PASSWORD BASED DOOR LOCKING SYSTEM USING ARDUINO

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1) INTRODUCTION

As we all are very familiar with the term "Security". Nowadays it is most important to keep our valuable things safe. The world is also growing digitally dependent, and we can even design the doors to be more secure. We can make these digital doors by using "Password" which is more secure than traditional lock system.

In this project we have make a "Password Based Door-Locking System" using an Arduino. It will be more efficient for the peoples in the field of security. It will be implemented in any places like our Houses, Institutions, Banks and any Public Places. We can only able open the door if we entered correct password for door and if users entered an incorrect password, then message will be display or door will not be open.

2) ABSTRACT

In this digitally dependent world, the security is most concern for every one of us. As we all are facing the fear of robbery, people cannot keep their valuable things safely even at their own houses, banks or in any other places. They are always in fear of losing their valuable things. Old traditional locking system is not that safe as password based door locking system.

So, in this project we have work for all these problems and this project provide much more lock security as compare to traditional lock security. We have replaced the old traditional lock system with password. This project will provide efficient security to the users at low cost. It will be also easy to implement and give safety in any places like our houses, institutions, banks or any other public places. If the users forgot the password, then he/she will change or reset the password, which gives the more flexibility to the users.

3) LITERATURE SURVEY

1) Prof.A.Y.Prabhakar1,Prof. Dr. Shruti K Oza2, Nayan Shrivastava3, Prakhar Srivastava4, Garvit Wadhwa5, "Password based Door lock System", Volume: 06 Issue: 02 | 2019.

The main objective of this project is to relinquish safety at each common place like home, public places. during this project all the data hold on within the info. once the proper word are going to be entered, the microcontroller can provide steering to servo engine then door can unlock. What we want is computerised innovation to develop a coordinated and every one around altered upbeat framework at a worth that is wise.

2) Akshay Krishnadas Bhat, Siddhesh Praveen Kini, "Password Enabled Door lockup System victimization Arduino and IoT", Volume: half-dozen Issue: fifteen, 5-1-2019. during this paper, we have a tendency to gift Associate in Nursing electronically controlled entranceway lockup framework that utilizes Arduino, Associate in Nursing open supply microcontroller board that may discover, screen, store and management applications. This framework likewise utilizes Associate in Nursing IoT based mostly log that screens the section and exit of the shoppers.

3) Anuj Kumar Gupta, Prachi Sharma, Sahil Pandey, Surabhi, "Password based door lockup system", 2015.

The main objective of this project is to style a secure door lockup system. to make this project they've to perform sure task like, planning the facility provide for the whole electronic equipment. choice of Microcontroller, Key pad, DC motor and conjointly choice of buzzer in line with the necessity for his or her project.

4) Methodology

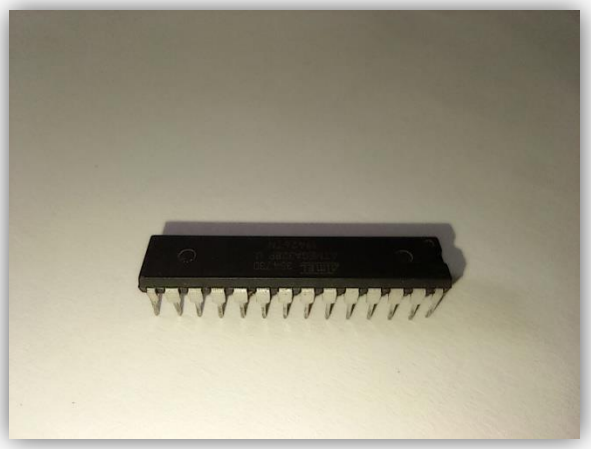
4.1) Arduino UNO

This microcontroller depends on the ATmega328P. There are all out of 20 pins (0-19) out of which 6 are simple information sources, 14 are computerized input yield pins(6 pins give PWM voltage) which can like be utilized as broadly useful pins, a ceramic resonator of recurrence 16 MHz, a USB association, a force jack and a reset button. It has a working voltage of 5V. It contains all that expected to help a microcontroller.

(Img-1) Arduino UNO

4.2) Arduino ATmega328

Arduino ATmega328 is a single chip microcontroller design by Atmel in the mega AVR family. ATmega328 is used in Arduino boards.



(Img-2) Arduino Atmega328

4.3) 4x4 Matrix Keypad

The 4x4 Matrix Keypad interfaced is to take the input from the person. We can enter the preset password to test the validity of the password. If the password is valid then, the door lock will be unlocked. If invalid, the door lock will continue to be locked. The 4x4 Matrix Keypad includes 4 rows and 4 columns. There is a transfer that connects every row and column. In our project We will use only the numeric between 0-9 keys along with # to change the password.

(img-3) 4*4 matrix keypad

4.4) Buzzer

In our project, we tend to used buzzer to point the right entry of password and additionally it indicate once we successfully changed the present old password.

(Img- 4) Buzzer

4.6) Potentiometer

In our project we have also used a potentiometer of 10Kohm resistance to adjust the brightness of the LCD as we want.

