Summary Description: Using An Esp8266 And Cayenne As An IOT Sensor Monitor

Tags: electronics; software; Esp8266; Arduino; WIFI Web Server; Cayenne

Why I did this: I wanted to test a free IOT server service that allows me to monitor my microcontroller sensors from the web (from my smartphone). Cayenne (powered by myDevices) allows a user to add arduinos, esp devices, and raspberry pis to its server so you can monitor whatever sensors you attached to them from their website.

(summary pic of system)

Design Walkthrough:

Parts: Esp8266 microcontroller; BME280 sensor;

The cayenne website had simple enough directions to follow when setting a new microcontroller setup; there is an installable library package that has code examples you can modify. They basically consist of authentication keys (grabbed from your free Cayenne website account), and library’s class objects to interact with your sensor data. I added a BME280 (Temperature/ Humidity/ Pressure module) to the Esp8266, then sent those to the Cayenne server via “Cayenne.virtualWrite” commands.

(pics of system)

Lessons Learned and Future Changes:

It works ok, but has flaws. One of the intentions of this was to easily see the sensor data from my phone; it does this but there’s an issue with displaying all the data. It seems that either my phone or their website settings will block the view of some of my sensor data, making it impossible to view, and, as far as I could tell, they don’t have a smartphone app. Also, I was having issues trying to recall historical chart data from the website. Aside from those it seems to work ok.

References:

Cayenne IOT service: <https://developers.mydevices.com/cayenne/features/>

BME 280 sensor: <https://lastminuteengineers.com/bme280-arduino-tutorial/>