Smart Door Lock Using IOT

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Abstract- **Security has always been a major concern for the households and the office environment. With this consideration, a design and prototype of a keypad-based door lock system has been presented in this paper. This provides tools to enforce reliable logs of system transactions and protect an individual's right to privacy. Passwords of the authorized users are enrolled and verified to provide access to a facility that is used by multiple users. A user can also be removed and a new user can be enrolled in the system. We have implemented a centralized control system from where we can control who can enter in which rooms and who cannot. It is an Arduino UNO device based flexible working device that provides physical security.**

Keywords:- **UNO device, right to privacy**

I. INTRODUCTION

Office/corporate environment security is a major threat faced by every individual when away from home or at the home. When it comes to security systems, it is one of the primary concerns in this busy competitive world. This is an era where everything is connected through network, where anyone can get hold of information from anywhere around the world. It's very important to have some kind of personal identification system to access one's own information.

The two methods of personal identification are password and identification cards techniques. Our design is implemented to provide better securities as users don't need any sort of keys or cards that often get lost If someone's password is authorized in the system, he/she would not face any sort of delays to enter a room.

An unauthorized access can be restricted by designing a lock that stores the passwords of one or more authorized users. It unlocks the system when a match is found. It also turns on the fan and light when a user enters a room by using a motion sensor and the fan and light turns off when someone exits the room.

II. PROBLEM STATEMENT

With traditional locks, there is higher risk of keys being misplaced or getting into the wrong hands. We aim to solve this problem by using smart lock system. Unlike the traditional lock, a modern smart lock requires no key to lock or unlock the door. There is a lack of security in traditional locks which can be solved using smart keypad lock system. Our system also saves energy/electricity as it uses a motion sensor to detect when an user enters the room and automatically turns on the light and fan and when a user leaves the room the fan and light turn off automatically and hence save energy and reduce electricity consumption.

III. OBJECTIVES

- Allow users to lock and unlock the door using a keypad and automate the electrical appliances.
- Automatically User is authenticated by keypad.
- Removes the need to carry physical keys which pose the risk of being misplaced or stolen.
- turns on the fan and light once a motion sensor detects that someone entered the room. This helps save energy.
- Increase the security of traditional locking system as number passwords cannot be physically replicated or stolen.

IV. REQUIREMENTS

- Keypad
- Arduino Uno
- Servo Motor
- PIR sensor
- Led light
- 200 ohm resistor
- DC motor
- Breadboard
- Jumper wires

V. APPLICATIONS

- Home security
- Office Security
- Keyless Entry
- Vehicle Security

VI. CONCLUSION

With traditional locks, there is higher risk of keys being misplaced or getting into the wrong hands. As a result, many people are now opting for modern locks to enhance the security of their houses. Unlike the traditional lock, a modern smart lock requires no key to lock or unlock the door. You no longer need to carry a bunch of keys wherever you go, as you just have to use your number password to unlock/lock the door and it also helps save energy as the fan and light are turned on only when someone enters the room and are turned off when the person leaves the room.

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