

ALCOHOL DETECTION WITH ENGINE LOCKING SYSTEM USING GPS

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Abstract-

In now a days most road accidents are occurred because of drunk and driving. The drivers who drunk alcohol are not in stable condition. So this leads to rash driving that's why accidents are occurred. So avoid this situation we proposed an idea. In this project the alcohol is detected by alcohol sensor which is sensing in the vehicle while in case drink alcohol. If the sensor sense that driver is drink alcohol it sends the signals to the Arduino board. Then the micron chip which is Arduino board sends the signals to the signals to the GPS. The GPS sends a location to pre-registered mobile. Led is indicated red and then the engine will be locked. In this way pre-registered person know the exact location of the vehicle through google maps.

KEYWORDS: LCD display, Arduino board, buzzer, DC motor, MQ3 alcohol sensor, NEO-6M GPS module, ESP-01S WI-FI Module

I. INTRODUCTION

Now a days drunk & driving is very common. The drivers who drink alcohol are not in stable stste.so this will leads to road accidents.

As per the national Statistics an average of 12000 people die every year and an average of nine lakh people get arrested in drinking and driving accidents.

Thus road safety is appearing as a big social concern around the worldwide .Therefore, there is the need for an automatic alcohol detection system that can function without the restriction of space and time. This project presents the design & implementation of Alcohol detection with engine locking using GPS. And Arduino ONO. The system will continous monitoring alcohol concentration. When the alchol sensor reaches threshold level the engine will automatically locked GPS sends the live location of the drunked person.

II. LITERATURE SURVEY

Here is a literature survey on alcohol detection with engine locking system using GPS and Wi-Fi module:

Alcohol Detection System with Engine Locking using GPS and GSM" by G. G. Dahake and R. S. Bichkar. This

paper discusses the design and implementation of an alcohol detection system with engine locking using GPS and GSM. The system uses a gas sensor to detect alcohol and sends an alert to the owner's phone through GSM if alcohol is detected.

"Development of a Smart Car Alcohol Detection System Based on GPS and GSM Technologies" by T. R. Liu et al. This paper describes the development of a smart car alcohol detection system based on GPS and GSM technologies. The system uses a gas sensor to detect alcohol and sends a message to the owner's phone through GSM if alcohol is detected.

"Design and Implementation of an Alcohol Detection System with Engine Locking Using GPS and Wi-Fi" by N. A. Bhat and V. D. Shinde. This paper describes the design and implementation of an alcohol detection system with engine locking using GPS and Wi-Fi. The system uses a gas sensor to detect alcohol and sends a signal to the engine control unit to prevent the engine from starting if alcohol is detected.

"Alcohol Detection System with Engine Locking Using GPS and Wi-Fi" by S. S. Patil et al. This paper discusses the design and implementation of an alcohol detection system with engine locking using GPS and Wi-Fi. The system uses a gas sensor to detect alcohol and sends a signal to the engine control unit to prevent the engine from starting if alcohol is detected.

Real-Time Alcohol Detection System with Engine Locking Using GPS and Wi-Fi" by S. D. Kore and P. D. Dumbre. This paper presents the design and implementation of a real-time alcohol detection system with engine locking using GPS and Wi-Fi. The system uses a gas sensor to detect alcohol and sends a signal to the engine control unit to prevent the engine from starting if alcohol is detected.

In summary, these papers highlight the importance of alcohol detection systems with engine locking using GPS and Wi-Fi modules in preventing drunk driving and ensuring road safety. They discuss the design, implementation, and testing of such systems, demonstrating their effectiveness in detecting alcohol and preventing vehicle operation.

III. EXISTED SOLUTION

In this existing system, alcohol detectors are not proposed inbuilt in a car. The traffic police uses alcohol detectors (device) to avoid drink and drive accidents.

The limitation of this device is that the police are not able to check each & every car & even if they stop some suspects there are chances that the police can be easily bribed.

Therefore, there is a need for an effective system to check drunken drivers. In previous technologies can do only detecting the alcohol, If the person drinks the alcohol the engine will be locked.

IV. PROPOSED SOLUTION

In Our proposed solution MQ3 alcohol sensor will continuously monitoring the alcohol. When the alcohol level reaches the trigger point then the MQ3 sensor sends the signal to the Arduino. Then Arduino sends signals to engine then automatically engine will be locked. Finally live location of the drunked person sends to the particular person which have our application through GPS.

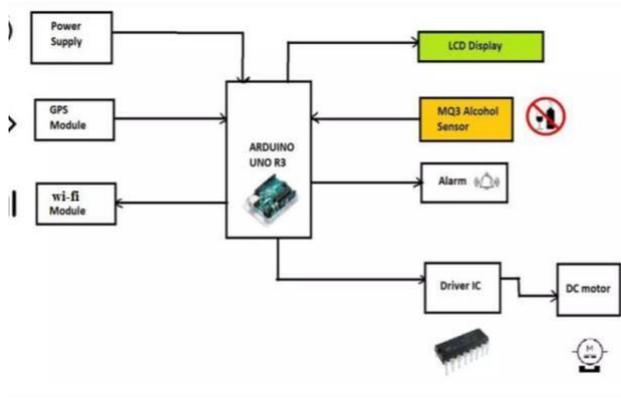


Figure.1: Block Diagram of Alcohol Detection With Engine Locking System Using GPS.

V. SOFTWARE

Arduino IDE is an open-source software, designed by Arduino.cc and mainly used for writing, compiling & uploading code to almost all Arduino Modules.

It is an official Arduino software, making code compilation too easy that even a common person with no prior technical knowledge can get their feet wet with the learning process.

It is available for all operating systems i.e. MAC, Windows, Linux and runs on the Java.

