

Drink and Drive Detection with Ignition Lock System

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Abstract: Liquor driving is the main source of street mishaps. Liquor Recognition requires the ceasing vehicles and it physically check the drivers broadness analyzers. In the framework that permits a liquor sensor with arduino board alongside a GSM module to send message warning and LCD show to indicate liquor is identified and it naturally lock the vehicle engine. At that point the framework initially permits arranging the client's numbers into the program. What's more, the driver is tanked by liquor above admissible breaking point detected the information triggers by giving required voltage. In this way the framework gives liquor identification utilizing motor bolting through arduino episodes consequently. The greater part of nowadays, we hear parcel of mishaps because of tipsy driving. Intoxicated drivers won't be in stable condition thus the rash driving is the bother for other street clients and furthermore question of life and demise for the inebriated driver and for other people. In this undertaking, we are building up an Auto Lock Framework. The contribution for the framework is from Discovery Sensors either from Liquor Breath or some other instrument. The controller continues searching for the yield from these sensors. On the off chance that there are any hints of Liquor over as far as possible, at that point the framework will bolt the Motor. As vehicle cars are past the extent of this venture, we are mimicking the procedure by enacting the transfer.

Keywords: (Arduino), LCD Display, Buzzer, alcohol sensor,gsm module.

1. Introduction

We hear parcel of mishaps because of alcoholic driving and it won't be in stable condition. So if the rash driving is the in accommodation for other street demise for the alcoholic driver and not for others. In this framework utilizes a reduced Arduino Uno board. Projects are created in inserted C. The fundamental reason for this task is "Programmed Motor Locking Framework through Liquor Identification utilizing Arduino". Most of nowadays numerous mishaps are going on was the fate of the liquor discovery of the driver or the individual who is in the vehicle. Practically every one of the nations on the planet is confronting real mishaps as a result of Alcoholic and Drive. In this undertaking is intended for wellbeing of the general population seating the vehicle.

The vast majority of nowadays, we hear part of mishaps because of tanked driving. Intoxicated drivers won't be in stable condition thus the rash driving is the burden for other street clients and furthermore question of life and passing for the

plastered driver and for other people. The framework utilizes a minimized hardware worked around Blaze form of microcontroller with a non-unpredictable memory fit for holding the secret key information for more than ten years. Projects are produced in inserted C. ISP is utilized to dump the code into the microcontroller. The principle reason behind this undertaking is "Inebriated driving location". Presently a-days, numerous accidents occur as a result of the liquor utilization of the driver or the individual who is driving the vehicle. Accordingly flushed driving is a noteworthy reason of mishaps in practically all nations everywhere throughout the world. Liquor Indicator in Vehicle venture is intended for the wellbeing of the general population seating inside the vehicle. This undertaking ought to be fitted inside the vehicle.

2. Literature survey

There are three major ways to test if a driver has consumed alcohol namely the Breathalyzer, the Intoxilyzer and the Alcosensor.

3. Detailed design

If an alcoholic driver is detected, then immediately the ignition system will turn off along with SMS about detection is send to relevant of driver for notification and notification will be displayed on LCD with alarm. A flag is set when first condition is passed without detection of alcohol. When the vehicle starts to move, the alcohol obstacle sensor and the heart beat sensors collect those parameter values and send them to the microcontroller. If alcohol detected in this case, then signal is send to fuel blocker by microcontroller for blocking fuel supply to ignition system so driver feels that vehicle is going to stop and then place car at appropriate location. At the same time SMS with current location of vehicle, vehicle number and detected information send to relative of driver and police station.

The Uno board is the reference model for the ARDUINO platform and the first in a series of USB ARDUINO boards; for an extensive list of current, past or outdated boards see the ARDUINO index of boards. The board operates on an external supply of up to 20 volts. But if supplied with less than 7V, the 5V pin may supply less than five volts and the board has the

potential to become unstable.

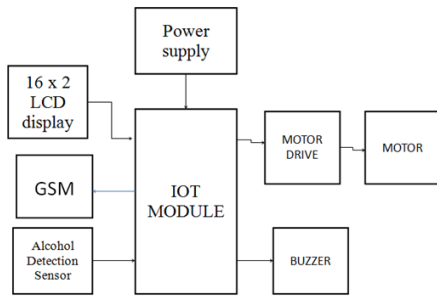


Fig. 1. Block diagram

4. Working procedure of electronic door opener

- *Step 1:* It consists of a node MCU and an Arduino where the Arduino is used to control the motor, the GSM and the LCD display.
- *Step 2:* The system is connected to a web server through the node MCU which can be used to detect alcohol.
- *Step 3:* The motor switch is active by default but if alcohol is detected, the motor is deactivated.
- *Step 4:* The status of the motor and the presence of alcohol is displayed over the web server.
- *Step 5:* An alarm is activated if the presence of alcohol is detected.

A. Arduino UNO

ARDUINO UNO is a microcontroller board, based on the ATmega328P, with a 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a power jack, a USB connection, a 16 MHz quartz crystal, an ICSP header and a reset button. It contains everything necessary to support the present microcontroller. All you need to do is to connect it to a computer through a USB cable or else power it with either an AC-to-DC adapter or battery to get started. You can play around with your UNO without too much worry about doing something wrong, the worst thing that can possibly happen is that you end up replacing the chip for a few bucks and start over again.

