

WLOラズパイ倶楽部 夏休み作品発表会

Raspberry Pi Zero WとCO2

2017年8月24日

ES社 システム開発センター

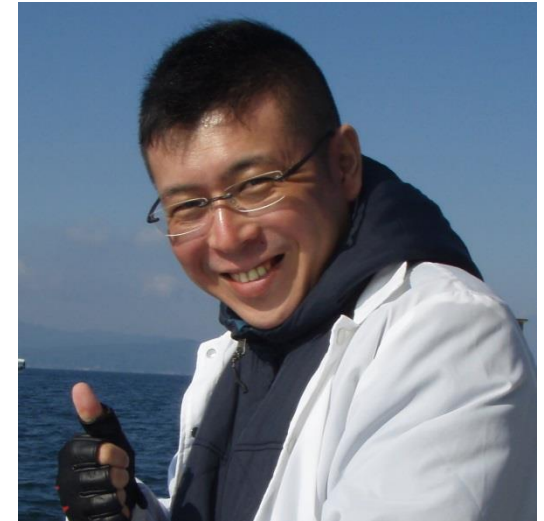
上野 武史

■ 仕事

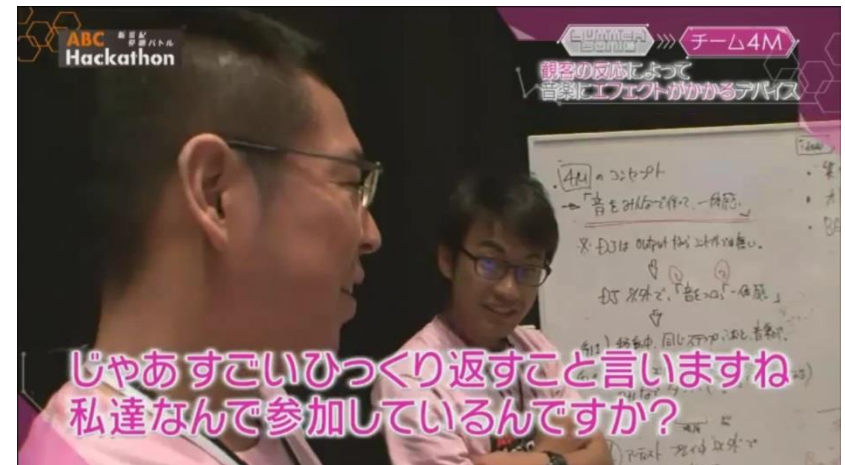
住宅機器関連のクラウドサービスの企画開発
いわゆる「IoT」

■ 得意技

マイコンからメインフレームまで
最近「Node-RED」 on Raspberry Pi
ラズパイ倶楽部の「導師」?!



2015年5月のABCハッカソン
では悪役でした⇒



■手元にある「積みマイコン」「積み部品」の消化...

- ・ゴールデンウィークと同じ...
- ・お盆休み長かったが、PokemonGoPark@横浜とか法事とかいろいろ忙しかった

⇒最終日(8/20)に半日で実装しました。
(夏休みの宿題はためるタイプ)

■眠くなったらオフィスのCO2を可視化して換気とかしたい

Qiita キーワードを入力 Release Qiitaユーザー向けのMas... 投稿する ストック一覧

Raspberry Pi 3 で CO2濃度を測る

6 いいね 0 コメント

RaspberryPi 2220 centos7 1114 MH-Z19 2

revsystem 2017年08月22日に更新 2

Raspberry Pi 3 で CO2濃度を測る

はじめに

社内で、この記事きっかけに「社内のCO2濃度を測ってみたいね」「計測器を買ったり借りたりすると高いから、Raspberry Piでなんとかならないの?」という話になったので、さっそく試してみました。

すでに実績のある手順が公開されているので、参考にしました。

なぜ、カフェだと仕事はかどるのか、を実験してみた。

端的にいうと、職場でいちばん生産性に影響を及ぼす因子は、気温とCO2濃度。その気温とCO2濃度がもっとも低く、生産性を高める環境というのが、自宅でも、オフィスでもなく、カフェなんだとか。

人気の投稿

- Raspberry Pi 3 で CO2濃度を測る

Raspberry Pi 3 で CO2濃度を測る

- はじめに
- 参考情報
- 前提条件
- 準備する物
- OSのセットアップ
- MH-Z19 の動作環境のセットアップ
- プログラム動作環境のセットアップ

