SPRINT - 3

Date	15 November 2022
Team ID	PNT2022TMID04642
Project Name	Smart Farmer-IoT Enabled Smart Farming Application

Receiving commands from IBM cloud

```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random

#Provide your IBM Watson Device Credentialsorganization = "3wc7ia" deviceType = "NodeMCU" deviceId = "12345" authMethod = "token" authToken = "12345678"

# 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 == "motoroff":

print ("motor is off")

 else :

print ("please send proper command")

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()

deviceCli.connect()

while True:
```

#Get Sensor Data from DHT11

temp=random.randint(90,110)

Humid=random.randint(60,100)

Mois=random.Randint(20,120)

data = { 'temp' : temp, 'Humid': Humid , 'Mois': Mois}

#print data

def myOnPublishCallback( ):

print ("Published Temperature = %s C" % temp, "Humidity = %s %%" %Humid, "Moisture =%s deg c" % Mois "to IBM Watson")

success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,on_publish=myOnPublishCallback)
if not success:

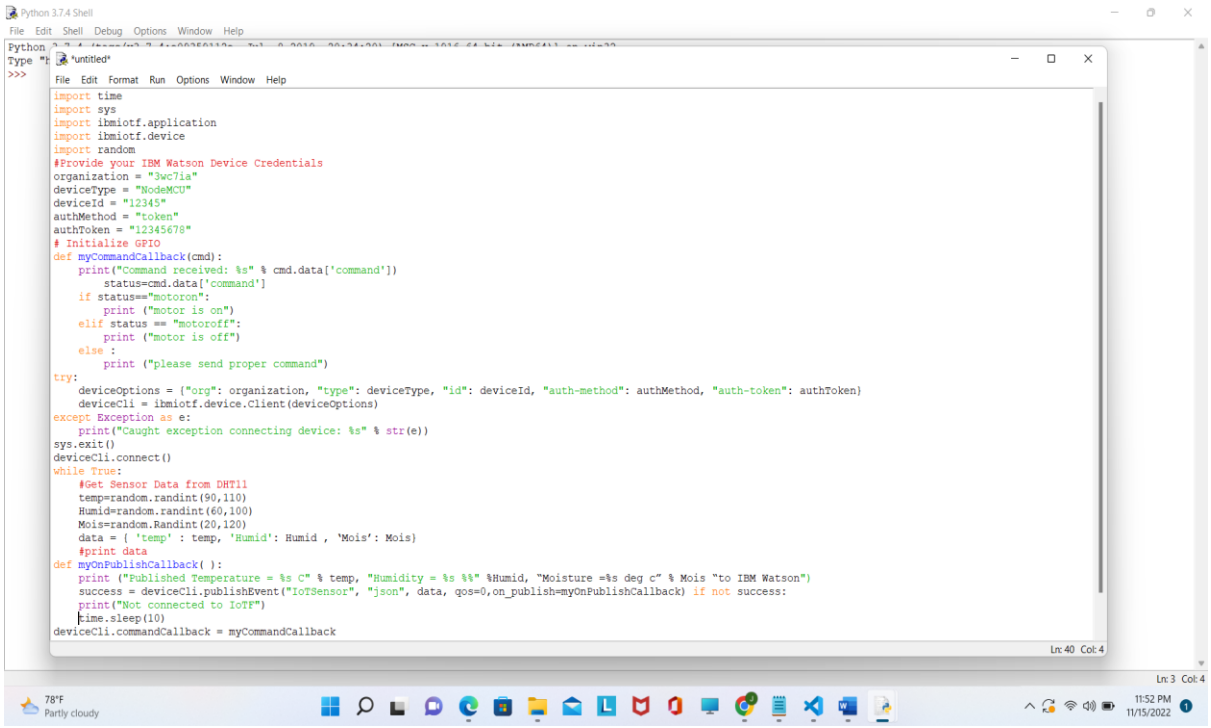
print("Not connected to IoTF")

