

EE 629 – IoT using Raspberry Pi

Lesson 10 – Exercises - Done

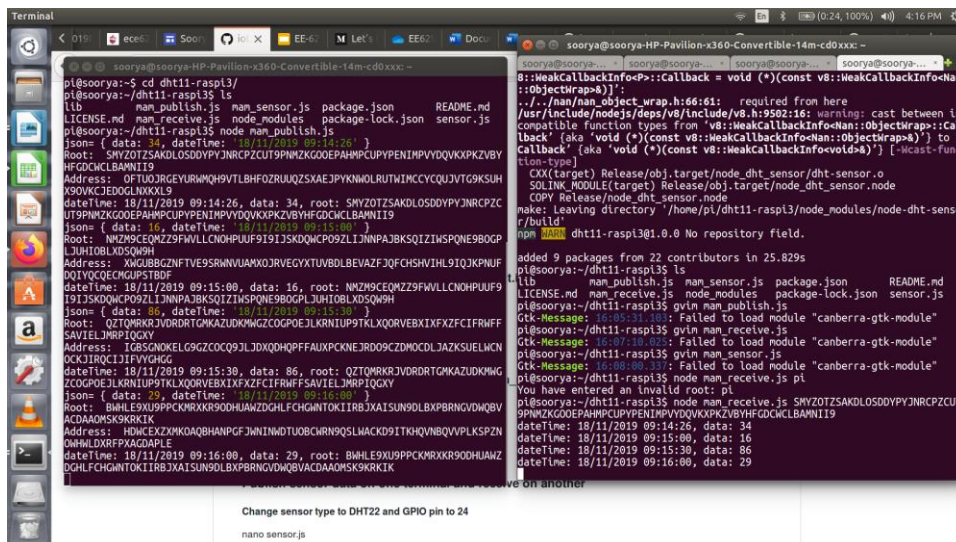
Lab A: Block Chain

- Ran the two python program given in the exercises to understand the basic blockchains creation

Lab B: IOTA

- Followed the steps given to install the required packages to send DHT22 sensor data to the IOTA Tangle using MAM

