

Advance Security System with Intruder Image Capture and Forward Through Email

Thota Sai Prasanth

B.Tech Student
VIT University.

Giri Prasad Rao

B.Tech Student
VIT University.

ABSTARCT

Security is primary concern everywhere and for every one. Every person wants his home, industry etc to be secured. This project describes a security system that can monitor an industry and home. This is a simple and useful security system and easy to install. Here our application uses Raspberry Pi as its controller and PIR sensor which detects presence of a person where ever we place this module either at a door near home or at offices, factories or any other place where we need monitoring every minute for the purpose of security.



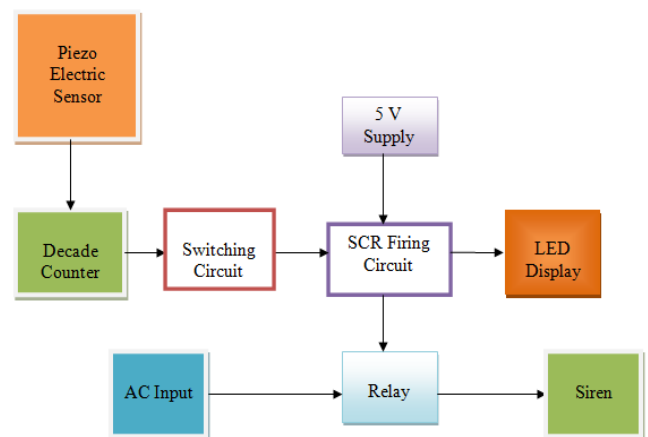
MODULES USED: Raspberry pi, PIR sensor, LAN, Camera

EXISTING SYSTEM

This project describes a security alarm system that can monitor an industry and home. This is a simple and useful security system and easy to install. This

vibration detector is realized using readily available, low cost components.

One of its many applications is in a rolling shutter guard for offices and shops. The detector will sense vibration caused by activities like drilling and switch on the connected load (bulb, piezo buzzer, etc) to alert you.

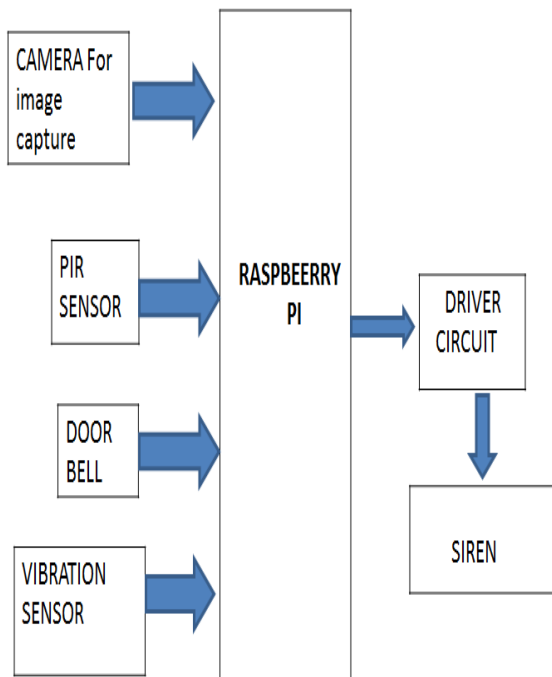


Drawback: In this process only neighbors will be alerted and there is no image capture of the thief to trace him later.

PROPOSED SYSTEM

Through the camera image of the person is captured whenever PIR senses presence of a person and our controller sends those image to the pre-stored e-mail address. So that one can have the knowledge of the person appeared at that instant. A vibration sensor is also connected to identify if some one tries to open the door and a siren is given to alert surrounding people in that case. The **Raspberry Pi** is a credit-card-sized single-board computer developed in the UK by the Raspberry Pi Foundation. The

Raspberry Pi has a Broadcom BCM2836/2837 system on a chip. It does not include a built-in hard disk or solid-state drive, but Uses an SD card for booting and long-term storage.



