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Performance Survey on IOT Based Security System for Social Safety

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ABSTRACT: In today's modern world, security plays an important role. Every person has precious accessories like gold, jewellery or cash. It is not enough to have these accessories, but security of this is very important, for this purpose we keep them in lockers. Still we often hear or read in newspaper that some fake person has access the locker of another person and have stolen money. In order to overcome this type of frauds, authentication of the person who wants to use the locker is very important. In this project; We are designing advance security system which will ensure the genuine access of the locker overcoming all the misuses. For this we are using unique password technique, password verification and lastly the OTP verification

KEYWORDS: IOT (Internet of things), Arduino Uno, Wi-fi Module, GSM Module, Android App, Buzzer

I. INTRODUCTION

As we know that it is era of Internet, Internet is one of the popular thing which is easily available and less costly thing. This advantage makes internet very important thing and hence many system trying to use this advantage. IOT (Internet of things) is one of the popular and growing technology. It will defiantly make impact in future. Already many companies' starts using of IOT technology for making their different products and start implementation of this. IOT is useful for decreasing the physical controlling of different systems in order to make connectivity. It helps to decrees manual work and increase the efficiency of any system.

In today's modern world, security plays an important role. Every person has precious accessories like gold, jewellery or cash. It is not enough to have these accessories, but security of this is very important, for this purpose we keep them in lockers. Still we often hear or read in news paper that some fake person has access the locker of another person and have stolen money. In order to overcome this type of frauds, authentication of the person who wants to use the locker is very important. In this project; we are designing advance security systems for security which will ensure the genuine access of the locker overcoming all the misuses. Electronic Lockers offer an easy, secure and convenient facility for person to store any personal items such as valuables, handbags, laptops, shopping bags, or any other items. The objective of this project to design three level "IOT BASED SECURITY SYSTEM" by using Arduino UNO, Wifi

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module, Buzzer, GSM and web application. User has to open first two doors before the lockers by entering his unique password on keypad in android application provided to him. LCD is used to see the password that the user will entered while opening the locker. When locker gets open, an SMS would be sent on user's cell phone to inform that his locker has been opened. In case if someone tries to cheat him by opening his locker in his absence, he will be alerted via SMS. comes content here

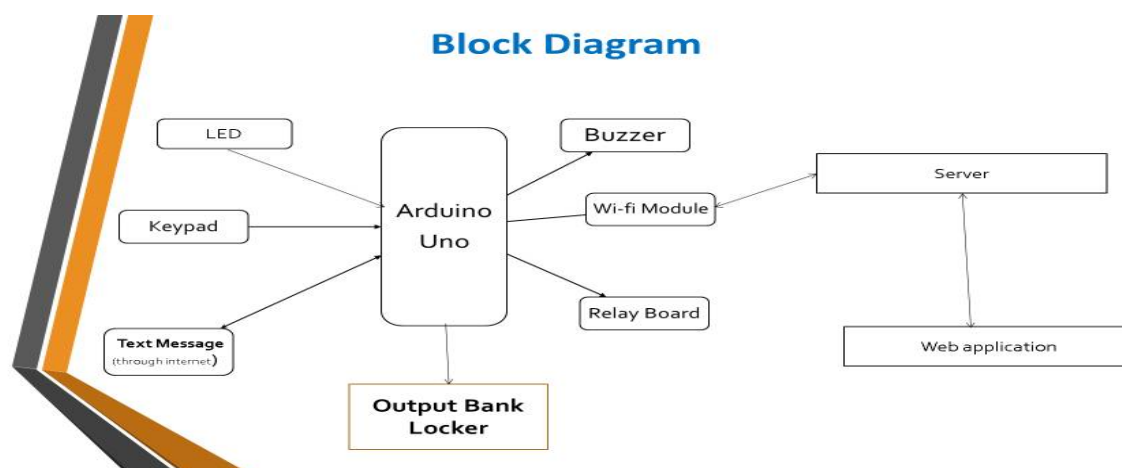
II. OBJECTIVE

The idea came to us while searching for good project topics. We always wanted to put theoretical ideas into practice. An representation of the present invention provides a compact electronic security locker system that includes an array of lockers, each of which is electronic locked and electronically accessed. One aspect of an representation of the present invention allows authorized personnel access to the identification of the person storing an article in a particular locker.

