SPRINT DELIVERY-4

SMART FARMER: IoT Enabled Smart Farming Application

Team ID:PNT2022TMID42977

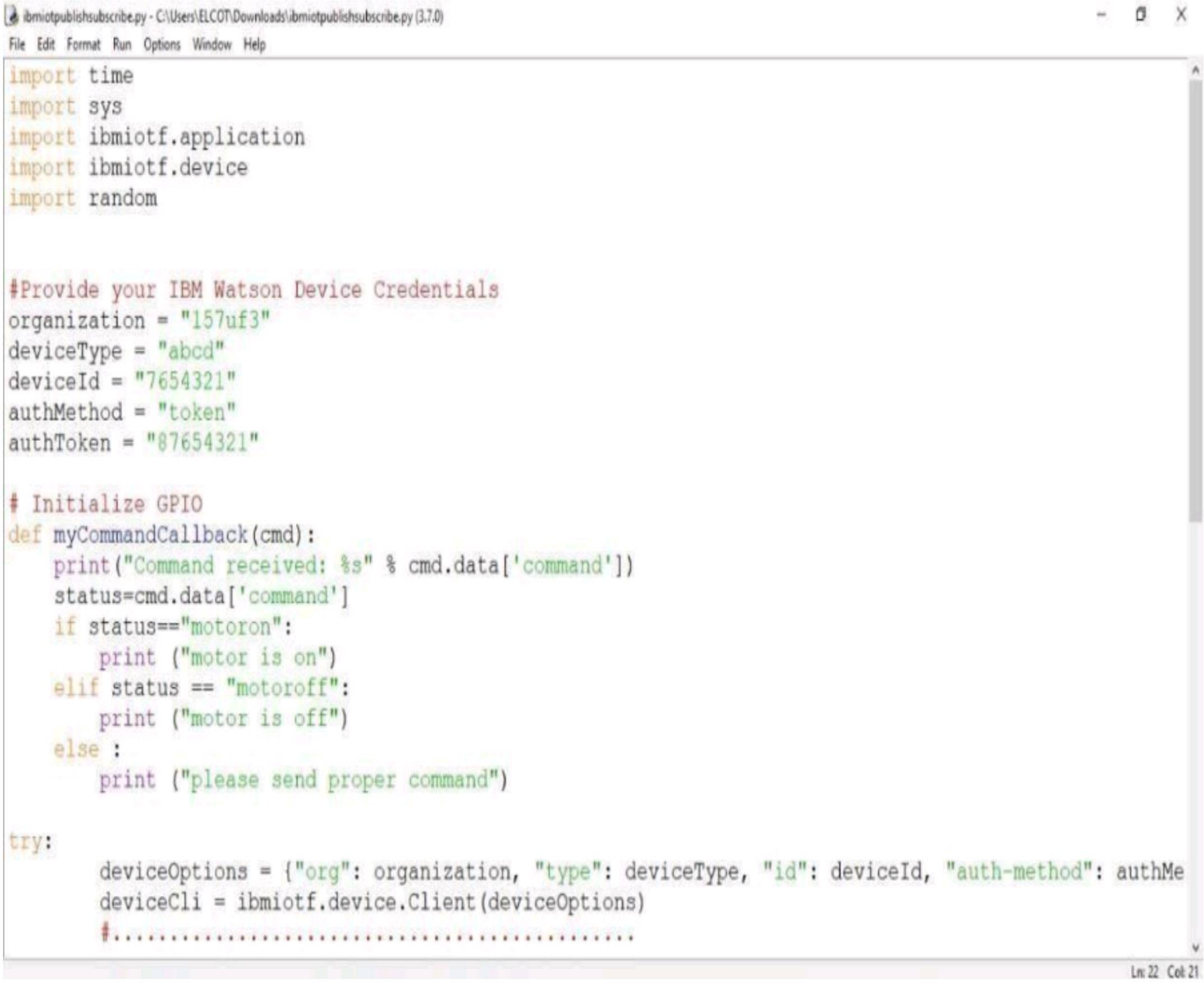
Receiving commands from IBM cloud using Python program

```
import time

import sys

import IBMIOT f. application

import IBMIOT f. Device

 import random

#Provide your IBM Watson Device

Credentials

organization = "157uf3" device Type = "a b

c’   ’   device Id = "7654321"

auth Method = "token"

# Initialize GPIO

Def my Command Callback (c md): print

("Command received: %s" % cmd.

data['command'])

status=cmd. data['command']
```

