// Hardware Pins

pir\_sensor <- hardware.pin1;

buzzer <- hardware.pin9;

buzzer.configure(DIGITAL\_OUT, 0);

led <- hardware.pin7;

led.configure(DIGITAL\_OUT, 0);

// Global Variables

countDownTime <- 10;

counter <- 10;

timer <- null;

isArmed <- false;

isEnabled <- false;

isLocked <- false;

function setMode(mode) {

if(mode == "enable") {

enable();

} else if(mode == "disable") {

disable();

} else {

server.log("UNKNOWN MODE");

}

}

// Enable the security system before leaving the apartment

// Once enabled, any motion deteced within a grace period will be assumed to be me.

// There will be a 30 second grace period to leave the apartment.

// Once the PIR senses no movement for a continuous 30 seconds, the system will be armed.

function enable() {

server.log("Enabling Security System...");

isEnabled = true;

}

// Disables the security system before re-entering the apartment

// Once disabled, motion detected will be ignored. Alarms will not sound.

function disable() {

server.log("Disabling Security System...");

isEnabled = false;

led.write(0);

buzzer.write(0);

}

// Detects motion using the PIR sensor readings

// 1. If the security system has been enabled, detected motion will delay arming.

// 2. If the security system has been armed, detected motion will trigger the buzzer.

// 3. If the security system is disabled, detected motion will be ignored.

function motionDetected() {

local pir\_state = pir\_sensor.read();

agent.send("message", format("PIR state is %d", pir\_state));

// When the security system has been enabled but not yet armed.

if(isEnabled && !isArmed) {

if(pir\_state) {

if(timer) {

imp.cancelwakeup(timer);

}

server.log("Motion Detected!");

resetCountDown();

} else {

server.log("Motion Ended");

if(counter < countDownTime) {

// already counting down

} else {

timer = countDown();

}

}

} else if(isEnabled && isArmed) { // Security system is enabled and alarmed

// Any motion detected will trigger buzzer

if(pir\_state) {

server.log("INTRUDER ALERT!!!");

} else {

server.log("SOUNDING ALARM!!!");

buzzer.write(1);

agent.send("alarm", "motion\_detected");

}

} else { // Disabled (ignore motion detection)

if(pir\_state) {

server.log("SECURITY DISABLED: IGNORING MOTION");

}

}

}

// Resets the delay countdown each time motion is detected while arming

// This allows my movement while exiting my apartment to be ignored.

// Only once movement stops (I have left), the system becomes armed.

function resetCountDown() {

counter = countDownTime;

}

// Count down the grace period just before arming the system.

// The LED will light up indicating that the system is armed.

function countDown() {

if(counter > 0) {

server.log(counter);

//agent.send("counter", counter);

counter--;

imp.wakeup(1.0, countDown)

} else {

server.log("System Armed!");

led.write(1)

isArmed = true;

}

}

pir\_sensor.configure(DIGITAL\_IN\_WAKEUP, motionDetected);

// Register handler for incoming messages from agent

agent.on("set.mode", setMode);