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PRECISE VEHICLE TRACKING WAYS EXHAUSTING ARDUINO

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Abstract:

Everyday model for routing of vehicles during a fat space out of doors supported the GPS (Global Positioning System) is employed popular frequent apps in the real life environment. An absolute position for vehicle with help of the GPS technology. The supporting device GPS continually move with the vehicle and can reckon the coordinates of every location and once needed by the owner it may be communicated with the assistance of (Global system mobile communication) GSM electronic equipment that is put in in each Transmitter and receiver section. An order to trace the vehicle, the user should send SMS (Short Message Service) proceeding with SIM variety authorized to the GSM services. When the SMS is away to the device then authorization will check for user. Condition confirmed, the locality latitude and longitude coordinates of the occur vehicle is distributed to the user mobile variety with kind of SMS. The coordinates of particular received with SMS may be viewed on the user mobile that may be show the precise location of the vehicle in Google Maps with support received coordinates and GPRS (General Package radio service) technology of user mobile.

Keyword:

Vehicle Tracking, GSM, Arduino, SIM, GPS, Google Maps.

I. Introduction:

The [1] GPS GSM based system inter connected working of both technologies. It's broadly working in many apps and more beneficial to millions of users toward assisted through the situation. By produced mostly anticipated toward improves the safe keeping [3] and safety amid the vehicle moving. Towards the vehicle-tracking scheme be able to connected in any vehicle to check robberies or in the direction of tracking is the right way moving. On every occasion a user requested to at present place of the vehicle, the scheme will pass locality coordinates of latitudes position and longitudes position, these statistical values can degree way of vehicle on users' mobile. The tracking [2] system covers furthestmost of the freeway, captain cities, towns and handled villages also and work well in the world with enhanced mobile connectivity. In this paper we explain an

embedded system to know the location of the vehicle using the current and freely available technologies like the GPS (Global Positioning System), GSM (Global System for mobile communication) and GPRS (General Package radio service). Now core story of my proposal stays that the situation wished-for improvement panel, which will have GPS and GSM segment not as unglued module but closely linked with a microcontroller with supported to an Arduino controlled by customized programming. That development will shrink the size of whole system and it will reduce the power loss in terms of heat through external wirings used for the connection of GPS and GSM module with the Arduino and along rise the durability of the entire system. It will provide the interfacing to various hardware peripherals to track the location of the vehicle

whenever user has to need track the vehicle locality then sent requested SMS to GSM module. The system will react by send response to the coordinates of the truck proceeding the requested user and then user can view location of the vehicle using these coordinates will be plotted on the Google map with GPRS connection. GPRS connection avail with tracking server, that has received vehicle location coordinate via network of the system over the internet on Google map. GPRS setup is an "always on" and isolated with Google map. It is best suitable for an instantaneous tracking super vision system.

II. Literature Review:

In most impartial of this system to resolve a vehicle location tracking method. The signal established from satellite is sent information to hardware peripherals for extra processing and in conclusion the signal is sent to the user for displaying on the Google Map. This approach generalized into two parts which are the tracking part and a viewing part. The tracking part is responsible for earning the user location while the control and viewing part is for exposing the spotted location on the Google Map. For this system purpose we embedded the hardware peripherals that are [4] GPS, GSM, Arduino and GPRS Shield Module and the software program written in Arduino IDE. Arduino Uno is used earlier vehicle tracking system was based on very complicated and high cost microcontroller like 8051 with programming kit, ARM etc. The main advantage of Arduino is low cost and easy program kit also compatible various plat forms that's why Arduino is better and further information is given below, Arduino is free where computer hardware and software corporation, project and user community designs will build digital and interactive things controlled with instructions.

III. Structure Designed Modules

GSM Module: GSM Segment is ultimately interconnected with PCB through innumerable

forms of manufacture occupied to the panel – in the region of TTL information and information to interface directly with a controller. A panel will also have connecting pins or comestibles to assign several components. GSM segments are artificial by connecting a precise GSM segment to a PCB and then giving requirements for RS232 information, TTL information.

```
GSM_Module(user,message)
{
    01: Configure GSM with SIM;
    02: While(unreadsms)
    03: {
    04:   Read user and message;
    05:
if(user=registered_user&&message=registered_me
ssage)
    06:   {
    07:     SendSMS_to_user( GPS_Module() )
    08:   }
    09: }
}
```

