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IoT Based Centralized Bank Security System with Live Video Transmission

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Abstract - *The aim of this project is to developed an internet of things, that can be used for Bank security locker system it needs of various things emerged. As years passed and with tremendous development people started earning money, property and many more precious things. With huge development people felt a need to secure their earnings. The money security is an important aspect as he earns the money by hard work, and banking is known for this. It is not enough to have these accessories, but security of this is very important, for this purpose to keep them in a bank locker. In 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. To overcome this security threat, a security system has been proposed using voice identification and live video transmission with automatic buzzer control.*

Key Words: Tremendous development, Money security, Live video transmission.

1. INTRODUCTION

Bank is an organization where we keep our cash and different assets. Where there is cash there are cheat, now days there are more instances of thievery so securing bank has turned out to be critical. With developing advancement in hardware security framework today all manual locks are supplanted by electronic contraptions. These contraptions incorporate different innovations like movement sensor, odour identification, voice recognition, video transmission etc. In perspective of this danger, individual unmistakable verification advancement, which can perceive enlisted real customers and fakers, is by and by delivering interest. All things considered passwords, ID cards and PIN check techniques are being used anyway the obstacle is that the passwords could be hacked and a card may be stolen or lost. The most secured system is interesting imprint affirmation in light of the fact that a one of a kind finger impression of one individual never organizes the other. The requirement for safe locker systems isn't just in banks yet additionally in different foundations like in Offices, shops business foundations, financial establishments, Petrol stations, Hotels and Hospitals.

2. EXISTING SYSTEM

The existing Biometric based bank locker access system using embedded technology using facial recognitions GSM based security system. In today's a man's life the money security is an important aspect as he earns the money by his hard work, and banking is known for this. It is not enough to have these accessories, but security of this is very important, for this purpose we keep them in a bank locker. Still, we often hear or read in a newspaper that some fake person has access the locker of another person and have stolen money.

2.1 Drawback

- Embedded based locker system has not access from anywhere
- The facial recognition will not give an appropriate result
- Signal strength is low when using GSM

3. PROPOSED SYSTEM

In this project, proposed the development the development idea is executed by using IOT technology which is the trending technology in today's modern society.is also enabled by using Voice recognition module with automatic buzzer control. It is also enabled with live video transmission for added security. In order to overcome this type of frauds, authentication of the person who wants to use the locker is very important. To overcome this security threat, a security system has been proposed using voice identification and live video transmission with automatic buzzer control.

3.1 Advantages

- It can be monitored and access anywhere from the world by the concerned person
- Live video transmission will receive the unwanted actions like theft
- Voice recognition will access up to 80 voice commands. It can be accessed in the advanced techniques

4. BLOCK DIAGRAM

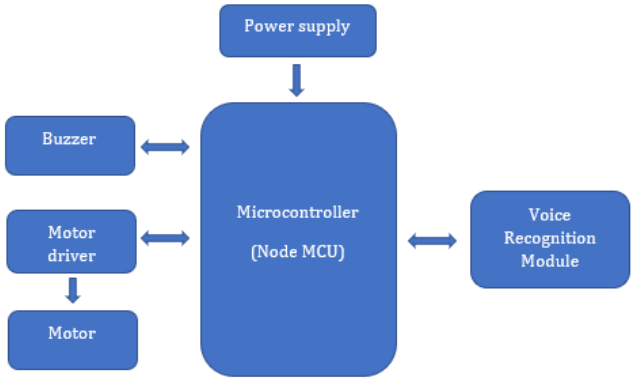

Fig -1: Block diagram of Proposed System

5. HARDWARE DESCRIPTION

5.1 Power Supply

A power supply is a device that supplies power to another device, at a specific voltage level, voltage type and current level. For example, when we talk about a 9VDC @ 500mA power supply can provide as much as 500mA of current and the voltage will be at least 9V DC up to that maximum current level.

5.2 Microcontroller

A microcontroller already contains all components which allow it to operates and alone, and it has been designed in particular for monitoring and/or control tasks. In consequence, in addition to the processor it includes memory, various interface controllers, one or more timers, an interrupt controller, and last but definitely not least general purpose I/O pins which allow it to directly interface to its environment. Microcontrollers also include bit operations which allow you to change one bit within a byte without touching the other bits.

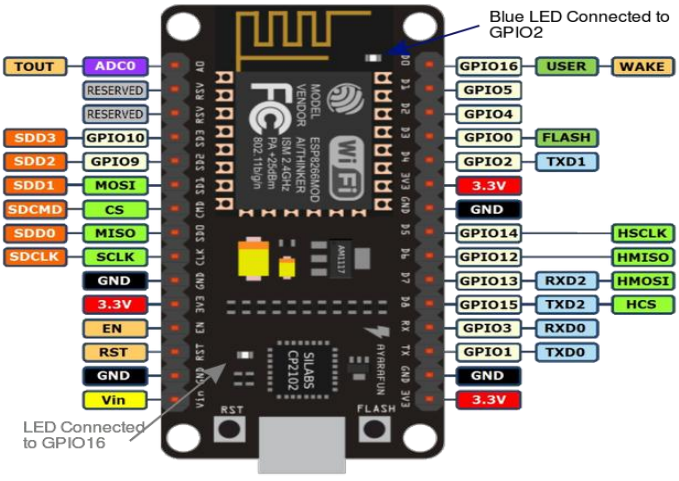

Fig -2: Microcontroller (Node MCU)

5.3 Motor Driver

L293D is a dual H-bridge motor driver integrated circuit (IC). Motor drivers act as current amplifiers since they take a low-current control signal and provide a higher-current signal. This higher current signal is used to drive the motors.