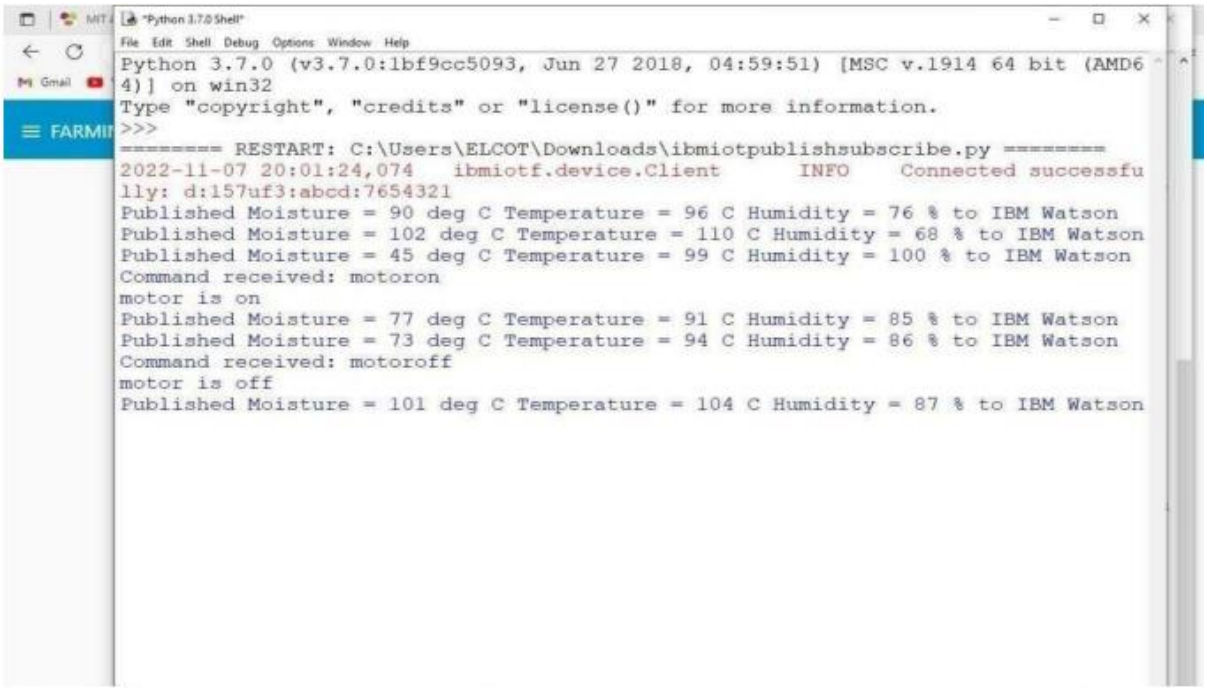
time.sleep(10)

deviceCli.commandCallback = myCommandCallback

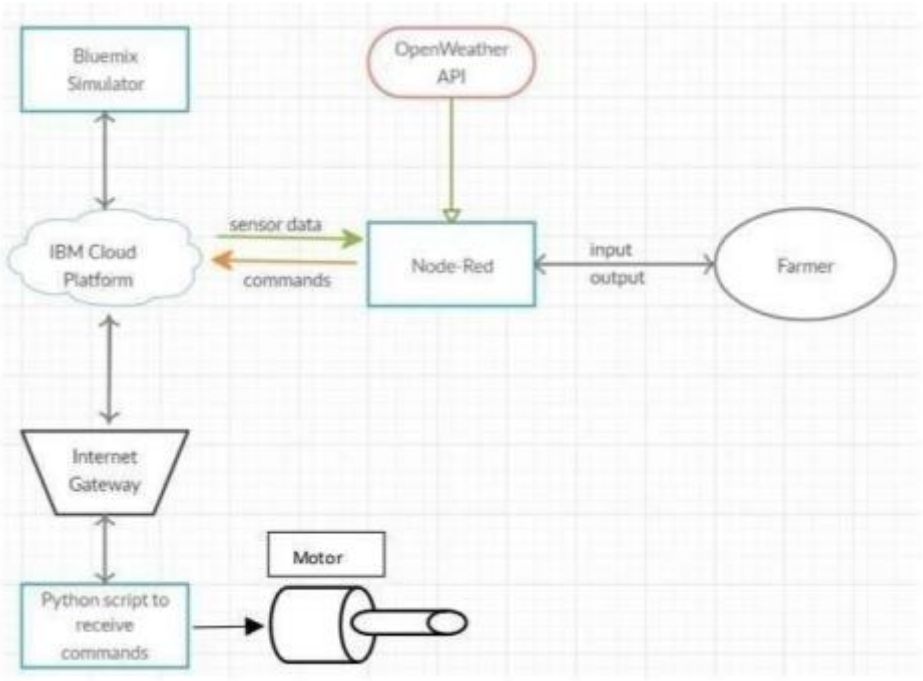
Disconnect the device and application from the cloud

deviceCli.disconnect()

