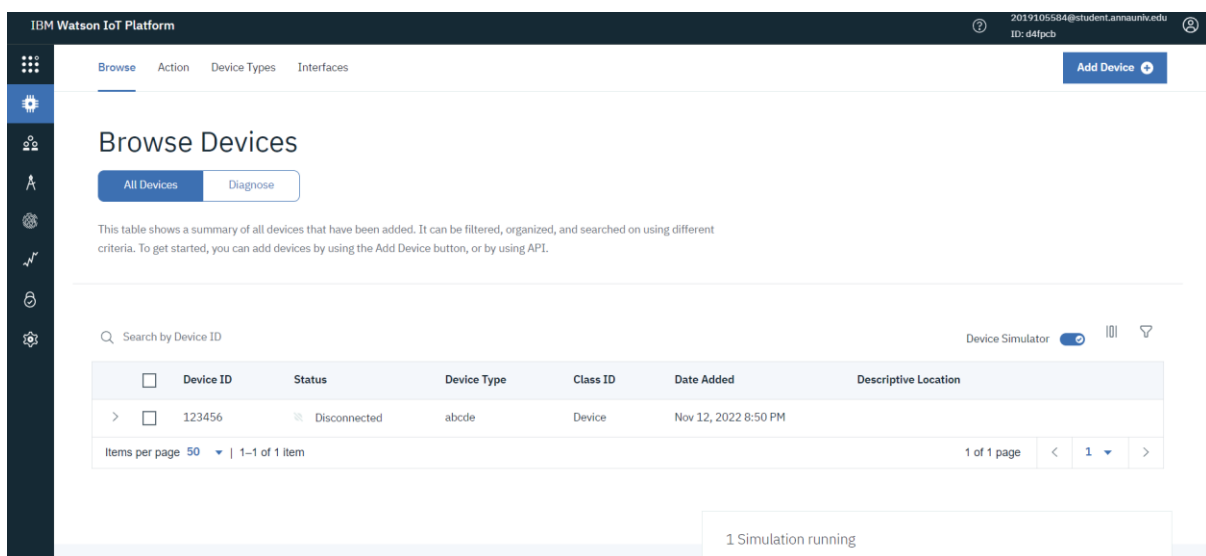
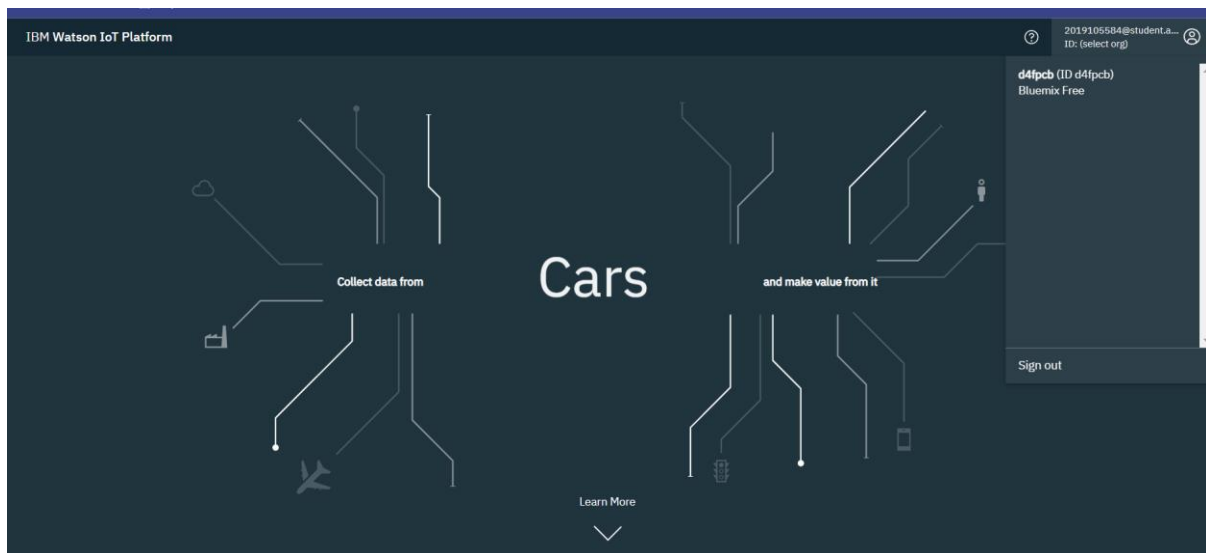


DEVELOP A PYTHON SCRIPT TO PUBLISH AND SUBSCRIBE IBM IOT PLATFORM

DATE	18 November 2022
TEAM ID	PNT2022TMID35489
TITLE	Gas Leakage Monitoring and Alerting System for Industries.

