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IoT Based Home Thief Movement Detection and Alerting System

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ABSTRACT

Smart Home can be also known as Automated Home or intelligent home which indicates the automation of daily tasks with electrical appliances used in homes. This could be the control of lights or giving the alarm alteration. Home security has changed a lot over the last century and will be changing in coming years

[1] Security is an important aspect or feature in the smart home applications.

[2] The new and emerging concept of smart homes offers a comfortable, convenient, and safe environment for occupants.

Conventional security systems keep homeowners, and their property, safe from intruders by giving the indication in terms of alarm. However, a smart home security system offers many more benefits. This paper mainly focuses on the security of a home when the user is away from the place. Two systems are proposed, one is based on GSM technology and other uses a web camera to detect the intruder. The first security system uses a web camera, installed in house premises, which is operated by software installed on the PC and it uses the Internet for communication. The camera detects motion of any intruder in front of the camera dimensions or camera range. The software communicates to the intended user via Internet network and at the same time, it gives a sound alert. The second security system is SMS based and uses GSM technology to send the SMS to the owner. The proposed system is aimed at the security of Home against Intruders. In any of the above cases happens while the owners are out of their home then the device sends SMS to the emergency number which is provided to the system. The system is made up of three components: sensors, GSM-GPS Module, microcontroller, relays to control the device and buzzers to give security alert signal in terms of sound.

Keywords: Security, Siren, SMS, Camera, Door locking, GSM Technology, Relay Switch and Comfortable and Convenient, etc.

1. EXISTING SYSTEM

In early days the system was built separately for their own purpose. The core problem faced by any system is the cost effectiveness. The existing system available are CC-TV, cameras, face recognition, so these traditional methods employed for building such security system includes costly sensors and different modules which unnecessarily increase the cost and complexity and are also difficult to implement

1.1 Proposed System

We are working on a home Alert System as a solution to these certain problems. The objective is to make Smart Home Alert System, which keeps the homes and its assets secure from thefts and other miss happenings. It monitors movements of the thief; the siren sound is generated and sends information via message to the owner and direct call id generated by police. And the location of that robbery taken place is available with the police.

Components Used: ARIDUNO, Passive Infra-Red (PIR) sensor, IR sensor, LED, Relay switch, siren, web camera, power supply (battery).



Fig. 1.1 System Architecture

1.2 Objective

The main objective is to make a budget smart home alert system which can provide security from almost every perspective. And which can be accessible remotely.

The main objectives of the system are as follow:

- It provides safety from any kind of intrusion related activities.
- Provides safety from the thief that can be caused when the owner is not available in Home.
- It provides calling effect to the police and the owner of the house.
- Captures the photo/image of the thief, in the camera.
- Also, Provide Door Locking Safeness.
- To Track the location (GSM).

2. CONCLUSION

The IoT Based Home Thief Movement & Alerting System has been designed with the GSM mobile network. The Home Owner and Police Station Staff (incharge) can get alerts anywhere through the GSM technology thus making the system location independent. This type of system is useful when the owner is out of the station and the home is locked. By installing this project at the door site, an intruder can be detected and the owner can receive a message telling the intruder entry in a home. If the nearby police station message is also configured in the system, then the intrusion message can be received by police also and necessary action can be taken.

This project deals with the study of thief detection and tracking using Arduino and PIR sensor using mobile devices. Thus, thief detection system capable of capturing an image and transmitting to a smart phone. Its advantage as it offers confidentiality and privacy. To provide essential security to valuables and detecting the thief the Arduino IoT board, PIR sensor, Camera and Home Locator can be used.

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