Smart Locker Security Control System

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ABSTRACT

In this new-fangedworld crime has become an important issue to be resolved. Some of the real time incidents as of today are thefts at home, trespassers and so on. Though people have no time to look up on these things as they are held up in their daily life, they always want to ensure their safety of their beloved ones and beloved things. Sometimes they forget to look after their necessary things like keys, wallet, credit cards etc. Without these, they are unable to access their home or any place they want. Smart locker security control system has become indispensable in daily life. This paper explains about the design and development of a security system, using remotely monitoring technology and human face recognition technology, to confirm the identity of the visitor and to control door accessibility using Internet of Things (raspberry pi) and also the implementation and deployment of wireless control system and accessibility to a home environment for only authenticated people.This paper also explain simple IOT based low cost security Locker security system for domestic and office lockers.

Keywords : Wireless Control System, IoT, raspberry pi, Arduino Software, Integrated Development Environment

I. INTRODUCTION

Securing Locker has become one of the concerning issues. Today Lockers are being more vulnerable for several threats especially being burgled. For this manner home security is needed. Locker security implicitly means a secured mechanism for the door. So the idea of Smart door lock system has been proposed. [1] This is one of the most popular home security systems. With this system, only the authorized individuals can gain the permission to access the doors [2] GSM and cellular networks support remote data transferring and are used to enter abundant levels of acumen within the home. Home automation has the ability to greatly assist and improve the quality of life of older people. It also greatly contributes to supply management and observance with ease of control. The World Wide Web is greatly used in home automation that gives decisions via conservative use of energy. The user can remotely control the gate, home appliances, etc comfortably and conveniently anywhere and anytime [3]. This paper presents an application of IoT used in smart door lock and lighting systems. The microcontroller the system checks input data and accordingly it switches ON or OFF the device. All these parameter values are looked upon via the application interface of door lock system [4].DC motor, the motor will be used to operate the hardware mechanism for locking and unlocking the door [5]. A servo motor is an electrical device which can push or rotate an object with great precision [6].The Arduino Uno is programmed using the Arduino Software (IDE), our Integrated Development Environment common to all boards and running both online and offline [7].In this new-fangedworld crime

has become an important issue to be resolved. Some of the real time incidents as of today are thefts at home, trespassers and so on. Though people have no time to look up on these things as they are held up in their daily life, they always want to ensure their safety of their beloved ones and beloved things. Sometimes they forget to look after their necessary things like keys, wallet, credit cards etc. Without these, they are unable to access their home or any place they want. Smart home security control system has become indispensable in daily life [9]. This paper explains about the design and development of a locker ssecurity system

II. METHODS AND MATERIAL

Arduino controller: Arduino is a simple integrated development environment (IDE) which runs on a pc and allow users to write programs for Arduino in C or C++ languages. The entire programs are installed in Arduino controller. Arduino is an open source electronics platform based on easy to use hardware and software. In this we use Mfcc algorithm. MFCC as a voice recognition algorithm Mel Frequency Cepstral Co-efficients algorithm is a technique which takes voice sample as inputs. After processing, it calculates coefficient unique to a particular sample. Also we use Voice Recognition Module. It is easy control speaking recognition board. It support up to 80 voice commands. Voice commands are stored in one large group like a library.

Super Capacity Battery: A Super Capacity Battery also called as ultra-capacitor, is a high- capacity capacitor with a capacitance value much higher than other capacitors, but with lower voltage limits, that bridges the gap between electrolytic capacitors and rechargeable batteries. It typically stores 10 to 100 times more energy per unit volume or mass than electrolytic capacitors, can accept and deliver charge much faster than batteries and tolerance many more charge and discharge cycles than rechargeable batteries.

Voice recognition phase: The two major phases a voice recognition system must pass to ensure proper functioning are: Enrolment: This phase is also called the training phase. This is when an individual speaker reads a text or phrase into the system. The system analyses the person's specific voice characteristics and stores the characteristics in a database. Systems that do not pass through the training phase are called speaker independent systems whilst systems that pass-through

Training are called speaker dependent systems.

Verification: This phase is also called the testing phase. In the verification phase, a sample speech utterance is compared against models already stored in the system to determine the best match (es).

