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Biometric Vehicle Security and Tracking System

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ABSTRACT

A successful and brilliant vehicle is planned by the accompanying structure which is laid out and executed for following the advancement of any vehicle from any zone at whatever point. The proposed structure made Good usage of an outstanding innovation that combines a Smart phone application with a microcontroller. Unique mark sensor is likewise utilized for bio-metric confirmation. There are many unique mark sensor innovations. Finger picture caught is carefully prepared and put away in memory as a layout. The unique mark of Vehicle's driver is taken by this gadget before the beginning of vehicle. Unique mark coordinating calculation is utilized to contrast and beforehand enlisted picture for checking confirmation. Among connection based coordinating, edge include based coordinating and details based coordinating, last one is prevalent as it is proficient and exact.

I. INTRODUCTION

Vehicle following systems were first displayed for the conveyance/stack ventures, since people need to know the vehicle territory at whatever point they required. By and by now a-days the development is growing up speedy. A robotized following of the vehicle structure is being used as a piece of a collection of ways to deal with track and demonstrate the territory of the vehicle.

In this way, customers will have the ability to continually screen a moving vehicle on ask for using the Smartphone application and choose the assessed division and time for the vehicle to meet up at a given objective. With a particular ultimate objective to show the likelihood and reasonability of the structure, this paper presents test delayed consequences of the vehicle following system and a couple of experiences on practical executions.

II. EXISTING SYSTEM

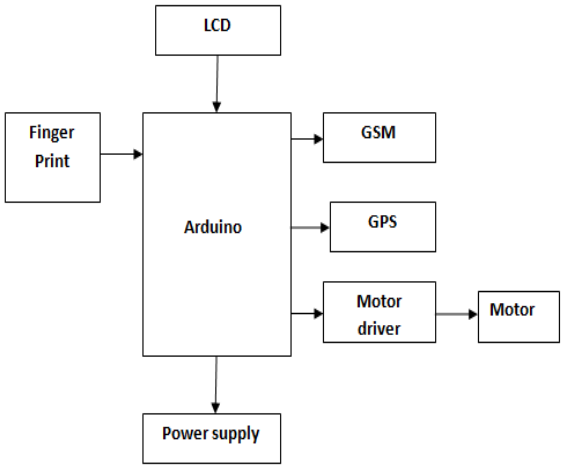
In the current framework Zig-honey bee is utilized for the correspondence. Zig-honey bee will enable just a single to-one correspondence. The scope region is restricted and isn't secured. Supplanting with Zig-Bee dissension machines can be expensive.

III. PROPOSED SYSTEM

In the proposed framework, we have presented unique mark based vehicle following framework utilizing GPS. It enables just approved client to utilize the vehicle. This circuit is intended for following the area of vehicles utilizing GPS which is basic and modest. This is a decent technique for keeping our vehicles from stolen. This following framework sends us the land facilitates. By utilizing these directions we can track our vehicle position on electronic maps utilizing web. Microcontroller gets the directions from GPS modem and afterward it sends this data to the client in content. SMS will be sent to the proprietor of the vehicle. This SMS

contains longitude and scope of the area of vehicle. LCD is utilized to show the messages.

BLOCK DIAGRAM:



Power Supply:

Transformers

Transformers are contraptions which wind down for the most part higher AC information Voltage into a lower AC yield voltage. To find the data and yield terminals of a transformer is incredibly scrappy. There are two sorts of transistors. Venture down transformers and advance up transformers. Here we utilize advance down transformers. These transformers are utilized to dispose of some power and give low power yield. Here we utilize 1Amp 12V transformer.

Figure 1 transformer

Rectifier:

Rectifier is a gadget which is utilized to change over AC voltage to DC voltage. It is essentially isolated into Full wave and Half wave rectifiers. At the point when forward biased there will be voltage drop in diodes of around 0.7v. Thus when two diodes are associated together for dissemination of light of the path , there will be a voltage drop of 1.4v, since every diode has a voltage drop of 0.7v. In any case, on account of full wave connect rectifier there will be a voltage drop of 0.7v as it were.

