Energy Watcher

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## Project Description:

For our final project, we want to make a device that can check the light status of a room and send an email if you spent x time with the lights on. The user will be able to set how much time it will take to trigger the email. Our project will also have a temperature sensor that will also trigger an email, a red LED will light up when the user’s threshold is passed. It will also detect CO2 emissions, that will trigger an email and an alarm with the active buzzer. The data will be sent back using MQTT to the dashboard. The user will be able to change the threshold’s value of any of the sensors and input an email in the web application to be able to receive the notifications.

Our project will be configured as a service, so it will always run. The Energy Watcher’s goal is to let its user become energy sensitive by watching their energy consumption and sending an email when the user is not energy efficient. It is also useful to remind the user if they forgot to turn off any lights or the A/C. The MQ-2 gas sensor will be useful for the user, to let them know if there are some gas emissions in their house.

Our project will be connected to AWS IoT core and DynamoDB and will display the data in a dashboard with cayenne using MQTT and their SDK so it will also be able to display some essential data about the hardware itself and the functionality to shut down and reboot our microcomputer at distance. If we have the time the user will also be able to change the threshold values from cayenne or else, it will be directly in a config file open to the user on the pi itself.

## Sensors used:

* DS18b20 temperature sensor
* ADC0832
* MQ-2 gas sensor

## Actuators used:

* Led
* Active Buzzer

## Email Reception Conditions:

* Spent x time with the lights on
* Temperature went over or below threshold
* Too much gas emissions

## Data Available:

* Temperature
* Gas
* Light Status