

Burglar Intimation and Monitoring of Vehicle Using Android Device

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Abstract: Nowadays, burglary of vehicle has increase so, it is difficult to trackback them. So we are designing a system “Burglar Intimation and Monitoring of Vehicle Using Android Device”. This system combines the installation of an electronic android device (mobile phone) in a vehicle, with purpose-designed java software to enable the owner or a third party to track the vehicle's Location, collecting data in the process. This system aims to provide a low-cost means of monitoring a vehicle's performance and tracking by communicating the obtained data to a mobile device and at base station. Modern vehicle tracking systems commonly use Global Positioning System (GPS) technology for locating the vehicle, but other types of automatic vehicle location technology also be used in our proposed system (GSM) instead we use cell phone. Vehicle information can be viewed on electronic maps via the Internet or specialized software like Google map. Our system is different from others because we lock the ignition while switching off the car so that we can start ignition by authorized user only and control car from base station also. Then the results can be viewed by the user for monitoring.

Keywords: Microcontroller, android device, Ignition control, Sensors, Real time monitoring.

I. INTRODUCTION

Vehicle navigation and location concept is well defined and is frequently used. That was a result of a lot of research efforts which were invested in developing its components and ideas. Also, in recent years, the problem of diagnoses of defects and faults on a remote vehicle has received considerable attention as a result of several factors. The current changes in the automobile industry trends where, vehicles are developed with a particular focus on eco-friendliness safety, besides comfort. Additional services and safe and convenient automatic internal control systems have been introduced to satisfy the customers' needs .Collection and analysis of diagnostic data from electronic control units is of paramount importance in the automotive industry, both from a life cycle support perspective post production and sales, and as a tool in the product development. For pre-series test vehicles, access to diagnostic data is crucial in order to be able to track problems as early as possible in the development process, preventing serious faults to pass undetected into production vehicles. Therefore, Information technologies must be added as software to enable, facilitate, and enhance achievement of the above goals.GSM and GPS based vehicle location and tracking system will provide effective, real time vehicle location, mapping and reporting this information value and adds by improving the level of service provided. A GPS-based vehicle tracking system will inform where your vehicle is and where it has been, how long it has been .The system uses geographic position and time information from the Global Positioning Satellites. The system has an "On-Board Module" which resides in the vehicle to be tracked and a "Base Station" that monitors data from the various vehicles. The On-Board module consists of GPs receiver, a GSM modem.

We have chosen a smart phone as the computing device for the obvious growth and demand on such mobile devices, in addition to reducing the overall system cost by utilizing the built-in functionalities that is integrated in such compact devices. Also, when installed properly, such devices can be a low cost alternative to integrated navigation systems. Moreover, our choice of Android as our operating system platform is consistent with current market trends and shares and user acceptance of such platform. System contains high performance controller, GPS and GSM modem and overall system resides inside a vehicle. A tracking system will provide effective real time vehicle location report. Tracking system will give all the specifications about the location of a vehicle. The basic function of the vehicle unit is to acquire, monitor and transmit the position, latitude, longitude and the time taken to reach the center either at fixed interval or on demand. Microcontroller unit forms the heart of the tracking unit as it acquires and processes the position data from the GPS module.

Vehicle Tracking System: A vehicle tracking system combines the installation of an electronic device in a vehicle, or fleet of vehicles, with purposed signed Java software at least at one operational base to enable the owner or a third party to track the vehicle's location, collecting data in the process from the field and deliver it to the base of operation. We switch off the system that time ignition is automatically gets off so any unauthorized user can not access the vehicle. Vehicle information can be viewed on electronic maps via the Internet or specialized software. Vehicle tracking systems are also popular in consumer vehicles as a theft prevention and retrieval device. Police can simply follow the signal emitted by the tracking system and locate the stolen vehicle. When used as a security system, a Vehicle Tracking System may serve as either an addition to or replacement for a traditional Car alarm. Some vehicle tracking systems make it possible to control vehicle remotely, including block doors or engine in case of emergency. The existence of vehicle tracking device then can be used to reduce the insurance cost.

II. MERHODOLOGIES

A. Literature Survey:

In the present system, security lock and alarm is implemented in a car. If a burglar can break the lock, then it becomes easy for the burglar to steal the car. And in this security system if the car is stolen then it is out of the owner control. User doesn't have any awareness about the current location of the vehicle.

