

# Microcontroller Based Security Access System Using 89S52

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**Abstract-** Password Based Door Security System using Microcontroller” is used in the places where we need more security. It can also use to secure lockers and other protective doors. [1]

Security is prime concern in our day- today life. Everyone wants to be as much as secure as to be possible. An access control systems forms a vital link in a security chain. The micro controller based digital lock presented here is an access control system that allows only authorized persons to access a restricted area. The system comprises a small electronic unit with a numeric keypad, which is fixed outside the entry door to control a solenoid-operated lock.[3] When an authorized person enters predetermined number (password) via the keypad, the relay operated for a limited time to unlatch the solenoid-operated lock so the door can be pushed/pulled open. At the end of preset delay, the relay reenergizes and the door gets locked again. If the entered password is correct the unit gives a longer beep of one second. And if the entered password is wrong it gives three small beeps. When the code has been incorrectly entered four times in a row, the code lock will switch to alarm mode and operate an alarm relay. Alarm relay are turned off after entering a valid User Access Code. This function thwarts any attempt by ‘hackers’ to quickly try a large number of codes in a sequence. The secret code can be changed any time after entering the current code (Master code).[3]

This system demonstrates a password based door lock system wherein once the correct code or password is entered, the door is opened and the concerned person is allowed access to the secured area. After some time, the door would close. Again if another person arrives and fails to enter the correct password, the door would remain closed, denying access to the person.

**Keywords-** Security system, Microcontroller 89S52, Password protection etc.

## I. INTRODUCTION

Password Based Door Security System using Microcontroller” is used in the places where we need more

security. It can also use to secure lockers and other protective doors.

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Various systems are available & that are as follows;

### Password Based Systems:-

The programmable electronic code lock device is programmed in such a way that it will operates only with the correct entry of predefined digits. It is also called an integrated combinational type lock.

Electronics door locking system is its example. Based on the programmable electronic code lock, the reprogrammable digital door locks were invented in that the password can change any time as it stored in PROM. For operating the device, GSM/CDMA module can be used. When any person calls up from his phone, the call will be received by the system. And the door will opens only if the call is from specified user.

A cellphone controlled password protected door lock system which was proposed to open the door with the help of cell phone device by entering a specific code the user can make a call to a system’s number. This call is responsible for opening or closing of the entry with the use of correct password.

**Biometric Based System**

The palmtop recognition is the next step for fingerprint recognition. It operates on the image of palmtop. Firstly system takes an image of the palmtop then it works on that image by partitioning it and process is required. At the end, verify the right person. Hence, it reduces the chances of error in other human recognition methods and clarifies the problems which were faced in the fingerprint recognition. The biometric technique is very useful in bank lockers. Except fingerprint recognition the vein detector and iris scanner gives best and accurate result so, in the bank security system, microcontroller continuously monitors the Vein Detector and Iris Scanner through keypad authenticated codes

**GSM Based Systems**

In many door lock security systems, GSM is used for communication purpose. The purpose of a work cultivated by utilization of a circuits like a GSM module which gets activated by a controller for sending SMS in emergency to proprietor and for sending corresponding services of security at the time of break in. For detecting obstacles, the system requires various sensors. It gathers data from the sensors and settles on a choice. With the help of GSM module, sends SMS to a respective number. A recently created model for security of door easily controlled like remote control operations by a GSM hand set acts as the transmitter and the other GSM phone set with the DTMF associated with the motor attached to door with the use of DTMF decoder, a stepper motor and microcontroller unit.

