SPRINT DELIVERY – 4

Team ID	PNT2022TMID47645
Project Name	IoT Enabled Smart Farming Application
Date	15 November 2022

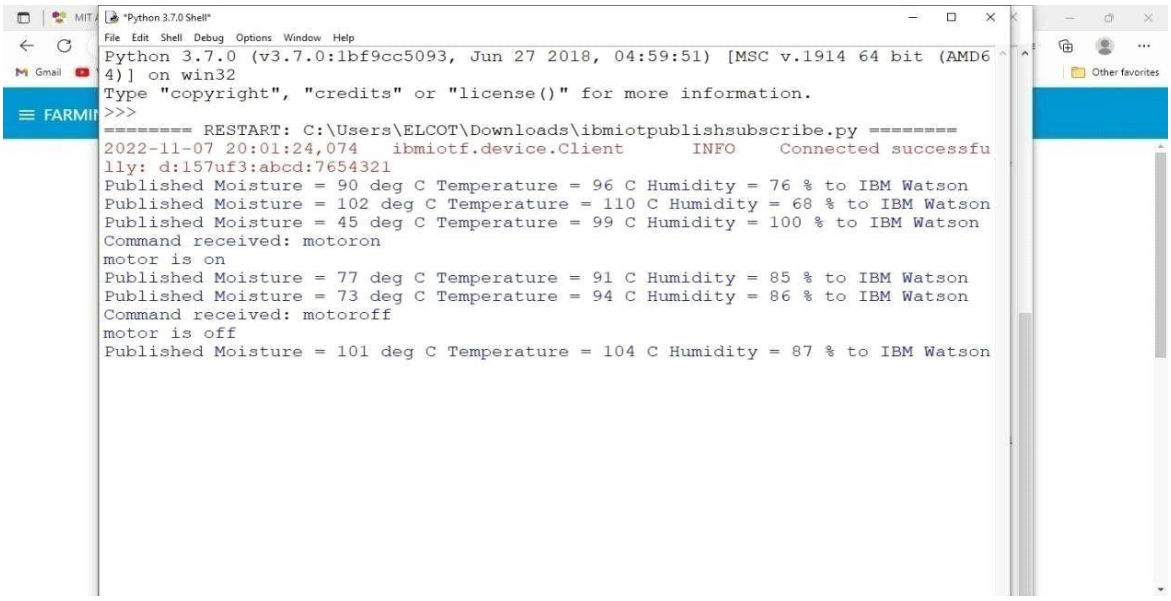
5.5 Receiving commands from IBM cloud using Python program

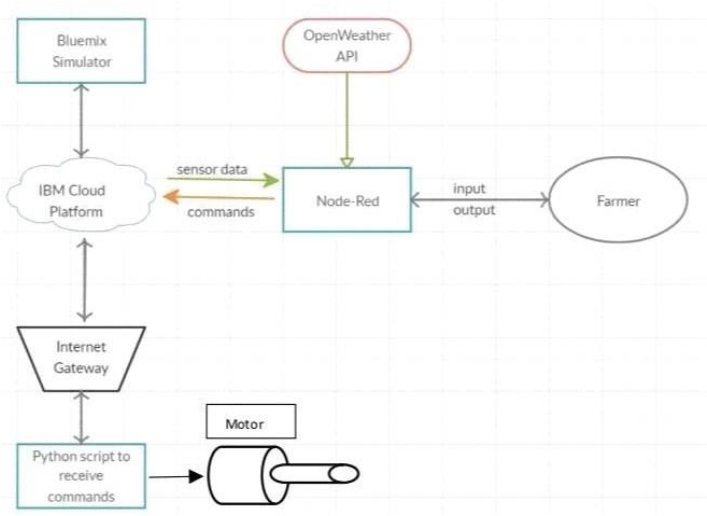
```
import
time
import
sys
import
ibmiotf.applicatio
n import
ibmiotf.device
importrandom
```