GPS Module: GPS (Global Positioning System) by which everyone can always achieve the place statistics wherever in the world. Initially, he indication of time is request from a GPS satellite at a set power point. Successively, the time variance between GPS time and set power point time obtains the clock time indication considered to produce the distance of both. [4][6]. GPS reads this information and trilateration will compute a power point specific locality. In essence, the GPS segment receiver methods find the distance for each satellite by the quantity of it time earnings to get a communicated indication [4]. Through distance dimensions from a small number of remaining satellites, the receivers can fix a power point locality longitude and latitude format.

```
GPS_Module()
{
    01: Sent GPS information to satellite
    02: Processing satellite
```

```

03:  Receives satellite fixed information
04:  Lognitudde_value=getLangitude();
05:  Latitude_value=getLatitude();
06:  coordinates=getCoordinates(
Longitude_value , Latitude_Value );
07:  return coordinates;
}

```

GPRS: GPRS (General Packet Radio Services) is a packet-based wire-less interaction facility that abilities statistics with various data baud rates and unremitting connection establish to the internet for mobile gadgets and CPU consumers. The advanced data baud rates permit consumers to yield part in videocassette symposiums and cooperate with Multi-Media Web apps and comparable solicitations operating mobile gadgets as well as CPU users. GPRS works based on [6] GSM segment communication and accompaniments present facilities such as circuit-switched mobile gadgets influences and the SMS (Short Message Service).

```

GPRS-Module()
{
    01: return internet_connection_established;
}

```

GoogleMap: Google Map is a world popular application that can be produced by the google corporation. It will work to show the global earth position and various sub paths of the particulars these are very helpful and easily understood the consumer because it can show result as in visualization mode[5].

```

GoogleMap(user_ coordinates, vehicle_
coordinates)
{
    01: Turnon GPRS_Module();
    02: Read particulars
    03: Calculate postion
    04: return path from user to vehicle
}

```

Arduino Hardware and Software: An Arduino is a free where circuit technology environment with

simple hardware and software process. Decade the existences Arduino can use to creates the intelligence of millions components based on their projects from daily things to multifaceted systematic appliances. A universal unrestricted of makers – learning scholars, beginning programmers, and professionals - has come across around to the free where plat form, their contributions have added up to an unbelievable amount of accessible knowledge that can be of abundant support to trainees and professionals alike and the Arduino software application is flexible and easy to understood for trainees, yet springy sufficient for professionals. Its compatible on Mac, Windows, and Linux. Arduino also make simpler the development of occupied with microcontrollers, but it provides the following deals to overcome other systems:

- Low-cost: Arduino microcontrollers are very low-cost based on other plat form components.
- Flexible and Portable– Arduino software applications was easily works in same manner to different operating system.
- Simple Code- the programming process is very easily understood for learners and its very flexible to the professional developeers also.
- Free-where and flexible software – the Arduino IDE is free where to download and us it. In this the extended coding using CPP functions.
- Free-where and flexible hardware - the various versions of Arduino microcontroller module are available in the market for the user convenience.

Algorithm:

```

Vehicle_Tracking()
{
    01: Initialize the GPS module and GSM
module
    02: while(true)
    03: {

