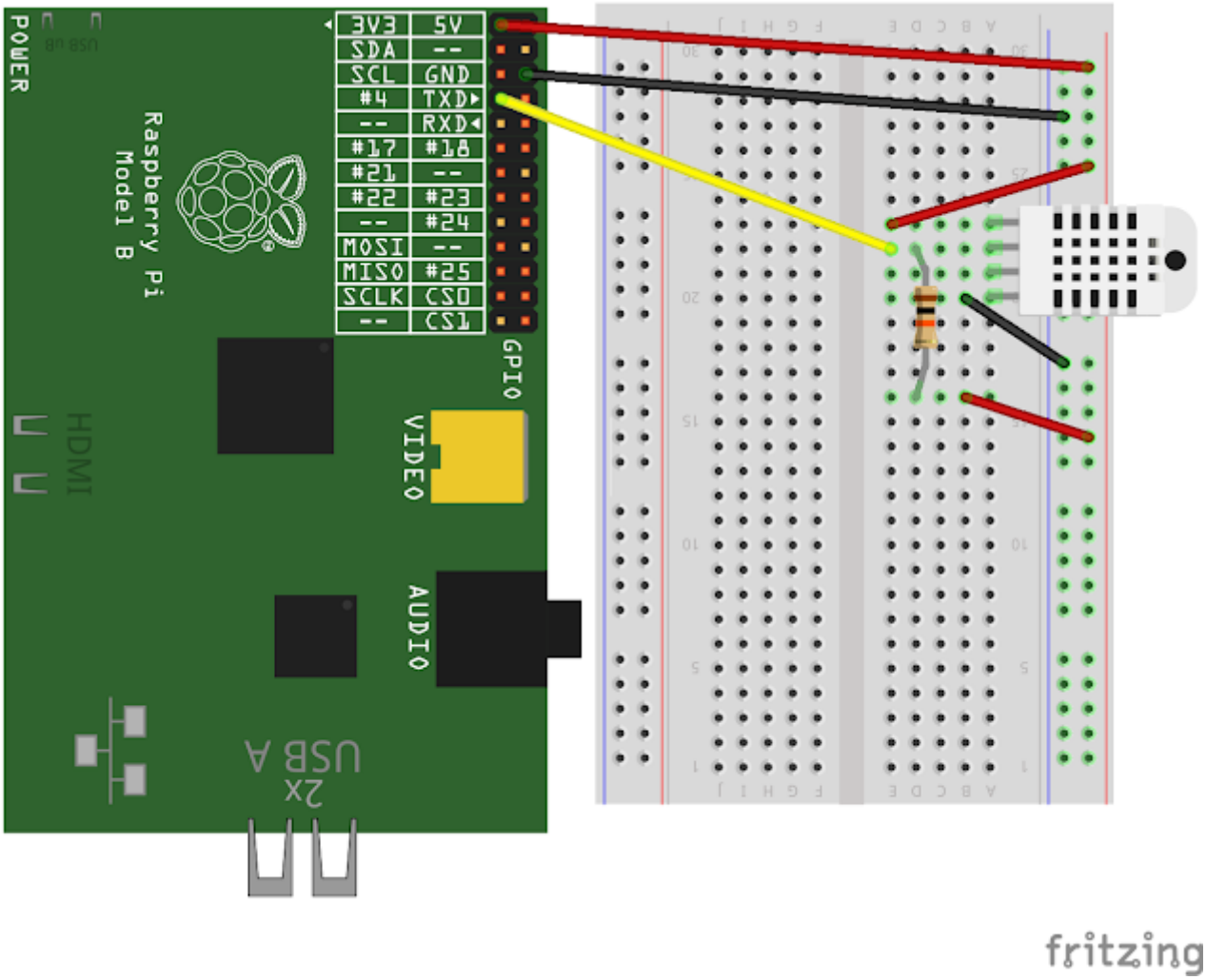
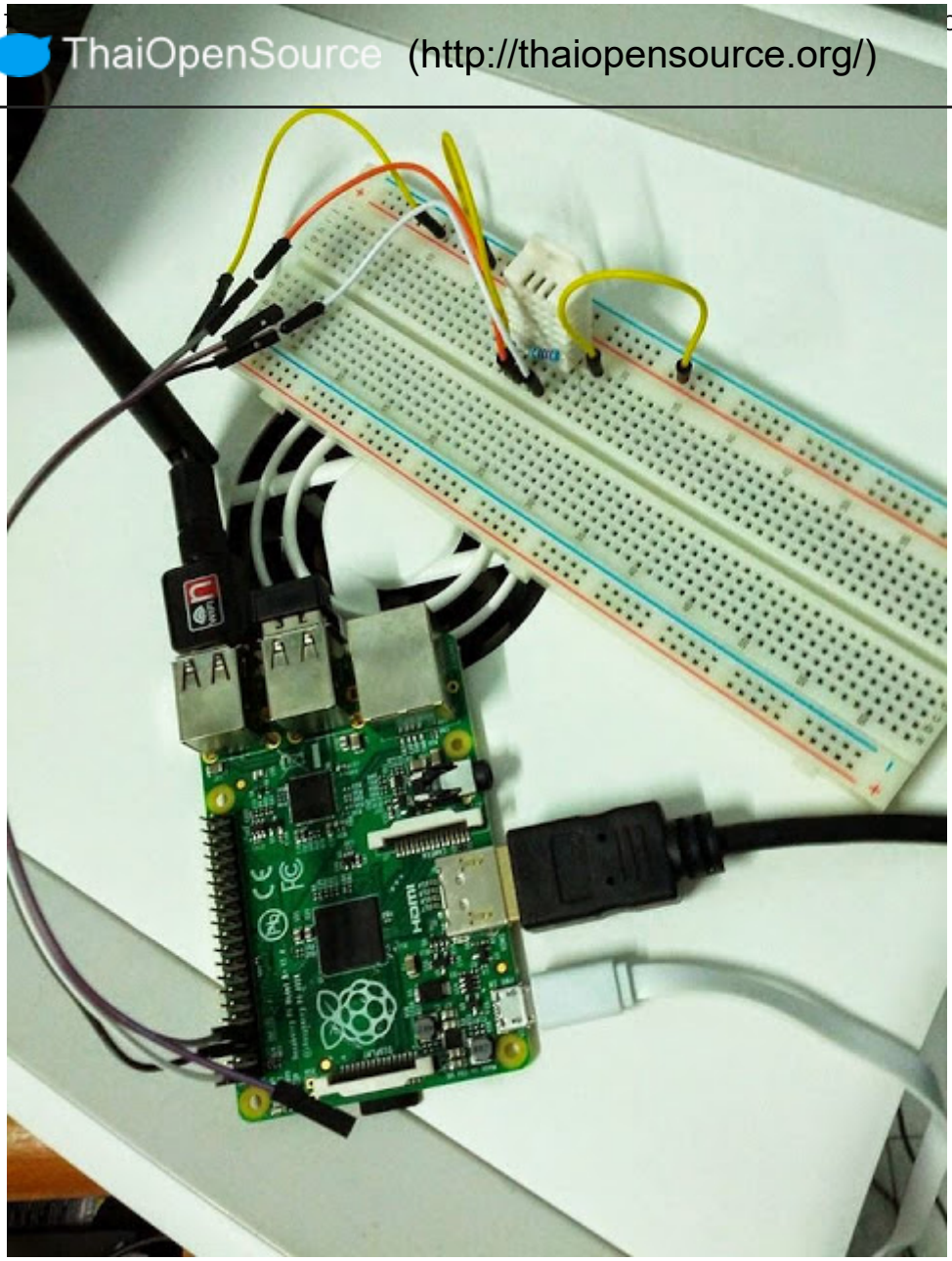
มาเล่น Raspberry Pi กับ DHT22 กัน

