Smart Cities

Introduction :

MavHome ieee

MavHome turns up the heat because it has learned that the home needs 15 minutes to warm to optimal waking temperature.

Architecture

**Physical layer** : All the sensors are present here, in our case, motion PIR sensor, temperature sensor, light sensor.

**Communication layer** : mediator between physical and information layer. ??

**Information layer** : It gathers, stores and generates knowledge useful for decision making. This is the repository which collects the meta data. The database records the information, updates its learned concepts and predictions. In our project, this layer represents :

* Collection of data based on the most frequent seating arrangement of occupants in the library.
* Motion Sensor : immediate response – count of the number of people entering the library.
* Time of the day for the light intensity correction. (Bright outside- less intensity light and vice versa)
* HVAC : weather forecast, past weeks usage and presence of users

**Decision Layer** : This layer selects the action and relates it to the information Layer. After updating the database, the communication layer routes the action to the appropriate effector to execute( here the relay) . The decisions based on our project are :

* Lighting ON or OFF—relay : based on the frequent seating arrangement. This action is based on the data collected by the motion sensor.
* Light intensity correction : ?? Bright outside- less intensity light and vice versa
* If we decide to keep a constant temperature of 22 deg C inside the room irrespective of the outside temperature, then it has to be adjusted accordingly ( plus or minus) based on the weather forecast.
* Based on motion sensor data obtained outside the working hours of Library – burglar system alarm
* Notification sent to the responsible based on this.