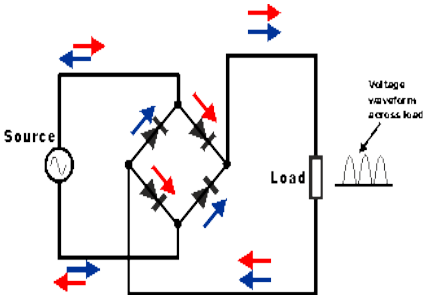


Figure 2. Rectifier circuit

Voltage Regulator:

The 78XX voltage controller is primarily overall utilized controller for voltage controllers. The XX speaks to the voltage of which the voltage controller delivers as the yield to the specific gadget. 7805 will deliver and control the yield voltage of 5v.

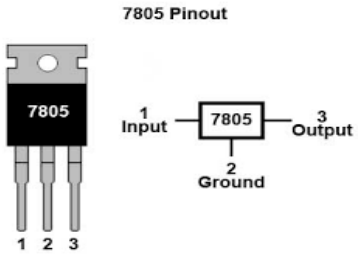


Figure 3. Voltage regulator

LCD (Liquid Crystal Display)

LCD (Liquid Crystal Display) screen is a computerized show module and find a tremendous mishmash of occupations. A 16x2 LCD demonstrates fabulously fundamental module and is usually utilized as a bit of various devices and circuits. These modules are bolstered more than seven components and diverse multi section LEDs.

The expense enroll stops the summon bearings given to the LCD. A summon is a bearing given to LCD to do a predefined undertaking like presenting it, clearing its show, putting the cursor work, controlling exhibit et cetera. The measurements enroll stops the insights to be appeared on the LCD. The actualities are the ASCII estimation of the

character to be demonstrated at the LCD. Snap to douse up additional ,about inward structure of a LCD. There are various styles of LCD resembles 16x2 and 20x4. Here on this test we utilize 16x2 LCD.

Pin Diagram:

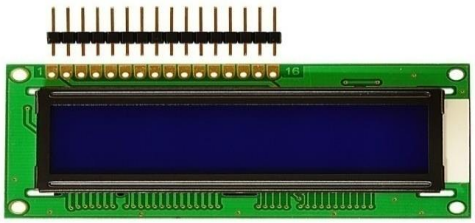


Figure 4. LCD module

Motor:

In a portion of the gadgets ventures you might need to control a DC Motor with Arduino microcontroller. The most extreme current that can be sourced or sunk from a 8051 microcontroller is 15 mA at 5v. Yet, a DC Motor need streams especially more than that and it require voltages 6v, 12v, 24v and so on. In contingent on the kind of engine utilized. Another issue is that the back emf delivered by the engine may influence the best possible working of the microcontroller. Because of these reasons we can't interface a DC Motor specifically to a microcontroller.

Figure 5. DC motor

To conquer this issue the L293D driver IC is utilized. It is a Quadruple Half H-Bridge driver and it takes care of the issue totally. You needn't interface any transistors, resistors or diodes. We can do without much of a stretch control by exchanging L293D utilizing a microcontroller or specifically to a microcontroller.

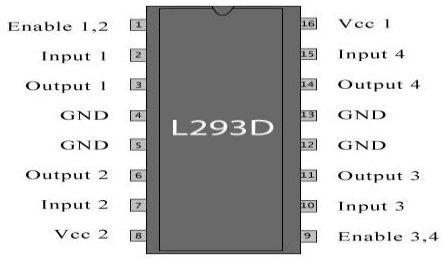


Figure 6. Motor driver

GSM MODULE:

Worldwide framework for versatile correspondence (GSM) is an internationally acknowledged standard for advanced cell correspondence. GSM is the name of an institutionalization assemble built up in 1982 to make a typical European cell phone standard that would define details for a dish European portable cell radio framework working at 900 MHz. It is evaluated that numerous nations outside of Europe will join the GSM association.

3G (UMTS) or 4G (LTE) empowers you to accomplish higher information speeds than when utilizing 2G (GSM). In the event that you select LTE/GSM/WCDMA (Auto mode), your cell phone consequently switches between the two system modes gave you're inside scope of a 3G or 4G arrange.

Figure 7. GSM module

GPS Module:

GPS is used as a piece of motors for each checking and course. Following systems enable a base station to keep up tune of the cars without the mediation of the central purpose wherein, as course contraption causes the fundamental impulse to accomplish the objective. Notwithstanding course gadget or watching machine, the structure is extra or

extensively less for all intents and purposes indistinguishable. Exactly when an occurrence gone off in any zone then GPS contraption tracks the position of the auto and sends the information to the specific character through GSM by alerting the character through SMS or through a call.

