Vehicle Security System Using IoT Application

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Abstract - *The main purpose of the project is to utilize the wireless technology successfully for the car conditions by utilizing the IOT Technology if there should be an occurrence of robbery suggestion. The main extent of this project is to stop the motor of an automobile naturally. This should be possible at whatever point a man attempting to take the vehicle, around then sends a hinder to a programmable microcontroller of arduino family that stores proprietor's number upon an Intimation message out of the blue .When some individual tries to take the auto then microcontroller gets a prevent and the proprietor gets a SMS that his auto is being stolen then the proprietor login to the IOT based web server and control the vehicle like start buzzering, or can execute engine… etc.*

Key Words: **Wireless, Vehicle, IOT, Security, GPS, Technology**

1. INTRODUCTION

Over the most recent couple of decades, India has advanced at such a gigantic rate, to the point that numerous organizations have firmly settled themselves here. These organizations carry an enormous measure of workforce with them. Organizing transportation to such an enormous mass is an awkward undertaking including numerous complexities. . Vehicle following frameworks have conveyed this technology to the daily existence of the basic individual. Today GPS is utilized as a part of autos, ambulances, and police vehicles which are regular sights on the streets of created nations. All the current technology bolster following the vehicle area and status. The GPS/IoT based framework is a standout and unique amongst the most imperative frameworks, which coordinate the two GPS technology and upcoming IoT or Internet of Things phrasing. With the use of GPS Technology the vehicle can be easily tracked non stop and which also helps the concerned authorities to know about the vehicle if it gets stolen or meets with an accident.

GPS is one of the innovations that are utilized as a part of countless today. One of the applications is following your vehicle and keeping general checking on them. This following framework can help us illuminate the area and course went by a vehicle, and this data can be seen from some other remote area. It additionally incorporates the web application that gives us the correct area of the objective. This framework empowers us to track the objective in any climate conditions. Our proposed system is designed to track and monitor vehicles that are used by certain party for particular purposes, also to stop the vehicle if stolen and to track it online for retrieval. This system is an integration of

several modern communication technologies. To get the latitude and longitude data, there are various web based geolocation services.

2. LITERATURE SURVEY

Microcontroller-based Vehicle Security System with Tracking Capability using GSM and GPS Technologies by Orven F. Mendoza

Microcontroller based Vehicle Security System with Tracking Capability utilizing GSM and GPS Technologies, is a framework that can be utilized to expand vehicle security, as it can track area of missing vehicle, and enable specialists to have dependable proof that the vehicle is stolen. The task utilizes the Global System for Mobile (GSM) and the Global Positioning System (GPS) technology, which incorporates the utilization of GPS collector module, GSM module, and microcontroller as its essential segments. It also uses a vibration sensor that senses vehicle movement and a buzzer that sends an alarm when sensors are triggered.

Microcontroller Based Smart Card Car Security System by A. Z. Loko, A. I. Bugaje, Usman Abdullahi

This paper focuses on the design and implementation of a microcontroller based smart card car security system with call intrusion alert capability. A PIC167877A microcontroller, RFID reader, RFID card and a GSM modem were used for the successful implementation of the system. The PIC16F877A microcontroller was used to serve as the entire brain of the system which holds the unique RFID card number and controls the electromagnetic relay and the GSM MODEM. The Electromagnetic relay served as the mechanical tool that secures the car ignition system, and the GSM modem was used to call the car owner whenever there is an intrusion attempt.

Vehicle Security System Using GSM Technology by K.Priyanga S.Sangeetha C.Thilagavathi R.Vinodhini Vaishanavi.K

This framework portrays the plan and development of a propelled auto security framework utilizing GSM technology. It utilizes the GSM portable communication to transmit a caution flag and control the direction. The control and communication between the client and the framework are accomplished through a short message administrations (SMS) convention are accessible in the cell phone. In the event that the auto entryway is unlawfully opened or the auto is vibrated, an alert flag will be initiated and it send SMS message to the proprietor's cell phone quickly.

3. PROPOSED SYSTEM

This project, we present a solution on how to protect the vehicle with affordable cost. Here, we made an attempt to develop a system based on IOT technology. With this system, when someone is trying to steal the Vehicle, it alerts the car owner when he is at nearest distance as well as when he is far away from the Vehicle.