We designed a system which provides a low-cost means of monitoring a vehicle's performance and tracking by communicating the obtained data to a mobile device via Bluetooth. Then the results can be viewed by the user to monitor fuel consumption and other vital vehicle electromechanical parameters. Data can also be sent to the vehicle's maintenance department which may be used to detect and predict faults in the vehicle. This is done by collecting live readings from the engine control unit (ECU) utilizing the vehicle's built in on-board diagnostics system (OBD). An electronic hardware unit is built to carry-out the interface between the vehicle's OBD system and a Bluetooth module, which in part communicates with an Android-based mobile device. The mobile device is capable of transmitting data to a server using cellular internet connection.

We are using sensors as follows:

1. Seat belt
2. Potentiometer for fuel level
3. Touch sensor
4. Towing button
5. Temp sensor

B. Flow of Execution:

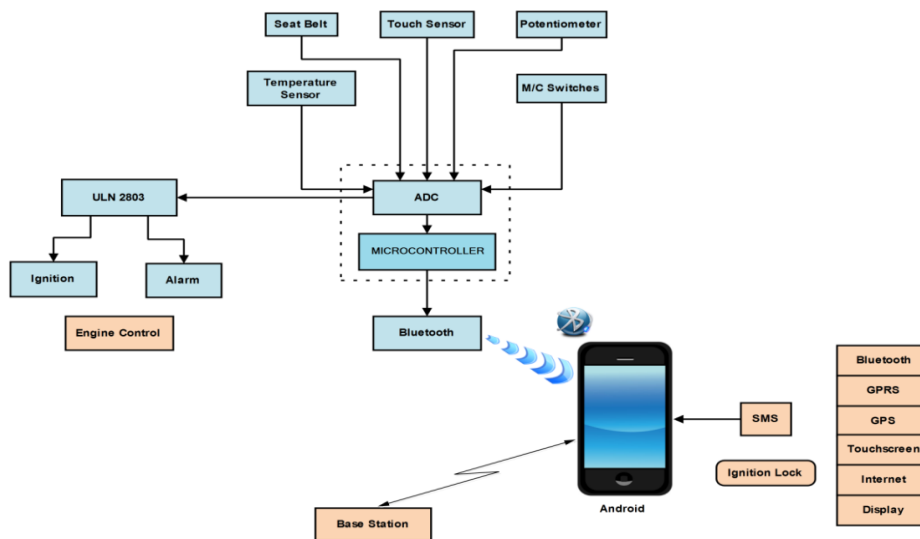


Fig.1. Block Representation of Execution

Initially once we start the engine that time automatically system gets starts. Then android device will synchronized with base station via Bluetooth. Most important thing is IP address of the base station device is used to synchronized base station with android device which in the car. User can unlock and lock the vehicle from base station also by sending SMS to android device. If sensor value decreases the threshold value which already set by owner then buzzer will be ON. If someone trying tow the car system sends the SMS to owner mobile number. System locates the vehicle location and stores at base station.

C. Review and Advantages of systems:

- i. Unified interaction for operator and owner with the rapid development in automobile industry.
- ii. More secure and more user friendly system, raising alerts based on real time information, correlation of various events of the hardware system.
- iii. Major advantage of the system is that whole work can be made with a meagre amount of investment and bringing in less complex and user friendly technology.

III. CONCLUSION

Hence, in this research work we implements universal integrated system which is composed of a combination of a low-cost hardware unit and user-friendly Android-based mobile application software utilized to create an on-board vehicle diagnostic system. The mobile application software will interact with the hardware interface unit wirelessly via Bluetooth to acquire desired vehicle parameters from the ECU of the vehicle.

Vehicle tracking system is becoming increasingly important in large cities and it is more secured than other systems. Now a day's vehicle burgling is rapidly increasing, with this we can have a good control in it. The vehicle can be turned off by only with a simple SMS .Since, now a days the cost of the vehicles are increasing they will not step back to afford it. This setup can be made more interactive by adding a display to show some basic information about the vehicle and also add emergency numbers which can be used in case of emergency. Upgrading this setup is very easy which makes it open to future requirements without the need of rebuilding everything from scratch, which also makes it more efficient.

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