POWER SUPPLY

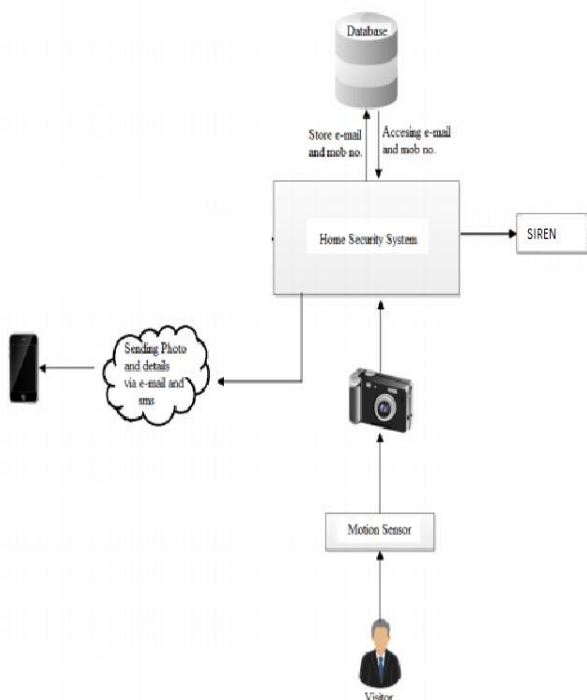


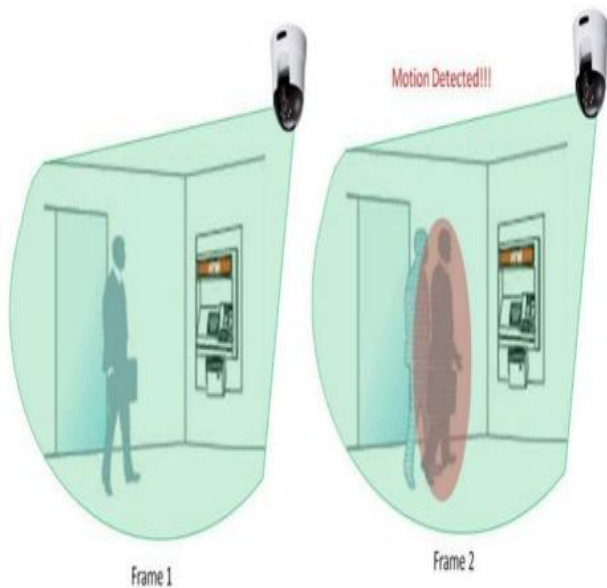
A simple mobile charger is used instead of complex hardware step down transformer.

PIR SENSOR

In a PIR-based motion detector (usually called a PID, for Passive Infrared Detector), the PIR sensor is typically mounted on a printed circuit board containing the necessary electronics required to interpret the signals from the pyroelectric sensor chip. The complete assembly is contained within a housing mounted in a location where the sensor can view the area to be monitored. Infrared energy is able to reach the pyroelectric sensor through the window because the plastic used is transparent to infrared radiation (but only translucent to visible light). This plastic sheet also prevents the intrusion of dust and/or insects from obscuring the sensor's field of view, and in the case of insects, from generating false alarms.

Architecture





Motion Detection

Vibration sensor

A vibration sensor is a device that uses the piezoelectric effect, to measure changes in pressure, acceleration, strain or force by converting them to an electrical charge. The prefix piezo- is Greek for 'press' or 'squeeze'.

SIREN

A **siren** is a loud noise maker. Most modern ones are civil defense or air-raid sirens, tornado sirens, or the sirens on emergency service vehicles such as ambulances, police cars and fire trucks. There are two general types, pneumatic and electronic.

RASPBERRY-PI

Model

- Brand: Raspberry Pi
- Model: 3 Model B

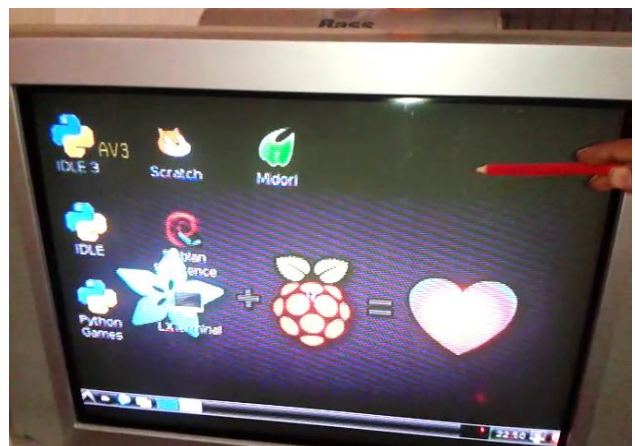
Bundle

- CPU: Broadcom BCM2837 64bit ARMv8 QUAD Core 64bit Processor powered Single Board Computer running at 1.2GHz
- Memory: 1GB RAM