PUBLISH DATA TO THE IBM CLOUD

IBM WATSON IOT:



INSTALLING RASPBERRY PI

- Now we are going to install necessary packages on your pi.
 - Open your terminal in your pi and type the following commands
 - `curl -LO https://github.com/ibm-messaging/iot-raspberrypi/releases/download/1.0.2.1/iot_1.0-2_armhf.deb`
 - `sudo dpkg -i iot_1.0-2_armhf.deb`
 - service iot status
- Following are the images as to what appears on your pi's terminal when u type these commands

```
File Edit Tabs Help
2017-10-23 06:55:22 http://ftp.nl.debian.org/debian/pool/main/o/openssl/lib
s11.0.0-1.0-1.deb868_0-armhf.deb
Resolving ftp.nl.debian.org (ftp.nl.debian.org)... 138.89.140.21, 2001:67c:2504:
a12b::21
Connecting to ftp.nl.debian.org [ftp.nl.debian.org]:138.89.140.21:80... connect
ed.
HTTP request sent, awaiting response... 200 OK
Length: 867850 (848K) [application/x-debian-package]
Saving to: 'libs11.0.0-1.0-1-deb868_0-armhf.deb'

libs11.0.0-1.0-1- 100%[=====] 847.61K 358KB/s in 2.4s

2017-10-23 06:55:25 (358 KB/s) - 'libs11.0.0-1.0-1-deb868_0-armhf.deb' saved [
867850/867850]

pi@raspberrypi:~$ sudo dpkg -i libs11.0.0-1.0-1-deb868_0-armhf.deb
Selecting previously unselected package libs11.0.0:armhf.
(Reading database ... 115660 files and directories currently installed.)
Preparing to unpack libs11.0.0-1.0-1-deb868_0-armhf.deb ...
Unpacking libs11.0.0:armhf (1.0.1-1-deb868) ...
Setting up libs11.0.0:armhf (1.0.1-1-deb868) ...
pi@raspberrypi:~$ curl -LO https://github.com/ibm-messaging/iot-raspberrypi/rel
eases/download/1.0.2.1/iot_1.0-2_armhf.deb
% Total % Received % Xferd Average Speed Time Time Time Current
100 164 0 164 0 0 157 0 --:--:-- 0:00:01 --:--:-- 157
100 600 0 600 0 0 457 0 --:--:-- 0:00:01 --:--:-- 457
100 110K 100 110K 0 0 29117 0 0:00:03 0:00:03 --:--:-- 48190
pi@raspberrypi:~$ sudo dpkg -i iot_1.0-2_armhf.deb
(Reading database ... 115620 files and directories currently installed.)
Preparing to unpack iot_1.0-2_armhf.deb ...
Unpacking iot (1.0-1) over (1.0-1) ...
Setting up iot (1.0-1) ...
Processing triggers for systemd (232-25+deb8u1) ...
pi@raspberrypi:~$ service iot status
* iot.service - LSB: IoT service
Loaded: loaded (/etc/init.d/iot; generated; vendor preset: enabled)
Active: active (running) since Mon 2017-10-23 06:56:25 UTC; 17s ago
Docs: man:systemd-sysv-generator(8)
CGroup: /system.slice/iot.service
└─2562 /opt/iot/iot /dev/null

Oct 23 06:56:24 raspberrypi systemd[1]: Starting LSB: IoT service...
Oct 23 06:56:24 raspberrypi iot[2591]: Starting the iot program
Oct 23 06:56:25 raspberrypi iot[2562]: **** IoT Raspberry Pi Sample has started ****
Oct 23 06:56:25 raspberrypi iot[2562]: Config file not found. Going to Quickstart mode
Oct 23 06:56:25 raspberrypi iot[2562]: Running in Quickstart mode
Oct 23 06:56:25 raspberrypi systemd[1]: Started LSB: IoT service.
```

