

# **HOME APPLIANCES CONTROL IN GEO- FENCE AREA OF MYANMAR REGION**

**Presented by:**

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# BACKGROUND OF PROJECT

- A smart home automation systems are developed in our daily life. In this project intended to improve the lives of people in rural area of Myanmar.
- It is attempt to make energy reduction using the smart systems in the house.
- Energy-saving solutions have been becoming increasingly essential in recent home environment.
- This system I want to develop is a low-cost and safety home appliances.
- This system using an embedded web-server, with IP connectivity for accessing and controlling *devices and appliances* remotely using *End-devices* that can access web-services.

# SYSTEM REQUIREMENTS

- Microcontroller (Raspberry PI)
- Zigbee Module
- PIR sensor
- DHT11( Temperature and Humidity Sensor )
- ACS711(Current measurement sensor)
- Relay Circuit

# PROPOSED SYSTEM

- Smart home consists of three parts , which are network , controlling devices and home automation .
- Some devices and appliances can be light switches, power plug, fan, current sensors. When user exit from geo-fence area, the system will automatically send alert from sensors.
- All of the functions support in this system can be controlled by smart phone via GPS.
- Wireless technologies that can support some form of remote data transfer, sensing and control using Zigbee Module by smart phone through web-services.

## CONT'D

- This system consist of sensor value and geo-fencing value. All of the functions provided our system can be controlled by a smart phone via GPS.
- The smart home is defined as the home with power units, controller with sensors and electrical appliances. The geo-fence would be a geographic virtual boundary surrounding the house .
- Firstly we need to define the geo fencing radius ( area). The size of geo fencing area uses the geo-fence within the rectangular coverage area, checking whether or not the geographic coordinates are in the actual coverage area and output of checking result.

## CONT'D

- If user entered or exited the geo fencing areas of our system will automatically notify the user and can control the home appliances.
- By using this system can save the electricity usage on the weekdays, when everybody has gone to his/her work or school and nobody at home. It can provide the safety functions on weekend and suddenly to prevent wire short.
- We cannot forget that user away from home these tiny loads, all together use in home increase the energy consumption.

## CONT'D

- The electricity needed to satisfy each type of use depends on these factors. This project is planned to provide the user in order to easily obtain the information at home and control by remove device away from home .
- We will define a set of device communication protocols where devices' triggers and actions are combined to manage interactions for safety of the home.



Home Appliances with sensors

Geo-fence Area

Leaves the area

Enter the area



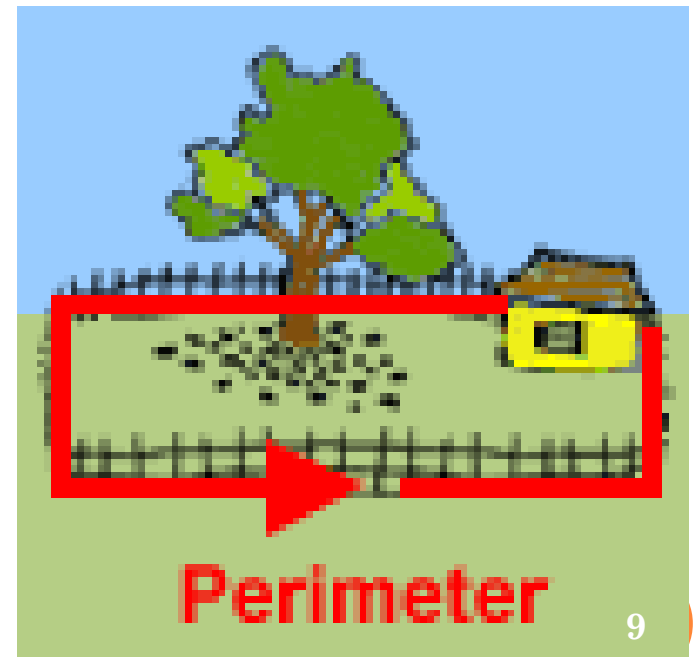
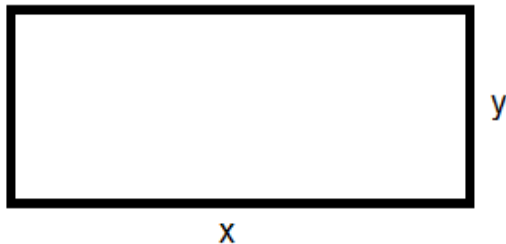
# WHAT IS PERIMETER ?

- Perimeter is 1-dimensional and is measured in linear units such as inches, feet or meters.
- To find the perimeter of a rectangle:

The perimeter P is:

$$P = X + X + Y + Y$$

$$P = 2 (X + Y)$$



# Overall System