(Img-5) Potentiometer

4.5) Solenoid Lock

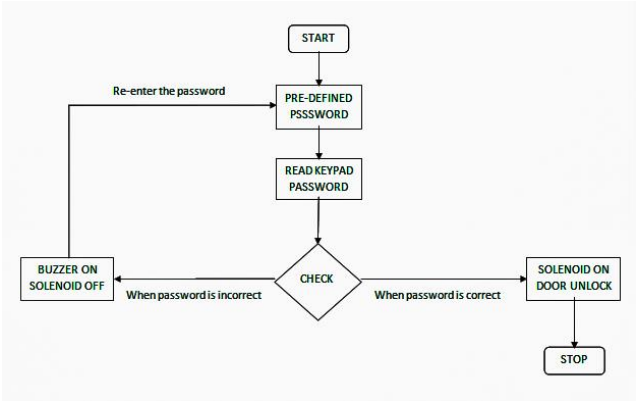
Solenoid lock is also known as Actuator Lock. In our project we have used this solenoid lock. To use this lock we need to have electricity because it is an electronic lock. We can use this lock in different places like door or safe or basic cabinet.

(Img-6) Solenoid lock

4.7) Flowchart

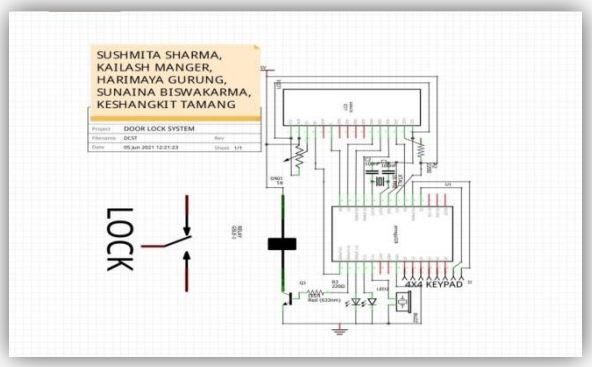
This flowchart shows short idea about how our Project works. When we enter the pre-defined password it will read that entered password. If the entered password is right solenoid will unlock that means door is Unlock. But if we enter the wrong password it will show wrong

password. It will ask you to re-enter the password. And also you can change your old password.



(Fig-1) Flowchart for password based door locking system

4.8) Circuit Diagram



(Fig-2) Diagram for password based door locking system.

5) RESULTS

(Img-7) it is showing "ENTER PASSWORD".

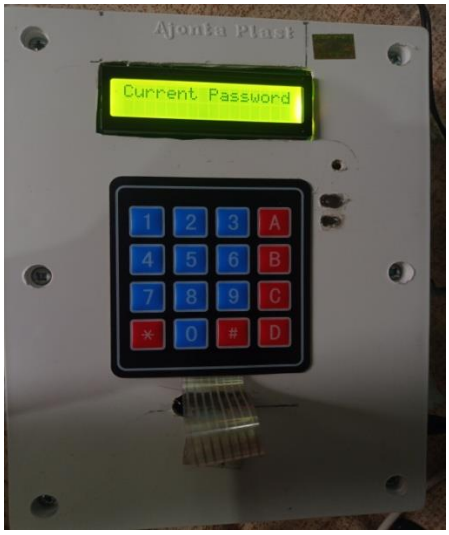
In the above image-7, it is showing enter password. Here we have entered the password which is 1234.

(Img-8) It is showing password accepted.

After typing the correct password it will show pass accepted as you can see in the above image-8.

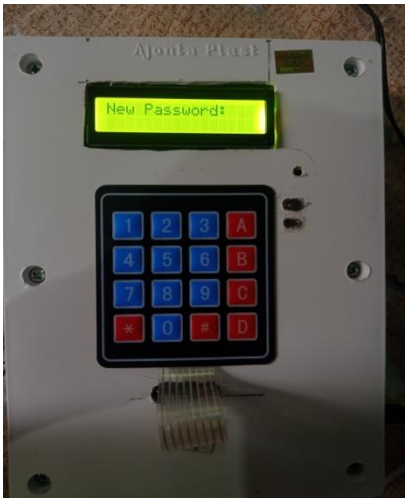
(Img-9) It is showing password incorrect.

If you enter the incorrect password then It will show wrong password as you can see in the above image-9. You can also change the password by dialing #.



(Img-10) it is showing enter current password.

After dialing # it will ask you to enter the current password.



(Img-11) it is showing enter new password.

After entering the current password it will ask you to enter the new password. Here you can set any password as you wish.

6) CONCLUSION

This project provides enough security as long as the password is not shared. We have successfully tested our project. This secret key based entryway locking system can end up being a less expensive then the costly entryway locking system which utilizes retina check, iris scan and fingerprint scan. The outcomes of the model were as per our expectation. Hence, everyone can afford to shop for such locking system at lowest price to keep his valuable things safe.

7) REFERENCES

[1]Working principle of an Arduino ,Abuja, Electronics Computer and Computation (ICECCO):11th international conference IEEE.

[2]T.B.Zahariadis and A.K.Sakintzis, Introduction to Special Feature on Wireless Home Network, ACM Mobile Computing and Communication Review, Vol.7, No:2, April 2013.

[3]Nikhil Agarwal, Microcontroller based Home Security System with Remote Monitoring, Department of EC engineering, MIT, Manipal.

[4]M.Faundez Zany, The Vulnerability of Biometric Security System, IEEE Aerospace and Electronic System Magazine, 2014.

[5]W.Durfee, Arduino Microcontroller Guide, University of Minnesota, Ver-2014.