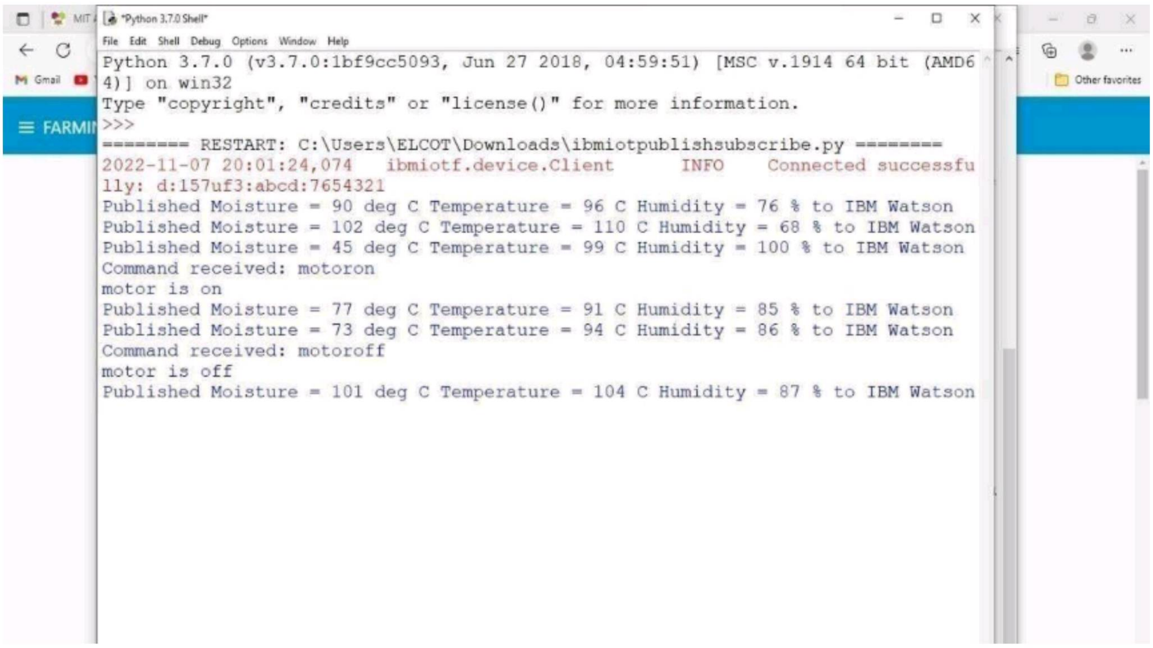
```
print ("please send proper command")

try:

device Options = {"org": organization, "type": device Type, "id": device Id,
"Auth -method": auth Method, "auth-token": auth Token}

device C li = IBMIOT f. device. Client (device Options)

        #......................................... 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 device C li. Connect () while True:

      #Get Sensor Data from DHT11

temp=random. Rand int (90,110)

Humid=random. Rand int (60,100)

M o is=random.

Rand int (20,120)

 data = {'temp: temp, 'Humid': Humid, ‘   M
o is’   : M o is}

     #Print data        def
My On Publish Callback (
):

        print   ("Published   Temperature   =   %s   C"   %   temp,   "Humidity
= %s %%" %Humid, “   Moisture =%s deg c”   % M o is “   to IBM Watson")
```

success = device C li. publish Event ("IoT Sensor", "j son", data,
q o s=0, on publish=my On Publish Callback) if not success:

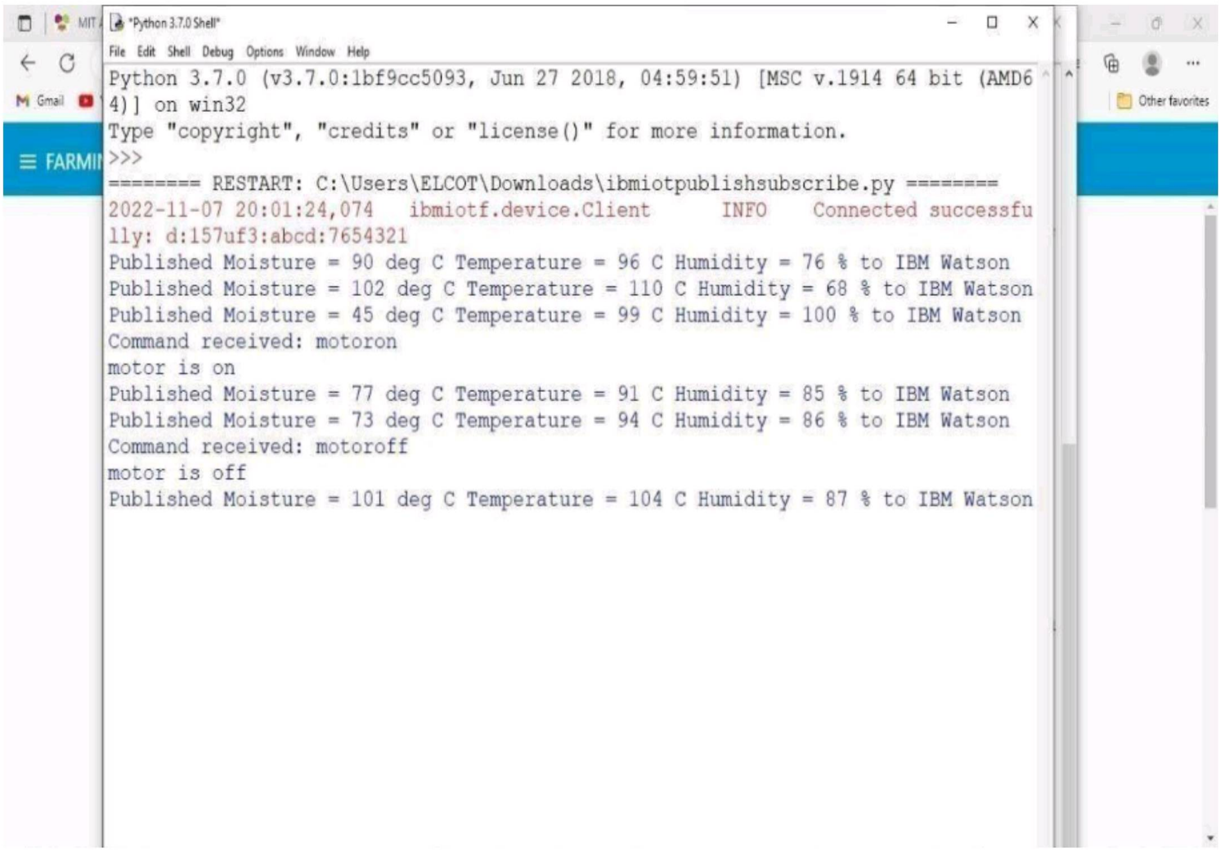
print ("Not connected to IoT F") time. Sleep (10)
device C li. command Callback = my Command Callback #
Disconnect the device and application from the cloud
device C li. Disconnect ()


ibmiotpublishsubscribe.py - C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py (3.7.0)
File Edit Format Run Options Window Help
Ln: 22 Col: 21

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


#Provide your IBM Watson Device Credentials
organization = "157uf3"
deviceType = "abcd"
deviceId = "7654321"
authMethod = "token"
authToken = "87654321"

# 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": authMe
        deviceCli = ibmiotf.device.Client(deviceOptions)
        #..............................................
```



