



ALCOHOL DETECTION AND AUTOMATIC ENGINE SPEED CONTROL FOR DRUNKEN DRIVER

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Abstract

In this project, the Arduino UNO is used to create and implement an alcohol detection system with engine locking for automobiles. The device will continuously check the alcohol detection sensor's level of concentration and, if it rises above a certain level, will shut off the vehicle's engine. The method that enables an Arduino board with an alcohol sensor immediately locks the vehicle's motor. The technology then enables entering the user's numbers into the program first. And by applying the necessary voltage, the input triggers were perceived by the driver, who was intoxicated by alcohol levels over the legal limit. The concept offers a practical way to reduce accidents caused by intoxicated driving.

Keywords: NodeMCU , ESP8266 Wi-Fi module

Introduction

When you open the newspaper, reading about a car accident is not unusual.

According to a 2010 WHO analysis, India actually sets the global record for the number of annual traffic accidents. India experiences approximately 1,34,000 fatal traffic accidents each year. The most alarming statistic is that alcohol intake accounts for 70% of these, according to a 2011 study. In this project, we'll cover how to use an Arduino to create an alcohol sensor. The MQ-3 sensor will be the alcohol sensor we employ. Not only is this sensor sensitive to alcohol, especially ethanol, which is the form of alcohol found.

I. Literature

The papers surveyed for literature are as follows:

[1] An productive resolution is provided to evolve the brainly system for car that will monitor miscellaneous parameters of overcome by alcoholic liquor constant level and will please this overcome by alcoholic liquor to the base unit has made clear in this paper, by utilizing hardware principle who's core is Arduino, alcohol sensor mq3 the whole control method has the advantage of breadth of view and extreme reliability future outlook concerning this system search out control the accident and providing beneficial analyses about the accidental car, through reducing the accidents happen on account of drunk driving. This arrangement influences innovation to the existent science in the car and also upgrades the security lineaments, hence trying expected an effective incident in the car manufacturing.

[2] All types of vehicles need to establish an ignition interlock device or breath alcohol ignition interlock device installed in order to prevent drunk drivers. It is a form of breath analyzer that can determine how much alcohol a driver has consumed, but because it is a prototype module, a basic alcohol detector is employed in this project work, and the findings are determined to be satisfactory. Currently, it is useful for our traffic police employ breath analyzers that often need the motorist to blow into a mouthpiece in order to detect intoxicated drivers.

[3] In this paper an active resolution to resolve the issue like drunk and drive demands a direct bright whole for car that monitors the alcohol consumption for drunken driver. Here the information

is alcohol sensor and if the driver is drunk intoxicating the engine will be secured certainly by turned off the engine and an warning idea is presented on the LCD display and having level of alcohol to the webpage by utilizing ESP8266 Wi-Fi module on NodeMCU board.

[4]A persuasive answer is provided to cultivate the inventive system for automobiles that will monitor miscellaneous parameters of car in constant and will this overcome by alcoholic liquor to the base unit has made clear in this place paper, by utilizing hardware Who's core is Arduino alcohol sensor mq3.the whole control order has the advantage of limited book extreme reliability. Future purview concerning this system search out control the accidents and providing beneficial analyses about the accidental car, with reducing the rate of accidents happen on account of drunk driving this scheme leads innovation to the existent electronics in the car and also helps the security face, hence trying expected an effective happening in the car manufacturing.

[5] Many procedures and methods are employed to prevent accidents brought on by drivers who have consumed too much alcohol. There are typically several various approaches, some of which include locking the steering, using an ignition interlock, using a vehicle interlock system, and many others. The technique involves a number of factors, some of which include cost, look, application of the approach, and many others. In this paper study, we have made every effort to identify the ideal threshold at which we can impose restrictions on the driver in the event that excessive alcohol consumption has him unconscious. On a daily basis, traffic accidents can be avoided in this way. Utilizing such a method, the rate of traffic accidents can reduce.

