IOT ENABLED SMART FARMING APPLICATION

SPRINT- 4

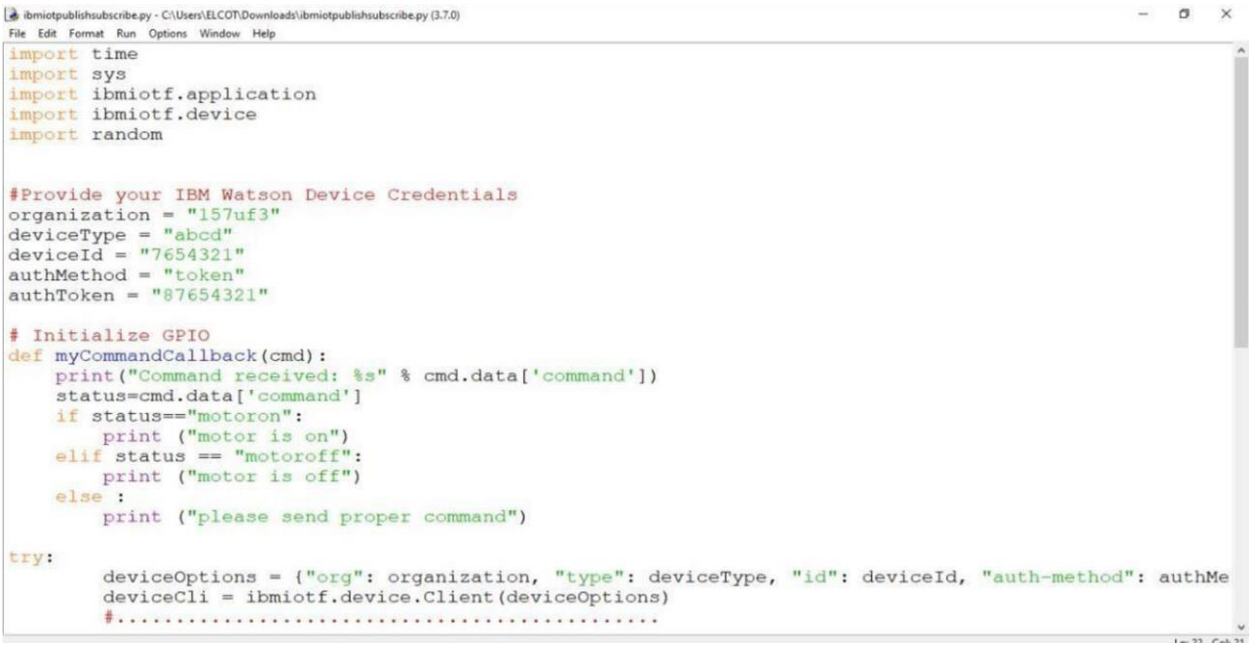
Date	12 NOVEMBER 2022
Team ID	PNT2022TMID52223
Project Name	Project – Smart Farmer-IoT Enabled smart Farming Application