```
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
```



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motor is off
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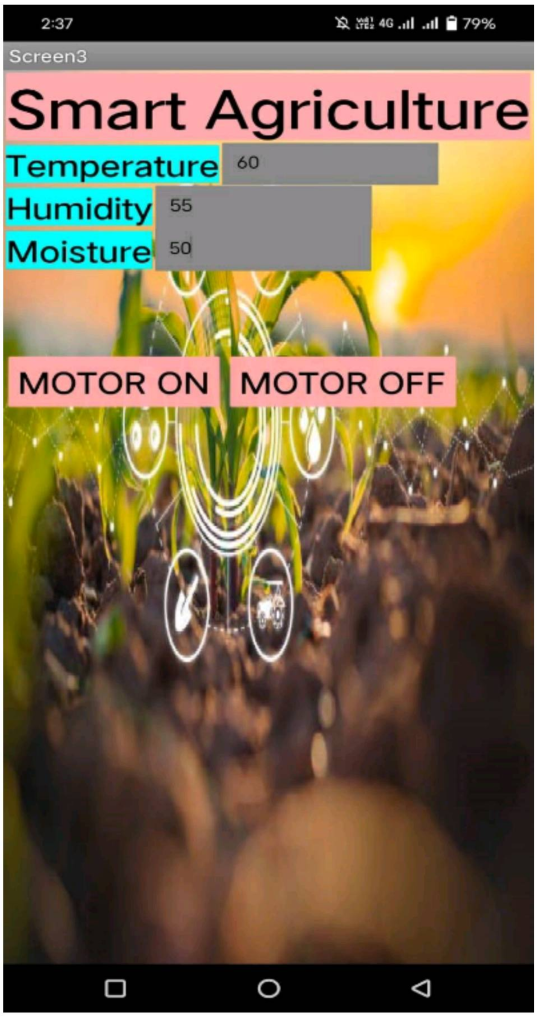


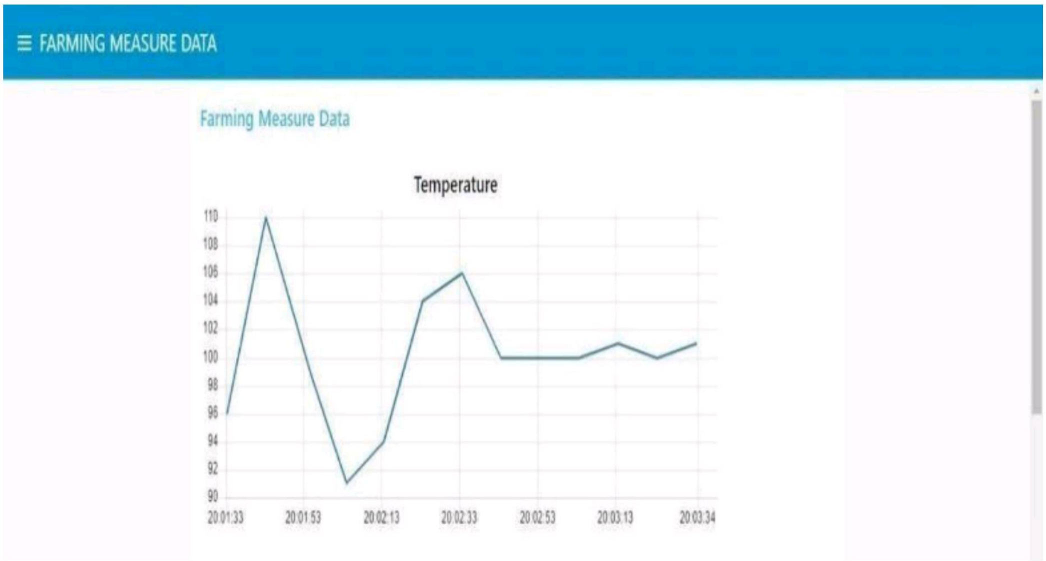
Screen3

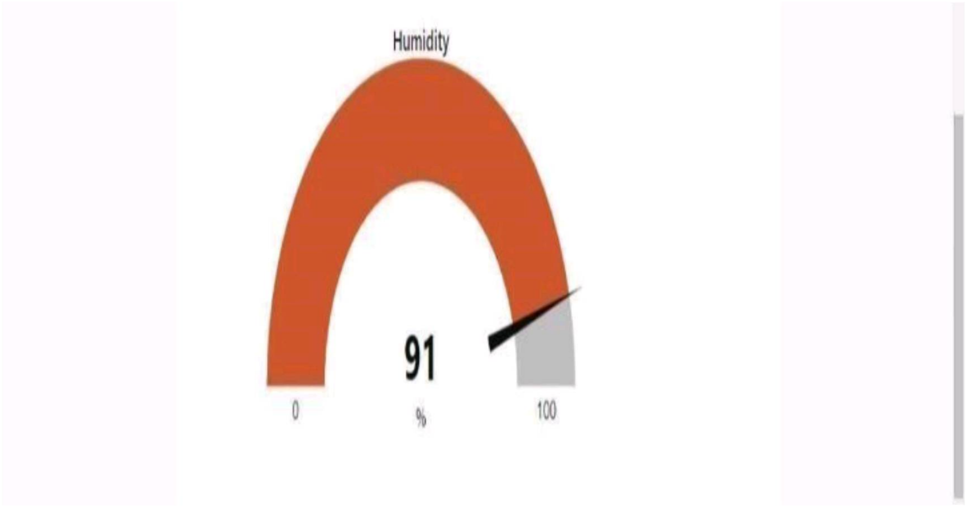
Smart Agriculture

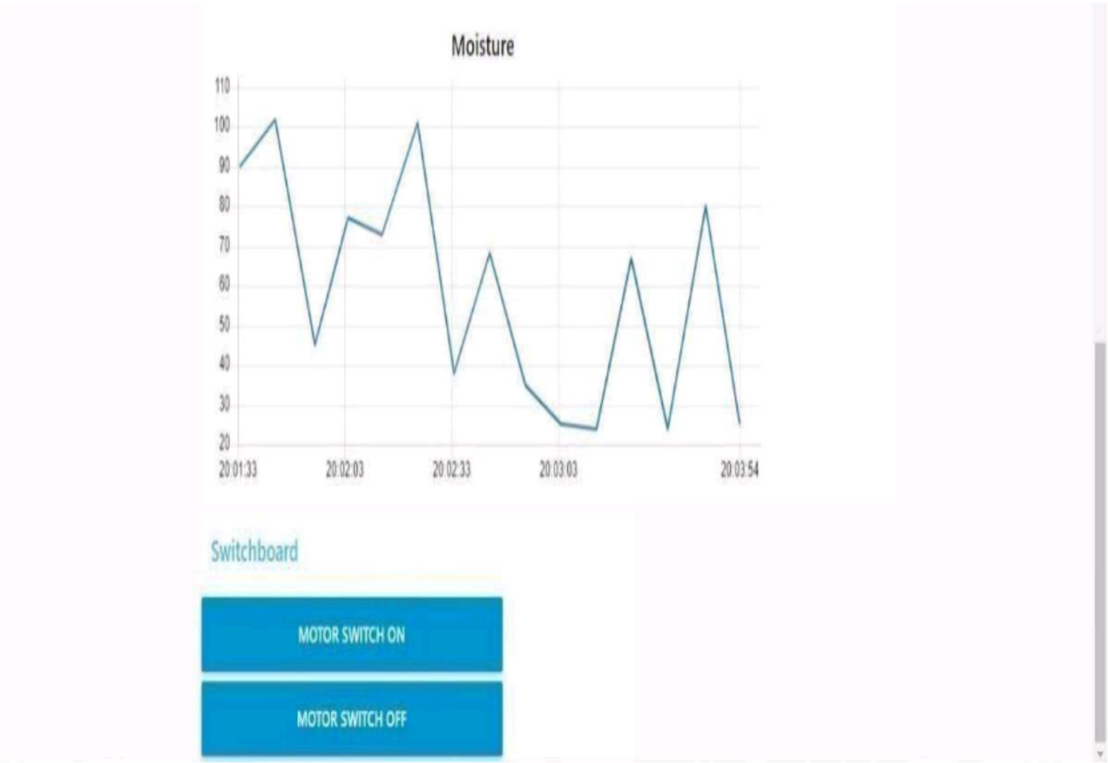
Temperature 60

Humidity 55

Moisture 50


≡ FARMING MEASURE DATA
Farming Measure Data
Temperature
110
108
106
104
102
100
98
96
94
92
90
20:01:33
20:01:53
20:02:13
20:02:33
20:02:53
20:03:13
20:03:34





Advantages:

- Farms can be monitored and controlled remotely.
- Increase in convenience to farmers.

- Less labor cost.
- Better standards of living.

Disadvantages:

- Lack of internet/connectivity issues.
- Added cost of internet and internet gateway infrastructure.
- Farmers wanted to adapt the use of Mobile App.

Conclusion:

Thus the objective of the project to implement an IOT system in order to help farmers to control and monitor their farms has been implemented successfully.