Sprint-1

Team Id	PNT2022TMID51106
Title	Hazardous Area Monitoring for Industrial Plant Powered By IoT

Generation of Python code for publishing the random sensor data to the IBM Iot Platform.


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

#Provide your IBM Watson Device Credentials
organization = "4wj0mx"
deviceType = "NodeMCU"
deviceId = "IoT001"
authMethod = "token"
authToken = "1234567890"

# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status =="motoron":
        print("motor in on")
    else :
        print ("motor is off")
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 = {'temp' : temp, 'humid' : humid}
    #print data
    def myOnPublishCallback():
        print ("Published Temperature = %s C" % temp, "Humidity:%s" %humid)

    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()
```

Random Temperature and humidity values generated and published to IBM IoT platform

```
=========== RESTART: C:\Users\91934\Downloads\Python Script IOT.py ===========
2022-11-18 20:59:00,384  ibmiotf.device.Client     INFO   Connected successfully: d:4wj0mx:NodeMCU:IoT001
Published Temperature = 7 C Humidity:71
Published Temperature = 96 C Humidity:20
Published Temperature = 69 C Humidity:8
Published Temperature = 32 C Humidity:11
Published Temperature = 64 C Humidity:26
Published Temperature = 94 C Humidity:71
Published Temperature = 51 C Humidity:10
Published Temperature = 58 C Humidity:46
Published Temperature = 94 C Humidity:27
Published Temperature = 93 C Humidity:52
Published Temperature = 85 C Humidity:63
Published Temperature = 55 C Humidity:44
Published Temperature = 36 C Humidity:76
Published Temperature = 34 C Humidity:54
Published Temperature = 35 C Humidity:34
Published Temperature = 60 C Humidity:14
Published Temperature = 77 C Humidity:18
Published Temperature = 69 C Humidity:73
Published Temperature = 32 C Humidity:80
Published Temperature = 41 C Humidity:89
Published Temperature = 93 C Humidity:57
```

IoT001	● Connected	NodeMCU	Device	8 Nov 2022 5:24 PM

Identity	Device Information	Recent Events	State	Logs

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

Event	Value	Format	Last Received
IoTSensor	{"temp":67,"humid":61}	json	a few seconds ago
IoTSensor	{"temp":20,"humid":88}	json	a few seconds ago
IoTSensor	{"temp":51,"humid":91}	json	a few seconds ago
IoTSensor	{"temp":59,"humid":7}	json	a few seconds ago
IoTSensor	{"temp":65,"humid":8}	json	a few seconds ago

Data stored in Database

industryiot > 000245d59da9ac61433e5f634f503b51

```
1  {
2    "_id": "000245d59da9ac61433e5f634f503b51",
3    "_rev": "1-9519887f3ae96d2d0163cd576f90e893",
4    "topic": "iot-2/type/NodeMCU/id/IoT001/evt/IoTSensor/fmt/json",
5    "payload": {
6      "temp": 30,
7      "humid": 24
8    },
9    "deviceId": "IoT001",
10   "deviceType": "NodeMCU",
11   "eventType": "IoTSensor",
12   "format": "json"
13 }
```