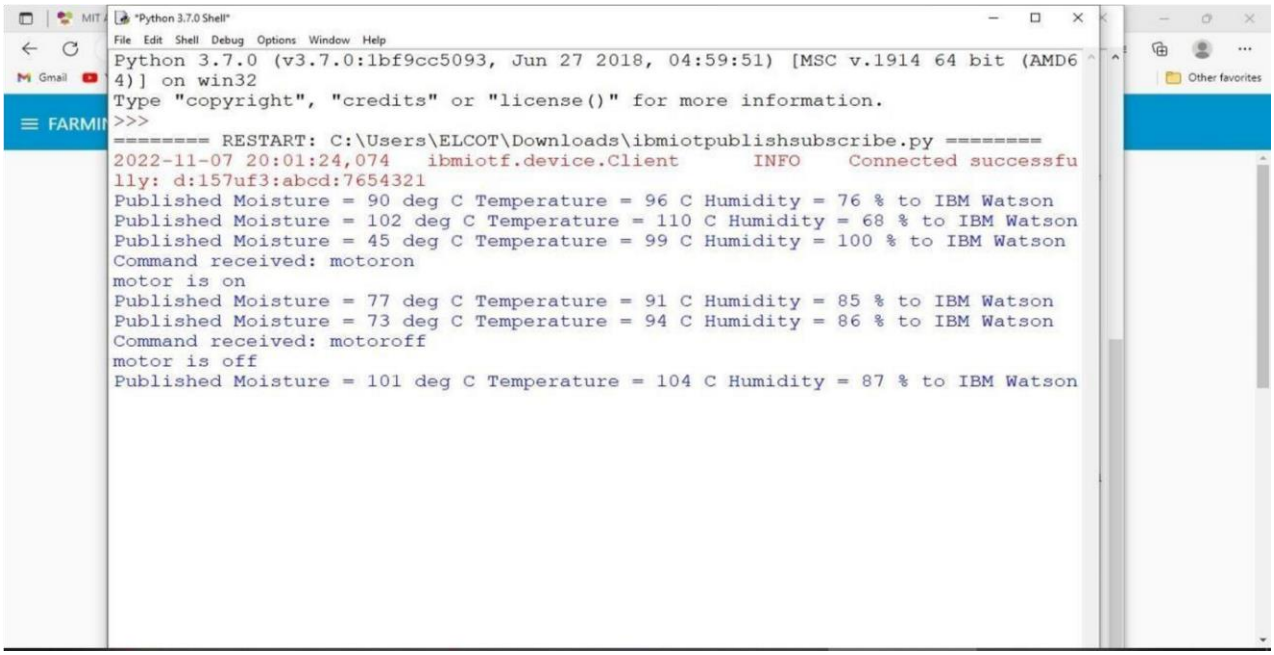
5.5 Receiving commands from IBM cloud using Python program

```
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,
```

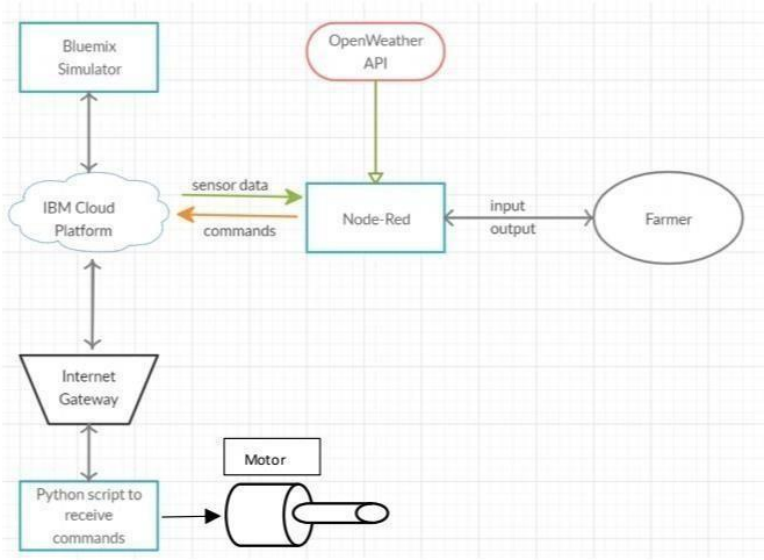
```
"auth-method": authMethod, "auth-token": authToken}

