IoT Application design

Room activity monitor

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## Purpose

The purpose for this prototype is to begin to develop an understanding of the feasibility of creating an cloud based system for monitoring and storing data on movement/ activity within a room to this end the prototype will take data from one sensor and process at the cloud edge via a python script and upload to a Mongodb

## Functions

The code will preform several basic functions at this level firstly

Arduino code will take sensor data and use it to blink an led it will then write this change in state to the serial port.

Secondly Python script will run a thread to constantly read the serial port till cancelled it will take any data incoming remove excess none data and store in a list it will then take a time stamp and store in a secondary list

Upon ceasing the read cycle the code will iterate through the list placing both the ongoing count and time stamp into dictionaries to then be passed to the Mongodb

## Extensibility

To extend the prototype beyond we could look at more sensors to create greater metrics on room usage and perhaps temperature sensors to monitor how the room changes over time

This could allow the edge python script to run greater analytics on long term pattern s in order to be more predictive about changes in usage.