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ALCOHOL SENSING ENGINE LOCKING SYSTEM

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Abstract: Now a day's many accidents happening because of the alcohol consumption of the person who is driving the vehicle. The drunk and driving is a major reason for accident in almost all countries all over the world. Alcohol detection project in car is designed for the safety of the people seating inside the car. This project should be installed inside the vehicle. In this project we have developed an automatic engine locking system. The input for the system is alcoholic breath. The controller waits for the output from alcohol sensor. Here a stimulating process activated using a dc motor through Arduino UNO, if there are any traces of alcohol above the set limit then the engine will be OFF by the system and at the same time the buzzer will on, so that we can avoid accidents. This task gives the layout and implementation of an Alcohol Detection engine locking for vehicles and cars using Arduino UNO. The current scenario shows that the most of the road accidents are occurring due to drunk-driving. The restricted ability of enforcement agents undermines each manual effort geared toward edge drink-driving. Therefore the need for an alcohol detection system that can function without the restriction of space and time. This project presents the design and implementation of an Alcohol Detection with Engine Locking for cars using the MQ3 Alcohol sensor, Arduino UNO. The system will continuously monitor level of alcohol concentration in alcohol detection sensor and thus turn off the engine of vehicle if the alcohol concentration is above threshold level. The project provides an efficient solution to control accidents due to drunk driving.

I.INTRODUCTION

The current scenario shows that the most of the road accidents are occurring due to drunk-driving. The drivers who drink alcohol are not in stable condition and so, rash driving occurs on highway which can be risky to the lives of the people on road, the driver inclusive. The enormity of the dangerous driving transcends boundary. The laws in India are currently prohibiting drivers to drink and drive so that the fine can stop them to drink and drive. Whatsoever, effective observation of inebriated drivers could be a challenge to the policemen and road safety officers. "Drinking is not only injurious to drunken driver it also affect the surrounding area and people. Now day's road accident is major problem all over the world. As report by WHO (World Health Organization) in its first Global status report (2023) 1.5 lakh of Indian people are killed on roads due over speeding, drunk driving. Drunk driving is a major factor for rise of deaths on roads. Drink and drive not only bring road traffic hidden danger to others, but also affects the safety of his own life. Most of the accidents are occurring outside the cities due to the drunk driving and no testing methodology has yet been adopted to avoid these fatalities on roads. In India every year traffic accident caused by drunk driving 3 thousands of deaths and more than 6 thousands of injuries in year and its increasing rapidly. According to our system, the car is controlled automatically, can't be driving after driver drinking, thus avoid the occurrence of drunk driving. Drunk driving is a very dangerous behavior. People will become slow in reacting and can't control their actions. Drunk drivers aren"t able to deal with the emergency situations when they are driving. The investigation done by the World Health Organization in 2022 shows that about 50%-60% of traffic accidents are related to drunk driving. The current scenario shows that maximum street injuries are taking region because of the effect of alcohol using. The drivers who drink alcohol aren't in a solid scenario and so,

rash using takes place at the highway which may be volatile to the lives of the humans on street, the use of strain inclusive. The enormity of the damaging using transcends boundaries

II. OBJECTIVES

- MQ-3 sensor detects the presence of alcohol higher the conductivity of MQ-3 sensor increases which in turn gives the reading to Arduino UNO. If the reading is greater than the threshold level, Arduino UNO will stop the DC motor. Thered LED will also blink if the distance is less than the safe distance to give indication to other vehicles that the vehicle in front of them is unsafe.
- The help of SIM800L the message will be sent to the civil forces, family that the particular vehicle is unsafe and can be a threat to other people.
- To provide alcohol detection with engine locking system this ensures the driver safety.
- To avoid road accidents due to driver under alcohol influence.

