Lab: Bluetooth Low Energy

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Step 1:Install nodejs and Bleno

curl –sL https://deb.nodesource.com/setup_6.x | sudo -E bash -

sudo apt-get install bluetooth bluez libbluetooth-dev libudev-dev

npm install bluetooth-hci-socket

npm install bleno

git clone https://github.com/sandeepmistry/bleno.git

Step 2: Establish connection between two raspberry Pi

In this step, we encountered a problem that we initially assigned the Pi without screen as Pi A. When we executed the command “sudo node main.js” command, the error message said:

“Module version mismatch. Expect 48 got 46.”

We try to reinstall the nodejs on the Pi A; however, the problem was not solved. Therefore, we change the roles of two Pis. We assigned the Pi with screen as Pi A. There was no error message. We connect two Pis successfully.

Step 3: Using DHT11 sensor to transmit data

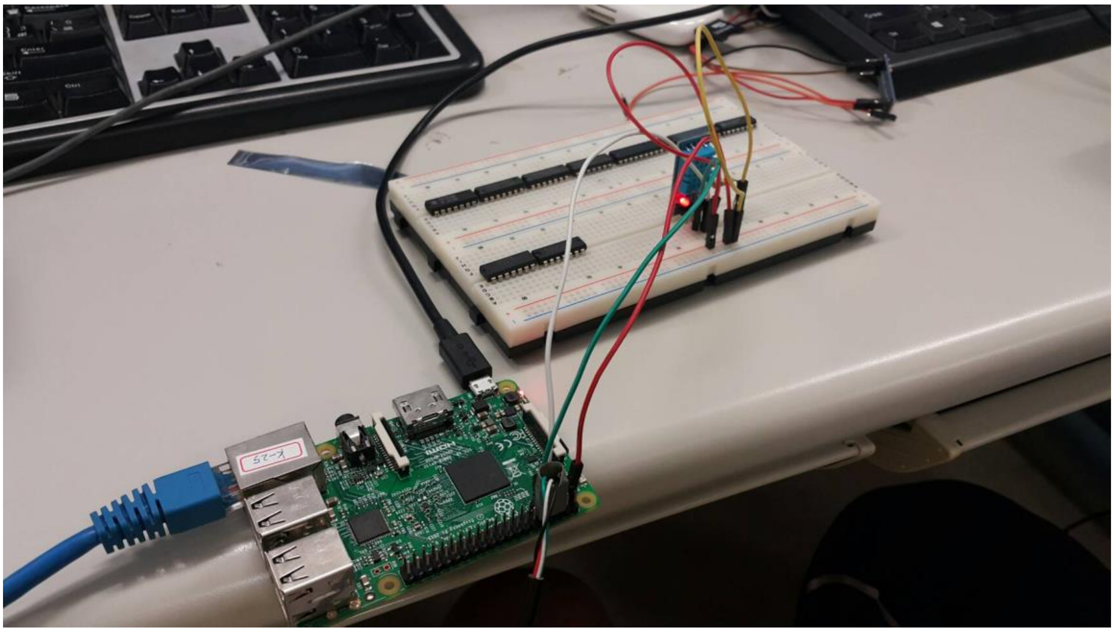
We use DHT11, which can detect the temperature and humidity of environment. Using GPIO to connect DHT11 to raspberry Pi B. We write a python code, and assign string variable “sudo gatttool -b B8:27:EB:5C:4C:AF --char-write-req -a 0x000c -n” and concatenate with temperature and humidity. Thus, we can write the information from RPi B to Rpi A.

The Picture 1 is our circuit of DHT11.

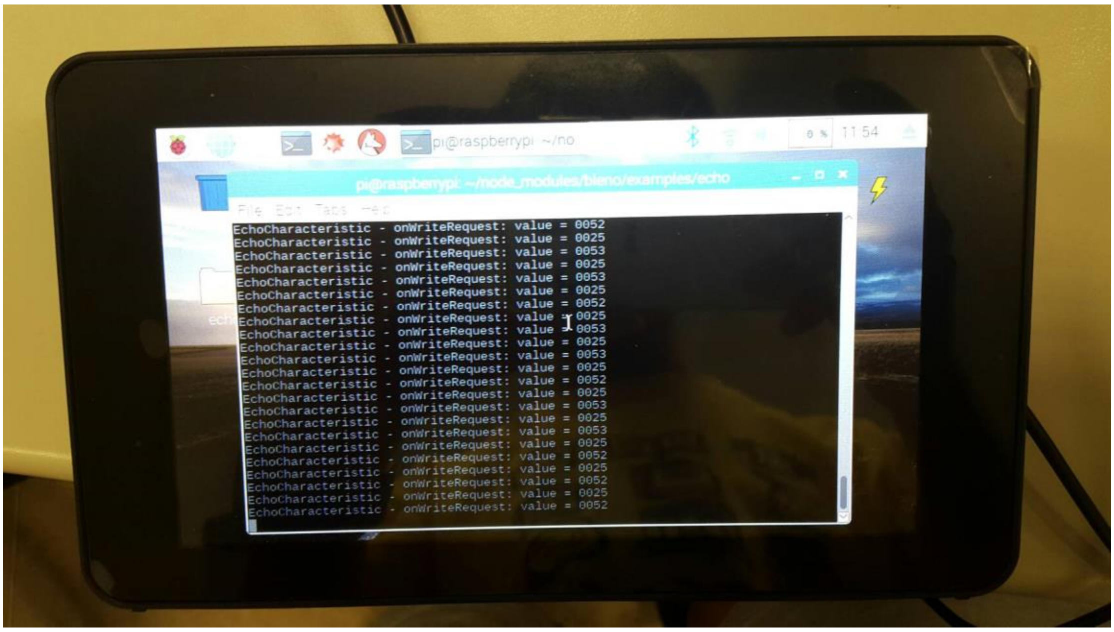
The Picture 2 is the result display on RPi A.

Reference:

1. https://github.com/adafruit/Adafruit_Python_DHT
2. http://www.uugear.com/portfolio/dht11-humidity-temperature-sensor-module/



Picture 1



Picture 2 (With temperature 25 degree Celsius and humidity 53%.)