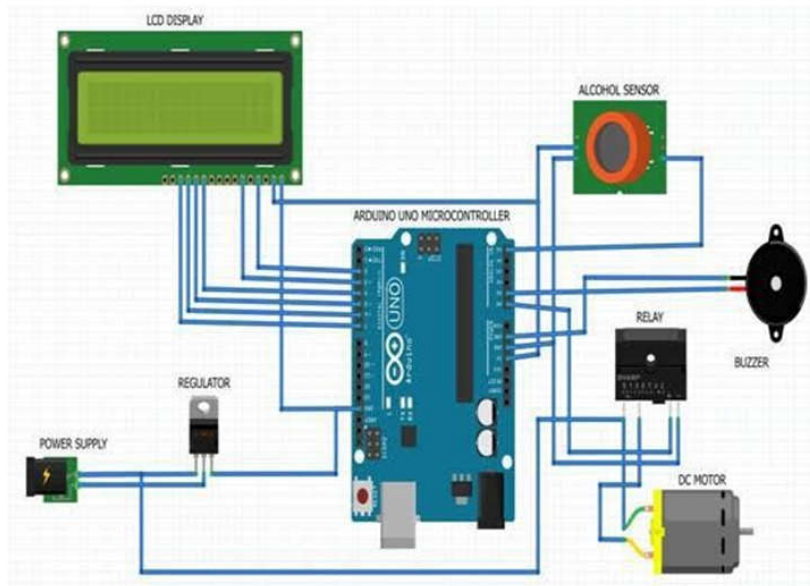
[6] The author has made an effort to develop a solution that addresses both the issue of helmet carelessness and alcohol detection simultaneously. The system is far too complicated. In addition, the author employed the more expensive P89B51RD2 microprocessor rather than the Arduino Uno. Additionally, the system's application is restricted because it can only be used with 2 wheelers and not with other types of vehicles.

[7] However, because our system can be integrated into any type of vehicle, not just two-wheelers, more accidents can be avoided and more lives can be saved.

## PROPOSED SYSTEM

This project consists of seven modules. The first module is about the introduction, the hardware components used and the software involved in designing. The second, third, fourth and fifth module is about the details and working of Arduino, Alcohol sensor, LCD module, Arduino software, circuit operation and its applications. The sixth module is about the simulation code involved in designing of the project. The Alcohol Detection with Engine Locking technology aids in lowering the number of accidents caused by drunk driving. The MQ-3 sensor can identify the presence of alcohol in the immediate area. The sensor output is determined by the alcohol content. If the alcohol concentration is higher, the MQ-3 sensor's conductivity increases, which in turn supplies the ARDUINO with the reading. The ARDUINO will shut off the dc motor if the reading exceeds the threshold level. In order to alert other motorists that the vehicle in front of them is risky, the red LED will also flash if the distance is closer than the recommended distance.

**RESULTS AND DISCUSSIONS**



The output results when the alcohol sensed value is below and beyond the threshold values.

**CONCLUSION**

The project contributes to a decrease in drunk driving and reckless driving-related traffic fatalities. Installing such a device increases road safety for both drivers and pedestrians by controlling the ignition of the car, preventing it from starting if the driver has consumed alcohol, monitoring the driver's speed constantly, and sending authorities alerts when the speed limit is being exceeded. Thus, the program lowers the number of traffic fatalities brought on by the two main causes, drinking and reckless driving.

## FUTURESCOPE

By adding alarm systems that can stop the car to avoid them by improving technology, i.e. by adding the speed monitoring and By giving the accident victims medicine on the scene, this can be prolonged. We can prevent accidents GSM module.

## REFERENCES

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