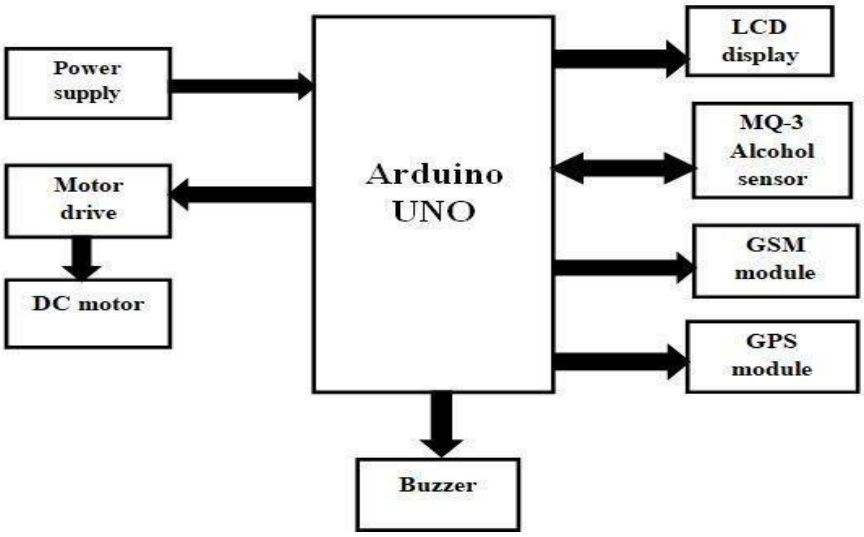
III.METHODOLOGY

The alcohol detection with engine locking system helps to reduce accidents which are occurring due to drunk driving. MQ-3 sensor detects the presence of alcohol in the surroundings .The sensor provides output on the basis of the concentration is higher the conductivity of MQ-3 sensor increases which in turn gives the reading to Arduino UNO. If the reading is greater than the threshold level, Arduino UNO will stop the DC motor. The LED will also blink if the distance is less than the safe distance to give indication to other vehicles. In this project we have to focusing three main operations First is sensing of alcohol, second is alerting the driver and third is engine locking. The complete system uses the Arduino UNO (Based on ATMEGA 328), MQ3 sensor, LCD display, buzzer, motor drive are handled by Arduino UNO. All the modules are interface and programmed in a way to wok the entire module. The reading will be demonstrated on the LCD board which is interfaced with the Arduino UNO board. Once the sensor detects it transfer the information to car ignition system which will not start the engine of the vehicle and engine will be locked. Our proposed work consists of various units that make up the system: the power supply unit, the alcohol detection unit, the engine locking unit, ignition system unit, display unit, alarm unit and indicating unit. An LCD display will be fitted inside the vehicle to act as an indicator to the motorist together with everyone in the vehicle. A DC motor is used as the car engine to demonstrate the concept of engine locking. The ATmega328 under the brand name of Arduino UNO will be used to keep looking for the output from the alcohol sensor. The Arduino UNO sketch which is the environment for programming is used to write the code.

IV. COMPONENTS

1. MQ-3 Alcohol sensor
2. Arduino UNO
3. LCD display
4. GPS module
5. GSM module
6. Motor driver
7. Buzzer
8. DC motor
9. Battery
10. Connecting wires

