Home Automation: Controlling lights and fans based on occupancy

Smart Energy Informatics Lab

Motivation:

❖ Preventing wastage of power when appliances are left running even in unoccupied rooms

❖ Can be extended to Internet Of Things (IoT) where control is based on some other wireless signal

Approach:

❖Smart Door detects entry/ exit of persons fro the room. It(acting as client) contacts our R-Pi(acting as server).

❖R-Pi then controls the PIR sensors

❖When these sensors detect a person, the lights are turned on by R-Pi.

❖Arduino controls a servomotor which allows the PIR sensor to oscillate.

Work Done so far:

❖ **Part B :** Controlling an LED (via R-Pi and relay) depending upon room occupancy, detected using Smart Door

❖**Part A :** Controlling PIR sensors based on room occupancy. When room is occupied, they are turned on and Led is lighted when a person is detected by them.

Future Extensions

❖Using multiple PIR sensors to divide the room into sections.

❖ Extension to multiple rooms and corridor