Design of Automated Car with Alcohol Detection, Emission Test and Women Security

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ABSTRACT:

This paper presents the review of the literatures based on automatic detections of alcohol, emission and women security. Previously, some authors proposed their ideas on alcohol detection, emission test and women security proposed individually. Through this paper, we propose to integrate these three aspects which will send the user information to the family by sending text messages through GSM Technology and share the location through GPS. Here, we are proposed to collect user information and will send the exact location to the family and hospitals in case of emergency. It is to secure and monitor the vehicle based on combination of mainly the Arduino, GSM and GPS. After the review, the system is proposed for the safety of people sitting inside the vehicle.

KEYWORDS:

Arduino UNO, Alcohol Sensor, Emission Sensor, SOS Switch, GSM, LCD, GPS.

INTRODUCTION:

Nowadays everything has been digitized. In order to test all these detections for all the vehicles is not at all possible and it takes a huge time for each and every vehicle.

Drunken and driving is a serious public health problem, which is likely to emerge as one of the most significant problems in the society. And, we are facing a pollution caused by "GREEN HOUSE EFFECT" due to "**GLOBAL WARMING".** Many of the people are losing their lives due to pollution caused by vehicles.

Another major concern in every girl's mind is considering the ever-rising increase of issues on women harassment is mostly about her safety and security. The system implemented by us aims at reducing the road accidents, greenhouse gases and women harassment in the society.

LITERATURE SURVEY:

In paper [1], the authors Aditya Madhab and Charisa explained about the incidence of use of alcohol in Fatal Road Traffic Accidents. They described that accidents which occurred due to the traffic issues are the main reason in the loss of many lives and property. It results in economic rate. The death of the people every year due to road accidents has raised to the 150,000 mark. From the report of the National Crime Records Bureau (NCRB) states, that drunken driving is the actual cause of road accidents. It is reported in India that 25% of accidents occur due to drunken driving.

In Paper [2] published by Aleena Mary and karanjit proposed a review on the automated pollution control system in vehicles. It was reported that in many countries, most of the people travel daily for work and they have their own vehicles like cars, two wheelers etc. for the travel. The major issue of these automobiles is air pollution. Each vehicle has to emit gases, which is due to the combustion of fuel. To a particular limit, this emission of gases due to combustion is not the major reason to cause pollution. The actual pollution problem occurs when these gases emit above the standard limits. The main reason for the emission of gases is the improper fuel combustion that supplied to the engine.

In paper [3] published by Nagendra babu and Chandra Shekhar proposed Automated System for Controlling Air Pollution in vehicles using ARM7 Micro Controller. The entire system is dealt for two reasons. The main

reason is the amount of identifying and controlling the limit of gases that cause pollution and directing it to the person who is driving the automobile. The next reason is that this system is the biggest achievement in technology, which keeps the Environment safe from gases that are emitting from automobiles. In addition, it will control it when it crosses the standard mentioned by Government. Actually, this system cannot change the engine configuration but it is easy to employ in vehicles.

In paper [4] published by Namita and Swati proposed Alcohol Detection and Vehicle Engine Locking System. In this paper, they have developed a kit, which is used to trace the occurrence of drunken driving. The main idea is to reduce the occurrence of accidents that results in loss of people life and property this system when adjusted on automobile alert the person who is driving by turning off the engine. Moreover, informing the nearby people by sending messages. By turning off the engine, it does not allow the drunken person to drive which helps in reducing the accident rate.

In paper [5] published by J Sunil Kumar and D. Sri lakshmi proposed women safety system. In this paper, these authors proposed a system consist with a smart featured button in encode module, when they press that button. In fraction of seconds that device sends a message of her current location to the registered mobile number as well as a buzzer turns on in that device.

In paper [6] published by N. Harshita and S. Ishwarya proposed smart security solution. In this paper, these authors explained this system. These smart band will communicate with the smart phone through wi-fi. These smart band continuously moderating with pulse, body temperature along with the body motion. In case of abuse, this device gives alerts to smart phone and that smart phone will share a message to the registered mobile number and as well as its send alerts to near police station.

