Edit

Vinay Peer Review

Jeremy Clark

Vinay, overall really thorough and readable. Thanks for that. Here are some comments/questions for your consideration:

- I believe an occupant can be created without being related to a house. How will you achieve that if the only class associated with Occupant is House?
- Related to above: If the House is the only class interacting with Knowledge Graph, how will you query status about an Occupant if they're not in a house or related to multiple houses? (Imagine a child with divorced parents, they would be an occupant in two different houses).
- The cardinality of the Occupant->Room association seems to indicate all rooms will always have exactly 1 Occupant and all Occupants will always be in a room. I think we need to support the idea that an occupant might not be in a room at all (if they are not in the house), and that a room can hold multiple occupants.
- I have personally grappled with the proper distinctions between Sensors and Appliances. I find it interesting that you have separate 'setters and getters' for Sensor and Appliance values, but a single API call to 'retrieve' a Sensor or Appliance status (getSensorOrApplianceStatus(name). Why the difference?
- What will IOTDevice::isControllable() return? Is that intended to be overridden by Appliance and Sensor where Sensor returns false and Appliance returns true? In what scenarios might that be used?
- How will I get the state of appliances? It looks like Sensor has state accessors but Appliance doesn't. Are you thinking that a single device could be both an Appliance and a Sensor? I might be misreading something here.
- Why do we need to store the numStates on IOTDevice?
- It looks like a Sensor has a single currentState attribute (as an int), but the examples you give support multiple states. For example, a camera could be detecting somebody leaving and coming at the same time, right? Will currentState be an integer that represents a binary mask of some sort? Also, it looks like Sensor::getState() returns a string...if the currentState is an int, what will getState() return?
- What will be stored in the IOTDevice.sensorType?
- I know it's not specified in the requirements, but have you given any thought to how a device (Sensor or Appliance) might be extended to support more features? Will I need to update the code, and deploy a compiled update?

In general, I think this is a strong document! Apologies in advance if these comments aren't clear or are misreading your intentions. Please feel free to comment back, explain, debate - anything!

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