Posted on 03/09/2014 (http://thaiopensource.org/%e0%b8%a1%e0%b8%b2%e0%b9%80%e0%b8%a5%e0%b9%88%e0%b8%99-raspberry-pi-%e0%b8%81%e0%b8%b1%e0%b8%9a-dht22-%e0%b8%81%e0%b8%b1%e0%b8%99/) by Anuchit Chalothorn (http://thaiopensource.org/author/xavier/)

ครั้งที่แล้ว blog เรื่อง Raspberry Pi B+ ที่ซื้อมากองไว้ แต่ช่วงนี้คงได้หยิบเอามาเล่นบ่อยมากขึ้น เพราะเด็กฝึกงานที่สำนักงานฯ ทำโครงงานสหกิจศึกษาเกี่ยวกับ Raspberry Pi ก็เลยมีแรงสนใจขึ้นมาบ้าง โดยส่วนตัวแล้วไม่ค่อยชอบ Raspberry Pi นัก เพราะมันเป็น computer ขนาดเล็กมากกว่า เอาเป็นว่าหยิบมาเล่นแล้วก็ลองมาทำอะไรสนุกๆ กันดูบ้าง ผมมี DHT22 เป็น temperature + humid sensor ในตัวเดียวกัน และที่สำคัญเป็น digital sensor ใช้งานกับ Raspberry Pi ได้โดยตรง ไม่ต้องแปลงข้อมูลอะไรมากนัก เรามาลองอ่านค่าจาก DHT22 กัน ต่อวงจรดังภาพ





