HIGH SECURITY SYSTEM FOR MONEY CARRYING VAN TO ATM's

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Abstract - *Today the rate of theft is increasing day by day. With the help of new technologies thieves are highly advanced. So the normal security systems are not efficient at all. Everyone knows that the money carrying vans always travel with a guard. But sometimes the security from guards will not be enough. In that case it is really difficult to protect the money in the van. This project is designed to solve this problem. Main concept behind this project is a security system using a password entered through a keypad and a fingerprint sensor along with the password security system. The fingerprint is unique so it is more secure than other systems. It has a LCD display which is of '16 x 2'size.It also contains a GSM module which sends an alert message to the authorized person. It uses a microcontroller, which is the central processing unit of our project. When the intruder tries to access the vehicle through the password using keypad, if it is wrong the access is denied. Otherwise if the password is correct he/she have to give the thumb impression on the fingerprint sensor. It is sure that if the unauthorized person uses the wrong fingerprint, the access is denied and an alert message is sent to the authorized person. If the authorized person tries to access the van through the password and fingerprint based security, he/she can access the van*

Key Words: Fingerprint scanner, Keypad, GSM Module, LCD Display, Security

1. . INTRODUCTION

The present car alarm systems are still of no match to the well-equipped thieves. It is just a matter of seconds to break through the system. It is known that money transferring vehicle from bank to bank requires high security. The main aim of this project is to improve security of the vehicle. The security is mainly provided by a password and fingerprint sensor, the entire functionality is controlled by the arduino board. The driver is made to provide access through the password and security. If an unauthorized person tries to access the vehicle an alert message is sent to the mobile phone of the driver for alertness of the driver and security. This method will be very useful in the present condition where there are high risks of vehicles getting attacked. The access could only make through the finger print of the driver. If the biometric input is also valid the LCD displays the access to unlock the vehicle. Whole operation is controlled by a microcontroller which is the central processing unit of the entire system. If the password entered is incorrect an

alert message is send to the mobile of the user through SMS. Also a warning signal also gets displayed on the LCD screen. It consists of an arduino board which consists of micro controller and associated serial ports for connectivity. The GSM module is used to establish a communication between computer and GSM \GPRS system .Global system for mobile communication (GSM) architecture used for mobile communication in most of the countries. Finger print sensors are security systems of biometrics. They are used to unlock doors and in another security applications .A LCD screen is used to show the output .The DC Motor is used in the place of a lock. Tracking and monitoring of vehicles are increasing in urban areas as many commercial and private vehicles are available large in numbers. Many organizations and individuals find a need for tracking nowadays for safety. Logistics companies need to track vehicles when precious cargos are carried. Individuals track and monitor their vehicles as a concern for safety.

2. LITERATURE REVIEW

The security mechanism for money carrying vans was done with the help of a guard. No other security mechanisms have been developed or implemented. To improve the security there were different mechanisms which provide unique and more security. Accordingly, different papers are taken then revised. Review analysis is done based on various security mechanism schemes and methods based on various parameters used.

Fingerprint Based Vehicle Security System [1] in this work Biometric system is used as security for vehicles. Biometric System is the combination of two different technologies' which are Embedded System and Biometric. Biometric is Greek word which means study of life. Biometric is the method for individual identification of humans. Biometrics refers to recognization and verification of retina, Hand shape and size, finger ridge etc. Fingerprint proves one of the best recognition systems. The security system implemented using Arduino mega

Bank Locker Security System based on RFID and GSM Technology [2]The main goal of this paper is to design and implement a bank locker security system based on RFID and GSM technology which can be organized in bank, secured offices and homes. In this system only authentic person can be recovered money from bank locker. We have implemented a bank locker security system based on RFID and GSM technology containing door locking system using

RFID and GSM which can activate, authenticate, and validate the user and unlock the door in real time for bank locker secure access. The main advantage of using passive RFID and GSM is more secure than other systems. This system consists of microcontroller, RFID reader, GSM modem, keyboard, and LCD, in this system The RFID reader reads the id number from passive tag and send to the microcontroller, if the id number is valid then microcontroller send the SMS request to the authenticated person mobile number, for the original password to open the bank locker, if the person send the password to the microcontroller, which will verify the passwords entered by the key board and received from authenticated mobile phone. If these two passwords are matched the locker will be opened otherwise it will be remain in locked position, this system is more secure than other systems because two passwords required for verification. This system also creates a log containing check-in and check-out of each user along with basic information of user.

Biometric Recognition: Security and Privacy [3]Concern Biometrics offers greater security and convenience than traditional methods of personal recognition. In some applications, biometrics can replace or supplement the existing technology. In others, it is the only viable approach. But how secure is biometrics? And what are the privacy implications?.

GSM Based Home Security System [4] Home Security System represents and reports the status of the connected devices in an intuitive, user-friendly interface allowing the user to interact and control various devices with the touch of a few buttons. There are various technologies used for Home Security such as Bluetooth, WiMAX and Wireless LAN (Wi-Fi), ZigBee, and GSM. Among these GSM is the most widely used technology in the world. In this paper, we are proposing the use of various types of sensors such as PIR motion sensor, Gas Leakage sensor and Fire Sensor to detect the change in surrounding of the home and notify the user by sending an SMS via GSM module SIM900A. The user can have access to turn the sensors ON and OFF by using an application connected via ESP Wi-Fi module.