Platform that comes with inbuilt functions and commands that play a vital role in debugging, editing and compiling the code. A range of Arduino modules available including Arduino Uno, Arduino Mega, Arduino Leonardo, Arduino Micro and many more.

Each of them contains a microcontroller on the board that is actually programmed and accepts the information in the form of code.

The main code, also known as a sketch, created on the IDE platform will ultimately generate a Hex File which is then transferred and uploaded in the controller on the board.

The IDE environment mainly contains two basic parts: Editor and Compiler where former is used for writing the required code and later is used for compiling and uploading the code into the given Arduino Module.

MIT App Inventor is a web application integrated development environment originally provided by Google, and now maintained by the Massachusetts Institute of Technology (MIT). It allows newcomers to computer programming to create application software (apps) for two operating systems (OS): Android and iOS, which, as of 20 January 2023, is in final beta testing. It is free and open-source software released under dual licensing: a Creative Commons Attribution ShareAlike 3.0 Unported license and an Apache License 2.0 for the source code.

It uses a graphical user interface (GUI) very similar to the programming languages Scratch (programming language) and StarLogo, which allows users to drag and drop visual objects to create an application that can be tested on Android and iOS devices and built to run as an Android app. It uses a companion mobile app that allows for instant live testing and debugging. In creating App Inventor, Google drew upon significant prior research in educational computing, and work done within Google on online development environments.

VI. METHODOLOGY

The Alcohol detection & engine locking system using 8 GRS is used to reduce the road accidents occurred due to the drunk & driving. In our project MQ3 Sensor 587 senses the alcohol levels and sends to the arduino board continuously. when the driver drinks above the threshold level then the information to the engine Buzzer sound. Person live The location alcohol senso sends the arduino then be locked with the drunked will sends to the particular person who have the Our exp mobile application Using GPS module.

VII. ADVANTAGES

The alcohol detection with an engine locking system can be implemented in any two or four wheelers

- The Government can keep track of drunken driving cases
- It can provide quick and accurate results
- Change of loss of life and property is minimized

APPLICATIONS

- Automatic engine locking systems through alcohol detection projects can be used in various vehicles for detecting whether the driver has consumed alcohol or not.
- This project can be used in various companies, organizations, and mines to detect the alcohol consumption of employees.

VIII. RESULTS



Fig 2: Final Project

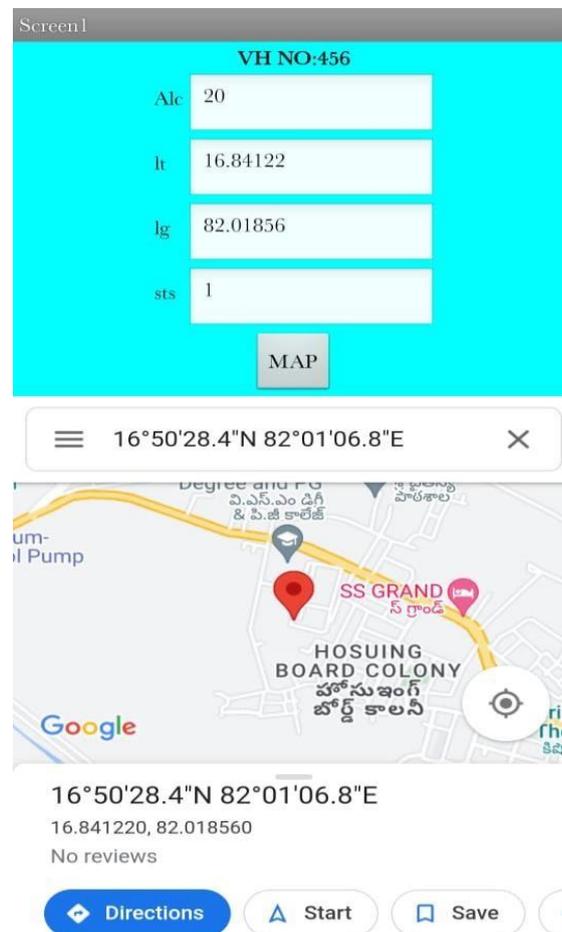


Fig 3: Google Map

IX. CONCLUSION

In conclusion, an alcohol detection with engine locking system using GPS and ESP-01S Wi-Fi module is a highly effective and affordable solution for preventing drunk driving and improving road safety. By accurately detecting the presence of alcohol in a driver's breath and locking the engine if necessary, the system helps reduce the risk of accidents caused by impaired driving.

The GPS module also provides real-time location tracking, allowing vehicle owners and fleet managers to monitor the location and route of vehicles in real-time, which helps improve fleet management and ensure that vehicles are being used in accordance with company policies. Additionally, the system can be easily installed in most vehicles and has a wide range of applications in different sectors, including personal vehicles, commercial vehicles, fleet management, law enforcement, and insurance companies.

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Overall, the system offers several advantages that can help improve road safety and prevent drunk driving, making it an important technology for promoting safe and responsible driving.

X. FUTURE SCOPE

The alcohol detection with engine locking system using GPS and ESP-01S Wi-Fi module has a lot of potential for future developments and improvements. Here are some potential future scopes for this technology:

Integration with other safety systems: The alcohol detection system can be integrated with other safety systems in vehicles such as airbags and anti-lock braking systems. This will enhance the safety features of the vehicle and prevent accidents.

Artificial Intelligence: The system can be improved by integrating it with artificial intelligence technology. AI algorithms can analyze data collected by the system to provide insights that can help prevent drunk driving.

Advanced sensors: Advanced sensors can be used to detect not just alcohol but also other substances that can impair driving such as drugs.

This will make the system more comprehensive and effective in preventing impaired driving.

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