ANTI-THEFT SYSTEM FOR VEHICLES USING FINGERPRINT SENSOR

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Fingerprint recognition, Global positioning system, GSM, Satellite, Microcontrollers, Receivers and Antennas.

Introduction:
Now a day’s automobile burglary cases are increasing day by day, it has gotten to be difficult to give a vehicle an outstanding security with the main focus being kept on the burglary gadget. Vehicle locking framework pledges the best ensure way to secure the vehicle from various types of theft cases. It is a vehicle security gadget that offers a better and fancy insurance to one’s vehicle. However this framework cannot be established to give complete security and directness to the vehicle in the event of burglary. So a more secure framework makes the utilization of an inserted framework which is being focused around GSM and GPS innovation. This demarcated and created framework is introduced in the vehicle which aims at providing real time tracking and active notification to user and helps prevent the probable theft Passwords are the weakest component of many important security systems, so there is an interrelated push from various directions towards passwords with less friable security measures. While pushing it has some effects, particularly in situation that require more security, it has failed to replace passwords. The vast mainstream of computer user’s still use passwords on a routine basis. Since the haven of password relies mostly on user behavior, studies that empirically scrutinize patterns of passwords creation and use the remaining important in the assessment of various security policies. The main emphasis while developing this car anti-theft system was to assimilate the above features equally. The most significant feature is the vehicle security from theft and it has been guaranteed by providing certain layers of anti-theft protection.

Objectives:
The objective of this study is to create a controllable system that can display the location of a vehicle using global position system(GPS) to pin point the location and global system for mobile (GSM) as a mean for communicating with the vehicle for ease of finding after a theft attempt.

1) To design security system for vehicles and can be used for other applications.
2) Using fingerprint and GSM module.
3) Vehicle will be safe and secure with this system.

Methodology:

Materials

List of Hardware
1. Arduino UNO R3 Microcontroller
2. Arduino Nano Microcontroller
3. Fingerprint Sensor GT511 C1R
4. GPS Vehicle Tracker
5. GSM Module SIM900A
6. Buffer & Driver

LIST OF SOFTWARE
1. Arduino IDE
2. Operating System

Methods

The whole operation of this vehicle tracking system is distributed in two parts:
1. Tracking the position of vehicle.
2. To provide security to vehicle.

(1) The vehicle tracking system consists of a GPS receiver which provides real time position of the automobile. This real time data is deposited in MMC (Main Memory Module) after a set time of intermission by the MCU (Main Control Unit).

(2) GSM module is undoubtedly associated with the MCU which is then used to propel and receive the SMS. GSM module takes the information from the MMC and sends this information to the registered user’s mobile cell phone. This data consists of longitude, latitude, altitude, the speed over ground, and the course over ground, the real time and date.

(3) By using Google maps we can then locate the exact location of vehicle. The vehicle tracking system also has another singular feature which tells not only the whereabouts of vehicle but also securing the automobile. To know the location of the automobile, it is necessary to stop the automobile as soon as possible.

(4) For repossessing the automobile, we are using to convey the message in such a way they are allied to the buzzer and other is associated to the power supply of the engine of automobile. User can simply deactivate the engine of automobile by sending a message from his cell phone and we can get the automobile back very soon.
Results:

A project or system has to be tested under various conditions to ensure its correctness. The testing conditions for this project include several authorized and unauthorized attempts to access the system. These include:

1. Authorized access that is registered fingerprint to access the system.
2. Unauthorized access that is unregistered fingerprint.
3. Vehicle being dragged for a specific duration.
4. Notification from the user to activate and deactivate the system.
Conclusion:

The project “ANTI THEFT SYSTEM FOR VEHICLES USING FINGER PRINT SENSOR” is a model for both two wheeler and four wheeler. The project is aimed at implementing an anti theft device with real time tracking and user control. This is achieved with the help of GPS and GSM technology. The project provides an extra layer of security by including biometrics in the form of fingerprint recognition to grant access to the vehicle. To prevent all possible ways of vehicle theft, a sensor which detects the vehicle being dragged has also been included in the project.

Future Scope of the Work:

Fingerprint technology is very effective security check technology and also in lower cost to avoid stealing of vehicles. In future, smart phone (i.e. android, windows) application can be made and interfacing a dedicated smart-phone installed in vehicle with fingerprint device can be done to get real-time vehicle tracking with inter-active mapping.