```

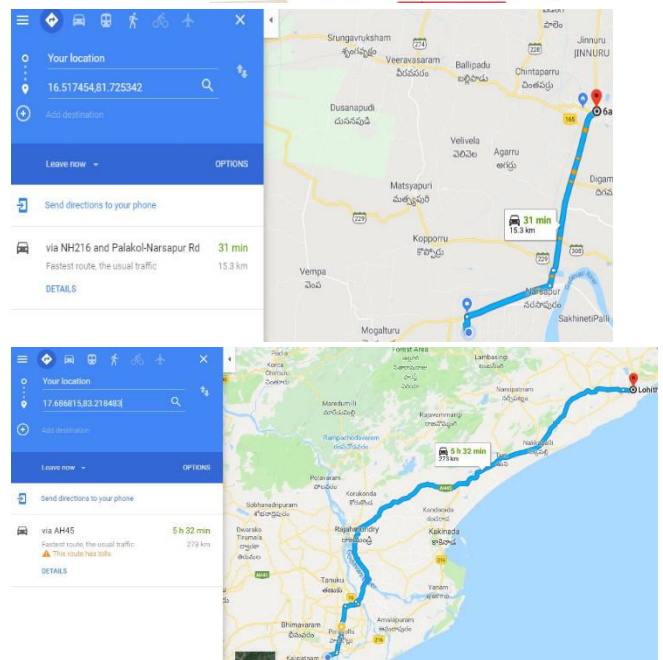
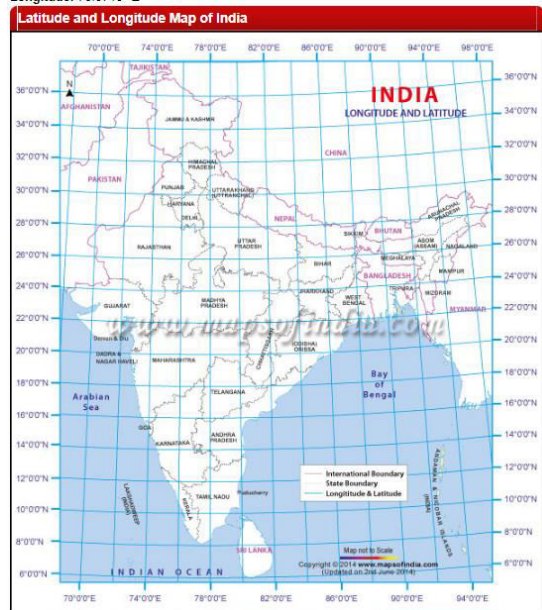
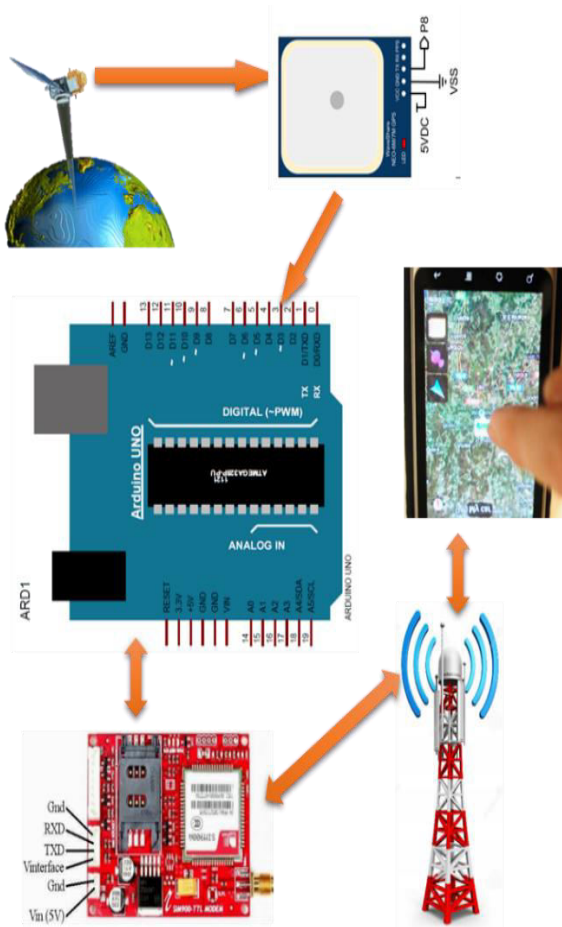
```

04: user compose message then send SMS to Vehicle ;
05: vehicle_coordinates=GSM_Module(user,message);
06: user_coordinates=GPS_Module();
07: ViewPath=GoogleMap(user_coordinates, vehicle_coordinates);
08: }
}

```

IV. Outcome Study

Functioning flow:



1. Start
2. User send SMS to vehicle
3. GSM receives SMS
4. Arduino validate User and SMS
5. If(Not-valid) goto 9
6. Fix position using GPS
7. Send SMS to user direction URL
8. User click on that URL show the way path using google map.
9. End

V. Conclusion and Future Scope

In this we are obtain a position of the vehicle in the form of visualized way with very less investment. This system can monitor the vehicle when user needs so its provide security to vehicle. It can also beneficial used for tracking various valuable things, human been, other emergency and ordinary services. Further enhanced by the use live travelling monitor using YouTube live telecast applications multiple users at a time and multiple things can be tracked with one or more users using

android applications and web applications at the same time.

VI. References

- [1] R.Ramani, S. Valarmathy, Dr. N Suthanithira, S. Selavaraju, M.Thiruppathi, R.Thagam, —Vehicle Tracking and Locking Based GSM and GPS, Issue Date: Sept 2013
- [2] F. M Franczyk, and J.D. Vanstone, —Vehicle Warning System, Patent number: 73639, Issue Date: 22 Apr 2008.
- [3] Kai-Tai Song, Chih-Chieh Yang, of National Chiao Tung University, Taiwan, —Front Vehicle Tracking Using Scene Analysis, Proceedings of the IEEE International Conference on Mechatronics & Automation 2005.
- [4] Fleischer, P.B.; Nelson, A.Y.; Sowah, R.A.; Bremang, A., "Design and development of GPS/GSM based vehicle tracking and alert system for commercial inter-city buses," Adaptive Science & Technology (ICAST), 2012 IEEE 4th International Conference on , vol., no., pp.1,6, 25-27 Oct. 2012.
- [5] S. Sahitya, N. Swetha, —Real Time Vehicle Tracking Using GPS and GSM, International Journal Of Research in Computer And Communication Technology, ISSN (O) 2278-5841
- [6] Lee, S., Tewolde, G and Kwon, J., "Design and implementation of vehicle tracking System using GPS/GSM/GPRS technology and smartphone application." Internet of Things (WF-IoT), IEEE, 2014.