

Implementation of Real Time Vehicle Tracking & Monitoring System Using Arduino

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ABSTRACT

Right now nearly of the general population having an own vehicle, robbery is occurring on parking and now and again driving instability places. The protection of vehicles is very necessary for public vehicles. It is important to plan a high level vehicle monitoring and tracking system for checking the vehicle area and speed at real-time. The proposed system chips away at GPS/GSM SIM900, A module which incorporates all the two things in particular GPS GSM. The GPS current area of a vehicle and the GSM is utilized to send the alarm message to the vehicle's proprietor mobile. The proposed system would put inside the vehicle whose position is to be resolved on the page and observed at real-time. On the off chance that the driver drives the vehicle on some unacceptable way, at that point the alarm message will be sent from the proposed system to the vehicle's owner mobile and furthermore speaker's alarm driven utilizing driver. On the off chance that the vehicle's speed goes past the predetermined estimation of the speed, at that point likewise the warning message will be sent from system to the owner mobile. The proposed system likewise dealt with the traveller's security by utilizing LPG Gas spillage sensor MQ6 and temperature sensor DS18B20.

Keywords: Arduino Uno, GPS, GSM, Google map

INTRODUCTION

This project aims to solve the problem of tracking and accountability of vehicles by providing a software platform. This project would serve as an important step to help in Vehicle tracking, component monitoring, vehicle analysis and fleet management. An efficient vehicle tracking system is implemented for monitoring of any equipped vehicle from any location at any time with the help of Global Positioning System (GPS) and Arduino Board which will enable users to locate their vehicles with ease and in a convenient manner. This web application will offer a dashboard for improved and easy considerate of their vehicle positions and related statistics.

DETAILS RELATED TO PROJECT

Projects which solve the problems in our

life, this is one of those Arduino projects. The advanced vehicle tracking system is an improved system that permits a client to follow the vehicle utilizing GPS alongside the GSM modem. Utilizing this vehicle tracking system client gets the area subtleties of the vehicle where it is as of now on his versatile and it can follow it on Google map. For this reason, we are utilizing Arduino Uno as the primary processing unit. The entire system is constrained by Arduino Uno. This Arduino is interfaced with LCD to show longitude and latitude. Likewise, it is interfaced with GPS and GSM modem. GSM modem is utilized to send SMS to the owner of the system. Once you start the system it starts sending location details. The user receives an SMS containing URL of location details [2]. Once the user clicks on the URL, he/she can see the location on

Google Maps with a marker. Nowadays every smartphone has Google Maps application preinstalled. So this URL opens in the Google Maps app. GPS tracker system continually continues sending SMS of area details of where the vehicle is Using the map we can see the spots around the vehicle likewise we can see the street on the map. So in this manner the client can get the area of the vehicle and real time vehicle area details. The system also has an SOS button which is used to send an SMS to the owner if there is an emergency.

Real time vehicle tracking system utilizing Arduino, GSM, and GPS is a creative and easy to use system [3]. Sometimes an organization's transportation vehicles consume more fuel which brings about deficiency of money. The answer for this is to introduce a GPS tracking device in the vehicle. It sends real-time updates of the vehicle coordinates. It also improves the safety and security of our car. We can likewise see the set of experiences by looking down through the SMS history in our SMS inbox. By utilizing the tracker system can perceive what time the vehicle was at which place.

METHODOLOGY

In-Vehicle Unit

This is significant piece of the system and it will be introduced into the vehicle. It is liable for catching the accompanying information for the vehicle Current location of vehicle, See figure 1.

GPS Receiver

In-Vehicle unit utilizes GPS receiver to catch the current location and vehicle speed. Location and speed information gave by GPS isn't in human justifiable format. This crude information should be prepared to change over it into helpful information that can be shown by a beacon on the map.

Data Transceiver

At the point when all necessary data is separated and handled, it should be transmitted to a remote Tracking Server which will have the option to show this data to the end client. For real time tracking of vehicle, dependable information transmission to remote server is significant.

GSM

A GSM modem is a specific kind of modem which acknowledges a SIM card, and works over a membership to a mobile operator, much the same as a cell phone. From the mobile operator point of view, a GSM modem looks much the same as a cell phone. A GSM modem can be a committed modem gadget with a serial, USB or Bluetooth connection or it could be a cell phone that gives GSM modem capacities. A GSM modem could likewise be a standard GSM cell phone the appropriate cable and software driver to associate with a serial port or USB port on our PC.

FUTURE PERSPECTIVE OF REAL TIME VEHICLE SYSTEM

1. Accident detection and generating message which will inform family members about the location of accident.
2. Sometime children are going to unknown place then, we reach our children using child tracking system.
3. Mobile phone tracking is a cycle for distinguishing the location of a cell phone, regardless of whether fixed or moving.

APPLICATIONS OF REAL TIME VEHICLE TRACKER AND MONITORING SYSTEM USING ARDUNIO

1. Vehicle tracker can be utilized in a motor cycle, vehicle, school transport, truck, transport vehicles.
2. Kinetic energy recovery systems an automotive system for recovering a

moving vehicle's kinetic energy under breaking.

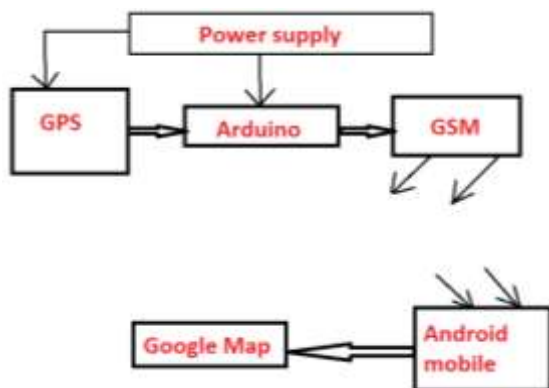


Fig. 1: Flow Chart.

RESULT

The results on the user interface of supervised center will show the routing tracking function of the system. The project is locating the position of the car. By designing this project the ignition of the project can be stopped or the car speed can be locked so that the thief can be catch easily. Refer figure 2. The map shown user can get vehicle information such as latitude, longitude and vehicle's current location is pointed in Google map with maker.



Fig. 2: Google Map.

CONCLUSION

In this paper we have proposed an enemy of robbery system which can be utilized to follow a vehicle fitted with the proposed gadget in it. It can likewise be utilized in wildlife tracking, asset tracking and in stolen vehicle recovery. Later on we may

incorporate other related gadgets in a vehicle, for example, sensors. We can make a worker to see the vehicle course and other data on our PC and we can save the route of its [4]. The sensors introduced in our vehicle can report the vehicle data to our worker and it can form an intelligent tracking system. There are different reasons why vehicle operators and public vehicle administrators like to have a GPS. You can decide your location, regardless of whether you are voyaging locally or in an unfamiliar land, having a GPS is genuinely a bit of advantage. On the off chance that you think you are lost, you can utilize your GPS beneficiary to know your accurate location. Vehicle tracking systems are regularly utilized by fleet administrators functions, for example, directing, dispatch, on-board data and security [5]. Different applications incorporate checking driving behavior, for example, an employer of an employee, or a parent with a teenager driver.

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