Figure 8. GPS module

Finger Print Module:

Fingerprint enrollment, image process, characters acquisition, fingerprint template creation, fingerprint template storage, fingerprint compare (1: 1, 1: N), fingerprint delete. This module can work with different devices based on UAWRT such as PC, SCM and so on. Only easy circuits and fingerprint module can enhance your product into fingerprint authentication power. It is widely used by electronics business, information security, access control, identity authentication and other security industry. The sensor in the module is AES2510 with image resolution of 500DPI.

Working of the project:

In following framework the area of vehicle is sent to remote place and it is finished by GSM modem. Worldwide Positioning System (GPS) modem requires least 3 satellites to figure the correct area. This modem conveys just in single route with Arduino microcontroller. This implies it can just transmit information to microcontroller. GPS Modem does not get any information from microcontroller. GPS modem gets motion from satellites as scope and longitude facilitates. By utilizing these directions we can track our vehicle position on electronic maps utilizing web. Microcontroller gets the directions from GPS modem and afterward it sends this data to the client in content SMS.

Software Requirements:

- ✓ The Arduino IDE software is a open source software, where we can have the example codes for the beginners. In the Present world there are lot of version in the Arduino IDE in which present usage is Version1.0.5
- ✓ There are many modern libraries such as, Wolfram modern plug that links your simulation models to the real world by the use of an Arduino board. Libraries open with a wide variety of ways to interact with your models by using buttons, switches input sensor information, or even Actuators such as motors and servos.
- ✓ These libraries support any Arduino compatible board.

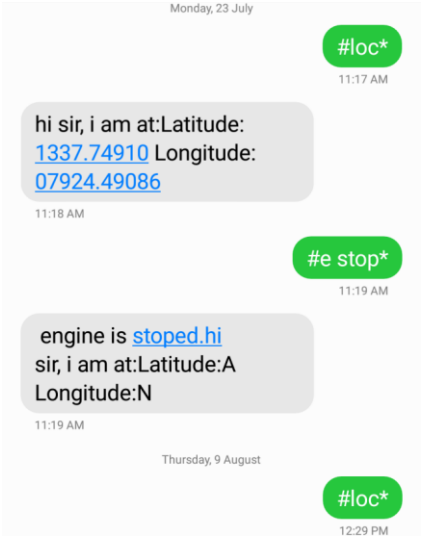
Applications:

- ✓ This project can be very useful to track when your vehicle is stolen.
- ✓ We can implement this project in two-wheelers as well as in four-wheeler vehicles.

Advantages:

- ✓ Low power consumption
- ✓ More reliable
- ✓ More compatible
- ✓ Less cost.

Result obtained by following this method:



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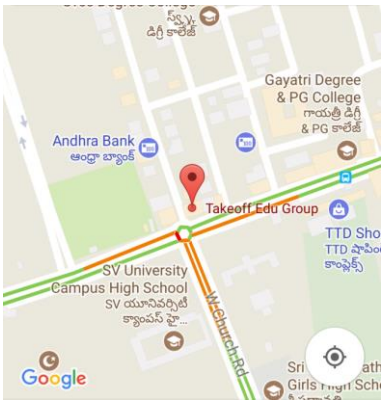

Figure 8. command messages sent , received data, and location of vehicle..

IV. CONCLUSION

The layout and execution of vehicle following, the framework, by utilizing unique finger impression module is confirmed. So it enables just approved client to utilize the vehicle. This structure is important in much application, for instance, perception, security following, which may be presented in mining trucks, payload trucks, cars, cruiser, and robot. The system can be useful for a few applications.

V. REFERENCES

[1]. NJ.-P. Hubaux, S. C Apkun, and J. Luo The security and privacy of smart vehicles, IEEE security and Privacy magazine, vol 2.no3,pp 49-55,2004.

[2]. Hui Hu, LianFang, published a paper title Design and Implementation of vehicle monitoring system based on GPS/GSM/GIS, Third International symposium on Intelligent information Technology Application 2009.

[3]. Mohammad A. Al-Khedher, Hybrid GPS-GSM Localization of Automobile Tracking System, International Journal of Computer Science & Information Technology (IJCSIT) Vol 3, No 6, Dec 2011

[4]. Fan, X., W. Xu, H. Chen, and L. Liu, CCSMOMS:A Composite Communication Scheme for Mobile Object Management System,20th International Conference on Networking and Applications, Volume 2, Issue 18-20, April 2006,pp. 235–239.