

The Smart Vehicle Concept

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Abstract— The main concept of our project is to unlock our automobiles by using our fingerprint as key and to sense our automobiles safety in mobile, PC or any other electronic gadgets using IOT. It is highly safe control of the automobiles from other person because, the idea implied in this paper is similar to a mobile's finger print lock. Today, technology has made the unbelievable and impossible things possible and greatly reduced man power also solved major problems in industries and gave high profit for industries. Technology has also solving very much day-to-day life problems. The main motto of this project is to get awareness from automobiles theft. First, this project is combination of several ideas to make things safe, simple, economical friendly. But, this project is one of the more best and simpler for installation and tougher for burglars who try to steal our vehicles.

INTRODUCTION

The necessity of this project is because of vehicle burglary (especially cars), The news **THE TIMES OF INDIA** , says that in delhi, nearly 105 cars being stolen a day in 2017 and it raised upto 120 in 2018. Even our country's capital Delhi's CM Mr.Arvind Kejriwal's car is also one among the 120. So I made this as my problem statement and worked on this. Here we come to a point there are several protective measures including buzzers also gps tracking but still robbery takes place. After my analysis I came to understand it is because a lack of communication or a vacuum found between the vehicle and its owner. So I understand the problem, designed and successfully fabricated my project and titled it as THE SMART VEHICLE CONCEPT. To prevent such vehicle robberies and keeping economical conditions in mind, making this as a PROBLEM STATEMENT, I worked on and fabricated my prototype. . Here we will see how my project works, its key components used and its results.

This locking mechanism is not only applicable to automobiles but also to control the various applications in home. This marvelous technique is highly confidential as we are the only persons who can access the whole system and control various activities through finger print.

WORKING

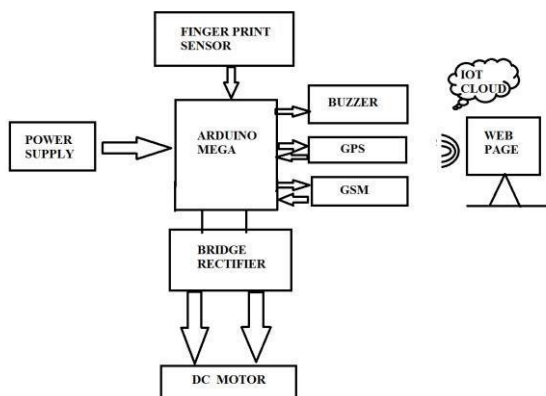
It is found to be more safer because the list of persons who access our vehicles will be displayed in a live streaming website 24*7. Also in case of wrong biometric sensed a text message in our mobile is forwarded called "ALERT" and it

the text message can also be customizable. This is one of the smart feature implemented and live location is also displayed in the website in the form of latitude and longitude number. Our project also has an intruder buzzer as soon as the wrong or mismatch finger prints placed they give warning. The intruder indication can also be indicated by LEDs and alarm buzzer.

The working of this project is simple. Initially, the finger print of the vehicle holder is recorded with his finger prints once. My sensor has the capacity of 11 fingers. So, it can also used for company or management's common vehicle purpose. Now the circuit is connected with vehicle's supply. When the correct finger print placed on sensor of vehicle it works and vehicle starts (Ignition Process Initiates) and if some wrong finger print records produces buzzer alarm and automatically updates the wrong finger intimation in a website where we installed through IOT. Also the live location (Latitude and Longitude) will be displayed in the below given website which is commonly accessible by anyone in Internet connected devices.

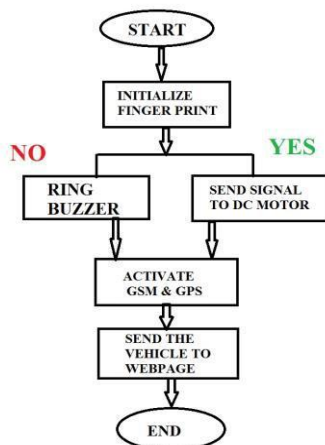


If a sim card is placed in the GSM Module with internet connectivity and main balance, the IOT Circuit gets completed. If a correct finger print gets recorded the data with date, time, employer id (within 11 persons) and its live location gets recorded and that data is published in the website or webpage we designed. Here the output webpage we provide is [vehicleiot.in/finger/view.php?key=Alert]. Even if wrong finger print gets recorded the data is stored in form of date, time, location and message mentioned "ALERT".



BLOCK DIAGRAM

For clear understanding, the Block Diagram



FLOW CHART

and Flow Chart of my circuit is provided. In the block diagram, the power supply is provided commonly to all the components of the circuit.

COMPONENTS

The components used here are

1. 12v supply (Battery)
2. 12v DC Motor (Instead of bike engine)
3. LED Board
4. Fingerprint Sensor
5. Switch
6. Toy Wheel (For better view of rotation of motor)
7. Buzzer
8. Relay
9. Arduino Board
10. GSM Module
11. GPS Board and Antenna

COMPONENTS SPECIFICATIONS :

