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ALCOHOL SENSOR BASED VEHICLE IGNITION CONTROL SYSTEM USING ARDUINO UNO

Dr.G.Sudha[*1], Pavithra P [*2], Priya P [*3], Manikandan M[*4]

[*1]Associate professor, Department of medical electronics engineering,

Muthayammal Engineering college, Namakkal,Tamil Nadu, India.

[*2,3,4]UG Scholar, Department of Electronics and Communication Engineering,

Muthayammal Engineering College, Namakkal, Tamil Nadu, India.

ABSTRACT

The primary motivation behind this undertaking is "Drunken driving detector". These days, numerous mishaps are going on in view of the liquor utilization of the driver or the individual who is driving the vehicle. The proposed arrangement of Liquor location in vehicles is intended for the well being of the individuals seating inside the vehicle and to maintain a strategic distance from street mishaps. This venture is created by incorporating a liquor sensor with the Arduino-Uno board. Arduino-Uno processor ATmega-328p can deal with a greater number of capacities than traditional microcontrollers. The MQ3 sensor identifies the liquor content in human relaxes. At the point when the degree of liquor crosses as far as possible, markers show the watched an incentive on LCD. The vehicle start framework kills and simultaneously, the GPS module will recognize the specific current area of the vehicle. Additionally for additional correspondence forms, the GSM module will send the message to family or family members.

KEYWORDS: Arduino-Uno ATmega-328p, MQ3 sensor, DC motor, LCD, Buzzer, GSM, and GPS module.

I. INTRODUCTION

Implanted methods something that is appended to something else. An installed framework can be thought of as a PC equipment framework having programming inserted in it. An installed framework can be an autonomous framework or it tends to be a piece of an enormous framework. An inserted framework is a microcontroller or microchip based framework which is intended to play out a particular undertaking. In this framework, the controlling is finished by utilizing the Atmega-328p microcontroller. The Arduino consistently utilizes the liquor sensor data to check alcoholic driving and works a jolt on the vehicle engine to stop the motor. Various sorts of vehicle mishaps happen in everyday existence with an assortment of cases. Mishaps may cause because of numerous reasons. Beginning starting here of view, we make a framework that is structured inside the vehicle that kills the vehicle mishap brought about by a tanked driver.

The primary explanation behind driving alcoholic is that the police can't check each vehicle and even they get anybody the police can be effectively paid off. So there is a requirement for a compelling framework to check inebriated drivers. So our undertaking is structured and created as a framework to bring the best arrangement by keeping away from such vehicle mishaps later on. Liquor identification is acted continuously by the liquor sensor, microcontroller, and Simple to Computerized converter circuit. Simultaneously vehicle controlling is finished by halting the vehicle motor.

At that point the microcontroller sends SMS to the handheld cell phone with the assistance of a GSM modem. Furthermore, the area is additionally sent by the GPS to the home or family members.

II. BLOCK DIAGRAM OF THE OVERALL WORK

Here we propose a framework where the individual is distinguished for a liquor level in his body to maintain a strategic distance from mishaps. Drivers will be detected before they start their vehicle. The driver will be detected by a sensor once he situated on the driver seat by his breath. The sensor is put in the directing to screen the breath level in the event that the liquor content in-breath is 0.08%, at that point the motor won't touch off. In

this framework if the driver isn't smashed he can drive else he can't drive until the liquor content abatements. This is where the sensor is set in the guiding. It will detect the driver's liquor content in the breath.