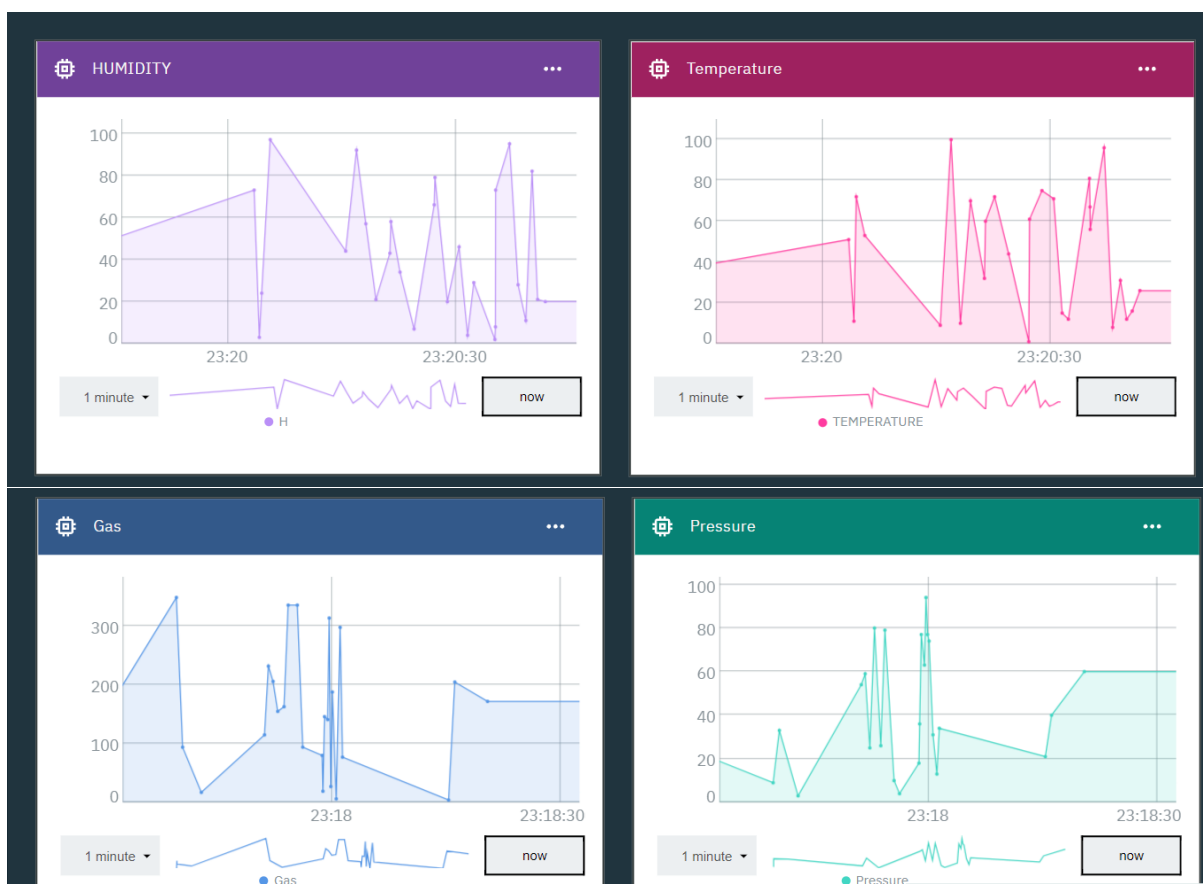
- Then open your terminal and type pip install ibm iotf

```
File Edit Tabs Help
pi@raspberrypi:~$ pip install ibmiotf
Collecting ibmiotf
  Downloading ibmiotf-0.3.0.tar.gz (50kB)
    100% |#####| 61kB 510kB/s
Collecting dicttoxml<1.7.4 (from ibmiotf)
  Downloading dicttoxml-1.7.4.tar.gz
Collecting iso8601>=0.1.0 (from ibmiotf)
  Downloading iso8601-0.1.12-py2.py3-none-any.whl
Collecting paho-mqtt>=1.2 (from ibmiotf)
  Downloading paho-mqtt-1.3.1.tar.gz (40kB)
    100% |#####| 61kB 616kB/s
Collecting pytz>=2014.7 (from ibmiotf)
  Using cached pytz-2017.2-py2.py3-none-any.whl
Collecting requests>=2.5.0 (from ibmiotf)
  Downloading requests-2.18.4-py2.py3-none-any.whl (88kB)
    100% |#####| 62kB 1.6MB/s
Collecting requests-toolbelt>=0.7.0 (from ibmiotf)
  Downloading requests-toolbelt-0.8.0-py2.py3-none-any.whl (54kB)
    100% |#####| 61kB 1.6MB/s
Collecting xmldict>=0.10.2 (from ibmiotf)
  Downloading xmldict-0.11.0-py2.py3-none-any.whl
Collecting urllib3<1.23.0, >=1.21.1 (from requests>=2.5.0->ibmiotf)
  Downloading urllib3-1.22-py2.py3-none-any.whl (132kB)
    100% |#####| 133kB 1.4MB/s
Collecting idna>=2.7, <=2.6 (from requests>=2.5.0->ibmiotf)
  Downloading idna-2.6-py2.py3-none-any.whl (56kB)
    100% |#####| 51kB 1.7MB/s
Collecting chardet<3.1.0, >=3.0.2 (from requests>=2.5.0->ibmiotf)
  Downloading chardet-3.0.4-py2.py3-none-any.whl (133kB)
    100% |#####| 142kB 2.3MB/s
Collecting certifi>=2017.4.17 (from requests>=2.5.0->ibmiotf)
  Using cached certifi-2017.7.27-py2.py3-none-any.whl