Design of highly reliable Fingerprint Access Control System based on C8051F020 single chip [5] this paper is about a highly reliable Fingerprint Access Control System, which is based on the single chip C8051F020, the system adopts SM-62 Fingerprint Module which is produced by Miaxis Biometrics Co. to enroll or verify the fingerprint. The system provides multifunction as follows: fingerprint access, PIN Code access, fingerprint management, historical attendance review, etc. This system is characterized with its anti-crack circuit design, the hardware design adopts dual single chips control strategy, in this way, the security of the system is maximum guaranteed.

Arm 7 Based Theft Control, Accident Detection Vehicle Positioning System [6] this system makes use of an embedded chip that has an inductive proximity sensor, which senses the key during insertion. This is followed by the system present in the car asking the user to enter a unique password. The password consists of few characters and the car key number. The system sends a text message to the owner's mobile stating that the car is being accessed. If the user fails to enter the correct password in three trials, a text message is sent to the owner and police with the vehicle number about the unauthorized usage and the location tracked using a GPS, GSM module and ARM7. Apart from this if your car is stolen, a password like SMS is sent by the owner, it automatically stops the car. One more application of this project is that it is use for early accident detection. It can automatically detect traffic accidents using accelerometers along with other sensors and immediately notify owner, police station & two more contacts saved in that along with vehicle number & location of that place.

Automobile Anti-theft System Based on GSM and GPS Module [7] In view of automobile anti-theft systems mostly used static real-time detection and alarm at present, in the paper we design an automobile anti-theft system based on GSM and GPS module. The system is developed based on the high speed mixed type single-chip C8051F120 and detect automobile stolen to the automobile owner by vibration sensor. Automobile location can be obtained with the GPS module integrated in anti-theft system. The system can keep in touch with automobile owner through the GSM module, to monitor the safety and reliability of automobile

GSM Based Bank Locker Security System using RFID, Password and Fingerprint Technology [8] implement a high security locker system based on RFID, fingerprint, password & GSM technology which can be organized in bank, secured offices and homes. in this system only authentic person can be recovered money from locker. fingerprints are one of many forms of biometrics used to identify individuals and verify their identity. RFID is means of identifying a person or object using a radio frequency transmission. In other words RFID is an electronic method of exchanging data over radio frequency waves the technology can be used to identify, track, detect wide variety of objects.

Fingerprint based authentication and security system using GSM and GPS technology [9] It is an embedded system which is used for tracking and positioning of any vehicle by using Global Positioning System (GPS) and Global system for mobile communication (GSM).It will continuously monitor a moving vehicle. This system contains single board embedded system that is equipped with GPS and GSM modems along with ARM processor which is installed in the vehicle. After pressing the emergency key in case of trouble, SMS is sent to the server via SMS using AT command.

The study of Biometrics Technology Applied in Attendance Management System [10] this study is based on the biometric recognition technology. The hand geometry machine captures the personal hand geometry data as the biometric code and applies this data in the attendance management system as the attendance record. The attendance records that use this technology is difficult to replicate by others. It can improve the reliability of the attendance records and avoid fraudulent issues that happen when you use a register. This research uses the social survey method-questionnaire to evaluate the theory and practice of introducing biometric recognition technology-hand geometry capturing into the attendance management system.

3. PROPOSED SYSTEM

This proposed system is to make a high security system for the safety of money carrying van to the ATM's. The regular security system is about a guard in the van. But it will not be enough in some cases. Inorder to increase the security we have to implement a system with more security. This system consists of a fingerprint scanner which is highly secured and unique system and a keypad to enter the password. It also have a GSM module to send alert messages to the authorized person.
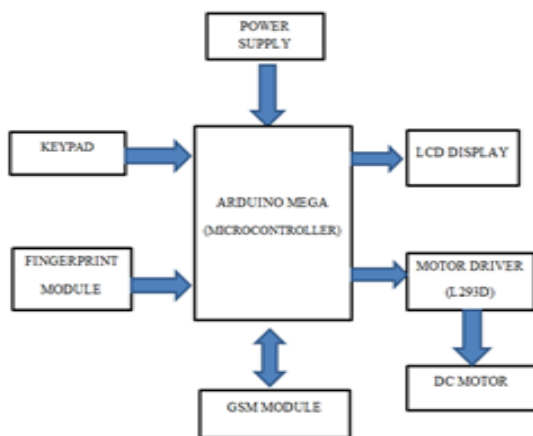
3.1 Block Diagram

Fig:1 Block Diagram

The figure above is the block diagram for the proposed system. It consist of a fingerprint scanner, keypad, arduino mega, LCD display, DC motor, l293d motor driver. Here the first input to the system is from the keypad. If the password entered is correct then the system shows to place the finger on the fingerprint sensor. If the fingerprint is matched then the driver will drive the motor and the door is unlocked. We can enter the password twice. If the password entered at the second try is also wrong then the LCD display

shows access denied and an alert message is sent to the authorized persons mobile phone from GSM module.

