Secured Smart Door Access using IoT

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***Abstract*:- House owners are using many methods to protect their house from theft. Nowadays, the security services are still developing for protection and that the user would prefer to be familiar with the technology used to protect the house from anything. Our paper is an idea to protect the house from penetration and theft. A simple design is placed in the door and the door is the protection of the house. The security device is connected with house owners mobile phone. If a burglar penetrates or attempts to steal, the owner of the house is aware of the theft by sending a message to his phone. The owner of the house can be aware about the problem and need to ask for support from other people or police.**

INTRODUCTION

Today, every person wants to have their own house for living with family members. And also people are busy with various activities such as jobs, business, etc [1]. Some people appoint security person to protect their house, some people use some security mechanisms such as camera, lock etc to protect their houses. In this paper, the authors have introduced secured lock system to protect doors. Secured Smart Door system is a mechanical or traditional door which is linked with electronic circuit. To access the door, the users have to use digital information such as a secret code, smart card and finger print as shown in Figure 1.

A society is free from theft and assault on the rights of others. It is to be the most professional security leaders in the industry by exceeding the expectations of our clients. moreover, providing a safe environment for residents and visitors to "secure your home and do not pay attention". Also, to exceed the specific security needs of our customers by providing the highest level of quality for professional security services based on confidence. because one of our mission is to have high customer's satisfaction. and to reduce the phenomenon of house theft this system can apply in every home. as well as, it can connect the system to a home control camera, by informing the homeowner by earlier text massage or by connecting the system to a police alarm during the house robbery. It may need for maintenance of the system every three months.

SMART LOCKS VS MECHANICAL LOCKS

The term 'traditional locks' is essentially referring to locks that are not automated and locks that have to be manually engaged in order for the locking mechanism to be operated. Most of these locks mechanisms are turned on either by turning on a key, rotating the thumb role, or pressing a button. In both cases, it is manually turned on and will need to be manually operated to unplug the lock mechanism. The most traditional locks operate when a key is used to activate the lock mechanism, giving it the ability to lock or unlock.

In its simplest form, smart locks are automatic versions of traditional locks. In most cases, the smart lock will use the traditional lock mechanism, but the lock mechanism can be used electronically or remotely. These locks differ because they require different interaction (between the user and the lock) than traditional locks. The name Smart Locks also stems from its ability to be controlled and operated by smartphones, as well as its ability to integrate with other smart devices. These locks allow homeowners to control and lock their locks in a way that traditional locks do not. If the smart locks are working the way as it is intended to, it provides unparalleled ease of access and comfort as shown in the figure 2.a, 2.b and 2.c. Manufacturers of smart locks tend to focus more on the efficiency and added features that lock brings to the table, making them skimp on safety factors have made locks a hallmark for every home [8].

ARDUINO SECURED DOOR

The doors are accessed through information technology; this will be very helpful for owners to monitor their assets. Arduino is an open source electronic platform based on hardware and software easy to use. Arduino panels can read inputs through light sensor, finger, button, or Twitter. It is matched with existing database and allow right users to access doors. In this paper, the authors have used digital buttons to lock the door, which is called password. Internet of Things (IoT) commonly refers to the connection of devices (other than typical fare such as computers and smartphones) to the Internet. Cars, kitchen tools and even heart monitors can be connected online things. And as the Internet of Things grows in the next few years, more devices will join that list [4].

The idea of Secure Door Access is a simple digital lock system, that containing a 4-digit password stored in the program. The system collects the user input from 4 digits, and compares the user input with the preset password. Within the program if the user enters and matches stored passwords, access will be granted (by opening the door). If there is a mismatch between the user input and the stored password, access will be denied (by not opening the closed door and sending a text message that someone is trying to open the door).

ADVANTAGES

- Improve home security to avoid theft.
- No need for Key
- House owners will get notification if anyone is accessing the door

- Very suitable for the elderly or handicapped: so that they can reach the door quickly without needs for others [5].

Disadvantages

- To Remember Passwords
- Need Electricity
- If technical Problem, can't access the door.

