# CT 108: Energy & Environmental Informatics

## Assignment 2

Each group has been given a set of X10 devices. These include a

Control Module (CM15 PRO UFL) Appliance Module(s) (AM12) Motion Sensor (MS13E)

Follow the instructions to simulate a Smart Home scenario where you can control electrical appliances from a PC.

## 1. Assemble/Connect Components

- Plug Control Module into electrical socket, and into USB port
- Plug Appliance Module into electrical socket
  - Set AM12 House Code to your assigned Group letter
- Turn on Motion Sensor

## 2. Configure software

- Open Active Home software Start -> All Programs -> ActiveHome Pro
- Create a new Room scenario File -> New -> ok (Assign name to Room)



- Add the "Plug in Appliance Module(s)" (AM 12) and a "Motion Sensor" (MS13E) to the new room
- Edit settings of Appliance Module Right click -> Edit Module

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Rooms 🕀 🕃	Johns Living Room	Turn All Light Turn All Units
Johns Living Room	New AM12 New MS13E	
Modules (2)		
Lamps		
Sensors	Edit Module	
Geourity	Name of the new module Desk Lamp	
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Macros (+ 3	Create in room Johns Living Room	
Timers 🕀 🕄	House Code A V Unit Code 1 V	-
Charles .	Cancel	

Edit **"House Code"** to your assigned group letter, and ensure **"Unit Code"** is set the same as AM12 module in socket.

#### 3. Simple control

Your first task is to turn on the lamp provided by simply clicking the "Appliance Module" switch in Active Home

## 4. Daylight Times

You must set the X10 module to turn on a lamp at dusk and to turn it off at dawn

- Set Module time in **"Tools"** –> **"Hardware Configuration"** – Set city time-zone to **"Galway, Ireland"**. Notice how ActiveHome gives the times for Dusk and Dawn, – Then save the settings on the device by clicking **"Update Interface"** 

Hardware Interfa	ace Configuration	n		×		
Location Galway, Ireland						
Time Zone: GMT	GMT Standard T	53.28 N Time - GMT-00:00	Memory Usage Macros 0.30%			
Interface Time	01/12/2009 20:46		Timed Events			
Dawn / Dusk Resolution Every 8 Days ~1.5%		Dusk / Dawn 1.72%				
Date Range 14/09-22/09 22/09-30/09 30/09-08/10	Dawn 06:25 06:38 06:53 07:00	18:35 18:16 17:57 17:00	Battery Status     Time Remaining			
16/10-24/10 24/10-01/11 01/11-09/11 09/11-17/11 17/11-25/11	07:23 07:37 07:53 08:08 08:22	17:39 17:21 17:05 16:51 16:37 16:28	Reset Monitored House Code A Transceived House Code(s)	ļ		
25/11-03/12 03/12-11/12 11/12-19/12 19/12-27/12 27/12-04/01	08:33 08:43 08:50 08:52 08:52	16:23 16:19 16:21 16:26 16:35	None         Auto         Specific           A         #         B         C         D           E         F         G         H           I         J         K         L           M         N         O         P	)		
(Update In	terface	Cancel	Help	_		

You must set your lamp to turn on at Dusk, and to turn off at Dawn. To do this you must create two macros, one to turn on a lamp, another to turn it off...

You must first set some conditions

Using the "Add Conditions" button,



You initiate the Macros in the main Room interface



## 5. Lighting Management Macro

You must create a simple Macro to simulate a person walking through a hallway. When motion sensor is activated, the first light must turn on. After 25 seconds, the second light must turn on. After a further 25 seconds, the 1<sup>st</sup> turns off and after a further delay, 2<sup>nd</sup> turns off. The initial trigger must be sent by the Motion Sensor.



Under "RF Commands" in Scroll down box, drag and drop "RF Command" into timeline

You can add delay to the Macro by adding a "Delay" condition to the timeline.

Timeline works as follows...

Press "house/ON" button on motion sensor Sends [turn on] signal to address Light 1 turns on Delay 25 seconds Light 2 turns on Delay 25 seconds Turn off Light 1 Delay 25 seconds Turn off Light 2 Finish

## 6. Weekly Scheduler Macro

You must create a weekly lighting Macro to turn heating in an office building at 3am every morning during week (Mon-Fri), and at midnight on weekends.

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The heaters must turn on for exactly 1 hour, then off for half an hour, and then on again for another hour.

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	02/12/2009 15:11:57	

Finally, ensure you have selected **"Store on Interface"** at the bottom of the screen so that X10 will still work even if you turn off your computer.



When you have finished the above, spend some time investigating other features of ActiveHome Pro and include useful features in your report as discussed at lecture.