

“IOT Based Centralized Bank Security System for Monitoring and Auto-Arresting”

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Abstract: Nowadays security could be a main issue for shielding the resources. Security is most important because risk of intrusion and theft has become increasing. Security is also important for protecting banks from smoke and other abnormal activities. Many people are using different types of security systems. We have found that most of the security systems are developed only for alarm using microcontrollers in our research we use Arduino with different sensors For example PIR, Smoke or Fire, IR and Gas as observatory to discover or establish interloper or abnormal activities within the bank and ATM. The main goal of this research is to design a system for alerting theft and to auto arrest the thief in ATM or Bank itself from centralized monitoring unit. The purpose of the project is to design a smart and centralized monitoring and control system using IOT technologies.

Keywords: IOT based security system, Bank Security System, Monitoring system, thief detection system, web monitoring system.

I. INTRODUCTION

The banking industry is continuing to grow and their technology implementation is forever expanding because the number of customers that they receive and new challenges they have to face continuously. In any case of that, the present world of threats and thief attacking the banking industry is not reducing neither will it slow down anytime soon. Vulnerabilities are being discovered daily and exploits developed towards them mostly targeting financial institutions. Traditional methodologies for focus on just firewalls and burglar applications to do carry out task with default setups to detect thief and mitigate threats. The effectiveness of such methods in the present Cyber Security world to get against such threats and forms of attacks can be easily circumvented. Banks have to be compelled to redefine their security management systems by continuous observance ways to be able to have a wider read and data of threats they take care of on day to day basis.

IOT emerged the concept of remotely observance objects through the net. When it involves our analysis, security is crucial issue to the general public banks and ATM's. Currently, the increments of various theft was identified with the bank was numerous. As to decrease that proportion this thought gets to be distinctly implausible that increased the security level of bank robbery. The car sensational system that create banks as advanced security. In previous days, we have one burglar alarm at our banks for the security, but the situation has changed turns out to be current days. Individuals begin acceptive on the innovation to realize some level of security in bank security. From these circumstance, we have a tendency to square measure spurred to create such system that will be ready for extremely secured one. On the off chance that one can't accessible at bank and theft was occurred at your bank that would give you a major inconvenience. This short address ascend as a primary concern United Nations agency illuminates you are that your bank isn't protected! This framework is that the response to the problems as mentioned on top of and might advise regarding felony at your bank instantly with the image of your bank current movement.

For enhancing the protection of bank this framework is maintained by central process unit. Assume bank was locked and a thief enters at your bank then this framework will give a caution through the burglary action. At a degree once the felon movement is starting at your bank then the PIR sensing element is connected with the framework and perceived the action happened at bank. After that, it offers flag to the microcontroller. Microcontroller is computational circuit which processes the information inside it. Therefore, with facilitate of microcontroller it can give flag to a different phase. Here, we have a tendency to utilize the IR sensing element for catching the current location of felon within the bank. IR and PIR is catching the motion and presence and offer back to the microcontroller with the goal that it sends then notification to the central processing unit. While in central process unit all the actions were monitored by the executives and data are going to be passed to the bank managers and native police stations. After that if the larceny was confirmed by the executives by checking the values of many sensing element inputs, executives activate the arresting system which locks all the doors inside the bank like manager room, locker room, .etc. and then the executive activate the burglar alarm. So that we are able to catch felon terribly simply and additionally we are able to keep the bank secure with the assistance of latest technology. Compare to the price of existing system this one is effective and cheaper.

II. EXISTING SYSTEM

In this system we've a guard and a camera to observe the ATM system. The recent enhancement made in the security system for a few ATMs is that it is provided with security to the entrance doors itself such that to enter the ATM we want to use the cardboard to unlock the door. System for a few ATMs is that it is provided with security to the entrance doors itself such that to enter the ATM we need to use the card to unlock the door.

In this existing system, the person should enroll his or her finger print into the fingerprint reader, later the fingerprint database compares the live sample provided by the customer with the template in the database, for identification. On confirmation the knowledge provided is factual so the client is granted access to the ATM system. Likewise, it's additionally pro-posed client's political leader idea for doing the dealings whereas actual customer is unable to try to to the transaction. Since the fingerprint can be easily forged, it becomes a major drawback to be used for biometric authentication.

ATM card fraud is inflicting billions of bucks in losses for the cardboard payment trade. In to-day's world the foremost accepted payment mode is positive identification for each on-line and additionally for normal purchasing; thus frauds connected with it are growing. To and also the fallacious dealings, we implement an Advanced Security Model for ATM payment using Hidden Markov Model (HMM), which detects the fraud by using customers spending behavior. This Security Model is primarily focusing on the normal spending behavior of a cardholder and some advanced securities such as Location, Amount, Time and Sequence of transactions. If the trained Security model identifies any misbehavior in forthcoming dealings, then that transaction is permanently blocked until the user enter High Security Alert Password (HSAP). This paper provides an outline of frauds and begins with ATM card statistics and also the definition of ATM card fraud. The main outcome of the paper is to and the fraudulent transaction and avoids the fraud before it happens.