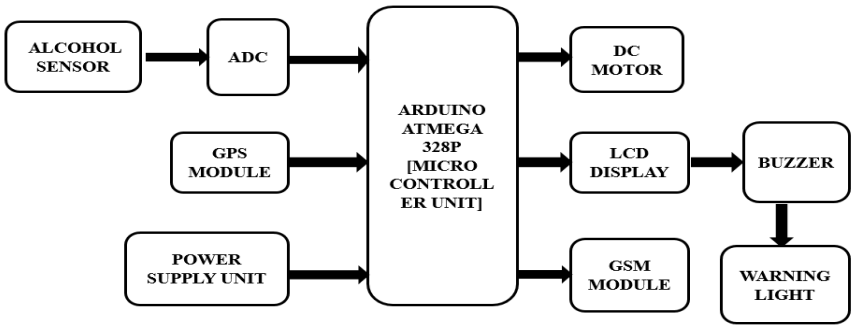

Fig-1: Flow chart of the overall working principle

Arduino is designed and associated with the sensor additionally LCD and one dc engine is associated. When the association is given force flexibly is given to it with the goal that the engine will turn over running. Presently liquor is splashed in it where the liquor content is above 0.08% so the LCD will show that liquor content is flood, dc engine will quit running and start additionally halted. This procedure is actualized the equivalent in all vehicles where the motor will be associated with the sensor. When the sensor detected its yield will be sent to the engine by alluding the range motor will stop its execution while actualizing this proposed framework we can lessen the mishaps by 75% and decrease the loss of property and lives.

III. HARDWARE REQUIREMENTS

ALCOHOL SENSOR (MQ3)

The liquor sensor utilized here is the MQ3 sensor. MQ3 sensor isn't just touchy to liquor, yet additionally delicate to ethanol, which is one kind of liquor found in wine, lager, and alcohol. MQ3sensor circuit can be utilized as a breath analyzer to check an individual's blood-liquor level. The simple gas sensor MQ3 is reasonable for liquor location; this sensor can be utilized as a breath analyzer.

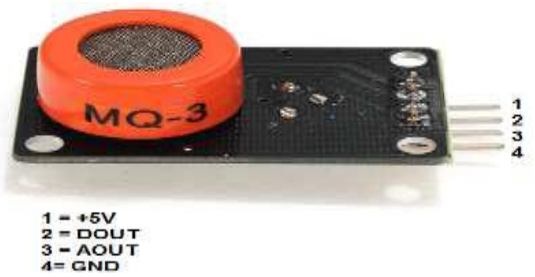

Fig-2: MQ3 Sensor for alcohol detection

We breathe out carbon dioxide when we inhale out, we likewise inhale out some liquor on the off chance that we have liquor in our blood. The more ethanol in your blood, the more there is noticeable all around on exhalation. This liquor content demonstrates for if an individual is flushed and how much percent alcoholic.

GSM MODULE

GSM is a cell arrange, which implies that phones associate with it via looking for cells in the quick region. There are five diverse cell sizes in a GSM organize full scale, small scale, pico, femto, and umbrella cells. The inclusion territory of every cell differs as indicated by the execution condition. Macrocells can be viewed as cells where the base station recieving wire is introduced on a pole or a structure over the normal housetop level.

Fig-3: GSM system module

GPS MODULE

The longest separation the GSM particular backings in down to earth use is 35 kilometers. The Indoor inclusion is additionally upheld by GSM and might be accomplished by utilizing an indoor picocell base station or an indoor repeater with appropriated indoor receiving wires took care of through force splitters, to convey the radio signs from a reception apparatus outside to the different indoor circulated receiving wire framework.

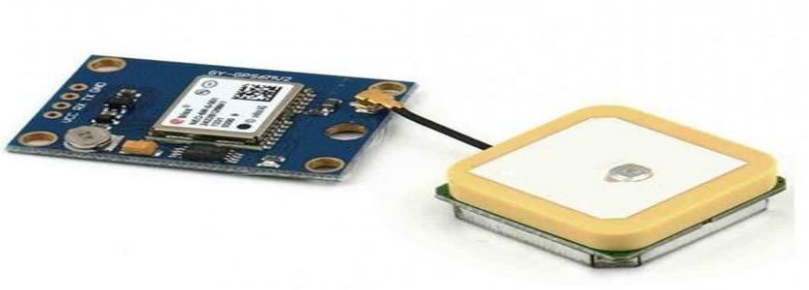

Fig-4: GPS system module

GPS gadgets may have abilities, for example, Guides, including avenues maps, showed in comprehensible organization by means of text or in a graphical configuration turn-by-turn route headings to a human accountable for a vehicle or vessel through content or discourse.

ARDUINO UNO

Arduino is an open-source stage utilized for building gadgets ventures. Arduino comprises of both a physical programmable circuit board (frequently alluded to as a microcontroller and a bit of programming, or IDE (Coordinated Advancement Condition) that sudden spikes in demand for your PC, used to compose and transfer PC code to the physical board.