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

# Initialize GPIO
def    myCommandCallback(cmd):                          print("Command received: %s" % cmd.dat
       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()
# 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
fromDHT11
temp=random.randint(90,110)
Humid=random.randint(60,100)
Mois=random. Randint(20,120)
   data = { 'temp' : temp,
'Humid': Humid ,‘Mois’:
Mois}
        #print
data                        defmyOnPublishCallback(
):
          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()
```

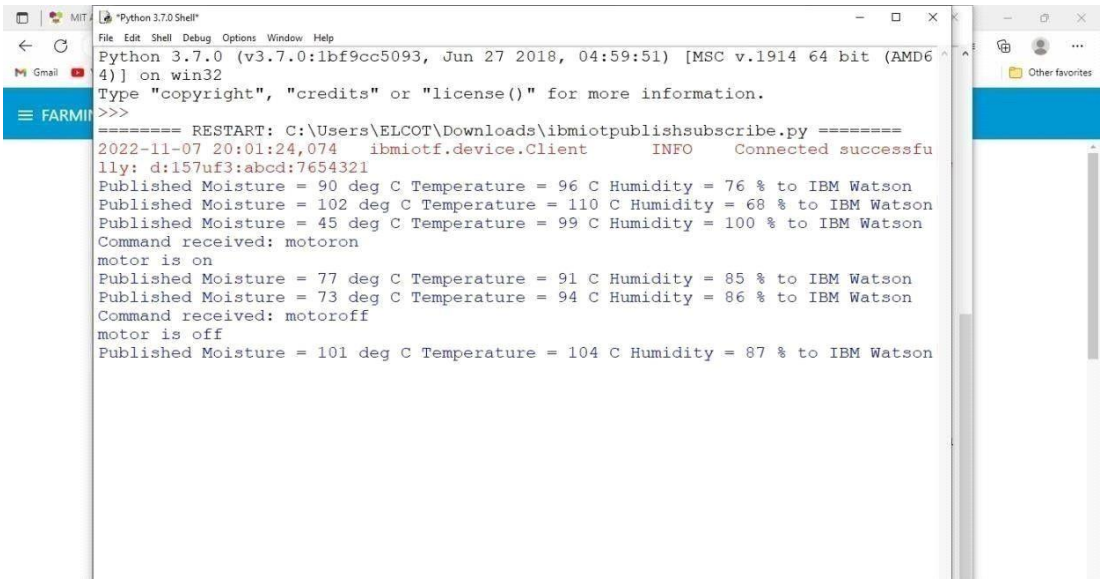

ibmiotpublishsubscribe.py - C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py (3.7.0)