In another aspect of Therefore, we are making a system for the protection of locker using Web application, Keypad, Wi-Fi module, LCD, Relay Board and buzzer. Basically, we are using a keypad to enter the password.

If the password is correct then it will ask for the OTP and we will get this OTP through the web server via the SMS and will enter the OTP into the android app. Hence the lock will be opened. In case if someone tries to cheat him by opening his locker in his absence, he will be alerted via SMS and get the link of the location.

III. BLOCK DIAGRAM



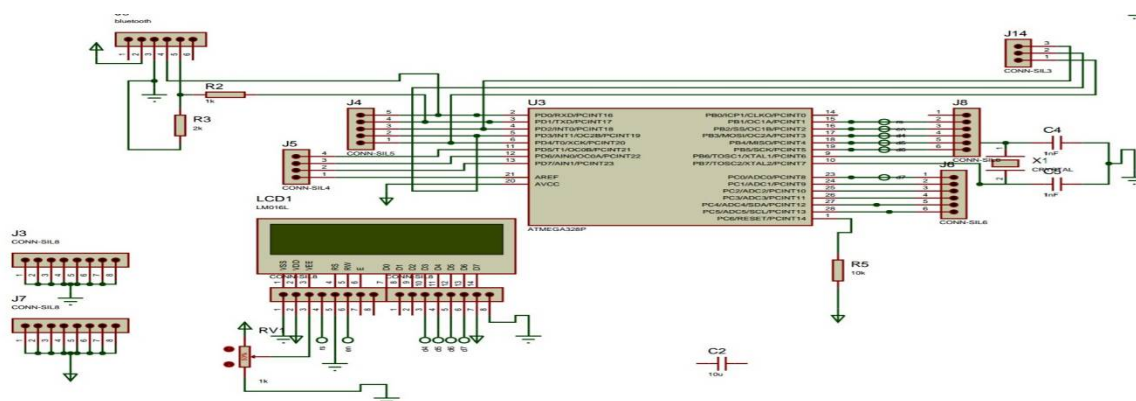
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IV. CIRCUIT DIAGRAM



V. LITERATURE SURVEY

These are some of the existing Smart Security designs that have been implemented-

1. GSM Based System: -

- In many door lock security systems, GSM is used for communication purpose. The purpose of a work cultivated by utilization of a circuits like a GSM module which gets activated by a controller for sending SMS in emergency to proprietor and for sending corresponding services of security at the time of break in.
- For detecting obstacles, the system requires various sensors. It gathers data from the sensors and settles on a choice. With the help of GSM module, sends SMS to a respective number

2. IR based security alarm System: -

- IR based security alarm circuit can detect any movement and trigger the alarm.
- This circuit is very useful in homes, banks, shops, restricted areas where an alert alarm is needed on any movement

3. RFID Based Security System

- RFID reader reads the unique alphanumeric code of RFID tags and sends it to Arduino.
- Then Arduino detects whether RFID card is valid or invalid.
- If the card is invalid then system turns on the buzzer.

VI. METHODOLOGY

In this project, here we are going to connect the wire to the adapter and start the circuit. When the circuit is on, then LCD will display and ask for the password. Before entering the password here we can see the Wi-Fi module is blinking which is connected into the circuit and we have to connect with the Wi-Fi module. After connecting with the Wi-Fi module, we can proceed for entering the password. If the password is correct then it will ask for the OTP number. Here

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we get the OTP number through the server and entered the OTP in bank application on android phone. If these passwords are correct, the microcontroller provides necessary control signal to open the bank locker. Bank locker opened for one minute. This method is simple and more secure than other system.