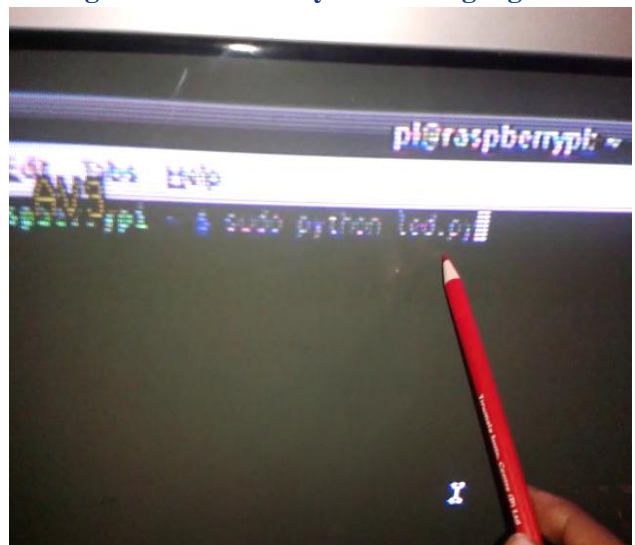
IMAGE OF THE BOARD SHOWING SD CARD



OS USED IN RASPBERRY PI IS LINUX



Coding will be done in Python/C language



ADVANTAGES

- Highly-flexible
- Fit & Forget System
- No need of human effort
- High security is provided

APPLICATIONS

- Museums
- Home / Office security
- Jeweler shops
- Banks

IMPROVEMENTS

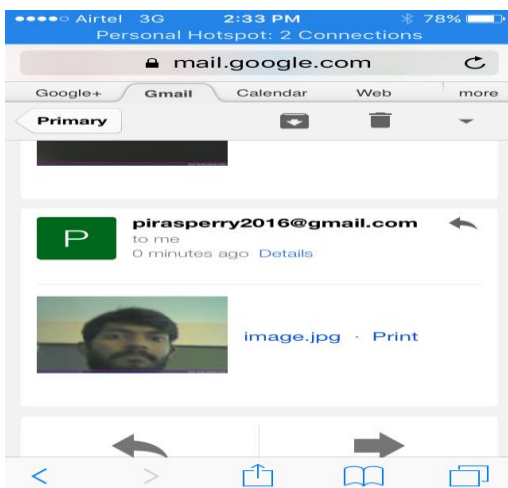
There is no issue even if owner forgets his key

- We have started using Android App.
- Once the Raspberry pi and the phone are connected to the same Wi-Fi, the phone will act as a remote.
- Hence, if at all the user forgets his key he can connect to that hotspot and switch off the raspberry pi.

Wi-Fi is used instead of LAN to make the system even more smarter.



RESULTS



CONCLUSION

The project “Advance Security System With Intruder Image Capture And Forward Through Email” is successfully tested and implemented. This can be used for many applications in security purpose for Houses, Banks, Jeweler shops.

REFERENCES

- [1] Raspberry Pi board – raspberry pi foundation’s official website
<http://www.raspberrypi.org/help/faqs/>
- [2] Gareth, Mitchell “The Raspberry Pi Single-Board” Engineering and technology 7.3 (2012)8.
- [3] TOA Corporation, TOA Electronics, Inc. (USA) “Closed Circuit Television Systems Fundamentals Course”, April 2005
- [4] Alarm Systems “A Guide to Design, Management and Procurement”, The Engineering Equipment and materials Users Association (EEMUA) publication No.191.
- [5] Raspbian –the operating system used in this paper <http://www.raspbian.org/Raspbianimages>
- [6] Gantt, Charles. “Raspberry Pi Camera Module Review and Tutorial Guide” TweakTown News. Tweak Town, 2 July 2013. Web. Oct. 2013
- [7] Motion_Detection_Programming_Guide_V1.1 GM8126 [8] Python Sending Email Using SMTP. “Tutorials Point Simply Easy Learning.” N.p., Web. Oct. 2013.
http://www.tutorialspoint.com/python/python_sending_email.htm