VECHICLE SECTION:
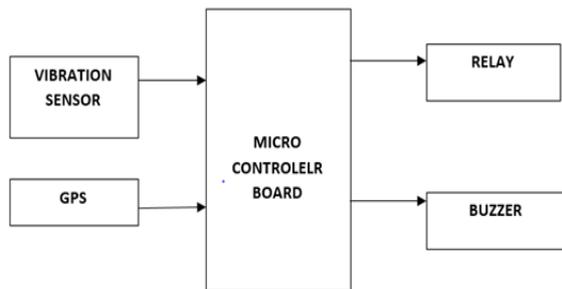
**Fig 1: Architecture Diagram**

IOT MONITORING SECTION:
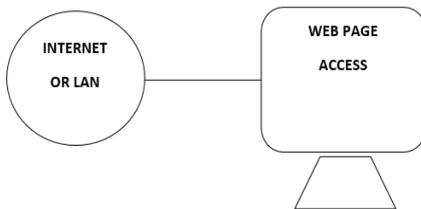
Fig 2: Monitoring Section

Product Features:

Anti Theft System.

Car Tracking available.

Remote Access.

3.1 Hardware Section

The Hardware requirements for the project are the following:

1.   ARDUINO MICROCONTROLLER

Arduino is an open-source project that created microcontroller-based units for building computerized devices and interactive objects that can detect and control physical devices. These controller boards provide the users with various I/O sticks to be used in development of their circuits. For programming the microcontrollers, the Arduino project gives an incorporated improvement condition (IDE) in view of a programming language named Processing, which likewise bolsters the languages C and C++.
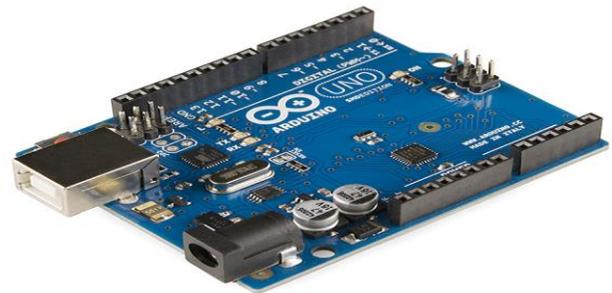
Fig 3: Arduino Board

2.   VIBRATION SENSORS

These sensors are used to measure velocity, and closeness to a object. Vibration patterns received by such sensors are often unnoticed by the human. The phenomenon used here is of induction.
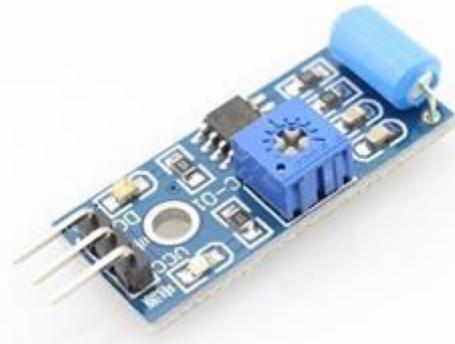
Fig 4: Vibration Sensor

3.   GPS MODULE

Also known as the Global Positioning System. It works on the basis of satellites that help us detect geo areas, and time information to the person using the GPS module. It works on the fields of web gathering and telephonic. This system is widely used by the militaries of many countries and also used by many people around the world.

One of the many usage of this system is :
Fleet Tracking
Robotics

Fig 5: GPS Module

3.2 Software Section

Arduino programming is required to be carried out,

And the coding is done on embedded C and we also use the web server to communicate with the device remotely.

Other requirements includes a Average working PC console with a good RAM and internal space.

4. CONCLUSION

Although securing a vehicle completely is not possible, this project aims to shorten the gap between flexibility and security of the vehicle. This project provides a sensible thought to accomplish and improve security and to prevent the events of thefts and accidents. IoT while still in its beginner stage has gigantic potential to automate variety of functions to a certain level and ensure that the processes continue to work without human intervention. This project also tries to better the existing security systems which though provide sensible security but have certain drawbacks. There are areas in which the idea can be improved upon and further make strides in robustness and capabilities of the system.

5. ACKNOWLEDGEMENT

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