Smart Farmer-IOT Enabled Smart Farming Application

SPRINTDELIVERY–4

Receiving commands from IBM cloud using Python program

```python
importtime

import sys

import ibmiotf.application
import ibmiotf.device import
random
#Provide your IBM Watson Device
Credentials organization = "bnkhnl"
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:
```

```python
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 anevent
 of type "greeting" 10 times 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
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)
        #...........................................
```
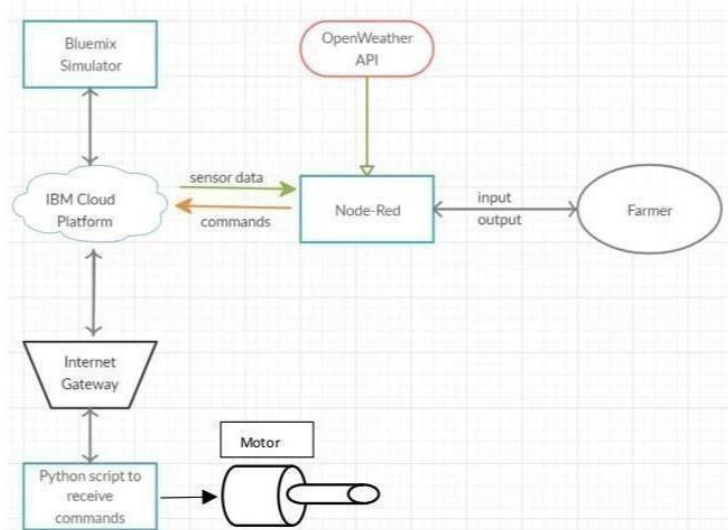
Ln: 22 Col: 21

```
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
```
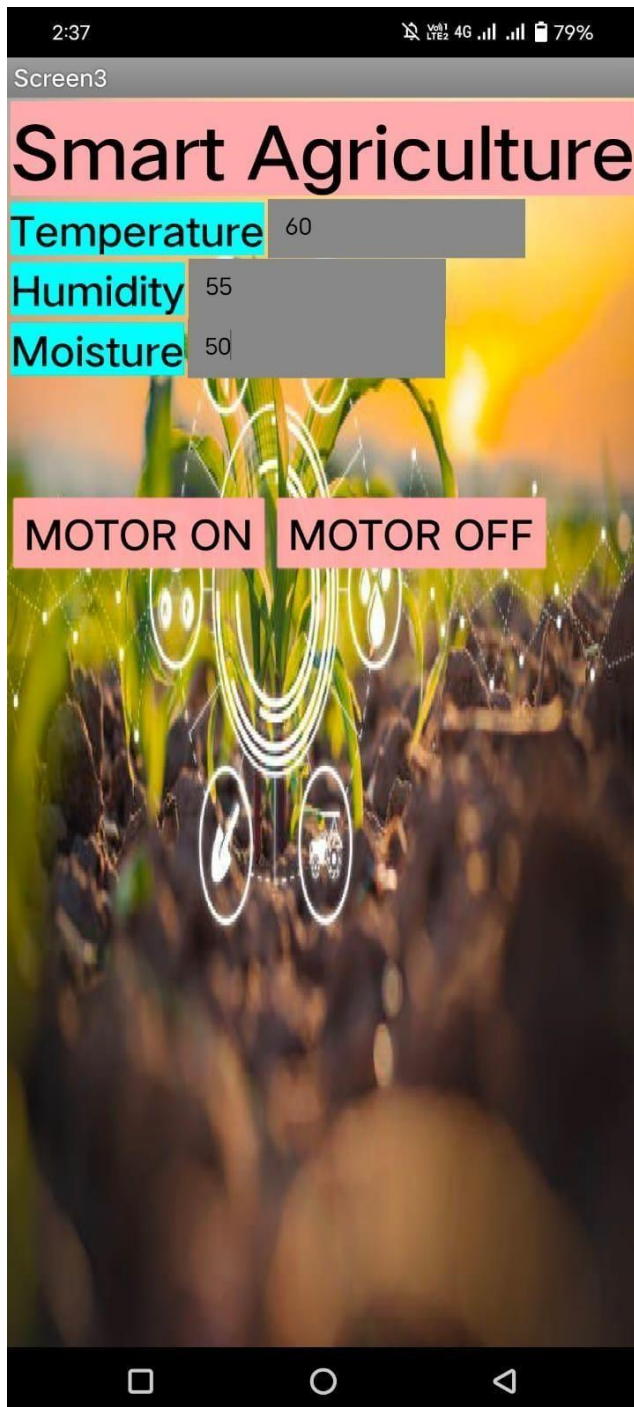
FARMIN
Gmail
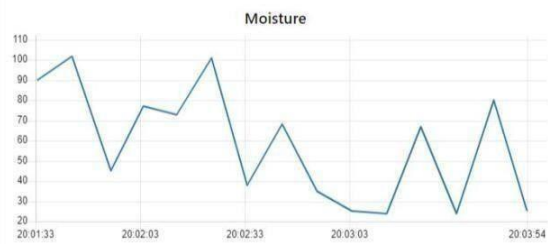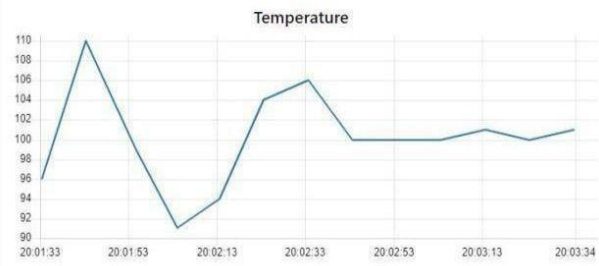Other favorites

6. Flow Chart

7. Observations & Results

Screen3

Smart Agriculture

Temperature 60

Humidity 55

Moisture 50

MOTOR ON   MOTOR OFF

Farming Measure Data

Temperature

Humidity

Moisture

Switchboard

MOTOR SWITCH ON

MOTOR SWITCH OFF

8. Advantages & Disadvantages 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. 9. 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.