IOT BASED VEHICLE OVER SPEED INDICATION AND VEHICLE TRACKING & ALCOHOL DETECTOR WITH ENGINE LOCKING USING GSM, GPS

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ABSTRACT:

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. 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. 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.

Keywords: GSM, GPS, MQ3, Vibration sensor.

1. INTRODUCTION

These days, majority of road accidents are caused by drink driving. Drunken drivers are in an unstable condition and so, rash decision are made on highway which condition endangers the lives of road users, the driver inclusive. However, effective monitoring of drunk and drivers

is the challenging to the policeman and the road safety officers. Many research officer's efforts have been directed to the design of efficient system that will monitor drunk driving. This project developed a prototype alcohol detection and engine locking system by using Arduino uno microcontroller interface with an alcohol sensor along with an lcd screen and a DC motor to demonstrate the concept. India had earned distinction in having more number of casualties due to road accidents around the world. Road safety is appearing as a big social concern around the world especially in India. Drinking and driving is a serious issue which probably would emerge as one of the most significant problems in the near future. The system proposed by us focus at minimizing number of road accidents in the near future because of drunk driving. The system detects the alcohol level present in the air inside the vehicle. At low level it sends an SMS to the preregistered contacts while at high level it locks the engine immediately and at the same time sends SMS along with the location to three pre-selected contacts. Hence the system will reduce the number of road accidents and casualties due to drunk driving in future. INDIA the world's second most populated country. Being a developing nation it faces many problems, which it tackles decently except road accidents. The mass/main reason for road accidents being drink and drive cases. Each year around 50,000 peoples die due to road accidents. The central nervous system is affected by alcohol. The ability to control steering is affected even at 0.05% BAC (Blood Alcohol Concentration). In case of public transport, the triggering of buzzer creates awareness among the passengers traveling in that vehicle. The GSM module sends the information of the position and alcohol content in the driver's body to the nearest police station by using GPS.

2. RELATED STUDY

In preview paper the authors have proposed many system to prevent the accidents due to drunken driving. Major drawback of this system is that they have used pic 16f877A microcontroller which is not as useful as 89s52 microcontroller that we are using. also, they have used an old design system which is not useful and increases the overall cost of the system which makes it expensive and somewhat unaffordable to certain segments of society thereby limiting its scopes to be used. However, in the proposed project the alcohol is detected by the alcohol sensor MQ3 which is the senses in the car while in case drink alcohol, and the sensor send a signal to microcontroller which forward a particular signal to the GSM. The GSM send a message to a particular preregister mobile that the driver is drunk and drudger beeping and led is indicated red and then the engine will be locked.

EXISTING SYSTEM:

drowsiness detected. A large number of road accidents takes place due to the fatigue of drivers due to alcohol consumption. An embedded system with UNO and open CV is developed. Where the Alcoholic drivers are detected in real time using the drivers drowsiness and intoxication, since large number of road accidents takes place due to alcohol drinking. In the computer vision concept is used which has an alcohol gas sensors combined with the Raspberry pi micro-controller and embedded systems [1] AnARM based face recognition system is developed with open CV library using the ARM based micro-controller and USB camera to detect continuous image. The image captured is compared with the existing database and the output is sent to the GPS and sent the information regarding the person to the authorises in charge using GSM. They used a vehicle based control in the school zone and controls the speed of the vehicle in brides, hospital areas and many other important areas [7]. Though there are many works carried out they concentre only on a specific feature and the accuracy level should be improved. The manual detection device that cops use, do analyze the breath and detect the alcohol consumption and penalize the defaulting drivers but then it becomes increasingly impossible for the traffic-cops to control, measure and monitor the vehicle movement given the size of modern-day traffic. It therefore becomes imperative for government authorities to take advantage of the growing technology to prevent such accidents and possibly prevent drunken-driving. The theft of the vehicle is also a major concern today, so if any theft happing in the vehicle should be notified to the police or the vehicle owner.

3. AN OVERVIEW OF PROPOSED SYSTEM

The main components in this system is the alcohol sensor which is placed inside the vehicle. Sensors gives signal to the comparator. The comparator is connected to the micro controller. It gives signal to alert the buzzer. The components used in this system are represented in figure1 which consists of LCD, Buzzer, GSM Module, AT89S52, Power Supply, Jumper Wires, Micro controller, Alcohol Detector Module, Ultrasonic Distance Sensor. The proposed system of this project. Alcohol sensor will detect the alcohol level from air, which is presented in the steering to detect the alcohol level in air breath out by driver. If level of alcohol is detected then it will be send message to microcontroller. Microcontroller compares the level of alcohol send by the sensor with normal level of alcohol. If the level of alcohol detected in the sensor is higher than normal level then microcontroller execute the code

which would not allow the driver to start the car. If the alcohol level is become high while car in moving condition then the car will be slowed down like parking and send message to owner using GSM.
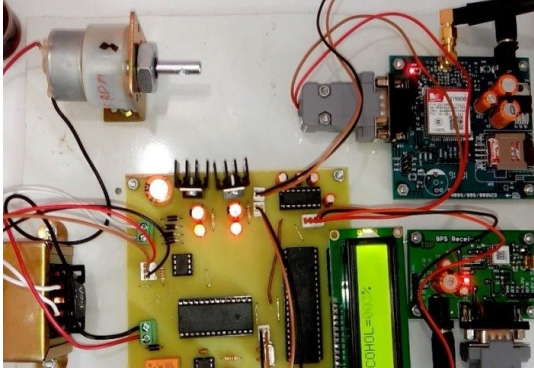
The project is actuated on switching on the vehicle with the help of the ignition key. This would actuate the working circuit and make the entire unit in a vigilant mode. Alcohol detection is performed in real-time by the alcohol sensor, the microcontroller, and Analog to digital converter circuit. Thus there is never a situation when the system is in a shadow or a sleep state. In the GPS based drunk and drive detection project, the system generates an alarm once the level of alcohol measured above a set threshold value. At the same time engine, locking is done with the help of deactivating Relay and DC motor. Also, it reads data from the GPS unit which gives the position of the vehicle to the microcontroller. Then the microcontroller sends SMS to the handheld mobile phone with the help of a GSM modem. The user can click on the link in the received SMS. The integration of the GPS tracker with 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.

4. CONCLUSION

An effective solution is provided to develop the intelligent system for vehicles which will sense the various levels of alcohol present in the breath of the driver and would respond accordingly. The system adopted different principles as explained in this paper, by using hardware platform who's Core is Atmega8, Alcohol sensor mq3, GPS & GSM module. The communication with preregistered phone numbers in this designed system is done via GSM, GPS and control of various parameters. The whole control system has the benefit of small volume and high reliability. Future scope of this system is to decrease accident numbers and providing useful details about the accidental vehicle, thereby reducing the rate of accidents

taking place due to drunken driving. This system brings modernization to the existing technology in the vehicles and also maintains and improves the safety features, hence proving to be an effective development in the automobile industry.

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