<http://qiita.com/revsystem/items/5a362e749ef80358e801>

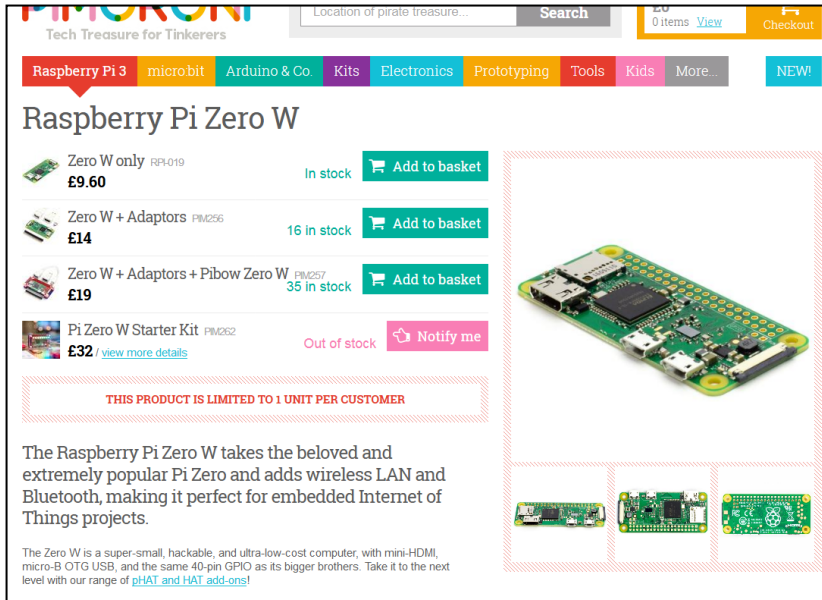
■ 格安CO2センサーを発注(8/6)⇒8/10着

The screenshot shows the Banggood website interface. At the top, there's a navigation bar with language options (English, Русский, Español, Italiano, Français, Português, Deutsch, Nederlands, 日本語, العربية, Türkçe) and a 'Help' link. Below this is a banner for '11.11 SNAP UP' with a 'Grab Now Or Miss Out' button. The main header includes the Banggood logo, a '11.11 Anniversary' badge, and a 'Ship to' dropdown set to 'Japan, JPY'. There's also a 'My Account' link for user 'Hi, utaani VIP3'. A search bar is present with 'Enter Keywords' and 'All categories' dropdown. The breadcrumb trail reads: Home > Electronics > Arduino Compatible SCM & DIY Kits > Module Board.

The product page for 'MH-Z19 0-5000PPM Infrared CO2 Sensor For CO2 Indoor Air Quality Monitor UART/PWM' is displayed. It features a large image of the sensor module, which is a gold-colored PCB with a white sensor chip and a green header. Below the main image are five smaller thumbnails showing different views of the sensor. The product details include a 5.0 star rating (6 reviews), a price of JPY 2602, and a warehouse location of CN. Shipping is free to Japan via Standard Shipping (7-20 business days). The quantity is set to 1, and there's a 'Wholesale Inquiry' link. The page also shows 'Order this & earn 23 Banggood points', 'Buy it Now' and 'Add to cart' buttons, and an 'Add to Wishlist' link (150 Adds). Social media sharing buttons for Facebook, Twitter, Pinterest, Google+, Reddit, and VK are at the bottom. There are also links for 'Report lower price', 'Price alert', 'Earn \$3', and 'Report error'.

<https://www.banggood.com/MH-Z19-0-5000PPM-Infrared-CO2-Sensor-For-CO2-Indoor-Air-Quality-Monitor-UARTPWM-p-1094463.html>

■ どうせなら小型化して持ち運びたい



The screenshot shows the Pimoroni website with a navigation bar for various product categories like Raspberry Pi 3, micro:bit, and Arduino. The main section is titled 'Raspberry Pi Zero W' and lists three product options: 'Zero W only' for £9.60, 'Zero W + Adaptors' for £14, and 'Zero W + Adaptors + Pibow Zero W' for £19. A fourth option, 'Pi Zero W Starter Kit', is listed as 'Out of stock' for £32. A red-bordered box highlights the text 'THIS PRODUCT IS LIMITED TO 1 UNIT PER CUSTOMER'. Below the products, a paragraph describes the Zero W as a super-small, hackable, and ultra-low-cost computer. To the right, there is a large image of the Zero W board and three smaller images showing different accessory kits.



The screenshot shows the Amazon.co.jp product page for the 'WINGONEER 0.96 inch OLED Display I2C / IIC / TWI 128x64 Dot Matrix Arduino Display Module'. The product is priced at ¥899 with Prime delivery. The page includes a detailed description of the module's features, such as its 128x64 resolution and compatibility with various Arduino boards. There are also customer reviews and a section for 'New Products' with a list of related items like the 'WINGONEER 0.96 inch OLED Display I2C / IIC / TWI 128x64 Dot Matrix Arduino Display Module' and 'WINGONEER 0.96 inch OLED Display I2C / IIC / TWI 128x64 Dot Matrix Arduino Display Module'.