Internet of Things (IoT) uses the Internet connectivity enabling access to cloud-based resources or remote communication. It also relies on microcontrollers, sensors and other circuit devices that create smart devices for deployment in a workplace to measure a specific signal. The data gathered by this device can be accessed through a cloud-based system and the volume of data can also be consumed using common devices such as PCs, tablets and smartphones.

APPLICATIONS

Arduino is an electronics platform based on flexible use hardware and software [6]. Arduino consists of both a physical Programming circuit board also referred to as a microcontroller and a piece of software, or Integrated Improvement Environment that runs on your computer, used to write and download the computer code to the physical board [7].

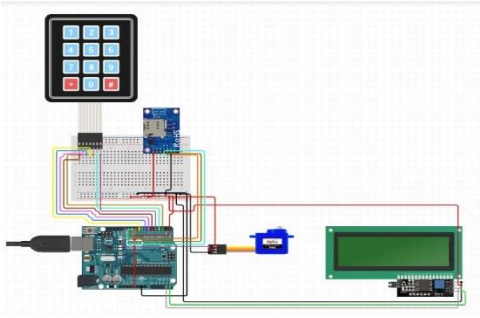

Figure 1 Secured door block diagram

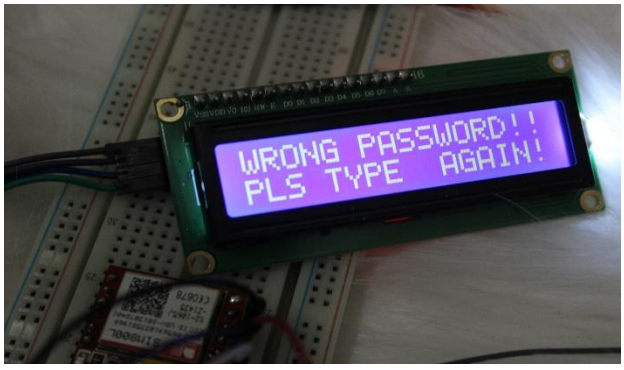

Figure 2.a Unknown person trying to open the door

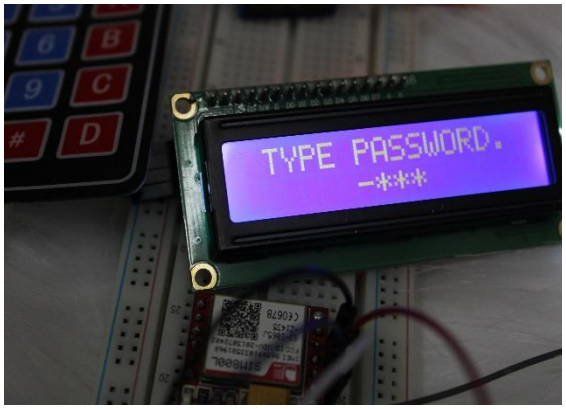

Figure 2.b Unknown person trying to open the door

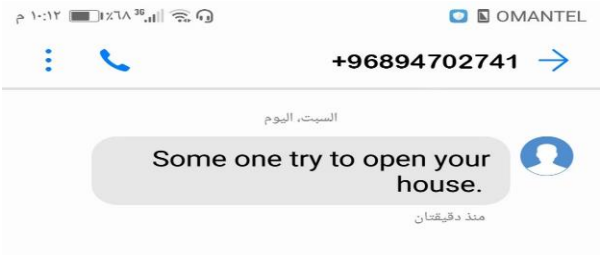

Figure 2.c House owners receiving SMS from security system

Therefore, the authors recommend everyone has to protect assets use our new Secure Smart Door. Also, we have more recommendation to the owner which is Change password every month that's a way of security. Moreover, maintenance of the device every 6 months to ensure that is no failure with the passing of days. Save your password in a place that can return to it as quickly as your phone. Always make sure your phone is always with you because it is connected to the smart door.

CONCLUSION

Security systems have now become an important aspect of human life. As need has been demanding at present, this system has been built in order to meet demand in the security system. The safe door lock system is built to help the user to open doors without using a key. This knowledge can be implemented in a more complex system at a later time. In addition, through this paper, not only a lot of skills have been developed in software and hardware skills but important data search capabilities have also been learned.

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