Home Automation System

## Abstract:

It is rightly said that “**Necessity is the mother of invention**”.   
The idea sparked from the simple fact that we do sometimes forget to switch of the lights and fans while we leave the room. So the main objective of this project is to automatically switch the supply off.

The idea involves two **infrared LEDs** on one side of the door frame that shoot two invisible beams of light across the doorway to the other side. On the side opposite of the infrared LEDs there are two infrared receivers that detect when the light is present or not.

The logic for determining when someone crosses a door frame, and what direction they went will be handled by an **atmega168** microcontroller. By sensing which of the two beams “breaks” first as someone crosses the door frame, it can detect the direction they travel in. The microcontroller then uses logic to keep track of the number of people in each room based on how many enters the house and from what rooms they travel to from there.

Lights come on in a room immediately upon entering. If you are the last person in the room the lights immediately go off when you leave. The microcontroller knows how many people are in the room, so if two people walk in and one leaves, the lights remain on until the last person leaves. The number of persons in the room can be monitored. Here the microcontroller uses the **ARDUNIO** platform to communicate to the system.

The greatest problem faced while using IR is the effect of Sunlight but here as the IR transmitters and Receivers are shielded sunlight does not affect them. The system is designed in such a way that handshakes, Object flying across the sensor will not be considered into account. The switching Output from the controller is given to the **Relay** which thereby switches the AC signal.

Since the counter Output is made available in the computer it possible to develop this project to send data to your mobile using Gsm Modules and Android apps can be developed to monitor the whole system.