1. **ARDUINO MEGA** : The MEGA 2560 is designed for more complex projects. With 54 digital I/O pins, 16 analog inputs and a larger space for your sketch it is the recommended board for 3D printers and robotics projects. This gives your projects plenty of room and opportunities.
2. **GSM MODULE** : GSM click is a compact and powerful GSM cellular network communication solution, featuring the GSM/GPRS Telit GL865-QUAD module. This module features a full set of options for the cellular networking and communication.
3. **GPS & ANTENNA** : There is LED signal indicator Antenna size 25 * 25mm, Module size 25mm * 35mm, Installation aperture 3mm, Default Baud Rate: 9600 Destined module with ceramic antenna, signal super, Save the configuration parameter data EEPROM Down With data backup battery.
4. **FINGER PRINT SENSOR** Supply voltage: DC 3.8 to 7.0V, Backlight color: red, Light way: long light / flashing, Operating current: <60mA, Peak current: <85mA, Fingerprint image input time: <0.5 seconds, Window area: 15 × 17mm, Matching method: Comparison method (1: 1).
5. **RELAY** : Heavy Duty 12 AWG wiring harness - pin 30, pin 87, pin 87a, 40 a/30 a high switching capability, Relay harness length - total: 5.9 inch, available - 5.1 inch
6. **LED BOARD** : Product Dimensions 7.5 x 5 x 0.2 inches, Item Weight 1.6 ounces, Shipping Weight - 1.6 ounces.

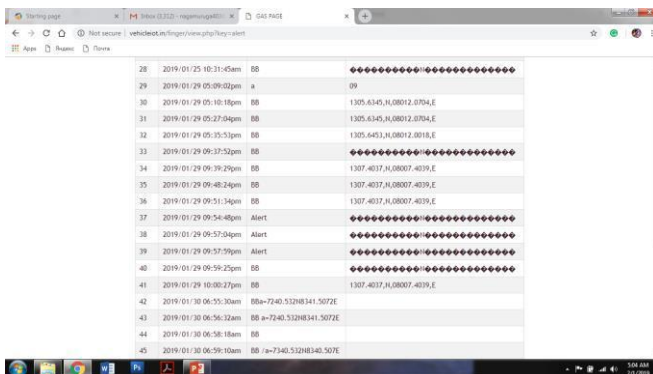
IMPORTANCE OF THIS PROJECT

Even a person with basic knowledge can easily make the circuits in minutes by this project and work it out. What is the importance of this project ?. It is because all our automobiles get protected by old key locking mechanism which is an out-dated mechanism, so to change the situation a new type of locking system is needed. But Re-

Designing of a automobile is not such easier thing and we engineers know this better. So, the project should not create major changes or alterations and my project too satisfies. As it not affects the design or arrangement simply equipped upon locking system.

Assume in a shed if a vehicle with my project and 9 vehicles with normal lock system found, It is damn sure the rest 9 can only get harm. This situation is similar if 9 vehicles of my project and 1 normal lock system bike found. Cent percent chances are there that the normal bike will only get stolen. Finally not leaving this project as end, I am planning to upgrade my project to next level with installation of fuel and air level sensors to the website also with wrong finger impression recordable memory card storage. Because, if the wrong or mismatch finger prints get recorded they will be uploaded in our website and on the next fraction of second we can view the culprit's finger print. Why this feature because, each and every Indian is enrolled in AADHAR. So with the help of police department, it is also much easier to find the culprit's aadhar detail by matching with the biometrics of aadhar with culprit's biometric. And it greatly decreases vehicle robbery and creates fear in minds of burglars.

A. RESULT



ID	Date/Time	Status	Location
28	2019/01/25 10:31:45am	BB	*****
29	2019/01/29 05:09:02pm	a	BB
30	2019/01/29 05:10:16pm	BB	1305.6345,N,08012.0794,E
31	2019/01/29 05:27:04pm	BB	1305.6345,N,08012.0794,E
32	2019/01/29 05:35:51pm	BB	1305.6453,N,08012.0818,E
33	2019/01/29 09:32:52pm	BB	*****
34	2019/01/29 09:39:29pm	BB	1307.4037,N,08007.4039,E
35	2019/01/29 09:46:24pm	BB	1307.4037,N,08007.4039,E
36	2019/01/29 09:51:14pm	BB	1307.4037,N,08007.4039,E
37	2019/01/29 09:54:48pm	Alert	*****
38	2019/01/29 09:57:04pm	Alert	*****
39	2019/01/29 09:57:59pm	Alert	*****
40	2019/01/29 09:59:25pm	BB	*****
41	2019/01/29 10:00:27pm	BB	1307.4037,N,08007.4039,E
42	2019/01/30 06:55:30am	BB	BB=7240.5328N8341.5072E
43	2019/01/30 06:56:32am	BB	BB=7240.5328N8341.5072E
44	2019/01/30 06:58:18am	BB	
45	2019/01/30 06:59:10am	BB	BB=7340.5328N8340.5072E

The above given pic is a screenshot of the website output. Then the responsible persons should take care after receiving the message. In addition, the warning message will be sent as a sms mentioning the same term "ALERT" (this text message can be customizable in Arduino programming). So, it would be more easier to protect our vehicle. As, it is a best way for preventing automobile theft because no thief will dare to steal your automobile. Another necessary reason to implement this project is back in Feb of 2018, Delhi Chief Minister Mr. Arvind Kejriwal's car has been stolen but after few days of hard work by Delhi Traffic Police, he got his vehicle back. Imagine if vehicle of chief minister must be highly secured but it can also be easily stolen why normal vehicles like us won't?

CONCLUSION

By the way of concluding, this project is good at cost efficient and easy in assembling the circuit also highly efficient in means of practical. If my project came into existence this vehicle theft will definitely drop to 3 or 2 vehicles a week in the same delhi city.

**EDUCATION HAS MADE OUR
FINGER IMPRESSION TO SIGNATURE
BUT
TECHNOLOGY SWAPPED BACK OUR
SIGNATURE TO THUMB IMPRESSION**

References

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