Smart Antitheft Alert & Security System

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Abstract - **We have developed Smart Antitheft Alert system. Our device/product is capable to anyone unauthorized person tries to access the vehicle it sends signal to the owner. give a loud alarm such that theft will leave the vehicle, and with the help of reset SMS it will come to its original mode. We are using Arduino IDE software platform with vehicle status monitoring Algorithm and Arduino Uno as hardware. The objectives of this work are to Avoid Stolen of vehicle from common parking area.**

Index Terms - **Security, Anti-Theft, Smart Solutions.**

I.INTRODUCTION

The project's outcome is the design and implementation of an effective anti-theft vehicle security system based on an embedded system with enhanced security features. Controlling the Centre door lock Electromechanical system of automotive Vehicle with a mobile fingerprint authentication feature, for example, will boost security and is a very distinctive feature compared to other security features. The Power Supply Unit (PSU) and Voltage Regulator are used to power this system. The USART is utilised to communicate between the GPS and GSM modems, as well as the Arduino Uno/ESP8266.

This communication is done through the USB Port, which is a cost-effective and well-integrated Wi-Fi Microcontroller.

We also use the Global Positioning System (GPS) and the Global System for Mobile Communication (GSMC) (GSM). Because the vehicle is used to travelling, it is always vital to know the owner's present location. We attempted to build a switching (Turning ON/OFF) mechanism from any range (such as several kilometers) to stop the vehicle, such as when the fuel supply was interrupted. The burger alarm is going off. This prototype could be used in a vehicle security system and is inexpensive.

The primary purpose of this study is to explain and construct a smart and comprehensive security framework for autos that can prevent robbery while also providing data on accidents. GPS and GSM technology are used in the framework being built in this project It can be made simple enough to fit into passenger cars and even bicycles.

II. LITERATURE REVIEW

Vehicle Tracking System Through GPS-GSM Modems: The vehicle tracking system is a system, that can be used for tracking the bus, car, or any other types of vehicles through global positioning system (GPS). Through this system, the vehicle can be tracked all time through mobile phone or any other computer network system. in many previous study investigations, nevertheless, the global positioning system (GPS) is frequently used as a worldwide navigation satellite system to identify, and halt stolen autos in other circumstances. The vehicle owner receives position information in the form of a text message that includes latitude, longitude, and speed information, or the location can be monitored on the internet using Google maps.

Al-Khedher [2] has created a hybrid GPS-GSM vehicle tracking system that uses the Google Earth application to track autos using an integrated GPS-GSM framework. The remote module uses a GPS on the moving vehicle to identify its current location, which is then sent to the remote module as an SMS along with additional parameters gathered from the car's information port.
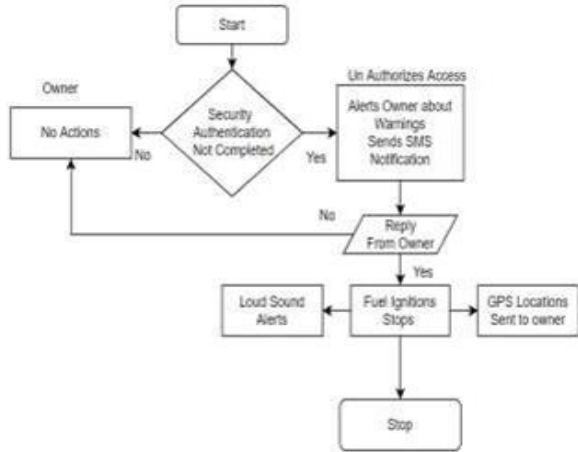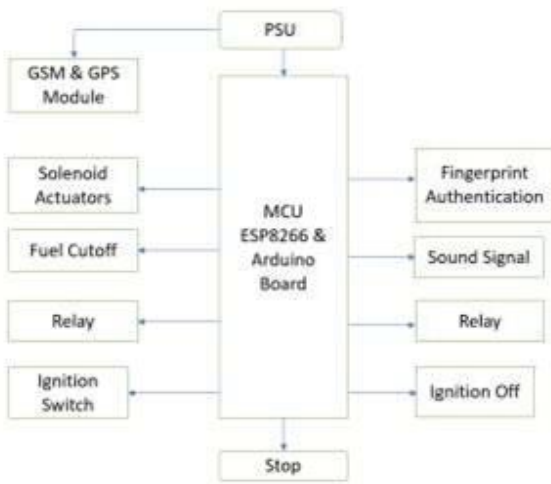
Fig.1. Representation for System Workflow