2.Block Diagram:

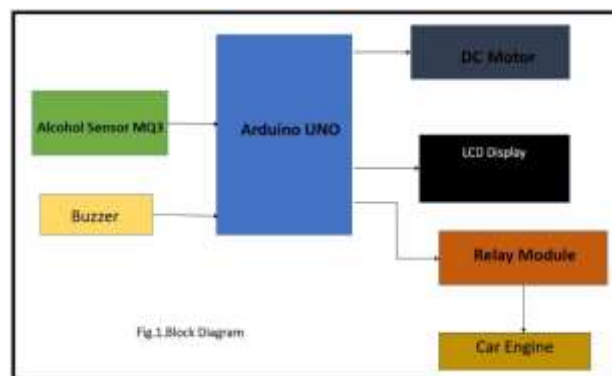


Figure 1: Alcohol Detection and Automatic Engine Speed Control For drunken Driver

Working:

This project makes use of a small Arduino Uno board, and it develops microcontroller programmers. Because it focuses on preventing drunk driving, it also includes a DC motor, an Arduino board, an LCD display, a relay module, a buzzer, and a resistor. The LCD display is used to show the amount of alcohol present in the driver's breath while the MQ3 sensor is used to detect alcohol. Arduino is used for programming and interface purposes. When a driver tries to operate the vehicle while overly intoxicated, this sensor is mounted on the fitted in car steering. sensor senses the presence of alcohol and when the percentage level is above the stated value a signal will be send to Arduino. Of that signal the engine working will stop.in this project we have set the percentage level of alcohol is 35% or a 40%.

Components

1 Arduino-

Arduino is a original floor(open-beginning) based on an smooth-to-use fittings and operating system. It resides of a motherboard which is compute (refer to as a microcontroller) and a more prepared spreadsheet called Arduino /IDE (integrated Development Environment), that is used to compose and transfer the calculating rule to the physical board.



Figure 2: Arduino

2 Alcohol MQ3 Sensor-

Alcohol MQ 3 sensor is sensing the when a drunk person breathes near the alcohol sensor it detects the ethanol in his breathe and provides an output based on alcohol concentration



Figure 3: Alcohol MQ3 Sensor

3 Relay-

A transmit is an electromagnetic switch that is to say used to excite and disgust a circuit by a reduced capacity signal, or place various circuits must be conditional individual signal. We know that most of the extreme end modern request schemes have relays for their productive active.

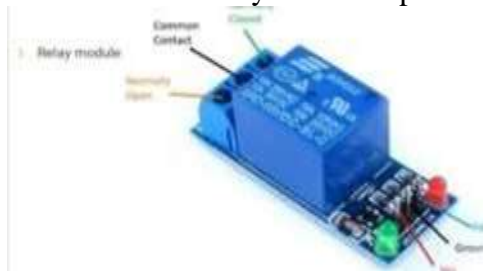


Figure 4: Relay

4 LCD Display-

LCD display used to display the message. driver is drunken or not and he drunk then how many percent drunk the drink and display the percentage of LCD display.



Figure 5: LCD Display

DC motor-

gear motor is used with 12 volt, 100rpm and weight 125gms.



Figure 6: DC motor

Buzzer-



Buzzer is a output audio signal

Figure 7: Buzzer

Result:

When a driver is drunk and he is start car and he is breathing the concentration on his breathe and alcohol sensor detect and buzzer is blow next display the message in LCD display how many percent alcohol is drink in driver, then relay module control the power signal or controlled the engine speed.

Expected Outcome:

The goal of the research is to create a system that can detect the presence of alcohol in the driver's exhaled air and shut off the vehicle. The microcontroller receives information about alcohol from the alcohol sensor, warns users of the condition it has detected using a buzzer, and switches off the vehicle's motor automatically using a relay



II. Conclusion

We have provided an extraordinarily capable method of dealing with the issue and have developed a smart system for cars to reduce the amount of accidents brought on by drunk driving. People are beginning to realize how important car security is on a daily basis. The structure's ultimate goal is to reduce the negative effects of alcohol consumption. By enhancing personal safety, this technology contributes to the automotive industry's convincing advancement in the reduction of accidents related to driving.

References

- [1] Shukla, P., Srivastava, U., Singh, S., Tripathi, R., & Sharma, R. R. (2020). Automatic Engine Locking System Through Alcohol Detection. *International Journal of Engineering Research & Technology (IJERT)*, 9(5), 634r637. Automatic Engine Locking System Through Alcohol Detection
- [2] Umapathy, K., Sindhu, M. S. S., Nithya Sri, S., & Nandini, P. (2022, October). Automatic engine locking system for drunken drivers. In *AIP Conference Proceedings* (Vol. 2519, No. 1, p. 050019). AIP Publishing LLC. Automatic Engine Locking System for Drunken DRIVER «
- [3] Sahu P, Dixit S, Mishra S, Srivastava S (2016) Alcohol detection-based engine locking system using MQ-3 sensor, B. Tech students, Department of Electronics and Communication, IMS Engineering College, Ghaziabad-201009, Uttar Pradesh “Alcohol Sensing And Automatic Engine Locking System”