A. ARDUINO:

Arduino is a single board microcontroller kit for the creating and building the various digital devices and interactive objects. It can also sense and control objects in the physical and digital world. It comes with different CPU versions such as Atmel AVR(8 bit), ARM Cortex-M0+ and ARM Cortex-M3(32 bits). Arduino boards come with equipped sets of digital and analog input and output pins which can be interfaced to various expansion boards and breadboards. It also has the feature of serial communication (universal serial bus) for loading programs which are typically use the dialect features from the programming languages of C and C++. Arduino provides an integrated development environment (IDE).



B. NODEMCU

NodeMCU is an open source [IOT](#) platform. It includes firmware which runs on the [ESP8266 Wi-Fi SOC](#) (System on Chip) from [Espressif Systems](#), and hardware which is based on the ESP-12e-module. The term "NodeMCU" by default refers to the firmware rather than the development kits. The firmware uses the [Lua](#) scripting language. It is based on the lua project, and built on the Espressif Non-OS SDK for ESP8266. It uses many open source projects, such as lua-cjson and spiffs.

Significance of NODMCU: - As NodeMCU is an open source platform which can be used by anybody freely. As it consists of on board Microcontroller as well as Wi-Fi Module it is really becomes useful board for connecting with internet tools as well as controlling (microcontroller's work). Due to this for decreasing or to make a compact system this board make possible.

In H-Box this NodeMCU plays significant role. This board is use for connecting with server. SSID and password of internet source (Hot-spot, router) and also Server's link is provide to this board by programming using arduino compiler. As it connect with the internet it automatically established its connection with server and starts uploading and receiving data. It basically consists of 8 GPIO (General Purpose Input Output) which are useful of interfacing input/output devices.

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C. LCD

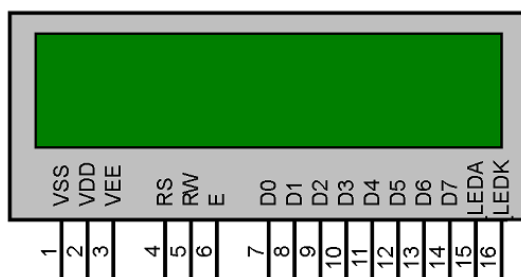
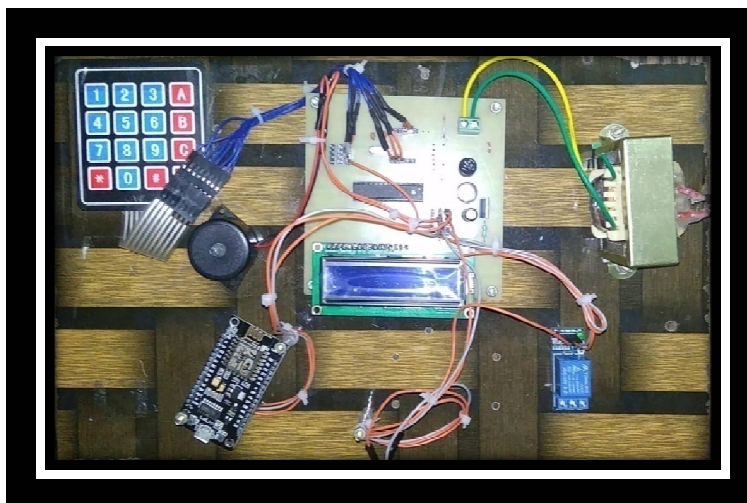


Fig 6. 16*2 LCD

We are going to use 16x2 alphanumeric Liquid Crystal Display(LCD) which means it can display Alphabets along with numbers on 2 lines each are containing 16 characters.

VII. SNAPSHOT



VIII. CONCLUSION

- The system will effectively detect and control unauthorized access by considering safety of the locker rooms.
- It will convince the owner to use system and hence defend their valuable things from robber and also any harm.



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IX. FUTURE WORK

Using this system as framework, the system can be expanded to include various other options which could include Locker security feature like capturing the photo of a person moving around the house and storing it onto the cloud. This will reduce the data storage than using the CCTV camera which will record all the time and stores it. The designed system can be monitors the sensor data, like temperature, gas, light, motion sensors. The future enhancement to this work could be done by adding some more aspect such as face recognition

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