

E-Alert: Bank Alert Messaging Unit Using IOT

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Abstract: This paper presents an emergency alarm in a bank, which is mostly deployed in locker unit to automate the human movement using internet of things (IOT). So If any unauthorized person try to enter into the restricted place the motion will be detected and an alarm will be triggered, message and mail will be sent to the administrator. So the administrator of the bank can receives the alert message through e-mail and SMS, so they can immediately take measures to rescue the bank.

Keywords: Controlled Indexing, Image motion analysis, Sensors, PIR-sensor, Event detection, Human motion event classification.

INTRODUCTION

The use of PIR Sensor is if anybody jumps or sneaks within its detection range, the connected lights / sirens or beeps can be activated automatically to create panic to the intruder.

Our system has two main functions: Emergency alarm and the system can be triggered automatically when the unexpected event happens, for instance, the alarm messages sent to the bank admin. The PIR (Passive Infra-Red) Sensor is a pyroelectric device that detects motion by measuring changes in the infrared levels emitted by surrounding objects. This motion can be detected by checking for a high signal on a single I/O pin as shown in Fig1.



Fig1. PIR with Buzzer

Pyroelectric devices, such as the PIR sensor, have elements made of a crystalline material that generates an electric charge when exposed to infrared radiation. The changes in the amount of infrared striking the element change the voltages generated, which are measured by an on-board amplifier. The device contains a special filter called a Fresnel lens, which focuses the infrared signals onto the element. As the ambient

infrared signals change rapidly, the on-board amplifier trips the output to indicate motion.

The PIR Sensor requires a 'warm-up' time in order to function properly. This is due to the settling time involved in 'learning' its environment. This could be anywhere from 10-60 seconds. During this time there should be as little motion as possible in the sensors field of view as shown in Fig2.

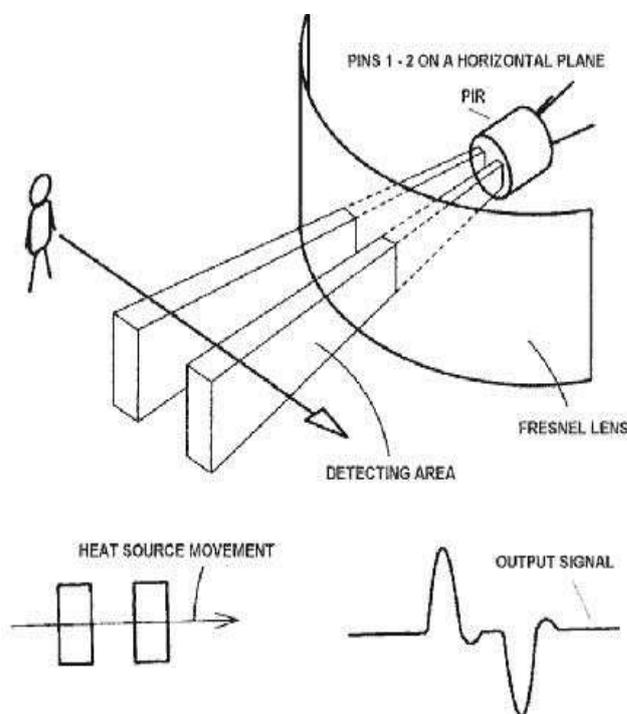


Fig2. PIR Sensor

The PIR Sensor has a range of approximately 20 feet. This can vary with environmental conditions. The sensor is designed to adjust to slowly changing conditions that would happen normally as the day progresses and the environmental conditions change, but responds by making its output high when sudden changes occur, such as when there is motion.



Applications:

- Common Toilets, for Lights and Exhaust Fans
- Common Staircase / Entrance / Basements
- Living Room, Malls, ATMs
- Parking Areas / Garden Lights
- Changing Rooms in Shops
- Offices / Conference Room
- Etc.

Advantages:

- PIR Motion Sensors will itself recover cost by reducing your electricity bills and it will save your electricity cost for the future.
- Very easily installation and can be installed by in house technician itself.
- No separate wiring is required hence no additional installation cost.
- No modification is required and compiles with current aesthetics.

LITERATURE REVIEW

Bank security is avoiding someone or some people entering a bank without the knowledge of the admin for the purpose of committing a burglary. According to the FBI's uniform crime report in the year 2005, property crime makes up slightly more than 75% of all crime in the United States. A burglary takes place in the United States every 14.6 seconds according to the Uniform Crime Reporting Program Crime Clock. Bank security systems are one of the most efficient, safe, and cost effective ways to prevent a bank from burglary [1].

The earliest bank security system comes from the early 1900's. They were very expensive at that time and hard to monitor an intrusion. Now the technology has developed very

much more than the old days. In the early days in bank security technology, most systems made a loud sound when an intrusion was taking place. These systems were unbelievably ineffective; most of them made false alarms, most of the time people began to neglect even a real intrusion. Intruders got to know how to overcome those systems and made them useless. Today bank security systems are far more advanced and inexpensive compared to the old days [1].

It is electronic equipment that is connected with sensors that sense and report any unwanted activity. The most commonly used burglar alarm systems are Passive Infrared Detectors (PIR), Ultrasonic Detectors, Photo electric beams and Glass Break Detectors. These advanced technology sensors are used in places where the criminal activities are expected. Those systems are mainly named as indoor security systems. Outdoor security systems such as Vibration Sensors, Microwave Barriers, and Taut wire fence systems are also available in the market [2].

The next generation bank burglar alarm systems are based on the wireless technology and they do not need to be connected to any power supply. They work from the battery power and can sense any unwanted movement near the bank. The installation of a wireless alarm system is very easy when compared to the previous models. It is far better in operations and working methodology. Their perfect working technology makes them the best product in the market. The problem is those systems are much more expensive [1].

PROPOSED METHOD

The PIR Sensor senses the motion of a human body by a change in surrounding ambient temperature when a human body passes acrossing to which it is connected. Once the motion is seized the alert messages will be sent to the bank admin through e-mail as shown in Fig3.

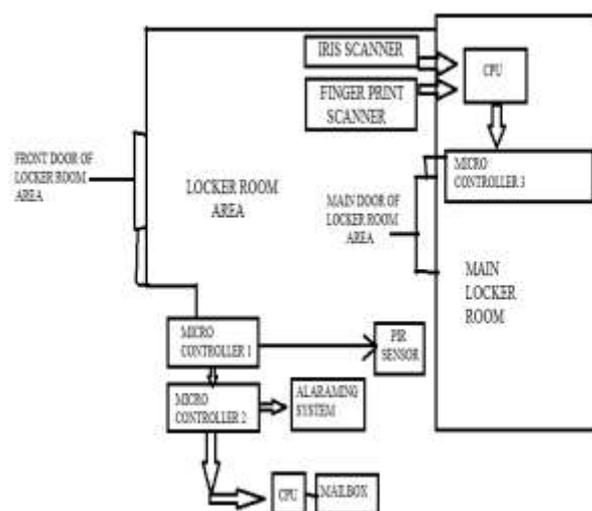


Fig3. Block diagram

