

Report on

‘Password Based Door Lock System’

By

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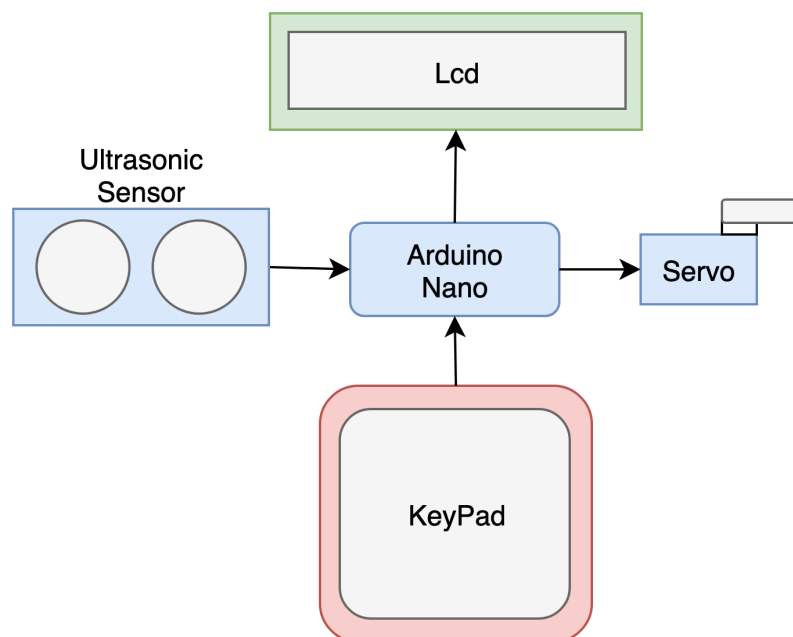
Objective:

To construct a password-based door lock system that can open the door if the password is correct.

Description:

This is a project used to safeguard any house from theft. This project is a small scale implementation of the idea. Instead of using a door lock, I have used a servo. Using the keypad we need to enter a password, if it is correct the door opens else nothing happens. For the further implementation of this project, we can add a GSM module and send a message to a number stating someone trespassed if the password is wrong.

Block Diagram:



System Requirement Specification

Hardware Requirement:

- LCD Display
- Ultrasonic Sensor

- Arduino Nano
- Keypad
- Servo
- Jumper cable

Software Requirement:

- Arduino IDE
 - Library: 1. Password.h
 - 2. Keypad.h
 - 3. Servo.h
 - 4. LiquidCrystal.h

Working Principle:

First, the LCD display is in off mode. The ultrasonic sensor checks for someone within a particular distance, if true Arduino switches on the LCD display. The LCD display displays the text 'enter the password'. We need to enter the password using the keypad which gets displayed in the LCD display as '*'. The Arduino checks the entered password, if it is correct the servo moves to a door open position and an led glows and if false LCD display displays the text 'wrong password' and it switches off.

Circuit Connections:

- Connection of Arduino to Ultrasonic Sensor:
 - 5v - Vcc
 - 18 - Trig
 - 19 - Echo
 - Gnd - Gnd
- Connection of Arduino to Keypad:
 - 14, 15, 16, 17 - R1, R2, R3, R4
 - 6, 7, 8, 9 - C1, C2, C3, C4
- Connection of Arduino to LCD:

- 12 - RS
- 11 - EN
- 5 - d4
- 4 - d5
- 3 - d6
- 2 - d7
- Connection of Arduino to Servo:
 - 10 - Signal
 - 5v - Vcc
 - Gnd - Gnd

Result:

The result of the project Password based door lock system is verified and it satisfied all my requirements without any exceptions.