Monitoring and control: The voice recognition testing consists of two stages which are the training stage and the testing stage. During the training stage, speech was inputted through the microphone. The features of the inputted speech were extracted using voice recognition algorithm and stored in the Database. During the testing stage, speech was inputted through the microphone. The features from the inputted speech were extracted using voice recognition algorithms. This newly extracted feature was matched with what was initially stored in the database during the training phase. If it matches with what is in the database, the door unlocks and if otherwise, the door remains locked.

III. ARCHITECTURE

Working: This project is used to secure our valuable thing or properties. In this system we are using the owner or user or authorize person voice as security key to open and close the locker. To achieve this project in reality here using Arduino Uno and V3 voice recognized module. Arduino kit is main brain to operate the one DC motor to open and close door, and servo motor for locking and unlocking the locker.
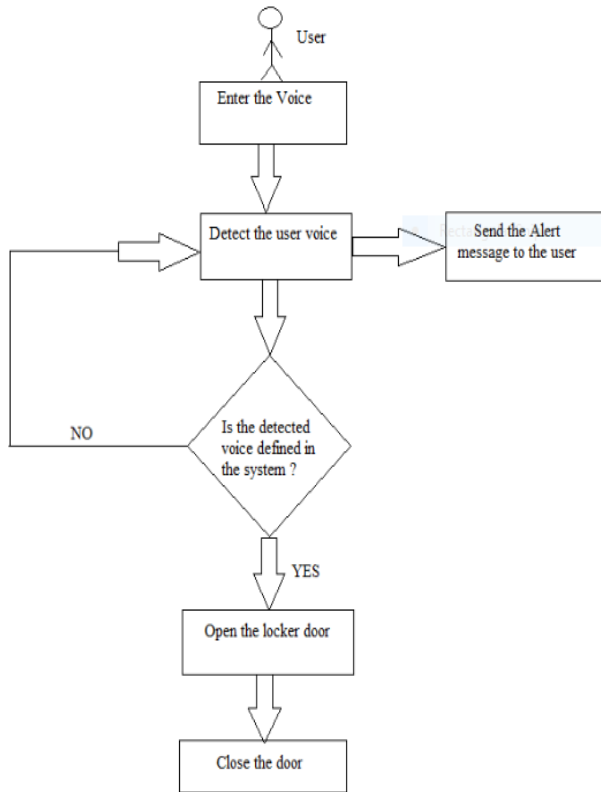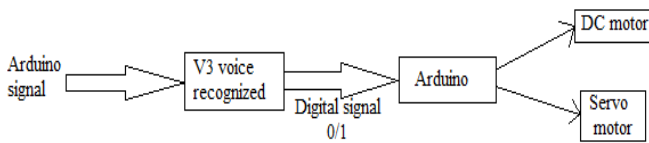
Fig.1

Fig. 2 Module Connections

close the door then servo motor will lock the door. If voice command is not recognized or not matching which provided during the voice module training it means some other person or unauthorized person is trying to open the door. Then the system will send the **Alert message** to the owner or user that someone is trying to open your locker.

Fig.3

V3 voice recognized module also have one microcontroller to process the owner or user voice into respective value for example say **"open"** and value is **"0"** or say **"close"** and value is **"1"** When owner or user said "open" voice command to voice module, the voice module generate respective value "0" for open which are provided during **voice module training.** The generated value of respective voice command is transfer to Arduino Uno microcontroller for processing. Inside the Arduino Uno insert hex code for respective operation with **decision making condition.** Written code like if owner say open voice command with proper sequence. For example user say "Open" voice command, first servo motor unlock the door the DC motor will open the door of locker. And when user say "close" voice command, first DC motor

Fig.4

1. Fig(3) is all about our project, in which the connections are fixed respectively.
2. Fig(4) indicates the opening of door after the authenticated person voice is recognized.

IV. CONCLUSION

In this paper, smart locker system based on voice which integrates the locker security. Locker security system for automatic doors provides advance security for today's standard for authenticate users. Since our project system is built over voice module it is a cheap, flexible and easily installable system. In this project, we tried to design a simple smart lock with secure and encrypted interactions with valid users. This simple project simulates the real smart locks performance and their functionalities.

V. REFERENCES

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