DEVELOP A PYTHON SCRIPT TO PUBLISH AND SUBSCRIBE TO IBM IOT PLATFORM

Date	9th November 2022
Team ID	PNT2022TMID34110
Project Name	Smart Farmer – IoT Enabled Smart Farming Application

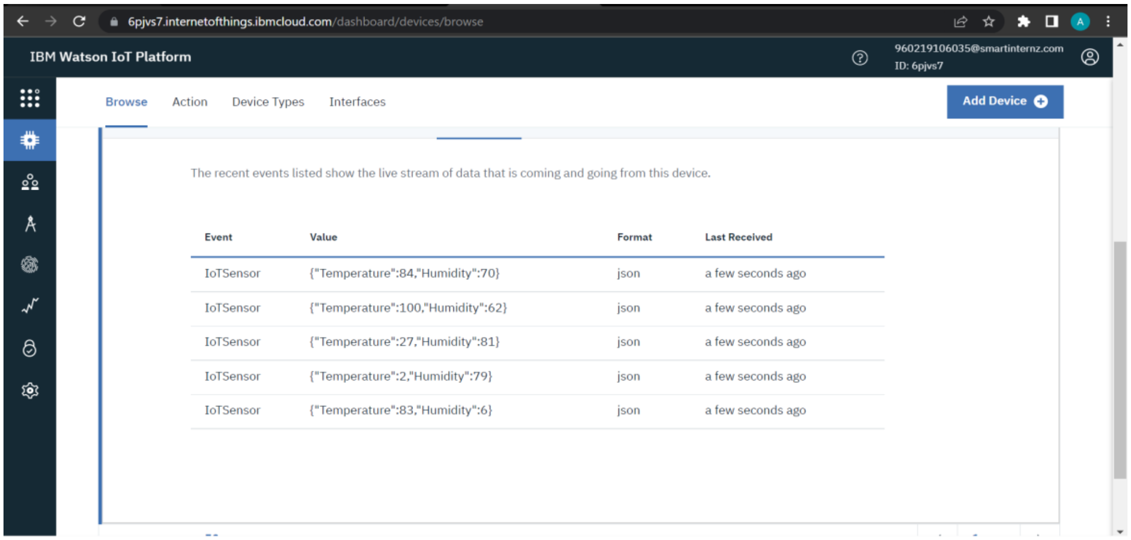
PROGRAM:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "6pjvs7"
deviceType = "Arshidevicetype"
deviceId = "Arshideviceid"
authMethod = "token"
authToken = "tGfGvVl-F2luRl2bsG"
# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    else :
        print ("motor is off")
    #print(cmd)
try:
deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-token": authToken}
deviceCli = ibmiotf.device.Client(deviceOptions)
#..............................................
except Exception as e:
print("Caught exception connecting device: %s" % str(e))
sys.exit()
# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting" 10 times
deviceCli.connect()
while True:
        #Get Sensor Data from DHT11
        temp=random.randint(0,100)
        Humid=random.randint(0,100)
        data = { 'Temperature' : temp, 'Humidity': Humid }
        #print data
        def myOnPublishCallback():
            print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % Humid, "to IBM Watson")
        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)
        if not success:
            print("Not connected to IoTF")
        time.sleep(1)
        deviceCli.commandCallback = myCommandCallback
```

Disconnect the device and application from the cloud

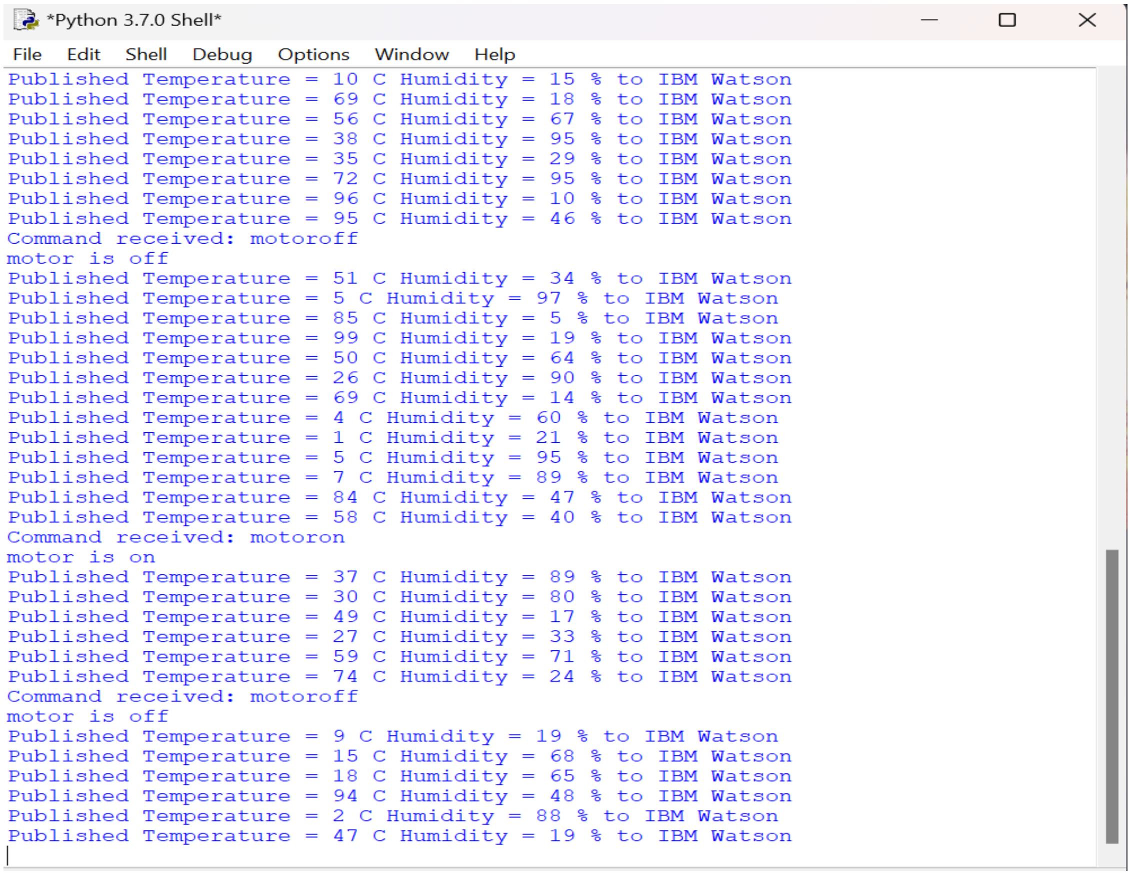
deviceCli.disconnect()

OUTPUT:


6pjvs7.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
960219106035@smartinternz.com
ID: 6pjvs7
Browse
Action
Device Types
Interfaces
Add Device

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
IoTSensor	{"Temperature":84,"Humidity":70}	json	a few seconds ago
IoTSensor	{"Temperature":100,"Humidity":62}	json	a few seconds ago
IoTSensor	{"Temperature":27,"Humidity":81}	json	a few seconds ago
IoTSensor	{"Temperature":2,"Humidity":79}	json	a few seconds ago
IoTSensor	{"Temperature":83,"Humidity":6}	json	a few seconds ago



