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**ABSTRACT**

Vehicle theft detection system is made to track a vehicle using GPS and GSM and notices it is being stolen, also stop it if required. Tracking of vehicle is a process in which vehicle location is tracked in form of Latitude and Longitude. GPS Coordinates are the value of a location. This system is very efficient for outdoor application purpose.

This project is used to collect the location data of the car in which hardware has been installed. The usage of this system is critical and increasing day by day. This system made a good use of known hardware to not only detect the theft of car but to stop its engine as well.

The harware and software required in this project include - Arduino UNO, microcontroller board based on ATmega328P, SIM900A GSM Module which can communicate with Mobile phones via AT commands, GPS Neo-6M Module which provides satellite searching capability, Arduino IDE used for coding Arduino programs or sketches, Proteus Design Suite, a Windows application used for schematic capture , simulation and PCB layout design, Google Maps for satellite imagery which is used to locate the coordinates on map.

This project uses GPS module through Arduino UNO to detect location changes in a vehicle through the data received from satellite. The data received is in form of Latitude and Longitude. Then the GPS coordinates are located using Google Maps. The GSM Module is used to send the location information to a mobile through SMS. User can read the SMS and know if someone else is driving his/her car. After this if the user wants to stop the car then he/she can send an SMS to stop the car which is received by Arduino UNO through the GSM Module. Arduino then cuts the power of the car’s battery which is indicated by an LED or a motor in this project. After the power is cut, the thief will not be able to start the vehicle and the user can inform the police about the theft and tell them about the location of the vehicle.

**LIST OF ABBREVIATIONS**

GPS: Global Positioning System

GSM: Global System for Mobile

GPRS: General Packet Radio Service

VCC: Supply Voltage

GND: Ground Pin

IDE: Integrated Development Environment

LED: Light-Emitting Diode

LCD: Liquid Crystal Display

SIM: Subscriber Identification Module

SMS: Short Message Service

UART: Universal Asynchronous Receiver-Transmitter

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