**Multi-Functional Secured Smart Home**

**Abstract**

Nowadays Technology keeps on upgrading. Home security is essential for occupant’s convenience and protection. Security systems are being preferred over manual system. With the rapid increase in the number of users of internet over the past decade has made Internet a part and parcel of life, and IOTs is the latest and emerging internet technology. Home Appliances control of smart security system using IOTs uses computers or mobile devices to control basic home functions and features through internet from anywhere around the world. This security system differs from other system by allowing the user to operate the system from anywhere around the world through internet connection. With the help of Arduino microcontroller as an Embedded device, security system design was constructed with the help of many sensors like PIR sensor, IR sensor, Fire Sensor, Gas Sensors.

**Introduction**

Safety and security of any living or working place is one of the most primary concerns. The advancement of technology has increased the safety and security of people along with their belongings. One of the reasons for the rise of the smart home is the increasing risk of burglary and robbery and the busy lifestyle. The busy lifestyle of people is leading to the necessity of controlling the devices at home remotely and increasing the necessity of keeping surveillance over their homes. With advancement of internet technology lifestyle of every person is changing constantly. So here is a method proposed to make a home secured with the help of IOT and along with some sensors.

**Existing Method**

There have many methods proposed earlier. Nikhil Agarwal, G. Subramanya Nayak had used password protected door system methodology in home automation system. The door lock is password protected with an LED based resistive screen input panel which operates by detecting difference in light intensity captured by the photo diode which is emitted by surrounding red LEDs and reflected by the finger.

Visa M. Ibrahim, Asogwa A. Victor, S. Y. Musa constructs his Security system for car protection. In that concept if thief tries to rob a car it automatically demobilizes the car by disconnecting the ignition key supply from the car battery. Aayush Aggarwal, R.C. Joshi designed his WSN and GSM based Remote Home Security System by combining the advantages of Wireless Sensor Networks and GSM technology is presented.

**Proposed Method**

**Block Diagram:**

**Home unit:**

PC

Cloud

Blynk

Blynk

ARDUINO

PIR SENSOR

ELECTROMAGNETIC SWITCH

DC motor

IR Sensor

Wireless camera

Keypad

Buzzer

**Receiver Side:**

Android Phone

Camera Receiver

TV Monitor

**Working principle:**

We propose a methodology where the wireless sensor inputs the parameters to the microcontroller like human detection, obstacle detection and keypad for the security. The microcontroller then uploads these values onto the cloud with the help of wi-fi. These values can be accessed by the concerned person through the android smart phone. If the User enters 3 times wrong password in the keypad then the wireless camera captures the image/video of the person and displays on the monitor.

**Components Used:**

**Hardware Requirements:**

* Microcontroller
* PIR Sensor
* IR sensor
* Electromagnetic Switch
* DC motor
* PC
* Keypad
* Android Phone
* Wireless camera
* Buzzer
* TV Monitor
* Blynk app

**Software Requirements:**

* Embedded C
* Arduino IDE

**Advantages:**

* It is Reliable.
* The parameters can be accessed anywhere in the world.
* It is fast and secured.

**Outcome of the project:**

* The proposed method was successfully designed using the IOT.
* The security monitoring of the house/ bank was done using the Microcontroller and IOT.

**Conclusion:**

The novel method of security system for Homes/ bank has been proposed using IOT. Various parameters are collected from the sensors and these parameters are uploaded to the cloud. The concerned person can access these through his Android Phone.

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