```
Published Temperature = 10 C Humidity = 15 % to IBM Watson
Published Temperature = 69 C Humidity = 18 % to IBM Watson
Published Temperature = 56 C Humidity = 67 % to IBM Watson
Published Temperature = 38 C Humidity = 95 % to IBM Watson
Published Temperature = 35 C Humidity = 29 % to IBM Watson
Published Temperature = 72 C Humidity = 95 % to IBM Watson
Published Temperature = 96 C Humidity = 10 % to IBM Watson
Published Temperature = 95 C Humidity = 46 % to IBM Watson
Command received: motoroff
motor is off
Published Temperature = 51 C Humidity = 34 % to IBM Watson
Published Temperature = 5 C Humidity = 97 % to IBM Watson
Published Temperature = 85 C Humidity = 5 % to IBM Watson
Published Temperature = 99 C Humidity = 19 % to IBM Watson
Published Temperature = 50 C Humidity = 64 % to IBM Watson
Published Temperature = 26 C Humidity = 90 % to IBM Watson
Published Temperature = 69 C Humidity = 14 % to IBM Watson
Published Temperature = 4 C Humidity = 60 % to IBM Watson
Published Temperature = 1 C Humidity = 21 % to IBM Watson
Published Temperature = 5 C Humidity = 95 % to IBM Watson
Published Temperature = 7 C Humidity = 89 % to IBM Watson
Published Temperature = 84 C Humidity = 47 % to IBM Watson
Published Temperature = 58 C Humidity = 40 % to IBM Watson
Command received: motoron
motor is on
Published Temperature = 37 C Humidity = 89 % to IBM Watson
Published Temperature = 30 C Humidity = 80 % to IBM Watson
Published Temperature = 49 C Humidity = 17 % to IBM Watson
Published Temperature = 27 C Humidity = 33 % to IBM Watson
Published Temperature = 59 C Humidity = 71 % to IBM Watson
Published Temperature = 74 C Humidity = 24 % to IBM Watson
Command received: motoroff
motor is off
Published Temperature = 9 C Humidity = 19 % to IBM Watson
Published Temperature = 15 C Humidity = 68 % to IBM Watson
Published Temperature = 18 C Humidity = 65 % to IBM Watson
Published Temperature = 94 C Humidity = 48 % to IBM Watson
Published Temperature = 2 C Humidity = 88 % to IBM Watson
Published Temperature = 47 C Humidity = 19 % to IBM Watson
```