

SPRINT -1

DATE	29-11-2022
TEAM ID	PNT2022TMID18361
PROJECT NAME	Project – Smart Farmer-IoT Enabled smart Farming Application

In the sprint plan first phase, a Python code was developed to run the motor . For that the random values for the sensor is generated on the IBM Watson Iot platform which is linked with the configured device on the nodered app is again linked with python code using the device ID.

Whenever the temperature sensors reach above the threshold value , the motor will be on and otherwise it will be off.

PYTHON CODE:

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

Organization_ID="lm9xem"
Device_Type = "sensor"
Device_ID = "9182"
Authentication_Method="token"
Authentication_Token="12345678"

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status = cmd.data['command']
    if status=="motoron":
        print ("Motor is on")
    elif status == "motoroff":
        print ("Motor is off")
    else :
```

```

    print ("please send proper command")

try:
    deviceOptions = {"org" : Organization_ID, "type": Device_Type, "id" : Device_ID,
"auth-method": Authentication_Method, "auth-token":Authentication_Token}

    deviceCli = ibmiotf.device.Client(deviceOptions)

    #.....

except Exception as e:
    print("Caught exception connecting device: %s" % str(e))
    sys.exit()

deviceCli.connect()

while True:
    temp=random.randint(90,110)
    hum=random.randint(60,100)
    moist=random.randint(20,60)

    data = {'temperature':temp, 'Humidity':hum, 'SoilMoisture':moist}

    #print data

    def myOnPublishCallback():
        print("Published Temperature = %s C" %temp, "Humidity = %s %" %hum, "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 IoT")

        time.sleep(10)

        deviceCli.commandCallback = myCommandCallback

#Disconnect the device and application from the cloud
deviceCli.disconnect()

```

CODE OUTPUT:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (tags/v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/DELL/AppData/Local/Programs/Python/Python37/ibm.py =====
Caught exception connecting device: Unsupported authentication method: use-token-auth
>>>
===== RESTART: C:/Users/DELL/AppData/Local/Programs/Python/Python37/ibm.py =====
2022-11-15 21:02:01,292 ibmiotf.device.Client INFO Connected successfully: d:lm9xem:sensor:9182
Published Temperature = 101 C Humidity = 86 % Soil Moisture = 23 % to IBM Watson
Published Temperature = 94 C Humidity = 65 % Soil Moisture = 30 % to IBM Watson
Published Temperature = 94 C Humidity = 81 % Soil Moisture = 21 % to IBM Watson
Published Temperature = 96 C Humidity = 90 % Soil Moisture = 42 % to IBM Watson
Published Temperature = 96 C Humidity = 63 % Soil Moisture = 56 % to IBM Watson
Published Temperature = 96 C Humidity = 71 % Soil Moisture = 34 % to IBM Watson
Published Temperature = 93 C Humidity = 97 % Soil Moisture = 20 % to IBM Watson
Published Temperature = 94 C Humidity = 76 % Soil Moisture = 26 % to IBM Watson
Published Temperature = 106 C Humidity = 100 % Soil Moisture = 58 % to IBM Watson
Published Temperature = 92 C Humidity = 95 % Soil Moisture = 25 % to IBM Watson
Published Temperature = 94 C Humidity = 82 % Soil Moisture = 27 % to IBM Watson
Published Temperature = 103 C Humidity = 85 % Soil Moisture = 50 % to IBM Watson
Published Temperature = 96 C Humidity = 66 % Soil Moisture = 26 % to IBM Watson
|
```