

DRUNKARD DETECTION SYSTEM

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Abstract— Because of the quick increment of vehicles on streets, the likelihood of street mishaps is rising steeply. Inebriated driving is viewed as a significant reason for street mishaps all through the world. The principal point of this venture is to foster a framework that would distinguish how much liquor that is consumed by the driver of the vehicle. The proposed framework targets keeping the client from driving when tipsy and consequently plans to decrease the quantity of mishaps happening because of inebriated driving. The proposed model is created utilizing Arduino Uno and liquor recognition sensor (MQ-3) as its significant parts. As a security measure, when the degree of liquor crosses a passable breaking point, the vehicle start framework (DC Engine) will be switched off and the concerned power will be cautioned utilizing the GSM module.

Keywords— Arduino-UNO, MQ3, Switch, LED, Buzzer.

I. INTRODUCTION

The report by the public authority of India [1] (Service of street transport and thruways) in the extended time of 2023 states that, the aggregate number of mishaps happening on the Indian streets were 4,64,910. Out of these, 14,071 mishaps happened because of plastered driving, which is turning into a significant reason for mishaps on Indian streets. India has in this way procured the questionable differentiation of having countless mishaps because of smashed driving. Numerous disasters are happening a direct result of the liquor utilization of the driver. Because of inebriated driving many lives and properties have been jeopardized. This is on the grounds that the individual driving the vehicle isn't in a steady situation to assume command over the vehicle. In such a circumstance, the driver should not be allowed to work his vehicle. It portrays the disturbing number of mishaps and passings happening between the years 2015-2023. Muthukumaran Narayanaperumal and Ravi Ramraj

(2014) advocated analyzing criteria like compression ratio, peak signal to noise ratio, mean

square error, bits per pixel in compressed images, and study of challenges during data packet communication in wireless sensor networks. [1].

A. Current Situation

Nowadays, police officers use breathalyzers to check roads for signs of alcohol consumption. The driver must blow into the breathalyzer in order for it to calculate their blood alcohol content. According to Section 185 of The Motor Vehicles Act, 1988, a person may be penalized if a breathalyzer test reveals an alcohol concentration of more than 30 mg per 100 mL of blood. Additionally, it adds that driving under the influence is a crime punishable by a fine of up to Rs 2,000 or by up to six months in jail for a first offence.

B. The Suggestion

The current systematic literature review (SLR) study's findings were synthesized to identify thematic foci and research gaps related to food waste in the profit sector of Huffs, including the sign of the methods employed, the accuracy of the samples, the geographic coverage, the demographic factors, the behavioral manifestations, the theoretical frameworks, and the specificity of the variables investigated. A framework for future research was developed as a result of the in-depth examination of the chosen studies, and practical conclusions can be drawn from it.

It displays the suggested system's block diagram. It comprises of a switch that kicks the system off. It is comparable to turning on an automobile engine.

Alcohol that exceeds the stated threshold value can be found with the MQ-3 alcohol sensor. After that, the value is provided to the Arduino, which, if the predetermined value is exceeded, transmits an input to the GSM module to send an SMS to the relevant authorities. The DC motor is used to symbolize the car ignition system, which is turned off when alcohol is consumed.

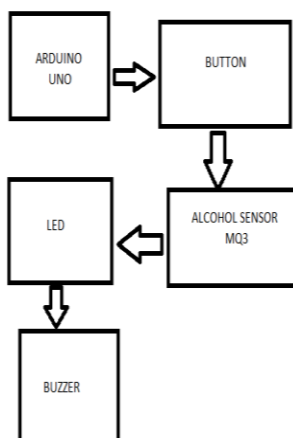


Fig.(1)

II. A SURVEY OF THE LITERATURE

In numerous studies, various strategies have been put out in relation to this problem. The next paragraphs analyze a few of these papers in particular.

A system using an alcohol sensor installed in the vehicle in addition to the ultrasonic sensor used

to avoid auto accidents was proposed by Vijay [4]. The GSM module uses SMS to send the resulting information to the nearby friend. MS Malathi et al. [5] proposed a software environment in which an alcohol sensor mounted on the steering wheel is introduced to detect the driver's blood alcohol content and a seat-belt detector is introduced for the driver's safety during collisions by locking the seat-belt slot, preventing the ignition from ever starting.

Proposed a prototype with an engine locking mechanism and a detector for alcohol. [6] utilizing an Arduino-Uno microcontroller connected to an alcohol sensor. together with a DC motor and an LCD display. Alcohol can cause the engine to shut off, thus it must be parked right away. Aryan Mathur et al. [7] proposed a system that would be integrated into the steering wheel of a four-wheeler to detect the driver's blood alcohol content. The system's output would then be transferred via signal to a piezoelectric shaft, which would lock or unlock the key. The driver is informed of the relevant zones when an RF receiver picks up signals from transmitters installed on accident-prone locations. S. Surya and R. Ravi (2018) proposed that the fault tolerance mechanism, the energy consumption, and the lifetime of the sensor nodes be enhanced. The outcomes of the experiment highlight the benefits of implementing a fault tolerance mechanism [2].

