e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

IOT ENABLE ALCOHOL DETECTION SYSTEM IN VEHICLE

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ABSTRACT

In this paper, a liquor discovery framework was created for street transportation security in city utilizing Internet of Things (IoT) innovation. Blood Alcohol Content (BAC) limits are set and observed with the utilization of a microcontroller. Whenever the limit is reached, the created framework communicates the BAC level of the driver and the position directions of the vehicle to the focal observing unit. The data about the Driver and vehicle was ship off the observing unit like vehicle number, driver's name, time, and careful live area of vehicle with accurate term. These data is ship off the proprietor to the vehicle to the product which has login based safeguarded programming. The proficiency of this framework is tried to guarantee appropriate usefulness. The organization of this framework will help in diminishing the frequency of tanked driving-related street mishaps in shrewd urban areas.

The fundamental point of the project is to plan an installed system for carrying out productive liquor recognition system that will be helpful to avoid accident. There are a wide range of sorts of mishaps which happens in day-to-day existence. Most frequently mishaps happen due to over smashed individual. However, there are regulations to rebuff tipsy driver they can't be completely carried out. Since traffic police can't remain on each street to really look at every vehicle driver whether he/she has inebriated or not. In this way, there is a requirement for a compelling framework to really look at tanked drivers. In this manner, to keep away from these mishaps, we have carried out a model task. In our venture, at first, we check regardless of whether the driver has inebriated by utilizing the MQ3 GAS sensors. Prior frameworks were planned exclusively to identify the presence of liquor in vehicle, which prompts a bogus location, regardless of whether the co-traveller or any of the individual in the vehicle is polished off or on the other hand assuming liquor spilled on the driver, framework will initiate, and vehicle will be controlled provided that the driver is inebriated. Here we have utilized two sensors one is breath sensor which a low awareness, high reach sensor and other one is sweat sensor, which is high responsiveness, low reach. Breath sensor situated on the controlling, and sweat sensor are situated on the endlessly safety belt. By utilizing this framework, we can precisely recognize and control the vehicle assuming that the driver is tanked, and misleading discovery can be kept away from.

Keywords: Alcohol Detection, Decreasing Accident, Road Safety, Drunken Driver, Vehicle Safety.

I. INTRODUCTION

As human is advancing different mechanical changes are being taken on in social orders bringing about quick industrialization. Individuals are moving towards urban communities abandoning wide open bringing about higher populace there by huge number of vehicles and henceforth number of accident is expanding.

Step by step situation in urban areas is changing extremely quick and utilized to decline. Different organizations and multinationals across the globe are making progress toward diminishing the accident level and tracking down an improved answer for something similar.

A vehicle that depends totally on computerization is by definition known as automated or independent. As robotization innovation has advanced, particularly in the a long time after the creation of the coordinated circuit, an ever increasing number of capacities have been added to autos, letting the driver free from a significant part of the ordinary second to-second dynamic that might be viewed as having made driving cautious.

The implementation of vehicle–highway automation early in the 21st century will provide an enhanced level of surface transportation accessibility and mobility. Vehicle–highway automation will take many forms and collectively these advanced control technologies will be the most important performance upgrade of the

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nation's surface transportation system since the advent of the interstate highway system. Benefits will result through improvements in safety, spurred economic development, reduced traffic congestion, and extended mobility for many, especially the elderly and disabled.

High lethal accident because of drunk driving endure, so an answer should be found. Forestalling intoxicated driving is a continuous concentration as protected driving innovation advances. In Japan, transportation organizations are expected to utilize a liquor locator to test whether proficient drivers are affected by liquor before they start their movements. In the U.S., the National Highway Traffic Safety Administration (NHTSA) is creating start interlock innovation that associates liquor indicators to the start of a vehicle's motor. Regular breath liquor gadgets use either energy components or strong state sensors. Frameworks utilizing energy units are utilized all the more generally for evidential breath testing. Be that as it may, high lethal accident rates brought about by tipsy driving are as yet a major issue.

These system have been utilized in different spots, like public vehicle workplaces and trucks, yet are seldom utilized by customary drivers since they require a mouthpiece to take in, and it takes more than 1 min. to yield the estimation results. Thusly, they are not reasonable for regular use. Further developing convenience is important to grow the utilization of liquor recognition system to standard drivers.

II. METHODOLOGY

A few methods have been created to handily quantify the gases in breathed out breath and harmlessly distinguish liquor in the blood [3-6]. To forestall mistakes while utilizing a liquor interlock, it is important to stay away from bogus location because of different gases, like surrounding air. We recently investigated a water fume sensor that recognizes an individual's breath and demonstrated the way that the sensor could without much of a stretch be combined with a liquor sensor.

