PBL PROJECT SYNOPSIS_A4

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Arduino based Alcohol Detection with Gsm and Gps

- **AIM:**
  Drunk driving is one of the major reasons behind road accidents worldwide. In all of the road accident cases worldwide drivers have been observed to have excess alcohol content in their blood. So we here design a smart alcohol detector system using arduino coupled with gsm and gps for location transmission.

- **OBJECTIVE:**
  The system allows for automatic sensing of alcohol in breath, we also use a motor to demonstrate as a vehicle. We further use a GPS module with GSM to send an SMS message to the concerned person in case alcohol is detected and stop the vehicle motor.

❖ **Components:**

1. **Hardware Specifications**

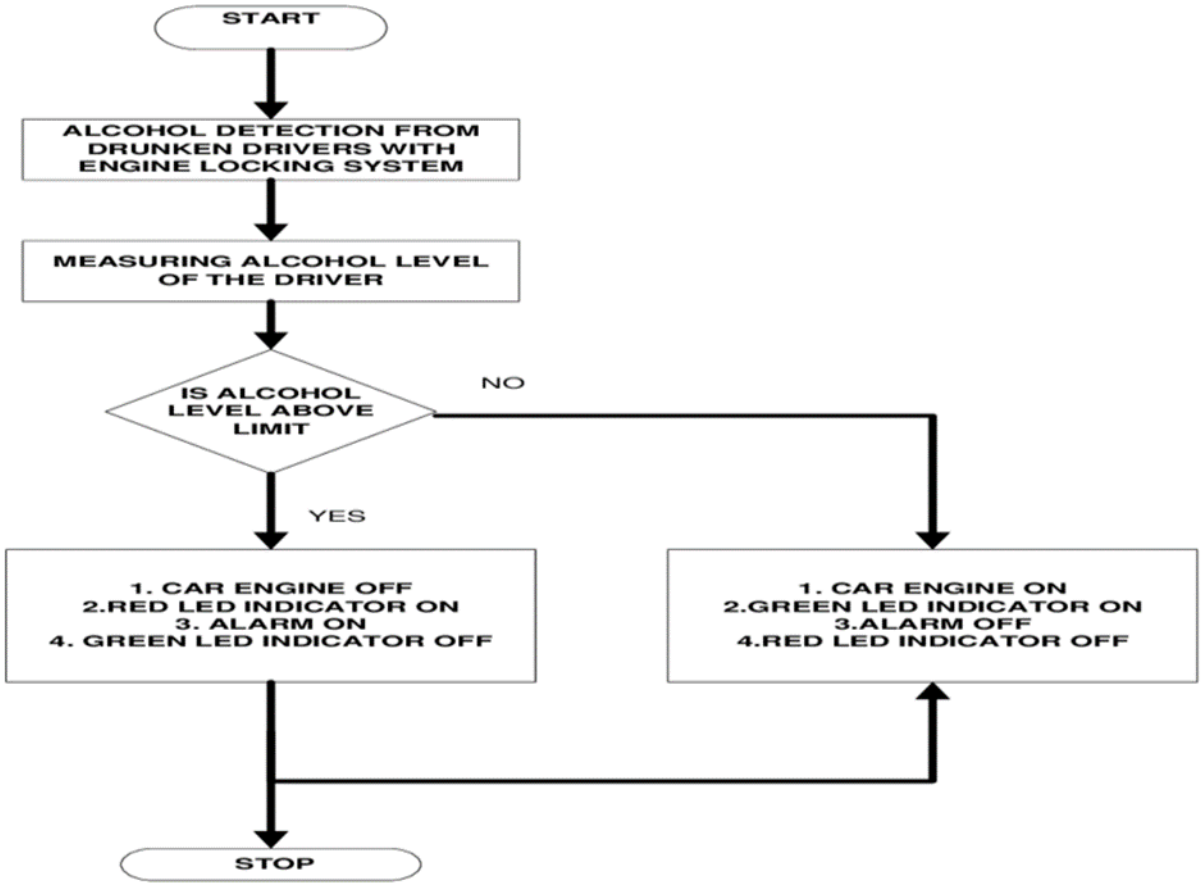
- Arduino Uno
- Alcohol Sensor
- GSM/GPS Module
- DC Motor
- Motor Driver IC
- LCD

- Vtg Regulator IC
- Resistors
- Capacitors
- Cables and Connectors
- Diodes
- PCB
- LED
- Transformer/Adapter
- Push Buttons
- Switch
- IC
- IC Sockets

2. Software Specifications

- Arduino Compiler
- MC Programming Language: Embedded C

- **FLOWCHART:**



- **CIRCUIT DESCRIPTION:**

The system consists of an Arduino Uno board along with an **Mq-3** alcohol sensor for detection and a **GSM/GPS Module** for notification. In the case of a sober driver i.e. the alcohol is under the permissible limits the car will normally which is indicated by the motor rotating, but in the case of a drunk driver, the alcohol content would be higher than the permissible limit which is detected by the alcohol sensor and the **Arduino controller which stops the motor** so that drunk driving can be avoided and also **sends an SMS notification** to the authorities or family members along with the location of the car so that assistance can be provided. The project also has an **LCD for parameter display.**

