

GPS Based Vehicle Tracking System via Android Device

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Abstract:- Now-a-days, there is a increasing number of vehicle and vehicle thefts has been increasing in large number. It is very difficult to protect the vehicle from the theft to overcome the theft of the vehicle an anti-theft system is designed. vehicle Theft Alert System with Remote Engine Locking mainly aims to reduce vehicle theft to a great extent.

This system is an attempt to develop an advanced vehicle security system that identify vehicle theft and can track the details using GPS and GSM Module. Today vehicles are being stolen on a large number and this is the reason why this system is being introduced. To prevent the theft from stealing vehicle. If the vehicle is stolen and detects, this system send SMS to the user and consultative authorities. After which the user is supposed to send back the commands in order to stop the functions of the vehicle. Whenever a person tries to steal a vehicle, the Arduino is being interrupted. The Arduino uses a mechanism to stop the engine. This project using GPS which will also help to find the exact location of the vehicle.

Keywords:- GPS, GSM, theft, Arduino and vehicle.

I. INTRODUCTION

In the present growing economy, the use of vehicles become enormous. Due to this, thefting of vehicles became large in amount. To prevent this, GPS based vehicle tracking system is introduced. This system can be used in every vehicle because GPS is used in different vehicles like cars, ambulance, school buses and police vehicles. The GPS/GSM based system is used in wide range of applications around the world due to it's use of ease.

Vehicle tracking system is the device used to determine the exact location and intimate the position to the use through an SMS. This system tracks the each vehicle at a given time and it is becoming most popular for people

having expensive cars as theft prevention and Retrieval device. This system is mainly used in navy operators for management functions. The main aim is to provide a system that monitor and manage the public transportation system

II. RELATED WORK

Firstly, in paper Akshatha S.A [1] States the “GPS vehicle Tracing and Monitoring System-a solution for public transportation”, the author of this paper provides a solution for tracking and observing the public transport vehicle by the help of raspberry pi and GPS antenna. Raspberry pi processing board with receive the values and gives the result . when a passenger is travelling at that time passenger will provide a different locations to the system. The location information is in the form of source and destination. Those locations are stored in raspberry pi database and raspberry pi process and compare the passenger stored data if the data is not the same then the passenger will get a warning message on LCD display that driver is driving in a wrong direction.

In these paper Amol Dhul, Amol Naikoji , YutikaPatwa, ManaliShilimakar Prof. M. k. Nighot ,[4] states that “Survey Paper on Vehicle Tracking System using GPS “. The author of this paper proposed a GPS based Tracking system to help for finding the address of the vehicle and gives the locations on their mobile devices. The author says that system will provide the exact location of the vehicle along with distance also. The location details of the data is stored in database . that data will be plotted using the google maps on monitoring device .

In these paper Prashant kokane, Prof . Yogesh Throat [5] states that “Review on Accident alert and Vehicle tracking system”. The author of this paper mainly discussing about the tracking the vehicles and detect the an accident. Here we are using a automatic detection of a traffic accidents using vibration sensor. When the accident

occur, this sensor will first sense and gives the information to the microcontroller. As soon as vehicle meet an accident the GPS module detects the longitude and latitude of the vehicle position then GSM module send vehicle position to the ambulance which is near to the accident location.

In these paper Hazza Alshamisi ,Vetonkepuska,[2] states the “Real time GPS vehicle Tracking system”. The author of this system designing of a real-time GPS tracking Via Arduino was applied. And also the author of this paper also tries to solve the problems of owner who have expensive cars to observe and track the vehicle and find out the movement and activation of the vehicle.

In these paper Jessica Saini, Mayank Agarwal, Akriti Gupta , Dr.Manjula R,[3] ”Android app based vehicle tracking system used GPS and GSM”. The author of this paper by using the technology of GPS and GPSM of embedded system we have to know the location of the vehicle. In our devices the GPS app is installed so that we can receive a message from satellite.

III. METHODOLOGY

In this system A microcontroller names Arduino Nano is used which helps in tracking of particular vehicle. GPS and GSM modules are used. GPS helps in providing information about location and GSM is used to send and collect data to the user or owner of the vehicle.