This project depends on controlling the Drunk and driven individual which is significant justification behind accident in practically all nations from one side of the planet to the other. Alcohol Detection System in vehicle is essentially plan for the security of the driver. This undertaking is one of the significant Sensor based project thoughts. The principal Unit of this undertaking is an "Alcohol Sensor". On the off chance that the individual inside the Vehicle has drunk liquor, it is Alcohol discovery is finished by the sensor.

In the Software System which is programmed by PHP programming which is display the information about driver and their location with exact time while he drunken in vehicle. The software system is handle transport offices with the security which has log in I'd and password.

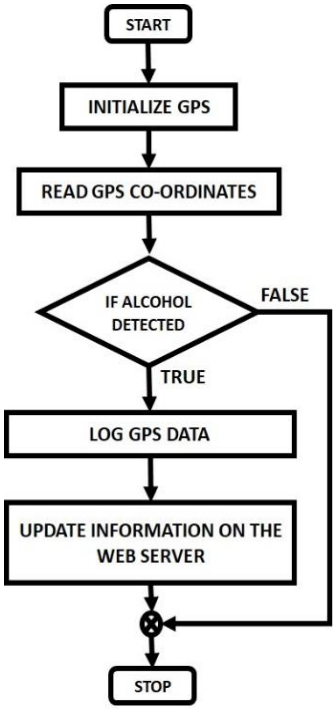

Figure 1: Flow chart of Alcohol Detection System in Vehicle

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The Alcohol Detection System will allow to get information about the drunken person in vehicle. It will use an Alcohol Sensor to detect the presence of alcohol content of driver.

Project will be dividing into two parts:

1) Hardware System

2) Software System

III. WORKING

Drunk and driving is an exceptionally hazardous way of behaving on the grounds that excessive utilization of liquor causes distortion in thought pattern of drivers. The Investigation directed by the World Health Organization in 2008 shows that around 50% to 60% of Vehicle collisions are related with drunk driving.

In present times, the instances of road accident caused by drunk driving has expanded rapidly. It has, become clear that drunk and driving causes extraordinary harm to public security.

The IOT based Alcohol Detection System in Vehicle is worked in the basis of MQ3 sensor (Alcohol sensor).

The IoT Drunk driving observing system is a ground-breaking system with enormous application in the field of smart urban areas and transportation. The system screens the unsafe alcohol level and coordinates of the drivers while in alcohol state through a web page. To make this project possible, we will situate the hardware section in vehicle to make use of MQ3 sensor which detects the alcohol molecules in the air around the driver to detect whether driver is drunk or sober.

The system makes use of ESP8266 microcontroller, MQ3 alcohol system, OLED screen, Neo6m GPS, Wi-Fi modem for sending data. The Hardware is powered by 12-V input.

The OLED screen used to display Alcohol consumption level and coordinates of the vehicle. The GPS gives the directions of driver's area and personnel monitoring it. The Webpage arrangement to show the alcohol levels of driver and direction of the vehicle as they change over the time. The final coordinates of the vehicle's location are taken when the coordinates stop changing hence suggesting that the device has closed the vehicle at those directions due to the alcohol consumption levels of the driver passing the second boundary of the system accordingly demonstrating that the driver is in an alcoholic state.

