

Sprint-3

TEAM ID	PNT2022TMID21422
PROJECT NAME	IOT Based Smart Crop Protection System For Agriculture.
MAXIMU MARKS	20 MARKS

PYTHON CODE:

```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random


#Provide your IBM Watson Device Credentials

organization ="8osflk"

deviceType = "cropprotection99"

deviceId = "cropprotection99"

authMethod="token"

authToken ="duiH-8z@4u@JXTmx20"

# InitializeGPIO

def myCommandCallback(cmd):

    print("Command received: %s" %cmd.data['command'])

    status =cmd.data['command']

    if status=="lighton":
```

```

        print("led on")
    else:
        print("led 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()

#Connectandsendadatapoint"hello"withvalue"world"intothecloudasaneventtye
"greeting"10times
deviceCli.connect()

while True:
    #GetSensorDatafromDHT11

    temp=random.randint(0,100)
    humid=random.randint(0,100)

```

```
data={'temperature':temp,'humidity':humid}

#printdata

def myOnPublishCallback():

    print("Published  Temperature=%s  C"  %temp,"Humidity=%s  %"  %
humid,"to IBMWatson")


success=deviceCli.publishEvent("IoTSensor","json",data,qos=0,on_publish=myO
nPublishCallback)


if not success:

    print("NotconnectedtoIoT")

    time.sleep(1)


deviceCli.commandCallback=myCommandCallback


#Disconnectthedeviceandapplicationfromthecloud
deviceCli.disconnect()
```

OUTPUT:

```

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

#Provide your IBM Watson Device Credentials
organization = "ibmf1a"
deviceType = "compProtection09"
deviceId = "compProtection09"
authMethod="token"
authToken = "auth-ha-9u3JlTma2D"
# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" %cmd.data['command'])
    status =cmd.data['command']
    if status=="ledon":
        print("led on")
        time.sleep(1)
        print("led 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 datapoint hello with value world into the cloud as a request of type "greeting" 10 times
deviceCli.connect()

while True:
    #Get sensor data from GPIO
    temp=random.randint(0,100)
    humid=random.randint(0,100)
    data={"temperature":temp,"humidity":humid}

```

```
data={'temperature':temp,'humidity':humid}
    #printdata
def myOnPublishCallback():
    print("Published Temperature=%s C" %temp,"Humidity=%s %% " % humid,"to IBMWatson")

success=deviceCli.publishEvent("IoTSensor","json",data,qos=0,on_publish=myOnPublishCallback)

if not success:
    print("NotconnectedtoIoT")
time.sleep(1)

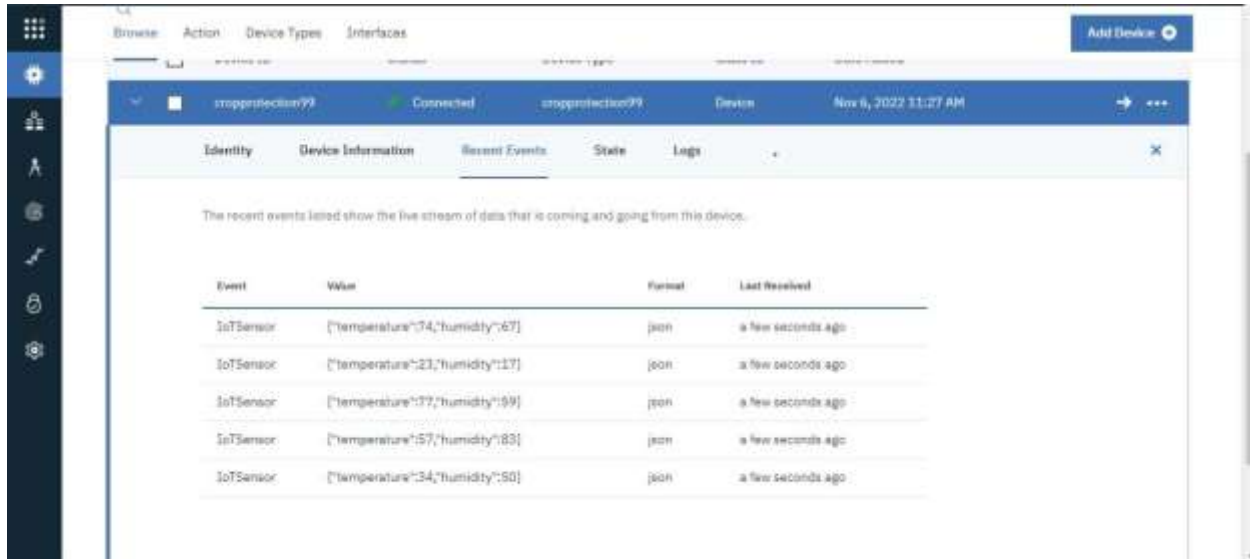
deviceCli.commandCallback=myCommandCallback

#Disconnectthedeviceandapplicationfromthecloud
deviceCli.disconnect()
```

```
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/Latha/AppData/Local/Programs/Python/Python37/ibmiot.py ==
ibmiotf.device.Client INFO Connected successfully: d:\soflk\cropprotection99\cropprotection99
Published Temperature=9 C Humidity=50 % to IBMWatson
Published Temperature=37 C Humidity=55 % to IBMWatson
Published Temperature=96 C Humidity=60 % to IBMWatson
Published Temperature=4 C Humidity=11 % to IBMWatson
Published Temperature=47 C Humidity=49 % to IBMWatson
Published Temperature=79 C Humidity=13 % to IBMWatson
Published Temperature=63 C Humidity=7 % to IBMWatson
Published Temperature=68 C Humidity=70 % to IBMWatson
Published Temperature=49 C Humidity=68 % to IBMWatson
Published Temperature=41 C Humidity=36 % to IBMWatson
Published Temperature=20 C Humidity=76 % to IBMWatson
Published Temperature=3 C Humidity=93 % to IBMWatson
Published Temperature=41 C Humidity=98 % to IBMWatson
Published Temperature=31 C Humidity=96 % to IBMWatson
Published Temperature=78 C Humidity=12 % to IBMWatson
Published Temperature=65 C Humidity=75 % to IBMWatson
Published Temperature=16 C Humidity=89 % to IBMWatson
Published Temperature=37 C Humidity=95 % to IBMWatson
Published Temperature=7 C Humidity=85 % to IBMWatson
Published Temperature=17 C Humidity=85 % to IBMWatson
Published Temperature=32 C Humidity=74 % to IBMWatson
|
```

IBM WATSON IOT PLATFORM:



The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains various icons for navigation. The main content area shows the 'Recent Events' tab for a device named 'cropprotection99'. The device status is 'Connected' and the last update is 'Nov 6, 2022 11:27 AM'. Below the tabs, a message states: 'The recent events listed show the live stream of data that is coming and going from this device.' A table lists the recent events with columns for 'Event', 'Value', 'Format', and 'Last Received'.

Event	Value	Format	Last Received
IoTSensor	["temperature":74,"humidity":67]	json	a few seconds ago
IoTSensor	["temperature":23,"humidity":17]	json	a few seconds ago
IoTSensor	["temperature":77,"humidity":99]	json	a few seconds ago
IoTSensor	["temperature":57,"humidity":83]	json	a few seconds ago
IoTSensor	["temperature":34,"humidity":50]	json	a few seconds ago