FINGERPRINT BASED BANK LOCKER SECURITY SYSTEM

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Abstract - The main goal of this project is to design and implement a security system based on fingerprints, which can be organized in banks, offices and apartments.In this system only the authenticated person picks up the documents or the money from the locker.Fingerprints of clients are stored and when the client puts his/her hand over the fingerprint module it reads the digital data and this data is entered into the AVR microcontroller. The microcontroller compares this value with the stored value. If both values are the same, the person's name will be displayed on the LCD screen and the motor will spin and the locker will open. If the values do not match, the motor will not turn and the locker will remain closed.This system also provides enhanced security by means of a Bluetooth module and vibration sensor. If an unauthorized person tries to unlock, a warning message is sent to the mobile phone via Bluetooth in order to monitor the security details of the bank. If the system is hit, the buzzer is activated and an alarm is generated.In this way, a simple and highly secure security system for bank lockers can be implemented

Key Words: Fingerprints, AVR Microcontroller, LCD Screen, Motor, Bluetooth module, Vibration sensor

INTRODUCTION

In the real world, people are more concerned about the safety of their valuable things like jewelry, money, important documents, etc. which is why safe deposit boxes are the safest place to keep them. The advent of rapidly growing technologies enables users to operate high security systems with electronic identification options .These identification technologies include safe deposit boxes and ATMs as well as other smart cards, user IDs and password-based systems etc., which are unfortunately not protected against hacker attacks, theft and forgotten passwords. All of these failures or faults and malfunctions or crashes of these systems still exist; However, identification based on biometric or fingerprint authentication is the most efficient and reliable solution for strict security. Biometrics measures a person's unique physical characteristics to recognize or authenticate their marketing idea in which the customers can register themselves

Raghu Ram.Gangi (2013) and others have given a proposal for fingerprint verification of the security system of automatic teller machines using biometrics with hybridization. The fingerprint function is chosen for its availability, reliability and high precision. The fingerprint identity. The physical characteristics are fingerprints of the hand, face, iris, etc., signature, voice keystroke patterns, etc. Biometric systems operate in verification mode or in identification mode. In verification mode, the system validates a person's identity by comparing the captured biometric template previously saved in the system database. In the traditional locker security identification mode, the system recognizes a person by searching the entire template database for matches, and the system performs one of many comparisons to determine the person's identity or fails if the person is not as the system is registered. Our project therefore use a fingerprint security system to improve the security of conventional lockers.

LITERATURE SURVEY

R. Ramani (2012) et al. defined a bank locker security system which is based on RFID and GSM technology which can be implemented in banks, secure offices and homes. In this system, only authorized people can get money from a safe deposit box. We have implemented a bank locker security system based on RFID and GSM technology which includes a door locking system with RFID and GSM that can activate, authenticate and validate the user and unlockthe door in real time for safe access to the safe deposit box. The main advantage of using passive RFID and GSM is that it provides more security than other systems. This system consists of a microcontroller, RFID reader, GSM modem, keyboard and LCD, in this system the RFID reader reads the identification number of the passive tag and sends it tothe microcontroller if the identification number is valid, then the microcontroller sends the SMS request to the mobile phone number of the authenticated person, the original password to open and l safe deposit box if the person sends the password to the microcontroller, which is responsible for the the keypad will verify passwords entered and received by an authenticated mobile If these two passwords match, the locker will open; otherwise it will remain in a locked position. This system is more secure than other systems as it requires two passwords for verification. This system also creates a logbook that contains the record and output of each user along with basic user information.based biometric system can easily be implemented to secure the ATM. In this system, the operation of these ATMs is that upon accessing the ATM, the customer inserts the

fingerprint module to withdraw the money, then the machine wants the fingerprint of the user using themachine, check / identify and give accurate with biometric fingerprints results if it's valid or not.In thismanner we can try to control and secure the criminal circle of the ATMs and lockers. Sanal Malhotra (2014) has given a proposal for a bank locker security system with Odour identification, Security Questions using RFID and GSM technology which can be utilized in banks, companies and at personal secured places. Only the original account holder is able to use his locker. This system uses Odor identification, Security question technique, RFID and GSM technology which makes it more secure than any other system. The system has the capability of providing more security as 4 steps are used for verification. RFID tag can be verified using RFID technology, then valid person has to answer the security question by using Security question software techniques and it should be same as that of already stored then the valid person gets a message in his/her mobile using GSM technology and needs to type password from his/her mobile and keypad of locker, both passwords should match to open the door of the locker, and then odor identification will be done, the odor pattern should match with the odour pattern stored in the microcontroller.

OBJECTIVE.

1. Banks offer lockers to people as and when needed. Both public and private banks provide this facility to people in need for a small annual fee. A bank locker has several advantages, some of the best are listed below
2. Soft
3. Easy Access
4. Available at any bank
5. Anyone can use
6. Easy nomination available

The fingerprint based bank locker security system is an advanced version of the traditional bank locker system which uses keys. Keys can now be easily copied and made by thieves. In addition, the keys need to be taken care of and they can also be lost through some neglect.The fingerprint based bank locker security system can solve all of these problems. The fingerprint-based bank locker system is more secure and it is easy to use and maintain. Here there is no need for key handling and hence you don't have to worry about losing keys.The system uses fingerprint recognition to read the fingerprints and first stores the registered fingerprints in the bank locker register. The next time when a person scans his/her finger, the sensor reads it and compares it to previous recordings. If a match is now found with the existing fingerprints, it sends the match signal to the microcontroller and the controller displays this data on the LCD screen. The controller also operates the driver motor to open the locker to authorized customers. The locker remains closed for unauthorized customers.

Block diagram

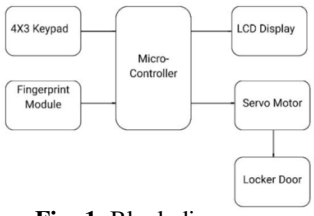

Fig -1: Block diagram

ALGORITHMS

1. Start
2. Initialize Input Output Pins
3. Initialize Keypad and Fingerprint Module
4. Initialize LCD
5. Read Fingerprint
6. If Fingerprint is Match go to step7 else go to step 5
7. Read Keypad
8. Check Entered Password
9. If Password is Right Open Door lock using Servo Motor
10. If Password is Wrong Start Buzzer for 5 sec
11. Go to step 5
12. Stop

CONCLUSION

The main goal of this project is to design and implement a bank locker security system based on Finger print. This can be organized in bank, offices and homes. In this system only the authenticate person recover the documents or money from the lockers. In this security system fingerprint is used. In this system first person enroll use name and password. If user fingerprint and password matches then Finger of person will detect and store with ID. If the ID gets matches.

In this project, we reviewed some papers which have worked on this project. In our paper we introduced biometric based locker which provide high degree of security. Any authorised user will unable to access the locker. We use fingerprint as the verification system as duplication of fingerprint is like unable. The system is cheap and easy to use. This system can be mounted anywhere, where you need high degree of security the low cost of the project is very important factor in this project. These locker system is very reliable and safe.

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