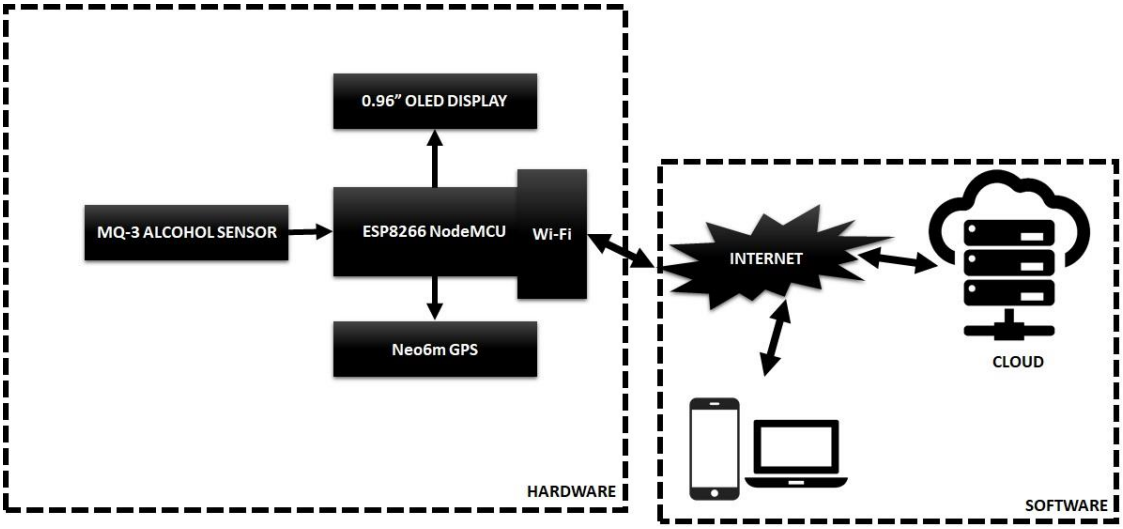

Figure 2: Block Diagram of Alcohol Detection System in Vehicle

Power Supply: A 12-V was utilized in this project. This 12-V is then stepped down to 5-V by the voltage regulator circuit to power the microcontroller and the sensors as 5-V is required by the circuits for its operation. Power supply input 12-V 1A DC power is given to this project through adopter, and we can also give 12-V 1A AC through Transformer

Alcohol Sensor: This module is made utilizing Alcohol Gas Sensor MQ3. It is a minimal expense semiconductor sensor which can identify the presence of liquor gases at concentrations from 0.05 mg/L to 10 mg/L. The delicate material utilized for this sensor is SnO2, whose conductivity is lower in clean air. It's conductivity increments as the convergence of liquor gases increments. It has high aversion to liquor and has a decent protection from aggravations because of smoke, fume, and gas. This module gives both advanced and simple

results. MQ3 liquor sensor module can be effectively connected with Microcontrollers, Arduino Boards, Raspberry Pi and so on.

This liquor sensor is appropriate for recognizing liquor fixation on your breath, very much like your normal Breathalyzer. It has a high awareness and quick reaction time. Sensor gives a simple resistive result in light of liquor fixation. The drive circuit is exceptionally straightforward, all it needs is one resistor. A straightforward connection point could be a 0-3.3V ADC.

In a Web Application we will use Front End as a HTML5 and CSS3 and in the other hand we use Back End as a PHP 7.2, MySQL, and Apache HTTP Server. In a Web Application it has show the information about the Driver and car was send to the monitoring unit like Vehicle number, Exact time, and Perfect live location of vehicle with exact duration. This all information will be sent to the owner or the Truck service manager though the Web Application which has full secured with the Login I'd and Password which will also protected. The Information of the Drivers location is connected to the GPS, and it is show in Google Maps. These Information as also we can be deleted through the owner by clearing history. In the first interface we must see login page and after login successful we enter the administrative page in that we are monitoring the information.

IV. RESULT

We successfully developed a prototype portable alcohol device that is tamper-resistant, as it can distinguish human breath from other gases. This device is capable of distinctively detecting the saturated water vapor and the metabolite from human breath, and it can accurately measure the alcohol level within 3 seconds once a driver breathes into the device. We also developed a system that can use smartphones to show the alcohol level measured by the detector and control the sensor device. The measurement accuracy of ±10 ppm was obtained by introducing exhaled breath from within 20 mm. To develop a more practical breath alcohol detection system, we plan to further develop our portable prototype breath alcohol detection system.

V. CONCLUSION

This paper addresses the detection of drunk and drive for the drivers with IOT based system. This system is proposed and classified into two basic parts basically hardware system and software system. The Hardware is located in vehicle and the software will be used manager of truck or cab or owner of the vehicle. Alcohol section check the alcohol level by driver followed by the microprocessor and it will be access location by GPS through antenna. This GPS section get the exact coordinates of location of vehicle with the help of microcontroller and upload all the data on cloud, which works as reporting system helps to inform all the drunk and drivers.

ACKNOWLEDGEMENT

The success of any work depends on efforts of many individuals. We would like to take this opportunity to express our deep gratitude to those who extended their support and have guided to complete the project work. We wish to express our sincere and deepest gratitude to our guide Mr. Jayant Hande for his valuable and unique guidance. We would also like to thank her for the constant source of help, inspiration, and encouragement in the successful completion of project. It has been our privilege and pleasure to work under his expert guidance. We like to thank Dr P. B. Pokle (Head of Department) for providing us the necessary information about topic. We would again like to thank Dr.A.M. Shende, Principal of our college, for providing us the necessary help and facilities we needed. We express our thanks to all the staff members of ETC department who have directly or indirectly extended their kind co-operation in the completion of our project report.

Place: Nagpur

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