Basic smart home system

The domain I have chosen for the Applied Artificial Intelligence project is a “Basic smart home” system. A smart home in this case is not to be understood as an IoT (Internet of Things), but rather as a rule based system in which the various sensors help with providing information about the environment, and the actuators change properties of the environment based on the rules specified.

The sensors I have made use of are: Luminosity sensor, Motion sensor and Temperature Sensor.

- The luminosity sensor provides information about:
    - If the lights are on
    - The daylight factor: indicates how bright the environment can be using just natural light. I have considered three values for this :
        - <2% - dark, needs lights
        - >2% & <5% - enough light
        - >5% - no artificial lights needed
- The motion sensor provides information about:
    - If the doors are open
    - If the windows are open
- The temperature sensor provides information about:
    - If the AC is on
    - If the heat is on
    - The environment temperature

The actuators are: The lights, doors, windows, air conditioning and heating facilities.
How these values are calculated is abstracted away and I only care about the values itself and not how they were obtained.
Once you provide information via the sensors and the time of the day, the rules get applied and you get the resultant environment based on the input and various rules.
The smart home system is considered to encompass a whole house, even though the values are ambiguous and consider only generic doors windows and environment, it can be extrapolated to mean every room in the house.