Figure 1 shows the results of MAM publish and receive functions using the java script



```
pi@soorya:~$ cd dht11-rasp3/
pi@soorya:~/dht11-rasp3$ ls
lib      mam_publish.js  mam_sensor.js  package.json  README.md
LICENSE.md  mam_receive.js  node_modules  package-lock.json  sensor.js
pi@soorya:~/dht11-rasp3$ node mam_publish.js
json: { data: 34, date: '18/11/2019 09:14:26' }
Root: SHYZOTZSAKLOSDOYPYJNRCPCZUT9PNWZKGOEPAHMPUPYPENIMPVYDQVKPKZVBY
HFDCMCLBAMNII9
Address: OPTUQJRGCEYURMHQ9VTLBHFQZRUUQZSXAEPYKNMOLRUTWIMCCYQJVTG9KSUH
X90VKCJEDGOLNKKXLB
date: 18/11/2019 09:14:26, data: 34, root: SHYZOTZSAKLOSDOYPYJNRCPCZ
UT9PNWZKGOEPAHMPUPYPENIMPVYDQVKPKZVBYHFDCMCLBAMNII9
json: { data: 16, date: '18/11/2019 09:15:00' }
Root: NMZM9CEQMZZ9FWLLCNQHPUUF9I9I3SKQMCPO9ZLJNNPAJBSQIZIWSQNE9BOGP
LJUIOBLXDSQW9H
Address: XWGU8BGCZNFV9SRNNUAKXJRVGEYXVUBOLBEVAZFJQFCHSHVH9I9QJXPNUF
QOIVYQCEQKQSP1B0F
date: 18/11/2019 09:15:00, data: 16, root: NMZM9CEQMZZ9FWLLCNQHPUUF9
I9I3SKQMCPO9ZLJNNPAJBSQIZIWSQNE9BOGPJLJUIOBLXDSQW9H
json: { data: 86, date: '18/11/2019 09:15:30' }
Root: QZTQWRKJVDORDTQMAZUKWZCQOPEJLKRNIUP9TKLQORVEBXIXFZFCIFRWF
SAVIELJMRPIQXV
Address: IGBSQNKELG9ZCQO9JLJDXQHPFFAUXPKNEJRD09CZDMCDLJAZKSUELNCN
OCKJIRQCIJFVYGHG
date: 18/11/2019 09:15:30, data: 86, root: QZTQWRKJVDORDTQMAZUKWZCQOPE
JLKRNIUP9TKLQORVEBXIXFZFCIFRWFSAVIELJMRPIQXV
json: { data: 29, date: '18/11/2019 09:16:00' }
Root: BWHLE9XU9PPCKMRXK90DHUAMZDGHLCFGHNTOKIIRBJXAISUN9LBPBRNGVQWQBV
ACDAKSK9KXKIK
Address: HDWCEZXKMOAQBHANPGFJWNIWDTUOBCHRN9QSLHACKD9ITK9QVNBQVPLKSPZN
QWMLDKRFPXAGDALE
date: 18/11/2019 09:16:00, data: 29, root: BWHLE9XU9PPCKMRXK90DHUAMZ
DGHLCFGHNTOKIIRBJXAISUN9LBPBRNGVQWQBVACDAKSK9KXKIK
pi@soorya:~/dht11-rasp3$ node mam_receive.js
0:WeakCallbackInfo<P>::Callback = void (*) (const v8::WeakCallbackInfo<Nan
::ObjectWrap>&):
./../nan/nan_object_wrap.h:66:61: required from here
./usr/include/nodejs/deps/v8/include/v8.h:9502:16: warning: cast between in
compatible function types from 'v8::WeakCallbackInfo<Nan::ObjectWrap>::Cal
lback' (aka 'void (*) (const v8::WeakCallbackInfo<Nan::ObjectWrap>&)') to '
Callback' (aka 'void (*) (const v8::WeakCallbackInfo<void>&)') [-Wcast-func
tion-type]
CXX(target) Release/obj.target/node_dht_sensor/dht-sensor.o
SOLINK_MODULE(target) Release/obj.target/node_dht_sensor.node
COPY Release/node_dht_sensor.node
make: Leaving directory '/home/pi/dht11-rasp3/node_modules/node-dht-senso
r/build'
npm WARN dht11-rasp3@1.0.0 No repository field.
added 9 packages from 22 contributors in 25.829s
pi@soorya:~/dht11-rasp3$ ls
lib      mam_publish.js  mam_sensor.js  package.json  README.md
LICENSE.md  mam_receive.js  node_modules  package-lock.json  sensor.js
pi@soorya:~/dht11-rasp3$ gvim mam_publish.js
Gtk-Message: 16:05:31.181: Failed to load module "canberra-gtk-module"
pi@soorya:~/dht11-rasp3$ gvim mam_receive.js
Gtk-Message: 16:07:19.002: Failed to load module "canberra-gtk-module"
pi@soorya:~/dht11-rasp3$ gvim mam_sensor.js
Gtk-Message: 16:08:00.337: Failed to load module "canberra-gtk-module"
pi@soorya:~/dht11-rasp3$ node mam_receive.js pi
You have entered an invalid root: pi
pi@soorya:~/dht11-rasp3$ node mam_receive.js SHYZOTZSAKLOSDOYPYJNRCPCZUT
9PNWZKGOEPAHMPUPYPENIMPVYDQVKPKZVBYHFDCMCLBAMNII9
date: 18/11/2019 09:14:26, data: 34
date: 18/11/2019 09:15:00, data: 16
date: 18/11/2019 09:15:30, data: 86
date: 18/11/2019 09:16:00, data: 29
```

Figure 2 shows the results of data received from sensor DHT22 being published using the java script