In this proposed system, Arduino Nano is serially interfaced to a GPS and GSM module. When a person tries to start a vehicle by inserting a key, the engine on Arduino Nano gets input from GPS and send the information to the user through GSM module. This module sends data Continuously about the position of the vehicle through mobile communication. By using arrived data which in the form of longitude and latitude , used to locate vehicle on the maps and also output is observed on LCD. The owner of the vehicle is supposed to send back the SMS to the GSM module which is in the system to stop the vehicle .Arduino IDE is the open source platform. The board is connected to a computer via USB, Where it connects with the IDE. The user writes the code in the IDE, then uploads it to the microcontroller which executes the code, interfacing with inputs and outputs. In this way the vehicle owners are able to track their vehicle.

IV. WORKING

Our project consists of three different sections or features first one vehicle theft detection , second one over speed detection, alcohol detection. First one vehicle theft detection whenever the theft person going to insert a key to the vehicle and try to start the vehicle by using a key .when the engine is on by using a key immediately the GPS gets the location co-ordinates in terms of latitude and longitude. after getting the location co-ordinates it will transmit the data to the user or owner of the vehicle in terms of message immediately turn off the ignition or vehicle by sending the commands. The second section or feature is over speed detection. initially we will set some maximum speed up to certain limits. when the driver reaches maximum speed .it will display and sends the message about speed limitation to the owner of the vehicle and also display the message on the LCD screen in the vehicle. though this overspeed detection the vehicle will go in normal speed the overspend is controlled. The third feature or section is alcohol detection. when the driver is drunken driving the vehicle. The alcohol level will detect how much level is drunken and send alcohol percentage to the owner of the vehicle though this we can control drunken driving accidents.

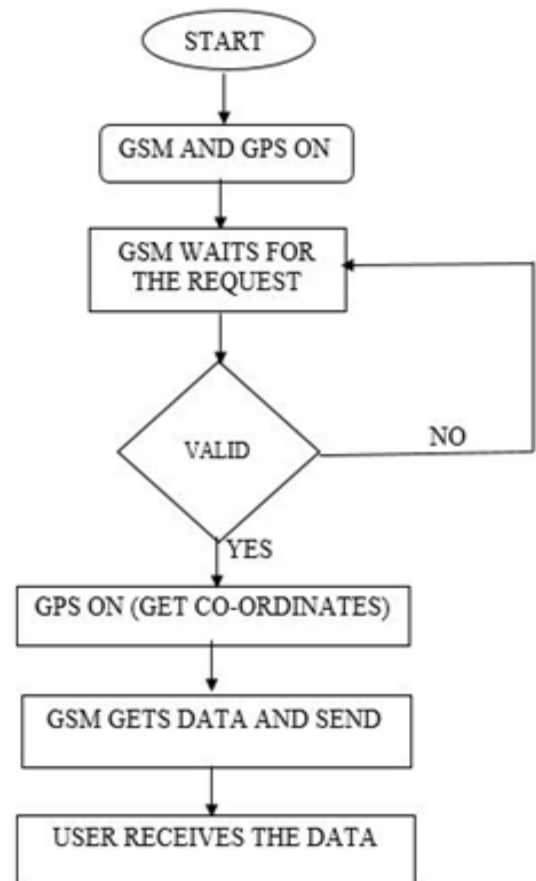


Fig 1

V. CONCLUSION

In this paper, we proposed a method of vehicle tracking system and it is used to track the vehicle by using GPS and GSM technology. When a person tries to start the vehicle by inserting a key to the Vehicle. When the engine is ON the Arduino Nano takes the input from GPS and sends the data through the GSM. These GSM module continuously sends the position of the vehicle to desired mobile. The owner of the vehicle is supposed to send back the SMS to the GSM module which is in the system to stop the vehicle. At the same time we have purposed the detection of alcohol using alcohol detector connected to Arduino such that when the level of alcohol crosses a permissible limit, the vehicle ignition system will turn off.

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