A Survey Paper on Thumb and Password Based Locker System

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Abstract— In this paper we implement and design a circuit of a bank locker system with help of a Password & Thumb only. In this project the Password is enter by using keypad. Most of the robberies are happens due to the traditional lock systems. This project provides a solution, which can ensure the safety of the bank locker and also private sectors such as shops, home. This project is used to control OPEN/CLOSE the door lock with the human thumb print or password only. This system required Password from keypad & Thumb from biometric sensor to operate the door lock (OPEN/CLOSE). In this system bank collect a thumb print or biometrics of each person for assigning locker and bank manager so the only authenticate person will open a locker. So it provides more security. The entered Password & Thumb is compared with the Password & Thumb store in the ROM of the microcontroller. If the entered Password & Thumb is correct, then only the door can be turns OPEN/CLOSE. Open or close of locker system by using solenoid lock. Here we also use GSM module so authenticate person will receives a message. This project is designed to operate the system by only authorized person to avoid such accident.

Keywords: Bank Locker, GSM, Solenoid Lock, Biometric Sensor, Keypad

I. INTRODUCTION

The most of the people refers a smart locker system to protect the most valuable things such as cash, jewellery, important documents. For this most people requires a secure locker system. The most of people to use this system for the security purpose to provide more security. In the thumb and password based bank locker system, when any combination from four possibilities of the thumb and password is entered from authenticate person and bank manager or any employee in bank, then the door is easily open. In this project we can use 4*4 keypad to enter the password. And biometric sensor R307 is used for collect thumb. When the password or thumb is wrong the door not open. After three unsuccessful attempts the authenticate person and bank receives message that any unknown person will try to open door. And every time of open a bank locker the authenticate person and bank receives message that successfully open. The same locker with slight modification also use to secure valuable things at private sectors such as homes, shops and any type or organizations and companies.

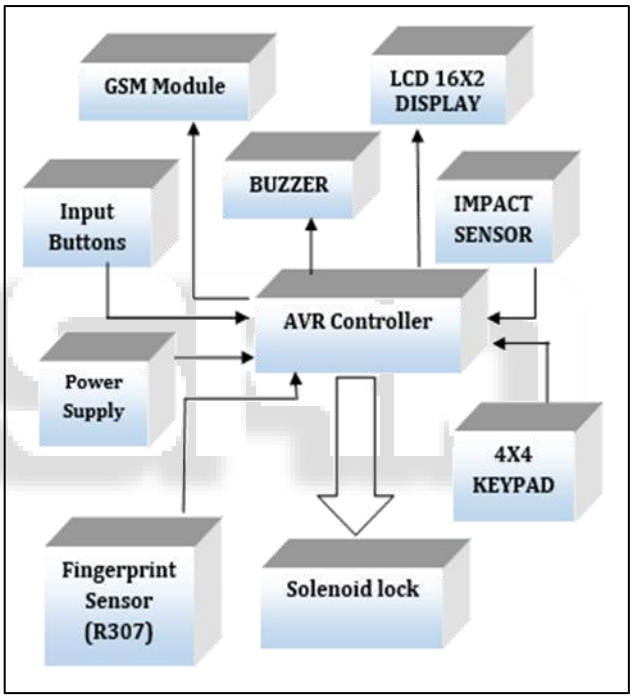
A. *Existing System*

In this project the traditional bank locker system has same drawbacks. Like if any one key from two is missing. Then it creates lot of problems also someone take misuse and the valuable things are not safe. To recover this problem our project is important. As we know Fingerprint is a unique identification for everyone. So using this concept we use biometric sensor and key pad for open a door. GSM impact sensor and buzzer is used for alerting authenticate person as well as bank.

B. *Proposed System*

In this project two personas are more important one is authorized person and second is bank manager. For this password and thumb prints are saved by the bank. For this any one from four conditions are checked. These are thumb & thumb, thumb & password, password & thumb, password & password. If anyone combinations are true then only open the door locker. If not more than two time the buzzer is alarming. Also authorized person will get message by using GSM.

II. SYSTEM BLOCK DIAGRAM



III. MODULES

- AVR Microcontroller
- Power Supply
- GSM module
- Fingerprint Sensor
- Impact Sensor
- Keypad
- LCD Display
- Buzzer
- Solenoid Lock
- Button

A. *Module Description*

1) *AVR Microcontroller*

AVR microcontroller ATmega 328 is a brain of whole circuit. Based on the microcontroller, programming is done. When power supply is off other controllers erase all the

program so overcome this problem we use AVR ATmega 328 microcontroller is used.

2) Power supply

Microcontroller requires +5V supply for its working. This is derived from 9V transformer. 9V transformer is connected to diode rectifier circuit, after converting AC to DC by using rectifier is 9V dc is regulated to +5V by using voltage regulator 7805.This +5V supply is applied to microcontroller.

3) GSM Module

GSM module has a sim slote which is operate over a network range. Here we used a GSM for messaging when locker is open, when unwanted vibration signal is detect and for three times incorrect thumb or password enterd.

4) Fingerprint Sensor

In this project we can store the finger print data in the module and can configure it in 1:1 or 1: N mode for identifying the authorized person and bank manager or officer.

5) Impact Sensor

impact sensor is used to detetect a vibration. So the vibrations convert into electrical energy and gives the output at output device.

6) Keypad

A keypad is a set of buttons arranged in a block or "pad" which usually bear digits, symbols and usually a complete set of alphabetical letters. If it mostly contains numbers then it can also be called a numeric keypad. In order to detect which key is pressed from the matrix, the row lines are to be made low one by one and read the columns. In this project keypad is used to enter a password

7) LCD display

Liquid Crystal Display, we use in our project is 16*2 LCD. This display consists of 16 columns and 2 rows. It is used to display message and instructions.

8) Buzzer

In our project the buzzer is used for beep sound indicating the entry of wrong attemps of thumb or password and after unwanted vibration signal. Here we use piezoelectric buzzer.

9) Solenoid Lock

We use Solenoid lock as a output device. Solenoid lock is connected to the door of bank locker.

10) Buttons

Buttons are used to select any one conditions of four conditions.

IV. Conclusion

In this project we conclude that, the traditional bank locker system has same drawbacks. Like if any one key from two is missing. Then it creates lot of problems also someone take misuse to recover this our project is important. As we know Fingerprint is a unique identification for everyone. using this concept we use biometric sensor and key pad for open a door. GSM and impact sensor, buzzer is used for alerting authenticate person as well as bank.

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