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

Date	18-11-2022
Team ID	PNT2022TMID34083
Project name	Smart farmer-IOT Enabled Smart Farming Application

PROGRAM:

```python
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random


#Provide your IBM Watson Device Credentials
organization = "b4hkg6"
deviceType = "12345"
deviceId = "54321"
authMethod = "token"
authToken = "cJG?hZd?IkkxL&ZO*b"

# Initialize GPIO


def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    elif status=="motor off":
        print ("motor is off")
    else :
        print("please send proper comand")

    #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()
    else :
        print("please send proper comand")

    #print(cmd)




try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-token": authToken}
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        #.........................................

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)
        moist=random.randint(0,100)

        data = { 'temp' : temp, 'Humid': Humid,'Soil Moist': moist }
        #print data
        def myOnPublishCallback():
            print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % Humid," Soil Moisture = %s %%" % moist, "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:

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
1)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\ADHARSH\AppData\Local\Programs\Python\Python37-32\pythn1.py
2022-11-18 15:48:18,529   ibmiotf.device.Client       INFO    Connected successfu
lly: d:b4hkg6:12345:54321
Published Temperature = 76 C Humidity = 18 %  Soil Moisture = 4 % to IBM Watson
Published Temperature = 62 C Humidity = 65 %  Soil Moisture = 3 % to IBM Watson
Published Temperature = 95 C Humidity = 67 %  Soil Moisture = 61 % to IBM Watson
Published Temperature = 97 C Humidity = 85 %  Soil Moisture = 35 % to IBM Watson
Published Temperature = 66 C Humidity = 41 %  Soil Moisture = 79 % to IBM Watson
Published Temperature = 25 C Humidity = 16 %  Soil Moisture = 9 % to IBM Watson
Published Temperature = 50 C Humidity = 96 %  Soil Moisture = 34 % to IBM Watson
Published Temperature = 25 C Humidity = 53 %  Soil Moisture = 19 % to IBM Watson
Published Temperature = 26 C Humidity = 93 %  Soil Moisture = 75 % to IBM Watson
Published Temperature = 3 C Humidity = 27 %  Soil Moisture = 90 % to IBM Watson
Published Temperature = 90 C Humidity = 46 %  Soil Moisture = 91 % to IBM Watson
Published Temperature = 36 C Humidity = 81 %  Soil Moisture = 8 % to IBM Watson
Published Temperature = 68 C Humidity = 81 %  Soil Moisture = 73 % to IBM Watson
Published Temperature = 74 C Humidity = 76 %  Soil Moisture = 3 % to IBM Watson
```