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Iot Based Real Time Vehicle Theft Control System

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Abstract - *As the amount of urban vehicle grows rapidly, vehicle theft has become a shared concern for all citizens. Security and safety have always become a necessity for urban population. However, present anti-theft systems lack the tracking and monitoring function. Internet of things (IOT) has been governing the electronics era with cloud services dominating the ever- increasing electronics product segment. Thus, there is a need to develop a system for providing security to the vehicle from problems like theft and towing using IOT for security of automobiles and passengers. Our system proposes a novel security system based on wireless communication and a low cost Wifi module. This paper illustrates a model in which the ESP8266 is used for sending messages. The user can control the engine/ignition and turn it off if needed. The system also a password through keypad (with maximum 3 chances) which controls the opening of a safety locker.*

Key Words: **IOT, Android mobile phone, wifi module (ESP8266), Microcontroller, Keypad, Sensors.**

1. INTRODUCTION

The Internet of Things (IoT) is the physical network of things or objects devices, buildings, vehicles, and other items embedded with electronics, software, sensors, and network connectivity that enables these things or objects to collect and exchange data. An anti -theft system is any device or method used to prevent or deter the unauthorized appropriation of items that is considered valuable. Internet of Things is expected to produce high degree of human to machine communication along with machine to machine communication. The primary objective of this project is to reduce human work. Automation has always been a prime factor for security system. Our aim in the project is to design and implement a security system. System that offers controllability through a hand-held mobile phone by means of IOT.

In today's world of comfort and luxury, various high priced costly vehicles are available. Many of these vehicles have been launched with inbuilt security systems. However, even though a huge amount of capital **is** being invested in areas of vehicle security, the cases of vehicle theft is still rising. This situation gives rise to explore for further security mechanism to avoid vehicle thefts. We have decided to devote our project in areas of vehicle safety and security to stop the vehicle theft. This project have features like, Keypad use unlocking of the vehicle and ignition control.

1.1 Literature Review

1. The paper presented by Mohanasundaram.s describe a Vehicle theft Tracking, Detecting and Locking system using open cv. A vehicle track system can be inserting to the vehicle at somewhere in the hidden place.no one can easily find out this system. If any unknown person try to break the system the buzzer gets on then automatically send to the user send SMS to the message and call to the owner.

2. Md. Akteruzzaman Arif Md. Asif Mahmud describes an Anti-theft protection of vehicle by GSM & GPS with Fingerprint verification: In this research work, vehicle location can be tracked and prevention of it from theft with fingerprint verification is done with minimum cost in quasi real-time mode.

3.Ahmed Abdelrahman A.A.', Ahmed Abdallah M.E.[2] describes Design and implementation of vehicle tracking and theft control system.This developed system used to display the current position of the tracked vehicle in the GUI and google map.

4. Hu Jian-ming; Li Jie; Li Guang-Hui describes an automobile anti-theft system using GSM and GPS module. The system is developed using high speed mixed type single-chip C8051F120 and stolen automobile is detected by the use of vibration sensor. The system remains in contact with automobile owner through the GSM module, for the safety and reliability of automobile.

1.2 Existing System

In facial recognition systems works in various methods, it can trained the images whenever you want just swipe to unlock the device otherwise it get lock mode. There is no facility to store many images in our mobile phones. It is also known as Biometric Artificial Intelligence based on mobile application that can be uniquely identified a person by analyzing patterns.

2. PROPOSED SYSTEM OVERVIEW:

For ignition to start or unlocked, user needs to enter the password through keypad, if password is correct then only vehicle gets start and the user is given only 3 chances to enter the password, if password is wrong all time then we need to press the reset button to reset the system. After that, if the user enter the password is correct only then the user can operate the ignition or engine of the vehicle. This sends a command to controller which in turn sends a command to user's mobile through wifi module. If someone is trying to steal valuable things and any wrong vibration comes in the vehicle, then the sensor sends command to controller and then controller send command to user mobile through wifi module. Then the user can control the vehicle by using mobile application.

Micro controller: Arduino uno is a micro controller based on the ATmega328. It has 14 digital input/output pins, 6 Analog inputs. It has a 5v operating voltage, 32KB Flash memory, 2KB SRAM, 1KB EEPROM.