<https://shop.pimoroni.com/products/raspberry-pi-zero-w>

<https://www.amazon.co.jp/gp/product/B01MYPZGH7>

■ Pi Zero用のUSB HUB (センサーUART接続用) ←手抜き

Zero4U

ZERO4U_V1.3

£10

42 in stock

Add to basket

This is a 4-port USB 2.0 hub for Raspberry Pi Zero, and it can be mounted to Raspberry Pi Zero back-to-back.

The 4 pogo pins on the back will connect the PP1, PP6, PP22 and PP23 testing pads on Raspberry Pi Zero, hence no soldering will be needed.

UPDATE: as of 23rd March 2017 all Zero4U now ship with a ferrite ring to prevent instability caused by the wifi on the new Zero W. [See here for more information](#)

The USB hub will take power directly from your Raspberry Pi Zero, so you don't need to power the USB hub separately. However you can use the JST XH2.54 connector on board as the alternative power input port.

The blue LED on board works the power indicator, and lights up when power is connected.



Each USB port has a dedicated white LED as transaction indicator, and a dedicated electrolytic capacitor to help stabilizing the output voltage.

If you use this USB hub with other types of computer, you can use a USB cable (not included) to connect the mini-USB port on board to the up-stream USB port.

Contents

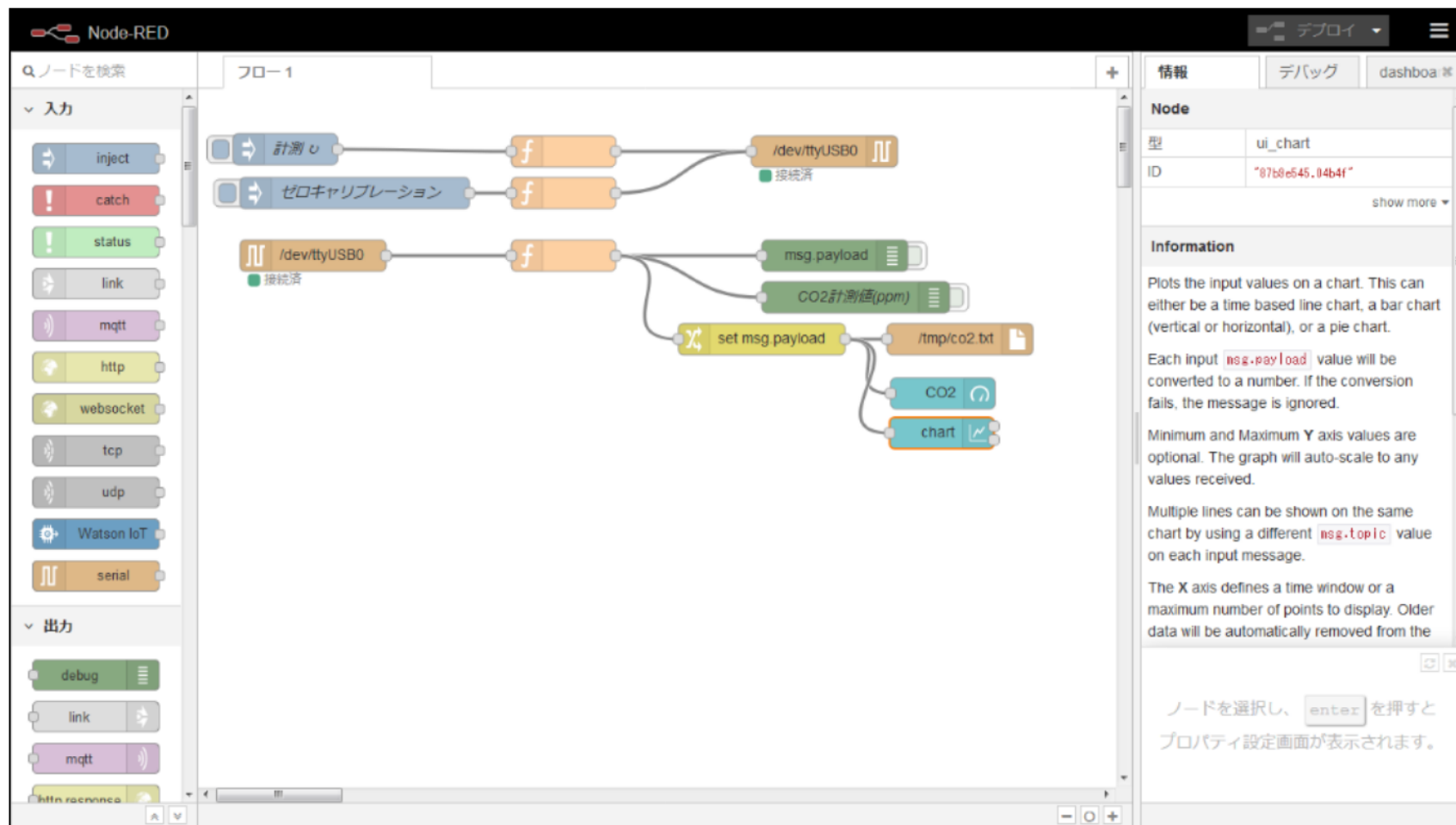
- 4-port USB hub board x 1
- plastic spacer x 4
- M2.5 plastic screw x 4
- M2.5 plastic nut x 4