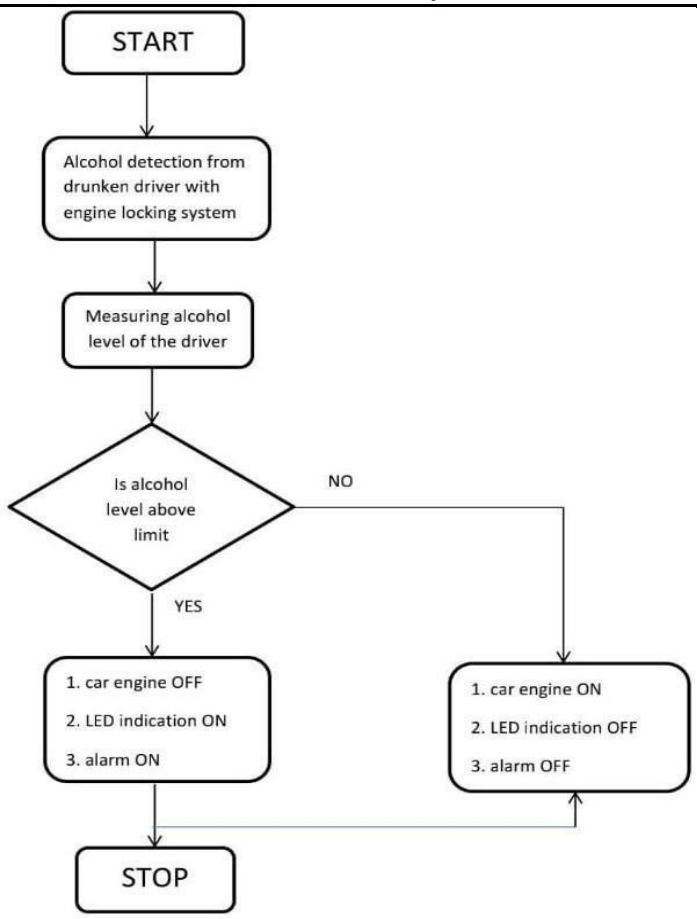
IV. BLOCK DIAGRAM



Power supply is given to the Arduino UNO. Arduino UNO is the programmable device. That is programmed and further connected to motor drive. Motor drive is used to control the direction of the dc motor. The alcohol sensor is connected to Arduino UNO and that will detects the alcohol smell and the buzzer will operates and engine will locked. The GSM module is used to send © 2023JETIRAPRIL2023, Volume 4, Issue 5www.jetir.org (ISSN-2349-5162) ME033 Journal of Emerging Technologies and Innovative Research (JETIR) www.jetir.org 27 the current location of the car and GPS is used detect the location of the car and LCD display shows the sending message and alcohol detection.

VI. FLOW CHART

This flow chart defines a very real solution to cultivate a smart system for alcohol detection which mainly based on Arduino UNO. The advantage of this system is its range of detection which can be customized as per the requirement of the vehicle and can be placed without getting noticed from accused. The whole embedded system is connected to the vehicle electronic system which will disable the car ignition system when it is detected that driver is drunk. This is one of the best solutions to reduce number of accidents. This arrangement advances the care of human being and hence providing the actual growth in the industry concerning to reduce the accidents source due to alcohol. The legislation instead of putting more police such systems can be inbuilt in the vehicle by the vehicle manufacturers so that driver or person driving the vehicle is alert and make himself responsible and reduce the accident due to drunk and driving.



VII. ADVANTAGES

a) It provides an automatic safety system for cars and other vehicles.
b) It protects the public property.
c) It can be very helpful to police.
d) Implementation in any four wheelers or higher vehicles.

VIII. APPLICATIONS

a) "Alcohol detector project" can be used in the various vehicles for detecting whether the driver has consumed alcohol or not.
b) This project can also be used in various companies or organization to detect alcohol consumption of employees.

IX. CONCLUSION

In this project we have developed a real time model that can automatically lock the engine when a drunken driver tries to drive a car. By fitting this alcohol sensor into the car, we can safe guard the life of the driver and also the remaining passengers. It is a very simple application. The life time of the project is high and also low maintenance and low power consumption. This project is developed to efficiently check drunken driving. By implementing this project we can decrease the accident rates under the influence of alcohol.

REFERENCES

[1] Bhuta, Desai, Keni, "Alcohol Detection and Vehicle Controlling", International Journal of Engineering Trends and Applications (IJETA) – Volume 2 Issue 2, Mar-Apr 2015.
[2] "Alcohol Detection and Accident Prevention of Vehicle", International Journal of Innovative and Emerging Research in Engineering, Volume 2, Issue 3, 2015.
[3] "Automatic Drunken Drive Prevention System", International Journal of Scientific Research in Technology and Management, Volume2, March-April 2014, ISSN 2321-2543, pg. 74-77.
[4] M. H. Mohamad, Mohd Amin Bin Hasanuddin, Mohd Hafizzie Bin Ramli, "Vehicle Accident Prevention System Embedded with Alcohol Detector", International Journal of Review in Electronics Communication Engineering, Volume 1, Issue 4 October 2013,
[5] http://youtube.com/@aerotechindia1161