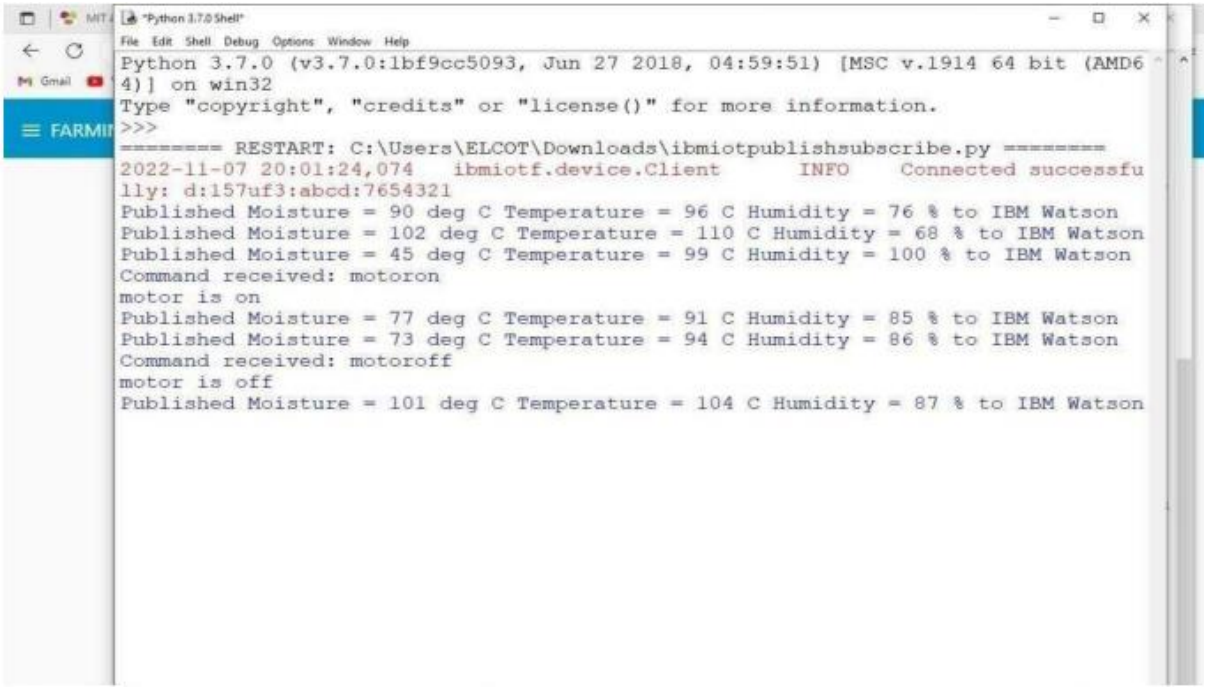



"Python 3.7.0 Shell"
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD6
4)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py ========
2022-11-07 20:01:24,074 ibmiotf.device.Client INFO Connected successfu
lly: d:157uf3:abcd:7654321
Published Moisture = 90 deg C Temperature = 96 C Humidity = 76 % to IBM Watson
Published Moisture = 102 deg C Temperature = 110 C Humidity = 68 % to IBM Watson
Published Moisture = 45 deg C Temperature = 99 C Humidity = 100 % to IBM Watson
Command received: motoron
motor is on
Published Moisture = 77 deg C Temperature = 91 C Humidity = 85 % to IBM Watson
Published Moisture = 73 deg C Temperature = 94 C Humidity = 86 % to IBM Watson
Command received: motoroff
motor is off
Published Moisture = 101 deg C Temperature = 104 C Humidity = 87 % to IBM Watson

Flow Chart


Bluemix Simulator
OpenWeather API
IBM Cloud Platform
sensor data
commands
Node-Red
input
output
Farmer
Internet Gateway
Motor
Python script to receive commands

Result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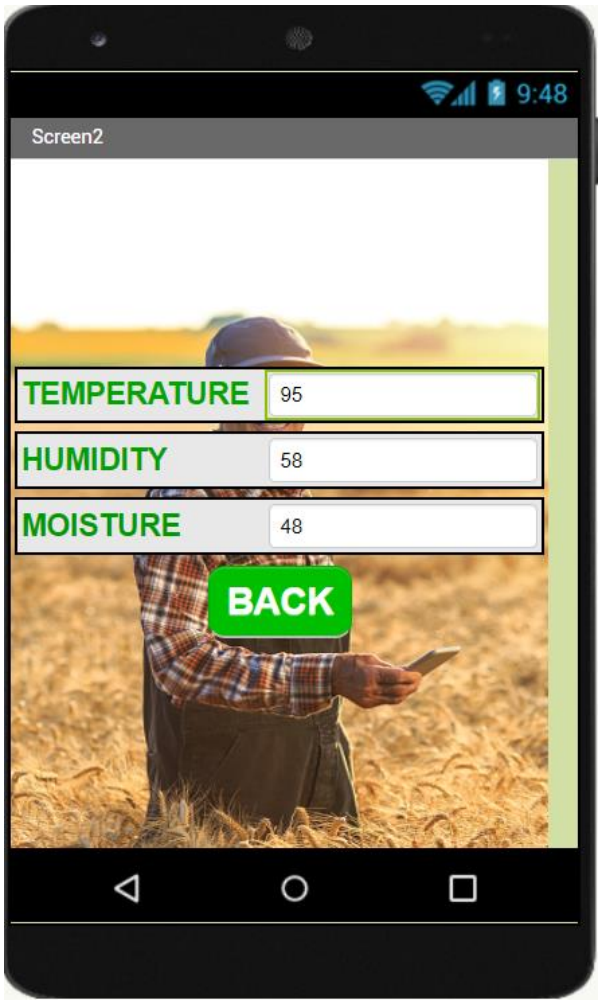
9:48
Screen2
TEMPERATURE
95
HUMIDITY
58
MOISTURE
48
BACK