Fig -3: Motor Driver L293D

5.4 Buzzer

A buzzer or beeper is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric. Typical uses of buzzers and beepers include alarm devices, timers and confirmation of user input such as a mouse click or key stroke.

Buzzer is an integrated structure of electronic transducers, DC power supply, widely used in computers, printers, copiers, alarms, electronic toys, automotive electronic equipment, telephones, timers and other electronic products for sound devices.

Fig -4: Buzzer

5.5 Voice Recognition Module

Voice Recognition Module is a compact easy-control speaking recognition board. It is a speaker-dependent module and supports up to 80 voice commands. Any sound could be trained as command. Users need to train the module first before recognizing any voice command.

Fig -5: Voice Recognition Module

6. SOFTWARE DESCRIPTION

6.1 Arduino IDE

Various kinds of Arduino boards are available depending on different microcontrollers used. However, all Arduino boards have one thing in common: they are programed through the Arduino IDE.

The differences are based on the number of inputs and outputs (the number of sensors, LEDs, and buttons you can use on a single board), speed, operating voltage, form factor etc.

Some boards are designed to be embedded and have no programming interface (hardware), which you would need to buy separately. Some can run directly from a 3.7V battery, others need at least 5V. Arduino is a prototype platform (open-source) based on an easy-to-use hardware and software.

It consists of a circuit board, which can be programmed (referred to as a microcontroller) and a ready-made software called Arduino IDE (Integrated Development Environment), which is used to write and upload the computer code to the physical board.

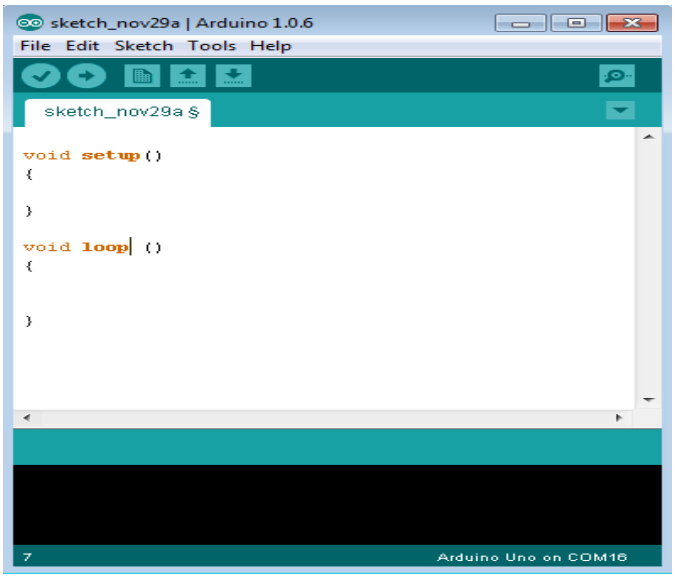

Fig-7: Arduino IDE

6.2 Proteus 8

Proteus expert is a product blend of ISIS schematic catch program and ARES PCB format program. This is an effective and coordinated improvement condition.

Instruments in this suit are anything but difficult to utilize and these apparatuses are extremely valuable in training and expert PCB planning. As expert PCB outlining programming with coordinated space-based auto switch, it gives elements.

For example, completely highlighted schematic catch, exceptionally configurable plan rules, intuitive SPICE circuit test system, broad support for power planes, industry standard CADCAM and ODB++ yield and incorporated 3D watcher.

Up to know we have examined about the fundamentals and programming depiction. Presently we are going into the outlining area. Run the ISIS proficient program by tapping the symbol on the desktop, then this sprinkle screen will show up

Next step is selecting the components to our required circuit. Let us take one example is designing of 38 KHZ frequency generators by using 555 timer IC. The circuit diagram is shown in below image.

- Proteus is a simulation and design software tool developed by lab centre electronics for electrical and electronic circuit design.
- It also posses 2D CAD drawing feature.
- It deserves to bear the Tagline"From concept to completion

7. FLOW DIAGRAM

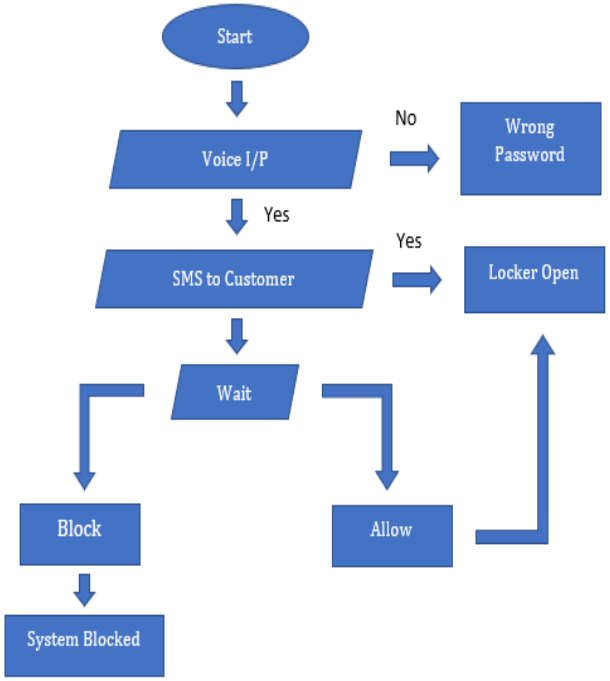

Fig-6: Flow Diagram

8. CONCLUSION

An advanced and cost-effective feature for bank locker security has been proposed. This system is distinctive in many ways from existing bank locker intrusion and theft control system. Existing system are either very expensive and not reliable. The proposed system is reliable, inexpensive with appropriate design.

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