In paper [7] published A. Sheryl Oliver, M. Anuradha and J Ramya has proposed automated pollution detection system using IOT and AWS cloud. In this paper, they were using a web application associated with cloud which stores the data of pollution. This device has a capacity to find pollution along 20km range. These system associate with GPS and help to visualize the location on internet.

In paper [8] published by Pratiksha Bhuta, Karan Desai and Archita Keni were proposed alcohol detection and vehicle controlling. In this paper these authors explaining their idea to control road accidents by using advanced technology. In case of device finds that person consumes alcohol it will sends a message alert to register mobile number.

Now, we are integrating alcohol detection, emission detection and women security in a single system to prevent the high cost of these security issues. In case of alcohol detected then immediately ignition turns off. Similarly, in emission detection this system will activated and incase of finding carbon monoxide more than limit then ignition turns off. But in women security aspect a message alert will be shared to the nearest police station include GPS location and also car details as well. This automated system turns to a modern solution for today's situations. But, in women security. In these days' maximum having smart phones and also had well knowledge on using that. By keeping this in mind. We are proposing this automated system to decrease pollution, preventing road accidents and providing a safe environment to women for their safety issue.
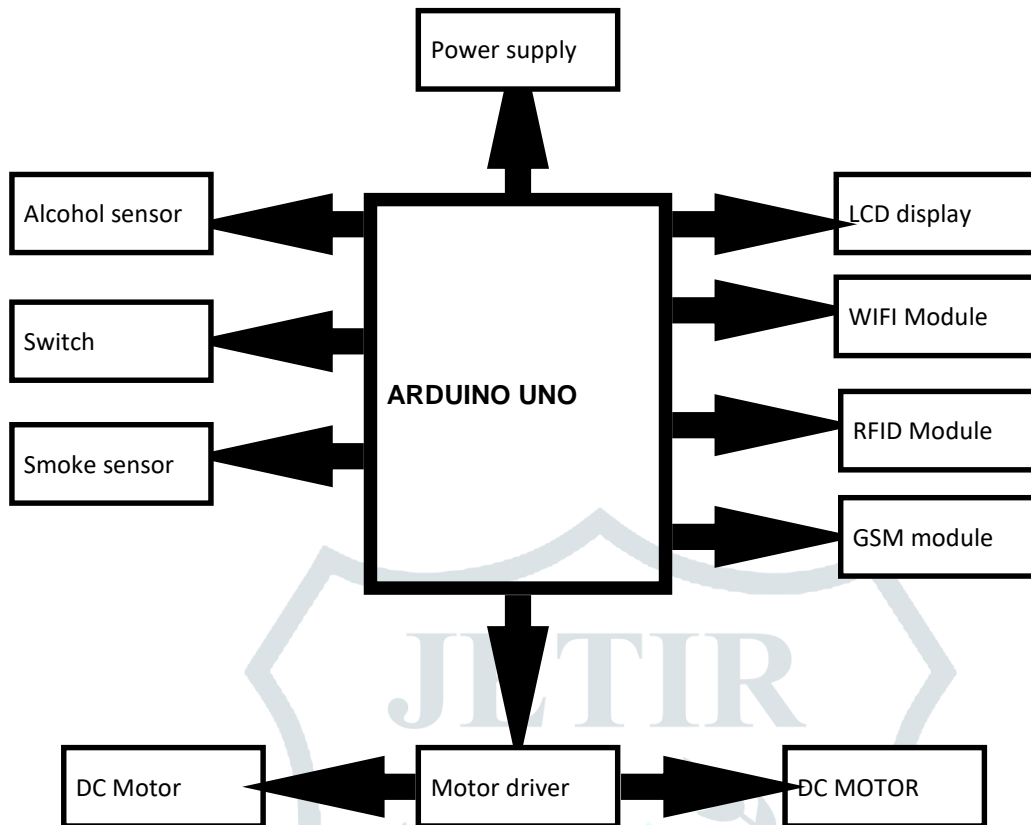
Block Diagram of Proposed System:

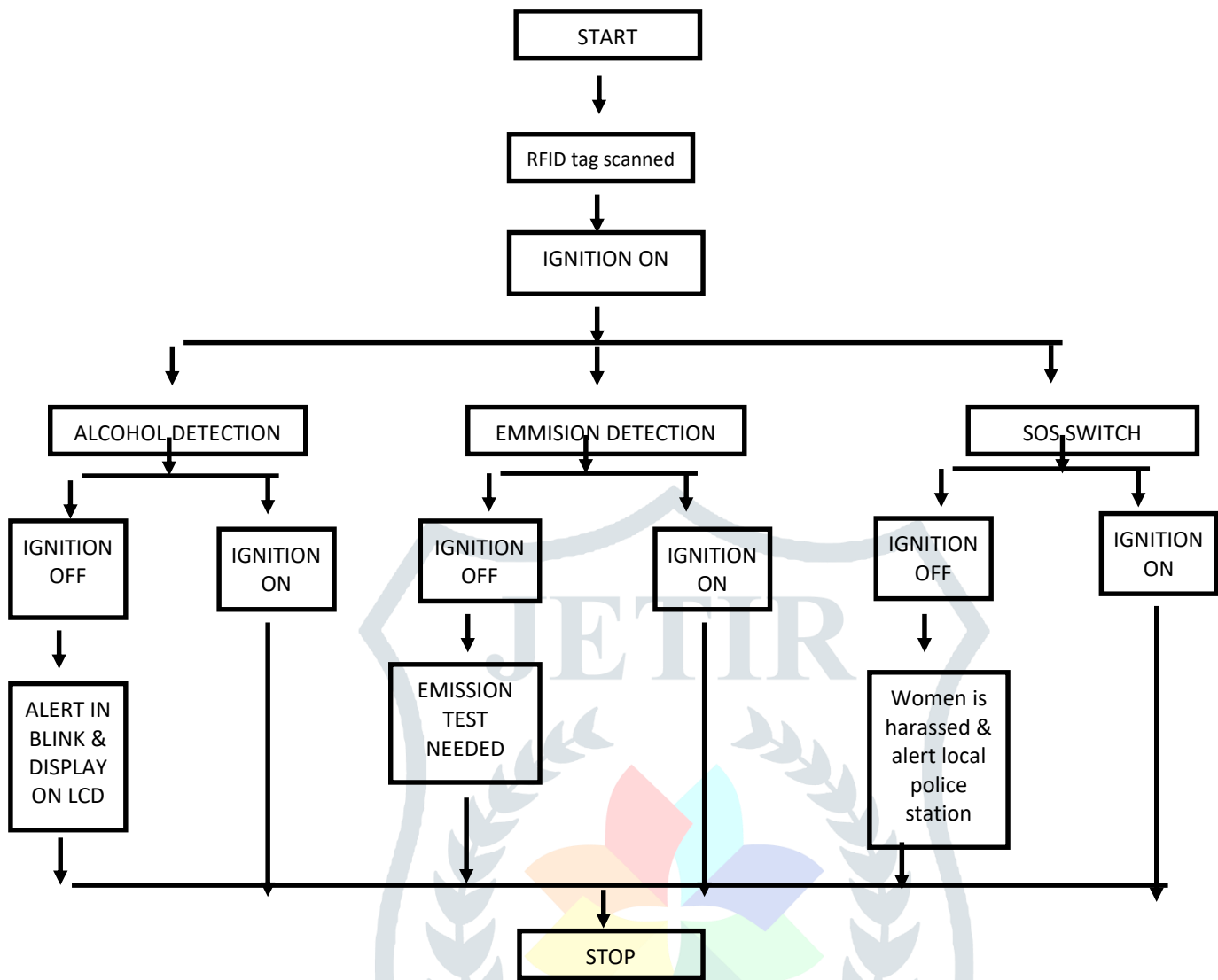Figure 1 Block Diagram of Proposed System

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                              ┌──────────────┐
                              │    START     │
                              └──────┬───────┘
                                     ↓
                          ┌────────────────────┐
                          │  RFID tag scanned   │
                          └─────────┬──────────┘
                                    ↓
                          ┌────────────────────┐
                          │    IGNITION ON      │
                          └─────────┬──────────┘
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| ALCOHOL DETECTION | EMMISION DETECTION | SOS SWITCH |

| IGNITION OFF | IGNITION ON | IGNITION OFF | IGNITION ON | IGNITION OFF | IGNITION ON |

| ALERT IN BLINK & DISPLAY ON LCD | | EMISSION TEST NEEDED | | Women is harassed & alert local police station | |

