Iot Based Autonomous Thief Trapping Mechanism for Shops

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ABSTRACT:-In this paper, we will deliberate how to control safe and securitized a shop by using GSM technology by using android application through android mobile phone. The wireless communication is increasing day by day. This has motivated us to use mobile phones to remotely controlled access and to receive a feedback SMS about the security and safety of the shops. Here we describe a remote appliance control system which can control trapping mechanism by sending a SMS or CALL from a mobile phone by using GSM technology. We will also show that we can control the appliances even in the absence of an android phone by sending a normal SMS. The advantage of using GSM technology is that we can control the shop security from remote places anywhere in the world. This system allows the owner to control the appliances and to receive a feedback status of the shop security by sending instructions in form of SMS as well as through an android application. For the Shop security system we are using an antitheft reporting system which will report the owner by ringing an alarm and by sending an SMS.Here we are adding PIR sensor for detecting motion of the Human body along with batteries for extra security.Also for the safety system in case of fire or gas leakage it will report the owner by sending a SMS and also by ringing an alarm. Thus by using GSM technology, it provides the wireless access to the devices to be controlled.

I.   INTRODUCTION:-

Thus many manufacturing industry has a lot to benefit from the potential of data-driven insights and advanced analytics. Here, let us look a bit more into how digital technologies, IoT-enabled analytics, and predictive techniques can be leveraged by the shops and industry to scale the business to greater heights. Another important problem to prevent burglary in shops is the lackluster attitude of the shop management in making adequate security arrangements. They engage in business with such valuables but do not pay attention to setting up burglar alarm.Another important problem to prevent burglary in shops.We have proposed an innovative idea by detecting the theft process undergone by the theft using PIR sensor; this tends to allow the owner by sending alerts and notification. This system is also design for night time surveillance. A call & SMS will be send to two different mobile phone numbers which are pre stored in security system by the owner based on his priority which will intern generate the alarm about the who is trying to enter the shop without the owner's knowledge.The microcontroller would then control the Shop appliances based on the information given to it and send a feedback during a security breach and it also send a feedback during gas leakage or if a fire takes place. The proposed solution is easy to use, simple, secure, and robust and can also be controlled through android mobile phones through an android application. In thispaper we describe a simple remote Shop appliance control, security and safety system using GSM SMS. A remote control appliance has been described in using internet. A Bluetooth based Shop automation control is described. A GSM based system for Shop automation is described which uses voice commands for control. In Voice command for Shop automation has been described. In this paper we describe a simple remote Shop appliance control using GSM and monitoring the shop by using PIR sensor.

II.   EXISTING SYSTEM:-

The existing system have many security system of which GSM based security system are more corpulent. In many security systems, Sensors are the backbone of the system which look no more than an alarming system detecting movement. This sort of technology has now become insignificant

and inefficient as many times the alarm goes off unwarranted. In this paper we have proposed and implemented a theft trapping mechanism for shops which is unsecured, providing a handshaking surveillance with CCTV footages, which in its own essence is a security system by itself, and is being currently used to control attempts to theft or robbery. So many sensors works together to detect break-instant at multiple potential entry points. With these sensors running at once, an alarm is almost guaranteed to be set off no matter how they break-in.

III.   SYSTEM HARDWARE :
3.1.PIR SENSOR :

The modern world is filled with such technology that get excited when they sense with their own competition of Human machine. Automatic doors in elevators and shopping malls, burglar alarms at houses and shops, automatic lighting systems, electronic amenities in washrooms are just a few examples where human presence or absence puts the device into active or passive state. It has many advantages insight, Because In shops many peoples can came and go ,either they can purchase nor they trapped it. The best technology of trapped items to be identified by using this PIR mechanism.

3.2.GSM MODULE :

A GSM Module is basically a GSM Modem (like SIM 900) connected to a PCB with different types of output taken from the board. The board will also have pins or provisions to attach mic and speaker, to take out +5V or other values of power and ground connections. These type of provisions vary with different modules3.Lots of varieties of GSM modem and GSM Modules are available in the market to choose from. For our project of connecting a GSM modem or module to arduino and hence send and receive SMS using arduino – its always good to choose an arduino compatible GSM Module – that is a GSM module with TTL Output provisions.

3.3.NODEMCU :

Node MCU Dev Kit/board consist of ESP8266 wifi enabled chip. The ESP8266 is a low-cost Wi-Fi chip developed by Es press if Systems with the TCP/IP protocol.It supports serial communication protocols i.e. UART, SPI, I2C etc. Using such serial protocols we can connect it with serial devices like I2C enabled LCD display, Magnetometer HMC5883, MPU-6050 Gyro meter + Accelerometer, RTC chips, GPS modules, touch screen displays, SD cards etc.Here is another way of developing NodeMCU with a well-known IDE i.e. Arduino IDE. We can also develop applications on NodeMCU using Arduino development environment. This makes easy for Arduino developers than learning new language and IDE for NodeMCU.Here we are using NodeMCU through Arduino.

3.4. Arduino IDE :
In this modern technologies 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 35 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 programed (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.

3.5. LCD DISPLAY :
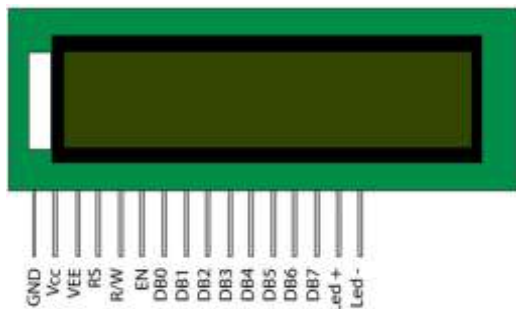
There are many display devices used by the hobbyists. LCD displays are one of the most sophisticated display devices used by them. Once you learn how to interface it, it will be the easiest and very reliable output device used by you! More, for micro controller based project, not every time any debugger can be used. So LCD displays can be used to test the outputs.LCD accepts two types of signals, one is data, and another is control. These signals are recognized by the LCD module from status of the RS pin. Now data can be read also from the LCD display, by pulling the R/W pin high. As soon as the E pin is pulsed, LCD display reads data at the falling edge of the pulse and executes it, same for the case of transmission. LCD display takes a time of 39-43µS to place a character or execute a command. Except for clearing display and to seek cursor to Shop position it takes 1.53ms

to 1.64ms. Here we used LCD display, how the PIR sensor detect the motion recognization and also it notifies the trapping signal, where the owner gets a information and it display.

IV. RESULT :

V. CONCLUSION :

Shop automation System is used to provide the security and control different devices and applications used in the smart system in order to save the electricity,time,and energy.Particular system is likewise been used to guard the human as of the intrusion with the alarm system.This system will also monitors the count of product data in the shops and helps for marketers.

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