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)
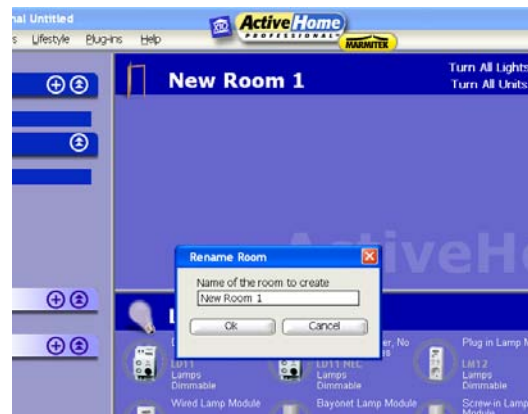*Appliance Module(s)   (AM12)*
Motion Sensor   (MS13E)

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

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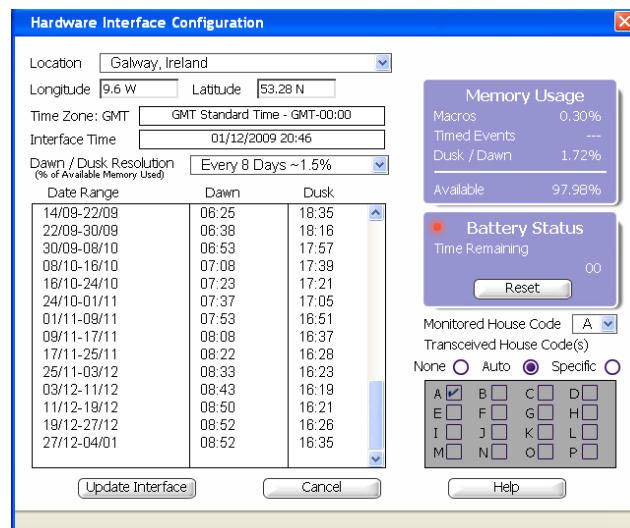
3. Simple control

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

4. Daylight Times

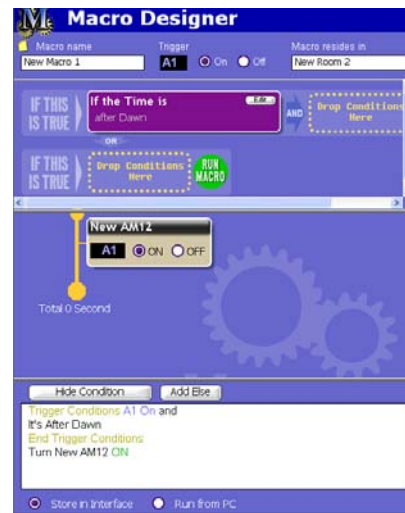You must set the X10 module to turn on a lamp at dusk and to turn it off at dawn

-       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"**

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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
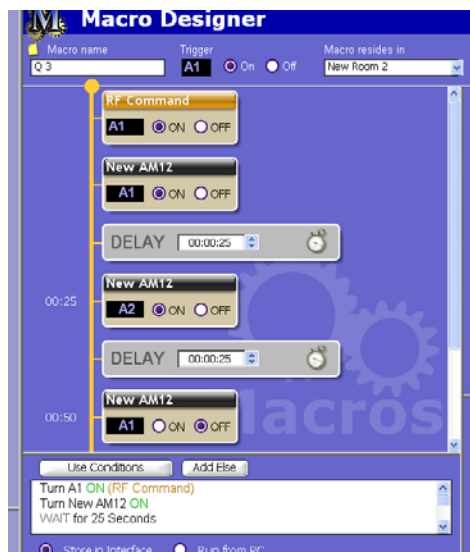   *Using the* **"Add Conditions"** *button,*

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 1st turns off and after a further delay, 2nd 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.
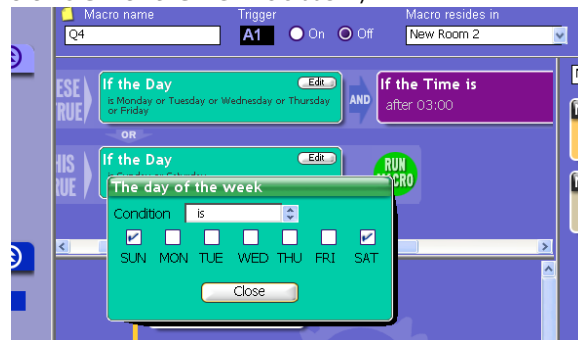
Timeline works as follows...

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.
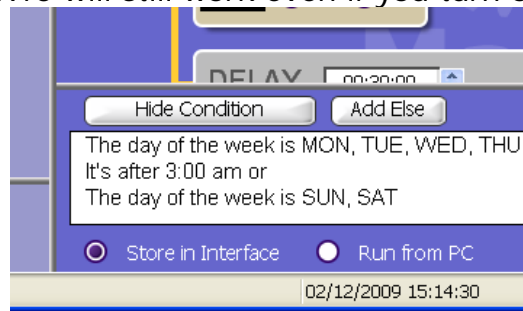
You must first set some conditions
Using the "Add Conditions" button,

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

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.