4. System Components

A. Arduino-Uno

It is the series' first Arduino USB board. To operate, the Arduino board needs 5V of power. It contains 14 digital I/O pins and 6 analogue I/O pins.

B. Alcohol Sensor (MQ-3)

In this situation, the MQ-3 alcohol sensor is used to help determine whether the driver has consumed alcohol.

Specifications: The sensor's sensitivity ranges from 200-1000ppm, and it has a short response time. It requires a 5V power source, can detect concentrations between 0.4mg/L and 4mg/L, outputs readings in terms of voltage (analogue output), and can detect concentrations between 0.4mg/L and 4mg/L.

C. Switch

When a push button is pressed, a specific connection can be formed. It essentially joins the circuit when

pressed, and it disengages the circuit when it is released. S. Surya and R. Ravi (2020) proposed that the simulation findings reveal that our suggested technique minimizes energy depletion and extends the sensor node's life time. By using high-quality monitoring mechanisms, the application of the suggested work aids in the monitoring of the structural health of buildings, bridges, and towers[3].

Details: The button has a MAX 50mA 24V DC power rating and a tactile feedback operating mode. Its typical operating temperature range is from -20 to +70 °C, and its typical storage temperature range is from -20 to +70 °C. Max.

D. Led

To do this, light is created when holes from p-type semiconductors mix with electrons from n-type semiconductors.

According to S. Sujitha, R. Ravi, and Beulah Sekhar's (2014) the ideal resource is employed for effective resource allocation. Internet is only required when allocating resources, which lowers the net cost, while other tasks are completed offline [5].

Specification:

Normal Directionality Round UV-resistant epoxy, 5 mm Luminous intensity is 20 mcd, forward current (IF) is 30mA, forward voltage (VF) is 1.8V to 2.4V, reverse voltage is 5V, and operational temperatures range from -30°C to +85°C.

E. Buzzer

A buzzer or beeper is a mechanical, electromechanical, or piezoelectric audio signaling device (piezo for short). Buzzers and beepers are frequently used as alarm clocks, timers, train horns, and to validate human input such a mouse click or keyboard.

III. Flow Chart

A. Algorithm

Step 1: Take the components needed for drunk

detection.

Step 2: By using flowchart, connect wires, Arduino, mq3.

Step 3: Save the code for Arduino needed to run.

Step 4: To check the drunken detection, keep the permanent Marker.

Then, Analogue inputs are passed to the Arduino-uno, which converts them to digital outputs and turns off the Light.

According to U. Muthuraman, J. Monica Esther, R. Ravi, R. Kabilan, G. Prince

Devaraj, and J. Zahariya Gabriel (2022) future data analysis will be based on statistics gathered with the aid of sensors and will be implemented as a webapp [4]

IV. Result

To show that there is alcohol present, the buzzer and Light are turned on. The measurements displayed on the COM terminal indicate the absence of alcohol in part per million (ppm), as they are below the cutoff value of 400 parts per million (ppm). The interpreted result thus establishes the absence of alcohol. Alcohol is present, with the range of the data received in the COM terminal being above 400 ppm of the predetermined value.

1. A. Lavanya Mathiyalagi, R. Mallika@pandeeswari, P. Rahul Raja and Dr. R. Ravi (2021) stated that the bulk of CT scan pictures are used for cancer diagnosis. Marker-controlled watershed segmentation also produces more accurate results as compared to other segmentation methods [6].

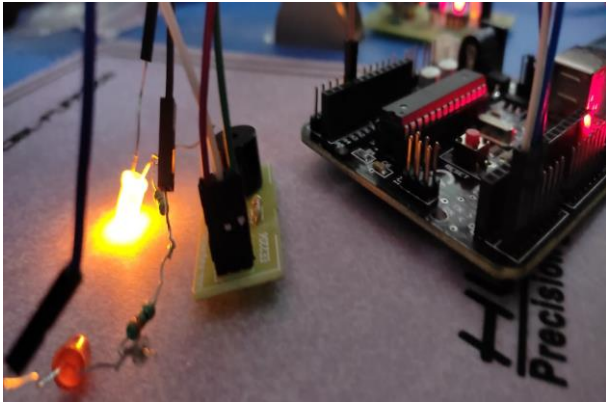


Fig.(2) outline of the arduino

V. Conclusion

If the driver has ingested a certain amount of alcohol, the suggested system, "Alcohol detection to reduce drunk driving," will meet the requirements of a safety system. When alcohol is found, the system will take safety precautions by reducing the DC motor's speed and sending a notification to the appropriate authority.

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