- **HOW AN ALCOHOL SENSOR WORKS:**

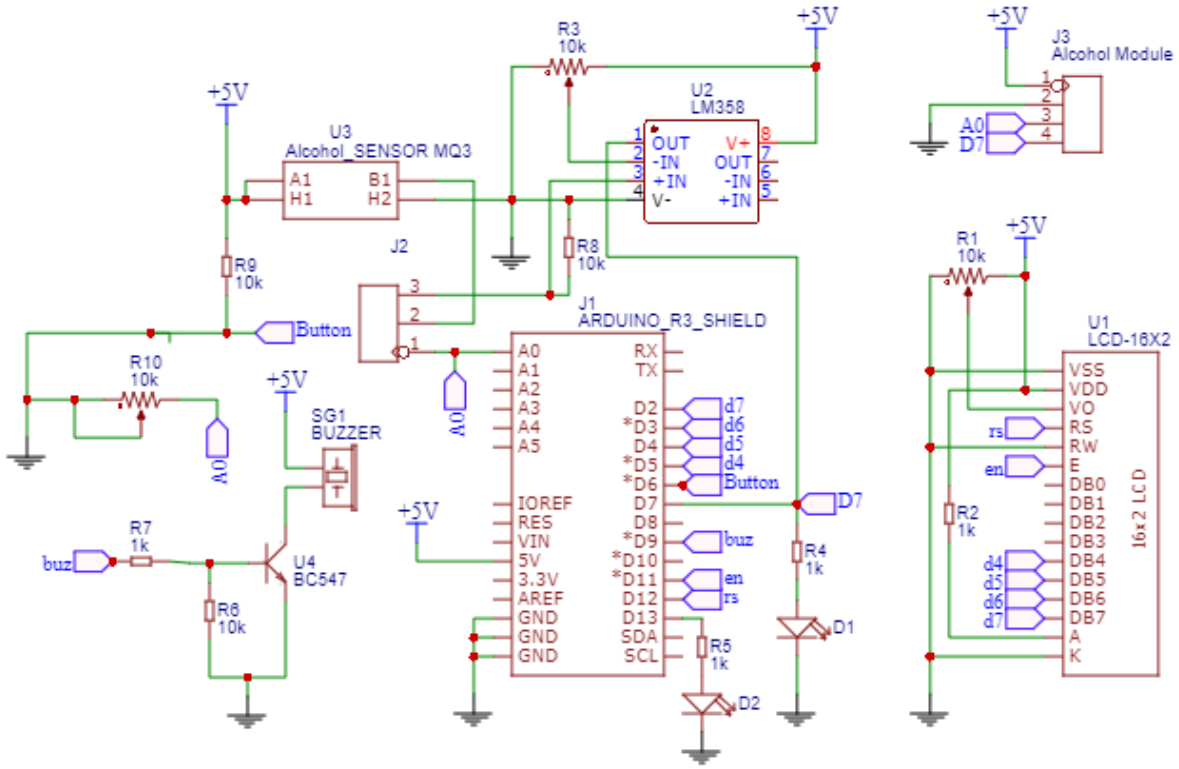
To get a blood alcohol content (BAC) reading, the users simply have to blow into a straw attached to the equipment for a few seconds. From here, the machine utilises the vapours in your breath to calculate an estimation of the level of alcohol in a person's system. This simple approach is due to the fact that **alcohol is not digested by the body** and is merely absorbed through different parts. **These include the mouth, stomach and intestines**. As a result, **traces of the material can still be identified minutes after drinking**, making it possible for the Breath Analyser to calculate an accurate number.

- **Blood Alcohol Content (BAC) limits**

The concentration of alcohol in blood: 0.05 grammes per 100 millilitres (all drivers), professional drivers: 0.02 grammes per 100 millilitres.

Breath alcohol content: 0.24 milligrammes per 1000 millilitres (all drivers), professional drivers: 0.10 milligrammes per 1000 millilitres.

- **PCB DESIGN**:



- **CONCLUSION:**

We have provided a very effective solution to develop an intelligent system for vehicles for **alcohol detection whose core is Arduino**. Since sensor has fine sensitivity range around 2 meters, it can suit to any vehicle and can easily be hidden from the suspects. The whole system has also an advantage of small volume and more reliability. As the growing public perception is that vehicle safety is more important, advances in public safety is gaining acceptance than in the past. **Future scope of this system is to control the accidents causes due to alcohol consumption.** This system improves the safety of human being. And hence providing **the effective development in the automobile industry** regarding to reduce the accidents cause due to

- **REFERENCE:**

1. http://www.arduino.cc/
2. **https://easyeda.com/ADITYA06**
3. **Manila, Philippines-Design of Alcohol Detection System for Car Users thru Iris Recognition Pattern**