Alarms System

SMART SECURITY SYSTEM

## Introduction

A smart security system will monitor and access control and alarm systems. It involves integrating these things, lights and doors, with one another via the internet. Each device has sensors and is connected to the WIFI, so you can manage them from your smartphone or tablet whether you are at home or miles away. Integrating IoT with doors in your house will best improve access systems hence promoting security around the house. We can also employ a monitoring system to send a message to your phone or social media account incase movement has been detected in or around your home.

## Objectives

Minimize break-in by keeping potential burglars away from your house.

Avoiding danger- a home security system is just a deterrent for criminals.

The system can also keep you safe by connecting the system to an alarm, the system can alert the police department within seconds if there is any kind of unauthorized access to your property.

## Literature Review

The system is feasible in that it can alert you of any kind of movement or unauthorized access within your home even when you are miles away. This is basically by linking your security system to a telegram bot which in case of detected motion or forceful access in your home, the sensor will send a HIGH signal to the ESP 8266 board which will then relay this information to your telegram account via Wi-Fi. Also, the system may be linked to the nearest police departments servers such that when there is burglary in your house or an attempt, the law enforcers will be alerted in due time reducing the risk of property loss or harm.

Bots are simply Telegram accounts operated by software – not people – and they'll often have AI features. They can do anything – teach, play, search, broadcast, remind, connect, integrate with other services, or even pass commands to the Internet of Things.

Bots can be used to:

* Get customized notifications and news
* Integrate with other services
* Accept payments from telegram users
* Create custom payments
* Build social services

Users can interact with bots by sending requests directly from the input field by typing the bots @username and a query, which allows sending of content from inline bots directly into any chat, group or channel, or sending messages and commands to bots by opening a chat with them or by adding them to groups. A bot is created by another bot, a BotFather by talking to it and following the steps provided. Once you have created the bot and received the authentication token, you go to the Bot API manual, which has a list of everything you can teach your bot to do.

## Bill of Materials

ESP 8266 Node MCU

HC-SR501 PIR sensor

Breadboard

Connecting wires

## Methodology

### Schematics

<https://drive.google.com/file/d/1NKizp4lDtXeXVwQK787LUY_DNJC3UBI_/view?usp=sharing>

## Flow Chart

MOTION

MOTION DETECTED

SEND TO SERVER

## Conclusion

### Challenges

Based on the sensitivity adjustments of the PIR sensor, that is, 7 meters for the maximum sensitivity range and 3 meters for the minimum sensitivity range, any object passing within the range of the PIR sensor, even at 3 meters away will send ‘Motion detected’ messages to the owner’s phone even though there is not an actual threat to the premises’ security. These messages may become a nuisance to the owner, resulting in a rather unpleasant experience for the owner.

### Scalability

The challenges with this project as mentioned leads to greater scalability for the project. Cameras could be coupled with the project, such that the owner of the premises is able to get visual proof of the happenings around. Also, the cameras could be able to take videos of the surroundings and send the video to the cloud, and the videos could be used for future reference. A buzzer could be introduced to the system, just for the case whereby the phone is not in close proximity with the owner.