Ultrasonic Sensor: Ultrasonic sensor is used to measure distance of the object. It will give signal to microcontroller, then microcontroller will send signal to user's mobile.

Vibration Sensor: vibration sensor is responsible for sensing any unwanted vibration of vehicle and it will give signal to microcontroller, then microcontroller will send message to user's mobile.

WIFI Module: ESP 8266 WIFI module is used for connection between Microcontroller and user's mobile.

16x2 LCD: A 16x2 LCD is used for displaying vibration mode, distance.

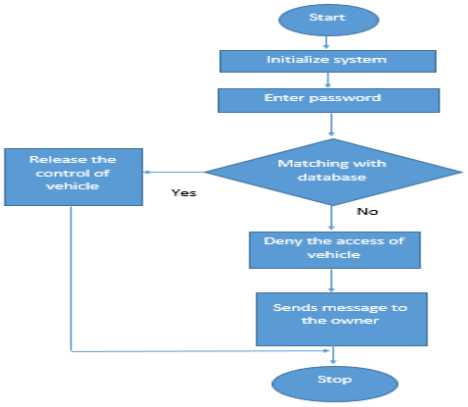

Chart -1: flow chart

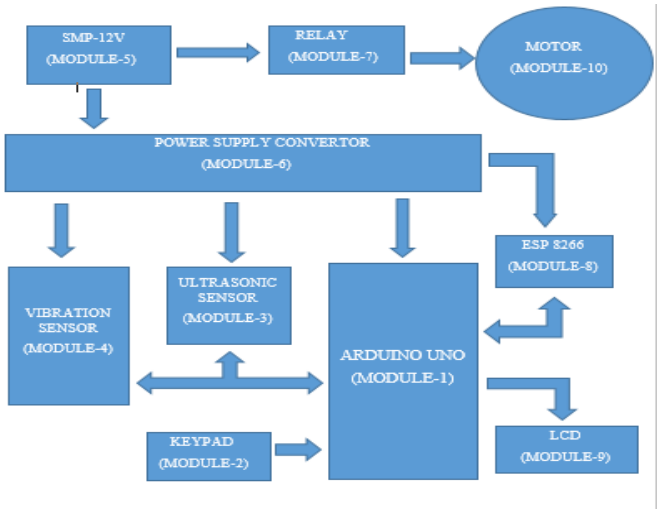

Fig -1: block diagram of proposed system

Password checking mode:

In this mode, there is a three chance to enter the password. It is used to check the password correct or not. If it is correct, then the vehicle can be accessed or it will be stop.

Vehicle theft mode:

In this mode, the three chances are getting wrong then it automatically changes into Vehicle theft mode. Then User can control the vehicle when the Command will receive to their mobile.

Vibration detect mode:

In this mode is used to detect vibration of vehicle. If it is normal or not.

Access the vehicle after correct password:

The user operate ignition or engine needs to enter the password through keypad, if password is correct then only vehicle gets start and the user is given only 3 chances to enter the password, if password is wrong all time then the command is sent to the controller. This controller is connected to the wifi module.

Web application: Wifi module ESP 8266 is communicate between microcontroller and user mobile. Blynk is a platform with ISO and android apps to control Arduino, Raspberry pi and the like over the internet. Then this application is used to control the vehicle (ON and OFF).

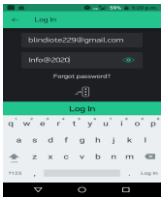

Fig -2: blynk app

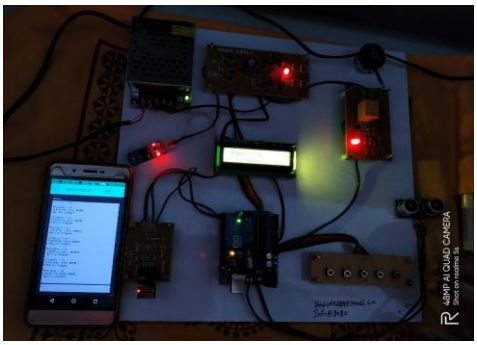

Fig -3: Result

3. CONCLUSIONS

This IOT based vehicle theft control system enables user safety, key less locking /unlocking system to operate the vehicle.

In this paper an advance and cost also less, then it is more secured for vehicle users. No one can easily find out this system. If any unknown person try to break the system then automatically send to the user send SMS to the message and call to the owner.

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