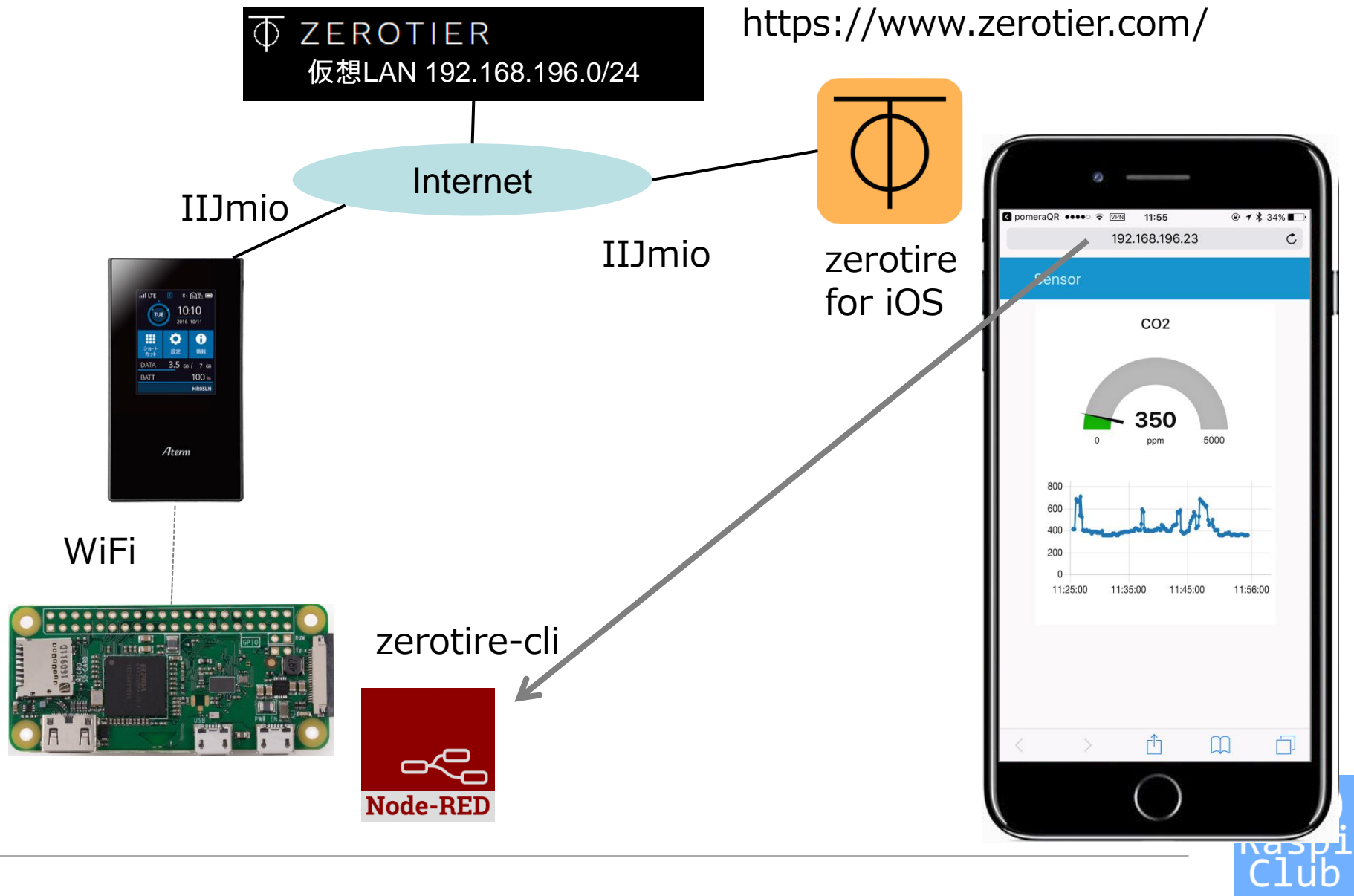
[For more details, check out the User Manual](#)



4.9 ★★★★★
Google
Customer Reviews

<https://shop.pimoroni.com/products/zero4u>







- 5200mA/hのモバイルバッテリーで約8時間稼動

- ・ シリアルポートを内蔵の/dev/AMA0(GPIOボード)
- ・ 温湿度計、GPSの追加
- ・ クラウドで継続的にログ
- ・ しきい値を超えたら音声で警告、SNS通知など