Fig2: Block diagram for Smart Antitheft Alert & Security System

III. WORKING

a. The antitheft system must be kept in active mode with the use of a switch contained in the system while we head to work after riding the car.

b. If someone accidentally starts a car that is already running, the voltage in the circuit rises, sending a signal to the microcontroller.

c. This microcontroller transmits a signal to the GSM, GPS, and GPRS systems to send SMS to the owner, as well as the vehicle's location (longitude, latitude, and speed) to GSM, which sends the SMS to the owner.

d. If the owner detects a threat to the car, he will cut off the ignition by switching off the spark plug with the help of a relay and cutting off the fuel supply to the engine with the help of a solenoid valve using SMS.

Fig3: fingerprint authentication unlock system.
In figure3 here we have shown the pictorial view of Demonstrations of Mobile fingerprint authentication

Fig4: Mobile Application Creation
Above figure is showing about Mobile Application Creation in Kodular Cloud IDE We have created One Mobile app for Interfacing mobile fingerprint authentication to Lock and unlock the vehicle center lock door systems. Kodular Cloud IDE 7 Gives Fingerprint Authentiaction Interface with Application Software
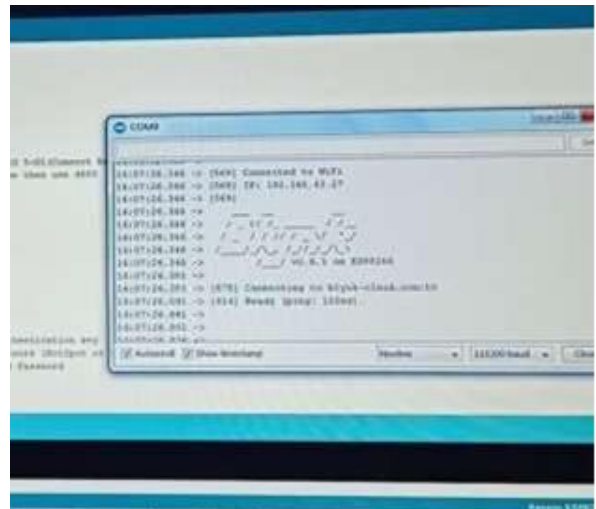

Fig5: Location Tracing (Serial Monitor Output)
Figure3 is showing the Output result of the NEO-6M GPS Module observe on Arduino Serial Monitor.

IV RESULTS

Sr No	Parameters	Results
1	Mobile Fingerprint	Lock/Unlock Central Lock Door
		System for authorized Persons Only
2	Loud Alarm indication	Gives Loud Sound Signal
		if Unitunicate
		Person tries to Open Door
3	GPS Modem	Sends longitude and latitude
		information of Vehicle
		to the Microcontroller
4	GSM Modem	Sending Vehicle Information to Owners Mobile Phone
5	Arduino Software (IDE)	Burn Software Code to
		Hardware Systems
6	Serial Monitor	Observe GPS Output Values
7	Kodular Cloud IDE	Gives Fingerprint Authentication Interface with Application Software

The next step was to put the technology in place on a vehicle's battery in real time.

while concealing the equipment within the vehicle so that the burglar cannot see it When the system was tested, it replied by sending a warning SMS message to the user when the vehicle was moved without permission.

The user received an SMS message including the warning message as well as GPS coordinates. The user sent an SMS message to the system to stop the vehicle, and the system replied by transferring power to the battery, causing the vehicle to stop.

V CONCLUSIONS

When the owner parked the car at a parking lot. After then, anyone who gains access to the car sends a signal to the owner that it is being stolen. If he sends another SMS to the vehicle to stop, the ignition will be turned off, the fuel supply will be turned off, and the buzzer will sound a loud alert, causing him to leave the vehicle in the same location. With the help of a reset SMS, the car will return to its original mode.

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