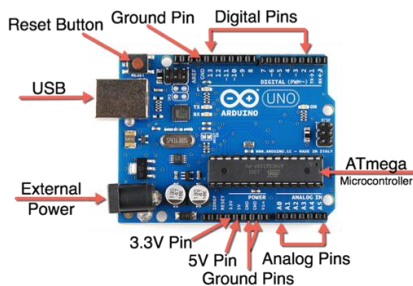


Fig. 2. Arduino UNO

B. Power supply

The Arduino Uno can be powered with a USB connection or an external power supply. The power source would be selected automatically. External (non-USB) power can be received from

an AC-to-DC adapter (wall-wart) or from a battery. The adapter can be connected by inserting a 2.1mm center-positive plug into the board's power jack. Leads from a battery can be plugged in

The Gnd and Vin pin headers of the POWER connector.

The power pins are as follows:

- *VIN.* This pin provides the input voltage to the Arduino board when it's using an external power source (as opposed to 5 volts from the USB connection or any other regulated source of power). One can supply voltage via this pin, or, if supplying voltage through the power jack, access it through the same.
- *5V.* This pin regulates the voltage using the regulator and supplies a regulated 5V. The board can be supplied with power either from the USB connector (5V), the DC power jack (7 - 12V), or the VIN pin of the board (7-12V). Supplying voltage via the 3.3V or 5V pins bypasses the regulator, and can end up damaging your board. We don't recommend it.
- *3V3.* A 3.3-volt supply is generated by the on-board regulator. Maximum current draw is 50 mA.
- *GND.* Ground pins

C. IOT module (node MCU)

Node MCU is an open source IOT platform. It includes firmware that can run on the ESP8266 Wi-Fi SOC from Espressif Systems, and hardware which is based on the ESP-12 module. The firmware uses the Lua scripting language. Term "NodeMCU" refers to the firmware. It is built on the Espressif Non-OS SDK for ESP8266 and is based on the eLua project, and. It uses many open source projects, such as lua-cjson and SPIFFS.



Fig. 3. IoT module (node MCU)

D. Alcohol detection sensor

The MQ-6 Gas sensor can detect certain gases like LPG and butane. The MQ-6 sensor module comes with a Digital Pin which makes it operate without even a microcontroller and that comes in handy when you are trying to detect one particular gas. When it comes to measuring the gas in ppm the analog pin has to be used, the analog pin is TTL driven and works on 5V and therefore can be used along with the most common microcontrollers. So if you are looking for a sensor to detect or measure gasses like LPG, or methane with or without a microcontroller then this sensor might be the right choice for you.



Fig. 4. Power supply

E. LCD display

The liquid-crystal display (LCD) uses the properties of both liquid and crystals which is needed to produce light to read the display. It is used to display the operating instructions and status of the output. It is having better legibility, more information displaying capability and a wider temperature operating range.

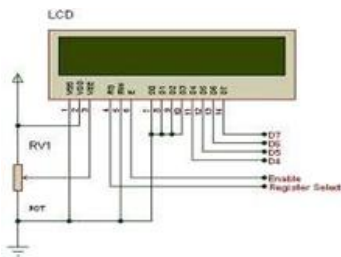


Fig. 5. LCD display

F. GSM module

- Connected to the controller. It can be used similar to a mobile phone where one can send and receive messages and also make a call.
- The GSM modem is connected to the controller through RS232.
- The SMS is sent through the terminal to the number using AT Commands.
- It is operated in 900/1800 MHz.
- GSM Modem can accept any GSM network operator SIM and it can act just like a mobile phone with its own unique phone number.
- The necessity to use this is it can use RS-232 protocol which can be easily.



Fig. 6. GSM module

G. Buzzer

- These high reliability electromagnetic buzzers are associated with automobile equipment.
- It is a compact pin terminal with an electromagnetic buzzer with a 2048Hz output.
- Pin type terminal construction allows for direct mounting straight onto the printed circuit boards.



Fig. 7. Buzzer

H. Motors

The speed of a DC motor is directly relative to the supply voltage, therefore if we reduce the supply voltage from 12 Volts to 6 Volts, the motor will run at about half the original speed. To achieve this when the battery is fixed at 12 Volts, the speed controller works by varying the average voltage sent to the motor. It could do this by manipulating the voltage sent to the motor. An alternate way to do this is to switch the motor's supply on and off very quickly. If the switching is fast enough, the motor will not notice it, as it only notices the overall average effect.

5. Advantages

- Low cost.
- Automated operation.
- Low Power consumption.
- It provides an automatic safety system for cars and other vehicles as well.

A. Future enhancement

- We can actualize Pulse Heartbeat Changeability to find precisely distinguish the driving conduct of drivers and to help them.
- We can actualize GPS innovation to discover the area of the vehicle.

B. Application

- "Alcohol Detector project" can be used to detect whether the driver has consumed alcohol or not.
- This project can also be used in various companies or organization to detect alcohol consumption of employees.

6. Conclusion

A successful arrangement is given to build up the smart framework for vehicles which will screen different parameters of vehicle in the middle of consistent timeframe and will sent information to the concerned people. This is finished by utilizing stages like Arduino, Sensor, DC engine, LCD show. The entire framework has the benefit of little volume and high dependability. This framework gets advancement to the current innovation the vehicles and furthermore enhances the wellbeing highlights henceforth giving to be a compelling improvement in the car business.

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