จากภาพเราจะอ่านค่า temperature จาก GPIO4 ของ Raspberry Pi และเราจะใช้ Python Module สำหรับอ่านค่าจาก DHT22 ไว้ของ Adafruit Industry ก่อนอื่น compile python module นี้กันก่อน

```
sudo apt-get update
```

```
sudo apt-get install build-essential python-dev
```

```
git clone https://github.com/adafruit/Adafruit_Python_DHT.git
```
(https://github.com/adafruit/Adafruit_Python_DHT.git)

```
cd Adafruit_Python_DHT
```

```
sudo python setup.py install
```

จากนั้นลองทดสอบ อ่านค่าอุณหภูมิดู

```
cd example
```

```
sudo ./AdafruitDHT.py 22 4
```

เราจะได้ค่าอุณหภูมิและความชื้นมา

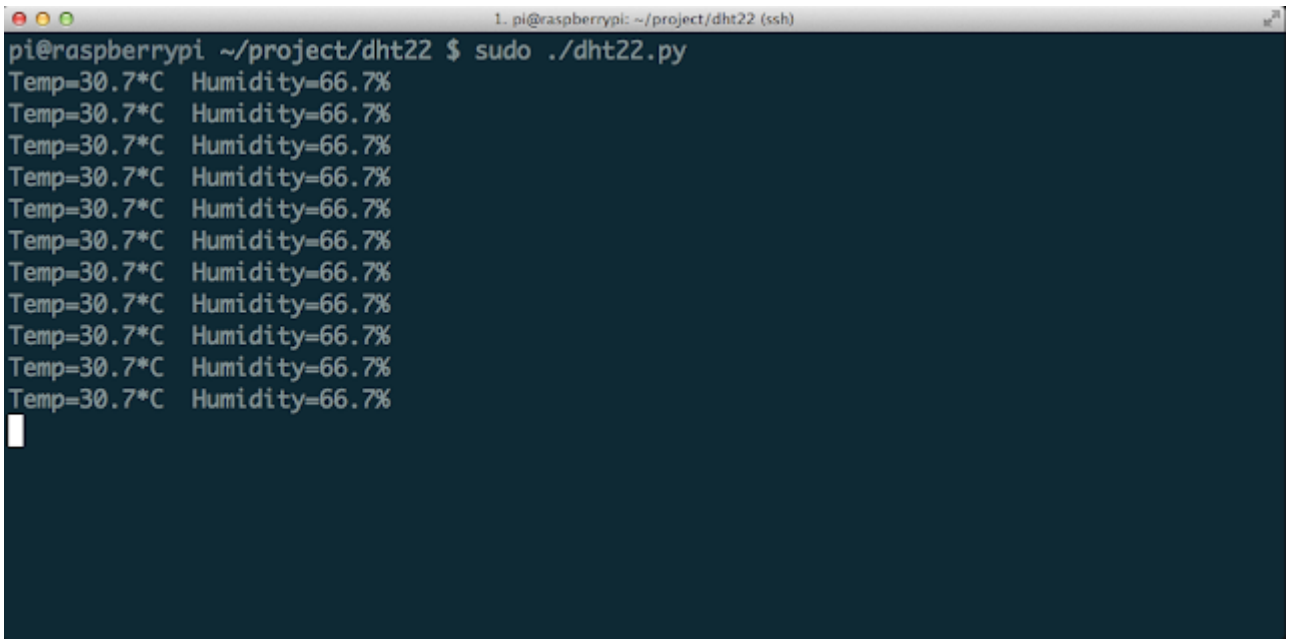
```
Temp=30.8*C Humidity=66.7%
```

ลองเขียน code กันดูบ้าง

```
#!/usr/bin/python
import sys
import time
import Adafruit_DHT

sensor = Adafruit_DHT.DHT22
pin = 4

while True:
  humidity, temperature = Adafruit_DHT.read_retry(sensor, pin)
  if humidity is not None and temperature is not None:
        print 'Temp={0:0.1f}*C  Humidity={1:0.1f}%'.format(temperature, humidity)
        time.sleep(2)
  else:
        print 'Failed to get reading. Try again!'