Fig-5: Arduino Uno

In existing framework they are utilizing 8051 microcontroller. It's expensive and writing computer programs is hard for this small scale controller. For that we are changed Arduino UNO (ATmega 328P) microcontroller. This controller is cost astute low and Programming additionally straightforward and easy to understand. In leaving framework they are send data through SMS as it were. Here and there SMS are not conveyed

appropriately. That is the reason we are including the extra component that is CALL. We send the data over the call and SMS.

IV. RESULTS AND DISCUSSION

In the existing system, they are using an 8051 microcontroller. It's very costly and programming is very difficult for this microcontroller. For that, we are changed Arduino Uno (ATmega-328P) microcontroller.

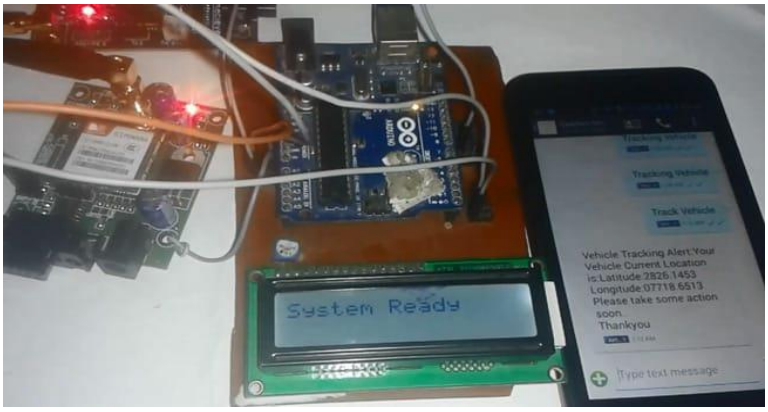

Fig-6: Hardware system

This controller has cost wise very low and Programming also simple and user friendly. In the existing system, they are sending information through SMS only.

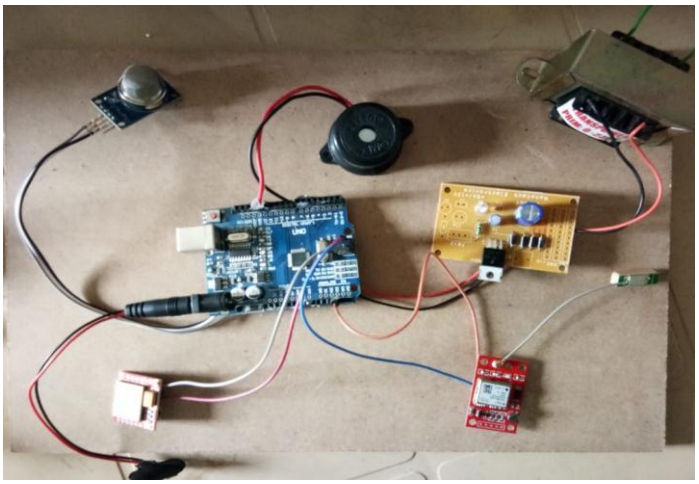

Fig-7: Project Kit

Sometimes SMS are not delivered properly. That's why we are adding the additional feature that is CALL. We send the information over the call and SMS.

V. CONCLUSION

In this future work, we have developed a real-time model that can automatically shut off the engine automatically. Tests found that this system is highly effective and it's efficient in testing the alcohol percentage of the Human beings and if it crossed the threshold value the dc motor will stop working, by fitting this alcohol sensor into the car. We can save the life of the driver and also the remaining passenger. It also gives a warning to the neighboring vehicle by buzzer sound and warning light. At the same time engine, locking is done with the help of deactivating DC motor. Also, it reads data from the GPS unit which gives the position of the vehicle to a microcontroller. Then the microcontroller sends SMS to the handheld mobile phone with the help of a GSM modem. Users can click on the link in the received SMS. The integration of the GPS tracker with the Google Maps would ensure that the position of the offender is given out on the maps readily to ensure the easy location

and possible further action if the value is beyond its set limits, then with the help of program controller takes appropriate action which controls the ignition system. In this project by controlling the ignition system, we can prevent accidents that occur due to drink and driver.

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