**RFID Based Systems**

These types of security systems used for digital door are utilizing inactive RFID tags (passive). With the help of

this, it ensures that only valid person can get entry. Such systems are working in real time basic for opening the door in which user have to place the tag in contact with RFID detector, then the entryway gets opens and in the central server the registration data is stored with necessary data of the users. Attendance and person tracking is possible by using such type of system. RFID Based Gate Access Security System which points out authorized peoples and permits just them

**Bluetooth Based Systems**

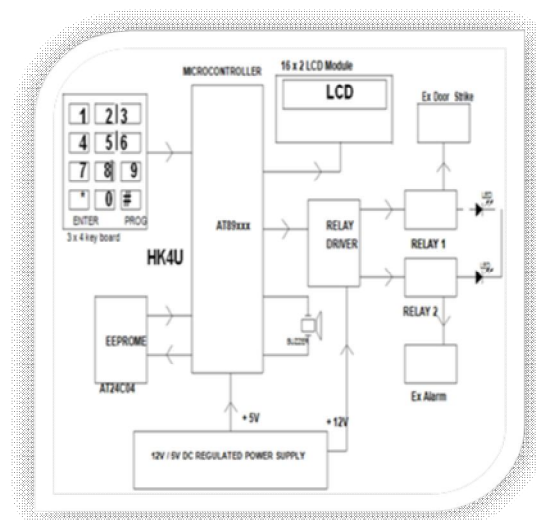
Bluetooth based system is a bit like savvy house innovations that utilizes Bluetooth function available in smart devices. The framework using Bluetooth turns out to be more simple and productive for proper utilization. Such systems are generally based on Arduino platform. The hardware of such framework is the combo of android smart phone and Bluetooth module. Arduino microcontroller here is acting as a controller and solenoid can be acting as output of locking system.

**Why we select password based security access system?**

We select password based security access system because it is more secured than Biometric based, GSM based, Smart card based, RFID based, Bluetooth based. In biometric based fingerprint can be copy. In GSM based phone can be used by orders also In smart card based card can be stolen

In RFID based tag can be lost In Bluetooth based short range and can we use by others But in password based it more secured and can be open by those who know the password no one else

**II. BLOCK DIAGRAM**

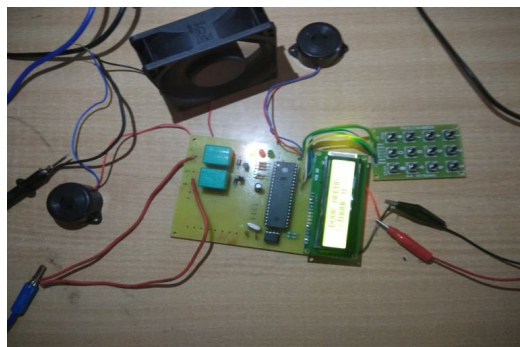


**Figure 1. Block diagram of system**

Figure 1 shows the block diagram of the security access control system. The system comprises a small electronic unit with a numeric keypad AT89S52 is an 8-bit CMOS micro controller. Its internal circuitry reducing the need for external components, thus reducing the cost and power consumption and enhancing the system reliability. The micro controller has four ports namely port 0, 1, 2, 3, and 4. Out of the available 32 bi-directional I/O pins are used for keypad, LCD, serial EEPROM, and relay interfacing

The password is store in the external serial EPROM (AT24C04) memory. The memory can be programmed and read by the micro controller. Which activates an output when the correct access code has been entered on a keypad. This code consists of six digits in the range 0 to 9. The code can be changed by the user and is also remembered when the power is off. A buzzer has been added to provide input feedback; the number of beep indicates weather the input has been entered correctly or not. This system mainly contains **AT89S52** microcontroller, keypad module, buzzer and LCD. At89s52 microcontroller controls the complete processes like taking password form keypad module, comparing passwords predefined password, driving buzzer and send status to LCD display. Keypad is used for inserting password into the microcontroller. Buzzer is used for indication of wrong password and LCD is used for displaying status or messages on it. Buzzer has inbuilt driver by using a NPN transistor. This circuit we have used multiplexing technique to interface keypad to the 8051 microcontroller, for entering the password in the system. Here we are using a 3x4 keypad which has 16 keys. If we want to use 12 keys then we need 12 pin for connection to 89S52, but in multiplexing technique we need to use only 6 pins for interfacing 16 keys. So that it is a smart way to interface the keypad module.

### III. EXPERIMENTAL RESULTS



### IV. CONCLUSION

This project for security access system whose access is only for respected authorities. Using a microcontroller the password entered is checked with the stored password and then does the corresponding operations. Here we use a 6 digit password for better secrecy.

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