```

view raw (https://gist.github.com/anoochit/1e966f901d7b78a5e421/raw/0d2be22c440cc591d239c708b8bd0dc6ea5434a5/dht22.py) dht22.py (https://gist.github.com/anoochit/1e966f901d7b78a5e421#file-dht22-py) hosted with ❤ by GitHub (https://github.com)

จากนั้นลอง run ดูจะได้ผลลัพท์ดังนี้



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- มาเล่น GPIO บน Raspberry Pi กัน (http://thaiopensource.org/%e0%b8%a1%e0%b8%b2%e0%b9%80%e0%b8%a5%e0%b9%88%e0%b8%99-gpio-%e0%b8%9a%e0%b8%99-raspbery-pi-%e0%b8%81%e0%b8%b1%e0%b8%99/)
- ลองเล่น Assistant SDK กับ Raspberry Pi (http://thaiopensource.org/%e0%b8%a5%e0%b8%ad%e0%b8%87%e0%b9%80%e0%b8%a5%e0%b9%88%e0%b8%99-assistant-sdk-%e0%b8%81%e0%b8%b1%e0%b8%9a-raspberry-pi/)
- มาเล่น Raspberry Pi 3 กัน (http://thaiopensource.org/%e0%b8%a1%e0%b8%b2%e0%b9%80%e0%b8%a5%e0%b9%88%e0%b8%99-raspberry-pi-3-%e0%b8%81%e0%b8%b1%e0%b8%99/)
- ต่อกล้องหลายตัวให้ Raspberry Pi พร้อม Stream Video ผ่าน MJPG-streamer (http://thaiopensource.org/%e0%b8%95%e0%b9%88%e0%b8%ad%e0%b8%81%e0%b8%a5%e0%b9%89%e0%b8%ad%e0%b8%87%e0%b8%ab%e0%b8%a5%e0%b8%b2%e0%b8%a2%e0%b8%95%e0%b8%b1%e0%b8%a7%e0%b9%83%e0%b8%ab%e0%b9%89-raspberry-pi-%e0%b8%9e%e0%b8%a3/)
- มา Stream Video บน Raspberry Pi สำหรับ Raspbian 8 กัน (http://thaiopensource.org/%e0%b8%a1%e0%b8%b2-stream-video-%e0%b8%9a%e0%b8%99-raspberry-pi-%e0%b8%aa%e0%b8%b3%e0%b8%ab%e0%b8%a3%e0%b8%b1%e0%b8%9a-raspbian-8-%e0%b8%81%e0%b8%b1%e0%b8%99/)
- ตั้งค่า Stream Video ใน Raspberry Pi (http://thaiopensource.org/%e0%b8%95%e0%b8%b1%e0%b9%89%e0%b8%87%e0%b8%84%e0%b9%88%e0%b8%b2-stream-video-%e0%b9%83%e0%b8%99-raspberry-pi/)
- ติดกล้องให้ Raspberry Pi (http://thaiopensource.org/%e0%b8%95%e0%b8%b4%e0%b8%94%e0%b8%81%e0%b8%a5%e0%b9%89%e0%b8%ad%e0%b8%87%e0%b9%83%e0%b8%ab%e0%b9%89-raspberry-pi/)
- มาเล่น ESP8266 DHT22 และจอ OLED กัน (http://thaiopensource.org/%e0%b8%a1%e0%b8%b2%e0%b9%80%e0%b8%a5%e0%b9%88%e0%b8%99-esp8266-dht22-%e0%b9%81%e0%b8%a5%e0%b8%b0%e0%b8%88%e0%b8%ad-oled-%e0%b8%81%e0%b8%b1%e0%b8%99/)
- มาเล่น LCD 16×2 I2C บน Raspberry Pi กัน (http://thaiopensource.org/%e0%b8%a1%e0%b8%b2%e0%b9%80%e0%b8%a5%e0%b9%88%e0%b8%99-lcd-16x2-i2c-%e0%b8%9a%e0%b8%99-raspberry-pi-%e0%b8%81%e0%b8%b1%e0%b8%99/)
- มาเล่น ArchLinux ARM บน Raspberry Pi 2 กัน (http://thaiopensource.org/%e0%b8%a1%e0%b8%b2%e0%b9%80%e0%b8%a5%e0%b9%88%e0%b8%99-archlinux-arm-%e0%b8%9a%e0%b8%99-raspberry-pi-2-%e0%b8%81%e0%b8%b1%e0%b8%99/)

Tagged DHT22 (http://thaiopensource.org/tag/dht22/), GPIO (http://thaiopensource.org/tag/gpio/), Raspberry Pi (http://thaiopensource.org/tag/raspberry-pi/).

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