The growth in electronic transactions has resulted in an exceedingly bigger demand for quick and correct user identification and authentication. Access codes for buildings, banks accounts and laptop systems typically use personal identification numbers (PIN's) for identification and security clearances. Conventional methodology of identification supported possession of ID cards or exclusive information sort of a social insurance range or a countersign don't seem to be all at once reliable. An embedded fingerprint biometric identification theme for cash machine machine (ATM) banking systems is projected during this paper. In this scheme, fingerprint biometric technique is fused with the ATM for person authentication to ameliorate the security level.

III. METHODOLOGY

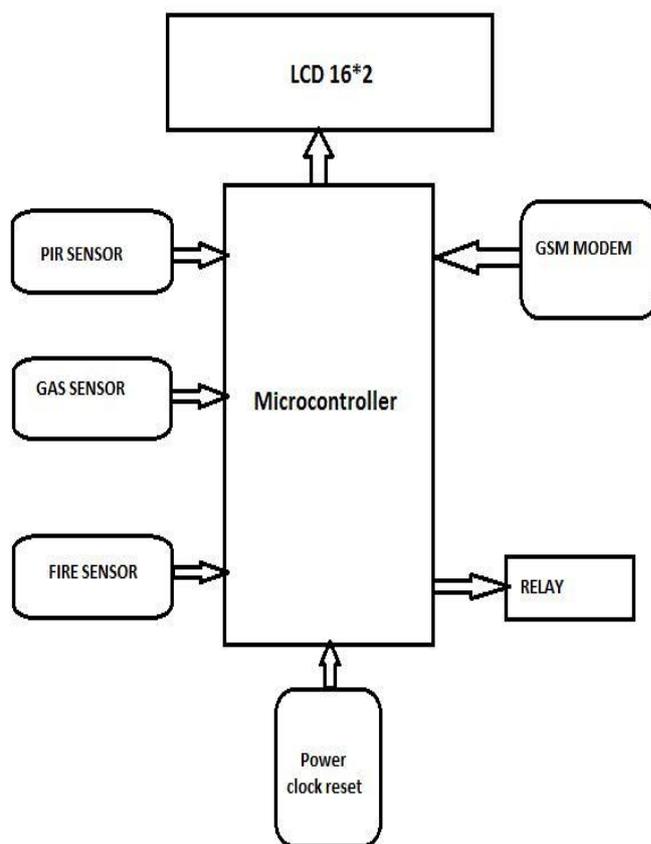


Fig1.Bank Section Block Diagram

Assume bank was locked and a thief enters at your bank then this framework will give a caution through the burglary action. At a degree once the outlaw movement is starting at your bank then the PIR device is connected with the framework and detected the action happened at bank. After that, it offers flag to the microcontroller. Microcontroller is computational circuit which processes the information inside it. Therefore, with facilitate of microcontroller it can give flag to a different section. Here, we utilized the IR Sensor for catching the present location of thief inside the bank. IR and PIR is catching the motion and presence and offer back to the microcontroller with the goal that it sends then notification to the central processing unit. While in central process unit all the actions were monitored by the executives and knowledge are going to be passed to the bank managers and native police stations. After that if the felony was confirmed by the executives by checking the values of many device inputs, executives activate the arresting system which locks all the doors inside the bank like manager room, locker room, etc. and then the executive activate the burglar alarm. So that we are able to catch outlaw terribly simply and additionally we are able to keep the bank secure with the assistance of latest technology.

IV. RESULT

PIR device was mounted in varied a part of bank and IR device was mounted within the entrance of each rooms. Fire and Gas sensor will be fixed in the locker area where all the doors are connected with magnetic locks controlled by relay and burglar alarm connected with the relay circuit. For testing purpose we have a tendency to used single sensors in real time implementation we are able to proceed with multiple sensors, in future implementation the tested results can provide the expected security intimation in real time with proper results. In this proposed work, the PIR and IR sensors did their work accurately with no time delay with the microcontroller, if the signal is valid then microcontroller display the information regarding the unwelcome person within the bank to the central process center. Then the unwelcome person are going to be in remission with automotive vehicle arrest system and data are going to be sent to the Police and manager through the central process centers. We have used some hardware components like sensors for detection of motion, re, gas. We used motion sensor to detect the motion of the persons in the bank, we detect re leakage or gas leakage by using re and gas sensors. We link all sensors in the IOT terminal and by using the LAN connection we set up and web based application to monitor or control the movements in the bank.

V. ADVANTAGES

- Provide high security.
- Low cost.
- Easy to use.
- Fully automatic system.
- Theft protection and alert.

VI. LIMITATIONS

- Strong network required.

VII. REFERENCES

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