Building wheels for collected packages: ibmiotf, dicttoxml, paho-mqtt
Running setup.py bdist_wheel for ibmiotf ... done
Stored in directory: /home/pi/.cache/pip/wheels/7e/f9/45/bbc33ad957e82f7b71ba80e316d65a83d9d735a0d12e0c0418
Running setup.py bdist_wheel for dicttoxml ... done
Stored in directory: /home/pi/.cache/pip/wheels/49/82/59/96910b33ec0a7b2a66a13765401b50d0f5468024078e12c0e
Running setup.py bdist_wheel for paho-mqtt ... done
Stored in directory: /home/pi/.cache/pip/wheels/20/d8/0d/acdc8f2890111b7be7de71deebef0642f83be0313dfff0493
Successfully built ibmiotf dicttoxml paho-mqtt
Installing collected packages: dicttoxml, iso8601, paho-mqtt, pytz, urllib3, idna, chardet, certifi, requests, requests-toolbelt, xmldict, ibmiotf
Successfully installed certifi-2017.7.27.1 chardet-3.0.4 dicttoxml-1.7.4 ibmiotf-0.3.0 idna-2.6 iso8601-0.1.12 paho-mqtt-1.3.1 pytz-2017.2 requests-2.18.4 requests-toolbelt-0.8.0 urllib3-1.22 xmldict-0.11.0
pi@raspberrypi:~$
```

- Send DHT-11 Sensors data to IBM Bluemix .To get the code u need to login into IOT GYAN.
- Then the image as follows in pi's shell

```
Published Temperature = 28 C Humidity = 50 % to IBM Watson
SensorData Invalid
Published Temperature = 28 C Humidity = 50 % to IBM Watson
SensorData Invalid
Published Temperature = 28 C Humidity = 50 % to IBM Watson
SensorData Invalid
Published Temperature = 26 C Humidity = 50 % to IBM Watson
Published Temperature = 29 C Humidity = 50 % to IBM Watson
Published Temperature = 29 C Humidity = 50 % to IBM Watson
```

BOARDS:



Thus, data is published in IBM cloud.