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VEHICLE THEFT INTIMATION WITH FUEL LOCKING SYSTEM

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Abstract:

Due to the significant rise in urban vehicles, the safety of vehicles has become a growing concern among citizens. However, the existing anti-theft systems lack advanced live tracking and monitoring features to prevent vehicle theft. To combat this issue, we have developed a vehicle anti-theft tracking system based on IoT technology that can offer owners comprehensive and proactive services to enhance vehicle safety. Owners can inspect the system's data using any device, whether it's a mobile phone or a laptop, through the locally integrated page within the system. When the system is triggered by the vehicle's infrared sensors during a theft, the GPS module will send location data to the local page. Our team has designed a system that allows for quick and easy access to the vehicle's location for owners. Using either a mobile phone or laptop, our system is more user-friendly and convenient than other comparable products, making it easier for owners to track their stolen vehicles in real-time.

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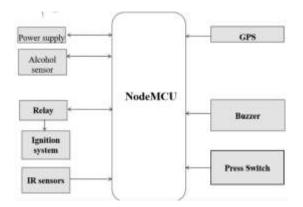
© 2023 IJNRD | Volume 8, Issue 5 May 2023 | ISSN: 2456-4184 | IJNRD.ORG System structure:

Introduction:

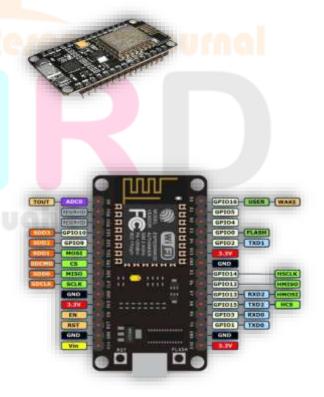
With the economy's development, the number of urban vehicles has rapidly increased, causing more and more concern about vehicle theft prevention. This growing concern creates an expansive market for vehicle anti-theft products.

Despite the development of various vehicle anti-theft devices, their effectiveness remains limited due to their respective drawbacks. Typically, domestic and overseas anti-theft products fall into three categories: mechanical lock devices, car alarm systems, and vehicle tracking/recovery systems, all aimed at preventing car theft. The most commonly used mechanical lock device is the steering wheel lock, which is relatively cheap but can be easily disarmed by experienced thieves and is also inconvenient to use. Car alarm devices are popular but often create false alarms that disturb residents, and they only cover a small area of less than 100m, making them ineffective for tracking stolen cars.

The commonly used vehicle tracking/recovery systems are based on radio signals such as the LoJack tracking system, the GPS Vehicle Tracking System, the TravelEyes2 Vehicle Tracking System and so on. After a vehicle has been stolen, the owner can report the problem to the police or the GPS tracking office. The wireless transmitter or the GPS device in the car will send wireless signals which can be picked up by the tracking device. The wireless signals can be used to pinpoint the location and lead police to rapid recovery. However, these systems have high cost and often come with а monthly monitoring fee our proposed anti-theft system for vehicles is designed overcome the limitations of to current tracking/alarming systems. It is mainly based on IoT and combines traditional anti-theft alarms with GPS. As soon as the car is stolen, the owner receives an alert on their phone or laptop, allowing them to track down the vehicle in real-time using their device. Unlike traditional systems which can be inaccurate and slow, our system is fast and accurate, providing customers with more immediate, convenient, and cost-effective service.

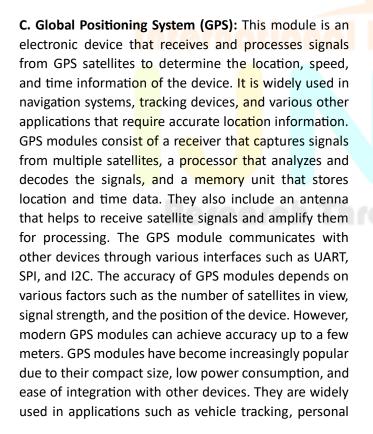


A. NodeMCU: NodeMCU is an open-source, low-cost, and easy-to-use IoT development board based on the ESP8266 Wi-Fi module. It integrates the capabilities of the ESP8266 with a built-in USB-to-serial converter and a power regulator, making it ideal for rapid prototyping of IoT applications. The board can be programmed using the Lua scripting language or the Arduino IDE, and supports a range of sensors and actuators to enable a wide variety of IoT applications. Its compact size, low power consumption, and Wi-Fi connectivity make it a popular choice for building smart home devices, environmental monitoring systems, and other connected devices. Additionally, its open-source nature and large community support provide developers with access to a wealth of resources and libraries to simplify the development process.



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B. Buzzer: A buzzer is a simple and commonly used electronic device that produces an audible sound when it receives an electrical signal. It is typically composed of a piezoelectric element that vibrates when it receives an electric current, producing sound waves that create a beeping or buzzing noise. Buzzer modules are commonly used in electronic circuits for a wide range of applications, including alarms, timers, notification systems, and feedback signals. In research papers, buzzers are often mentioned in the context of experimental setups where they are used as an alert system to notify researchers or participants of a specific event or to indicate a certain task or action. The use of buzzers in research studies can enhance the reliability and validity of the findings by providing consistent and standardized feedback to participants. Additionally, buzzers can be used to measure reaction times and response accuracy in cognitive psychology experiments, and to track the progress of interventions in clinical studies.



navigation devices, fitness trackers, and unmanned aerial vehicles (UAVs). With the advent of the Internet of Things (IoT), GPS modules are becoming an integral part of various IoT applications such as smart cities, agriculture, and logistics.



D. Relay: Relay can be used to activate the whole theft identity system. The location will be sent to the owner. If the switch is not in ON place an alert will not be sent and information of the location will not be shared. By leveraging the switch, able to order system activation and inactivity.



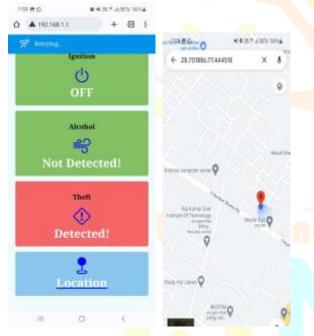
Alcohol sensor:

The alcohol sensor is technically referred to as an MQ3 sensor which detects ethanol in the air. When a drunk person breathes near the alcohol sensor it detects the ethanol in his breath and provides an output based on alcohol Concentration. If there is more alcohol concentration, then buzzer will turn on and owner will get an alert on his phone.



Testing result:

When the car is stolen, the mobile phone of the owner receives messages as shown in Figure below, which contains option to directly open



Google map by clicking on location option on page and track live location of the vehicle.

Conclusion:

The article has described a vehicle anti-theft monitoring with fuel locking system, based on GPS technology and IOT, which contains a communication platform with remote monitoring function. The owner can simply use a mobile phone to locate and monitor the car in real time, which provides the technical foundation for the development of wireless network vehicle anti-theft system.

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