3.2 Circuit Diagram

In the circuit diagram we connect the various components to the arduino mega. The fingerprint scanner, GSM module, keypad, dc motor and the motor driver. The connection of the GSM module and the fingerprint scanner is the important connection with the arduino.
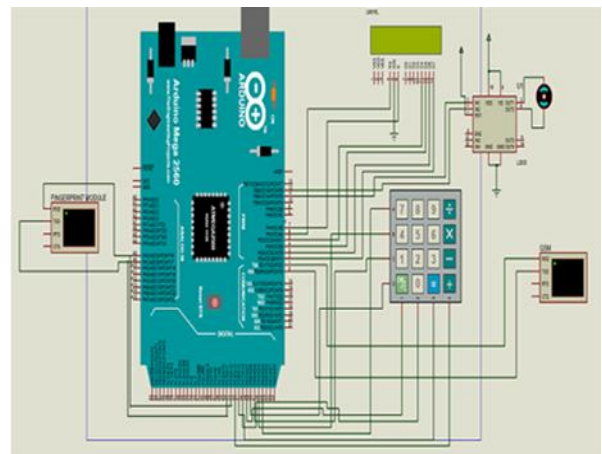

Fig 2 Circuit Diagram

4. RESULT

Our system have been successfully completed and performs well in all conditions. In the system when the input from keypad and fingerprint scanner the arduino checks the inputs and the dc motor works and the door unlocked. And when the input from the keypad is wrong then the GSM module sends an alert message to the mobile number we have given. Our system proved to be efficient and highly secured and even moderately cheap. It functions very well. The system we implemented is shown below as Fig 3
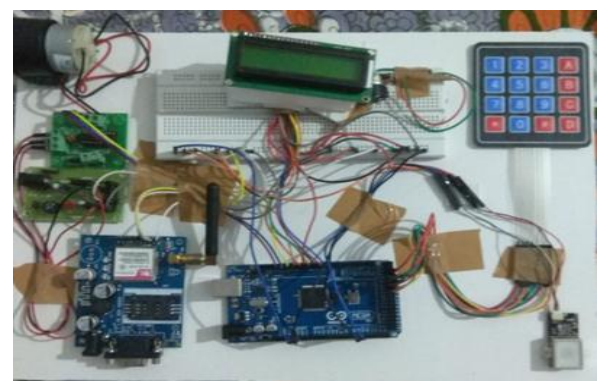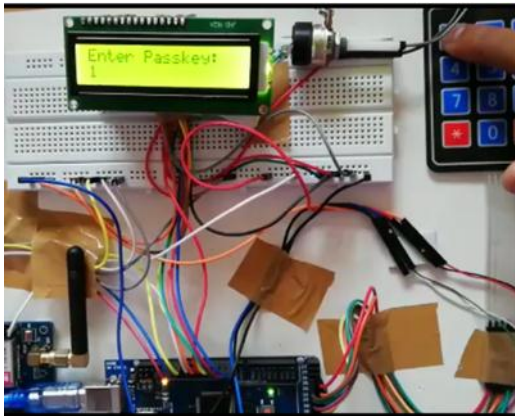

Fig 3 Proposed system
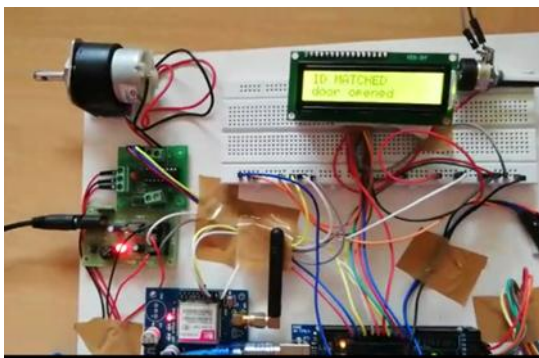
Fig 4 Entering password

Fig 5 Password and Fingerprint matched
and door unlocked

Fig 4 shows the entering of password to the system. In this, when the password is correct display shows us to place the thumb on the fingerprint sensor. Fig 5 shows that the entered password is correct and the thumb impression is matching and the lock gets unlocked.

Fig 6 SMS is send to the authorized person
when password entered is wrong

Fig 6 shows the SMS send to the mobile number of the authorized person when the password entered twice is wrong

5. CONCLUSION

Recently we have heard about security uses of money carrying van. Some technologies have implemented in this field but they are not sufficient. By the proposed system we can ensure the security of money carrying van. Because of the fingerprint identification technique used in the system we can select the access to authorized users. We know that fingerprints are the unique identity of a person. So we can prevent the access to the system from unauthorized users. Hence we can enhance the security of money carrying van than that of the security offered by the conventional security system by lock and key. This system is relatively cheap and affordable with high security. In future, on using highly advanced fingerprint sensors we can reduce the time delay for the matching of fingerprint and also with advanced technologies we can increase the security to a higher level.

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