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                              ┌──────────────┐
                              │    STOP      │
                              └──────────────┘
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Figure 2 : Flow Chart of Proposed System

Comparison table:

Author / ref	Invention	Technology	Platform	Advantages
Aditya Madhab Baruah, Rituraj [1]	"A study of the incidence of Alcohol use in fatal road traffic accidents".	GSM	Microcontroller	Protect people from road accidents.
Aleena Mary Anson, Dr. Karanjit.[2]	Automated pollution control system in vehicles.	GSM	Microcontroller	Protect the environment from the dangerous gases.
D. Nagendra Babu, H. Chandrashekar, [3]	"Automated system for controlling Air pollution in vehicles".	GSM	ARM Microcontroller	
Namita Shinde, Amresh Geri, Swati Rima, Paul Singh. [4]	"Alcohol Detection and Vehicle Engine Locking System".	GSM	Microcontroller	Protect people from the road accidents caused by drunken drivers.
J Sunil Kumar, D srilakshmi.[5]	women safety system	GPS, Mobile application	Arduino	Featured with simple gestures. To feel security for women with this technology
Harshitha.N and Ishwarya.S [6]	smart security solution	Smart band (GPS, mobile application)	IOT BASED	This smart band continuously monitors the physical changes and sends an alert to near police station.
Sheryl Oliver, M. Anu radha, J Ramya. [7]	automated pollution detection system using IOT and AWS cloud.	GPS	Web application.	It can detect dangerous gases around 20km. And displayed the data in web application with exact location.
Pratiksha Bhuta, Karan Desai and Archita Keni. [8]	alcohol detection and vehicle controlling.	GPS	Microcontroller	This system featured with automatic engine lock when it senses alcohol consumption.

Proposed Work	Integration of Alcohol, Emission Detection and Women Security	GSM and GPS	Arduino IDE	Protection of the lives of person which may occur due to drunken driving, harmful emission. Women Security Feature. Integration of above 3 features in one system.

CONCLUSION:

This paper presented the review of available literature in the field of automatic alcohol detection, emission detection and women security. All the literatures have been thoroughly reviewed and analyses. After review, we came to know that there is a need of one integrated system which will include all these three features. we propose to develop an integrated system which may be helpful for the society in totality. The proposed system will be developed   on Arduino IDE platform by using GSM and GPS Technologies.

REFERENCES:

1) Aditya Madhab Baruah, Rituraj Chariha. "A study of the incidence of Alcohol use in fatal road traffic accidents". J Indian Accad Forensic Med. Jan – March 2015, vol.37, No.1.

2) Aleena Mary Anson, Dr. Karanjit. "Automated pollution control system in vehicles: A Review" International Journal on Recent and Innovation trends in computing and communication Issue 05, volume: 5.

3) D. Nagendra Babu, H. Chandrashekar, "Automated system for controlling Air pollution in vehicles using ARM7 microcontroller International Journal of Scientific Engineering and Technology Research vol.3, Issue 25, September 2014.

4) Namita Shinde, Amrich Geri, Swati Rima, Paul Singh.   "Alcohol Detection and Vehicle Engine Locking System".   International Journal of Industrial Electronics and Electrical Engineering. Vol 06 Issue 3, March 2018.

5) J Sunil Kumar, D srilakshmi " women safety system using GSM & GPS Tracking ". Associate professors in electronics and communicational engineering at narayana college, Nellore.

6) Harshitha.N and Ishwarya.S " smart security solution for women using IOT". Department of ECE, Rajarajeswari college of engineering, Karnataka.

7) Sheryl Oliver ,   M. Anu Radha and J Ramya " automated pollution detection system using IOT and AWS cloud." International journal of innovative technology and exploring engineering vol-8, issue-11, sep 2019.

8) Pratiksha Bhuta, Karan Desai and Archita Keni " alcohol detection and vehicle controlling." International Journal of Engineering Trends and Applications (IJETA) – Volume 2 Issue 2, Mar-Apr 2015.