

Overview

As a team you identified an environmental or social need in your school that could benefit from « smart building » technology that works through concepts from « the internet of things ».

Summarize your identified problem and proposed solution and discuss how you would « sell » the project to your school administration.



Engineering design

Brainstorm with your team about how your life at school could be improved with smart building technology. On separate paper, or using a word processor, take notes on at least three ideas.

Designing devices:

- What sensing devices will you need?
- What reactive devices will you need?
- What kind of data will your sensing device produce?
- What kind of information will the methods attached to your sensors broadcast?
- What rules will your methods associated with sensors need to determine what to broadcast? For example, a rule might be 'if the temperature in the room goes about 70 degrees Fahrenheit broadcast the message to lower the temperature in the room.
- What kind of information will the methods attached to reactive devices need to receive? For example, a device attached to a thermostat (or directly to a heater) is waiting for a message to raise or lower the room temperature.
- What kind of rules will your methods associated with reactive devices need to listen for?

At a minimum, you will be asked to design something involving a thermometer and a thermostat. Write down a description of your design, making sure you identify both the sensor and reactive device needed. Also write down

- the method in the sensor device that broadcasts the message
- the message(s) being sent
- the method in the reactive device that is listening for a message.

Plan a simulation of your smart solution:

what happens when your sensor causes your algorithm to send a message to other methods.