File Edit Format Run Options Window Help
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "157uf3"
deviceType = "abcd"
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

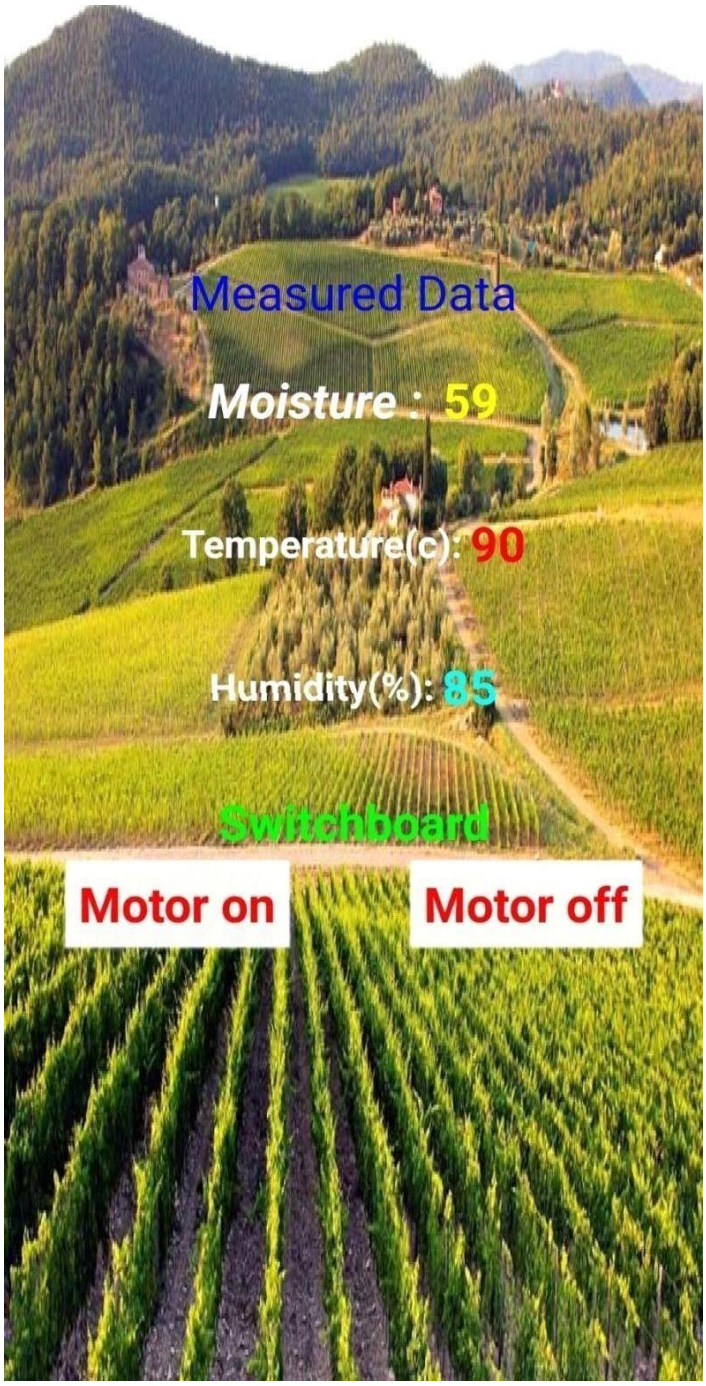

"Python 3.7.0 Shell"
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py ========
2022-11-07 20:01:24,074 ibmiotf.device.Client INFO Connected successfully: 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
Gmail
Other favorites

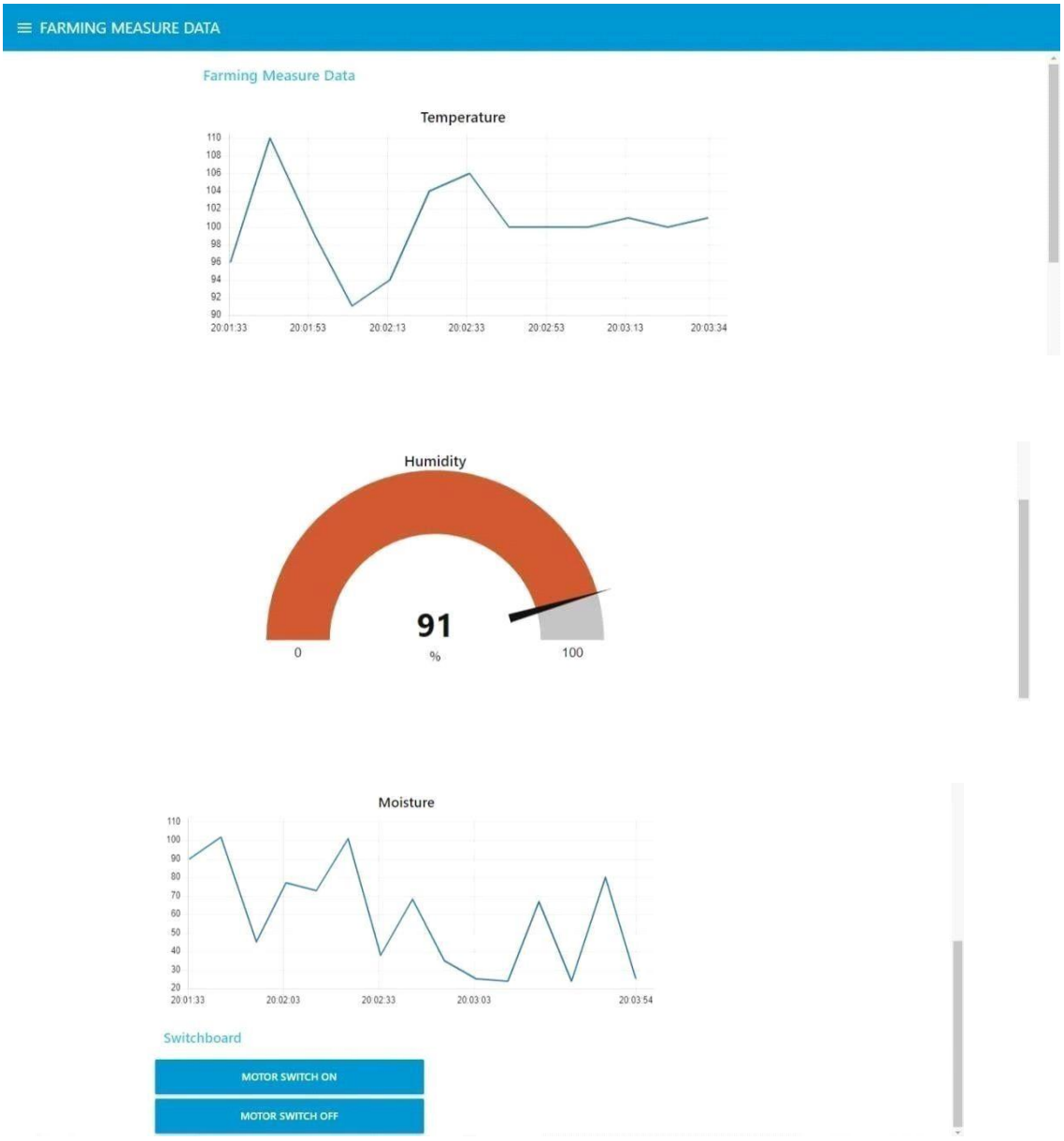
- 

Flow Chart

- Observations & Results




Measured Data
Moisture : 59
Temperature(c): 90
Humidity(%): 85
Switchboard
Motor on
Motor off



- 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.