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 an
event 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()

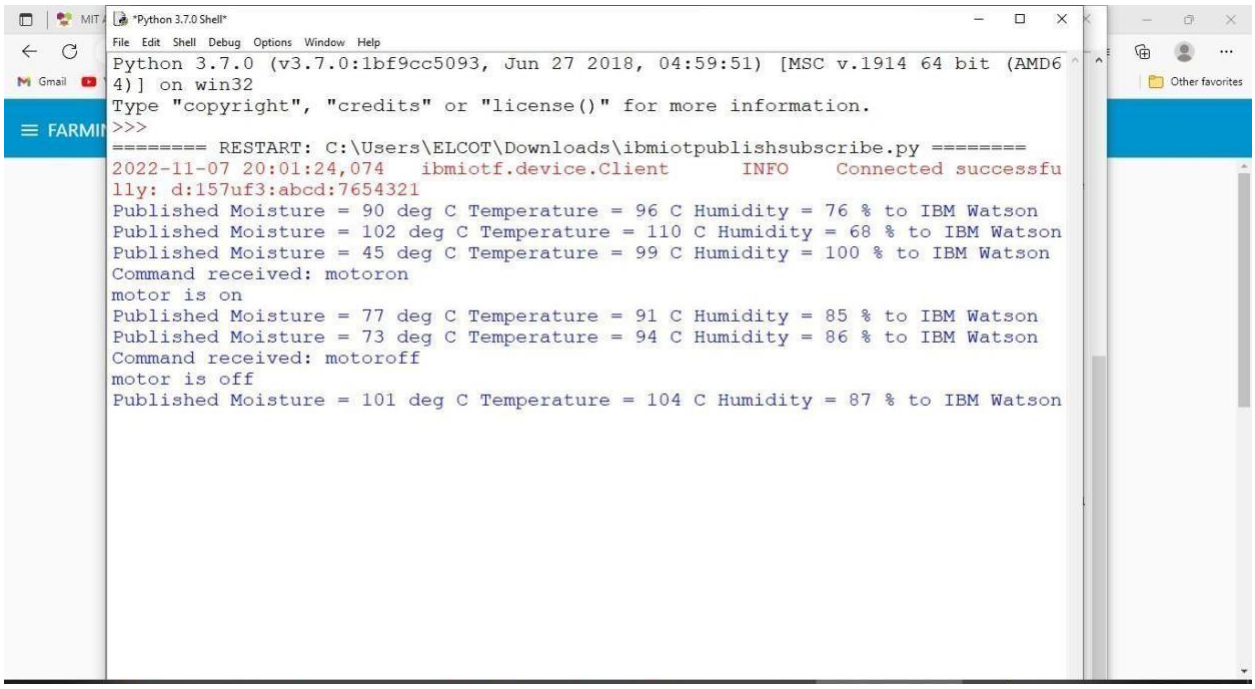


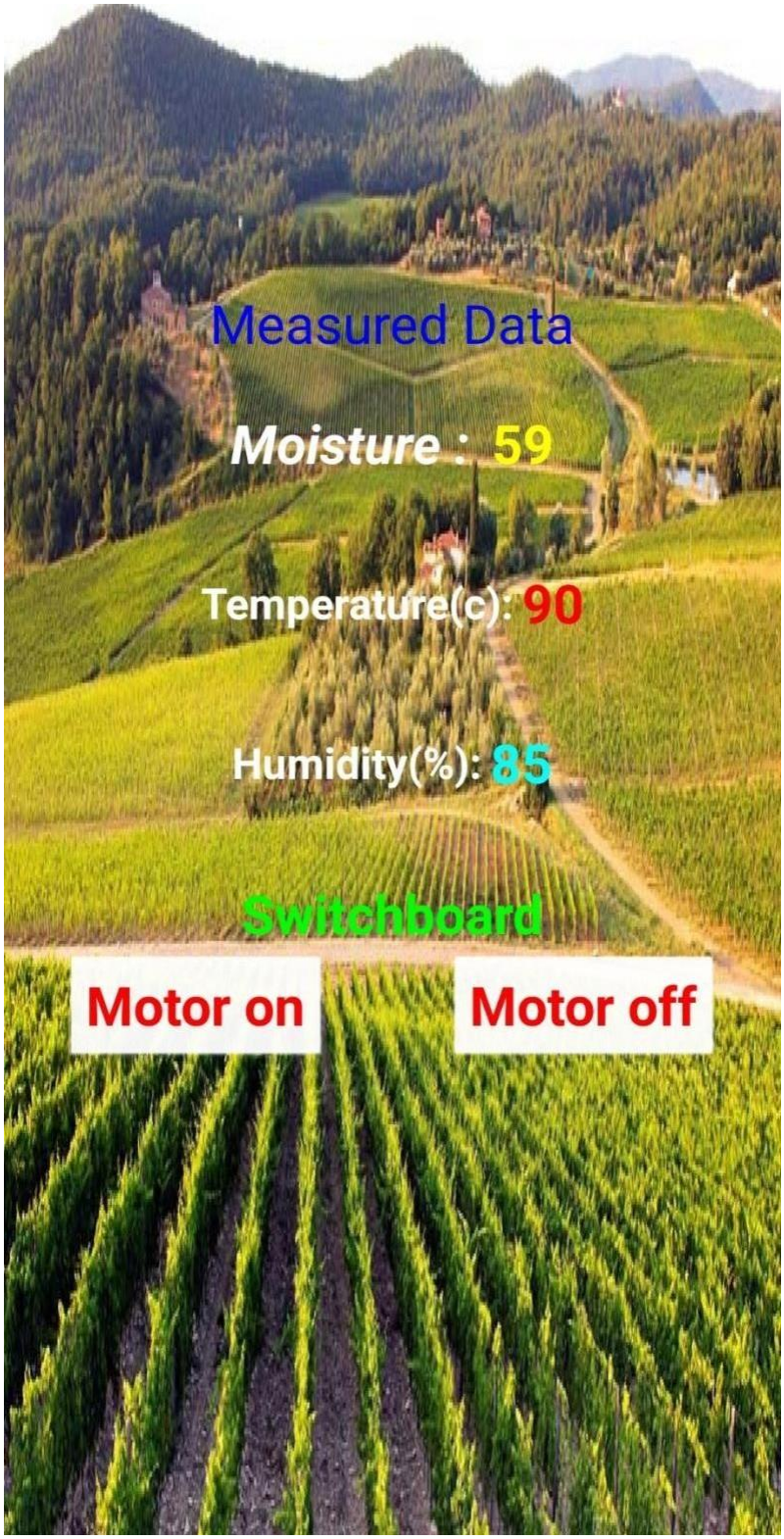


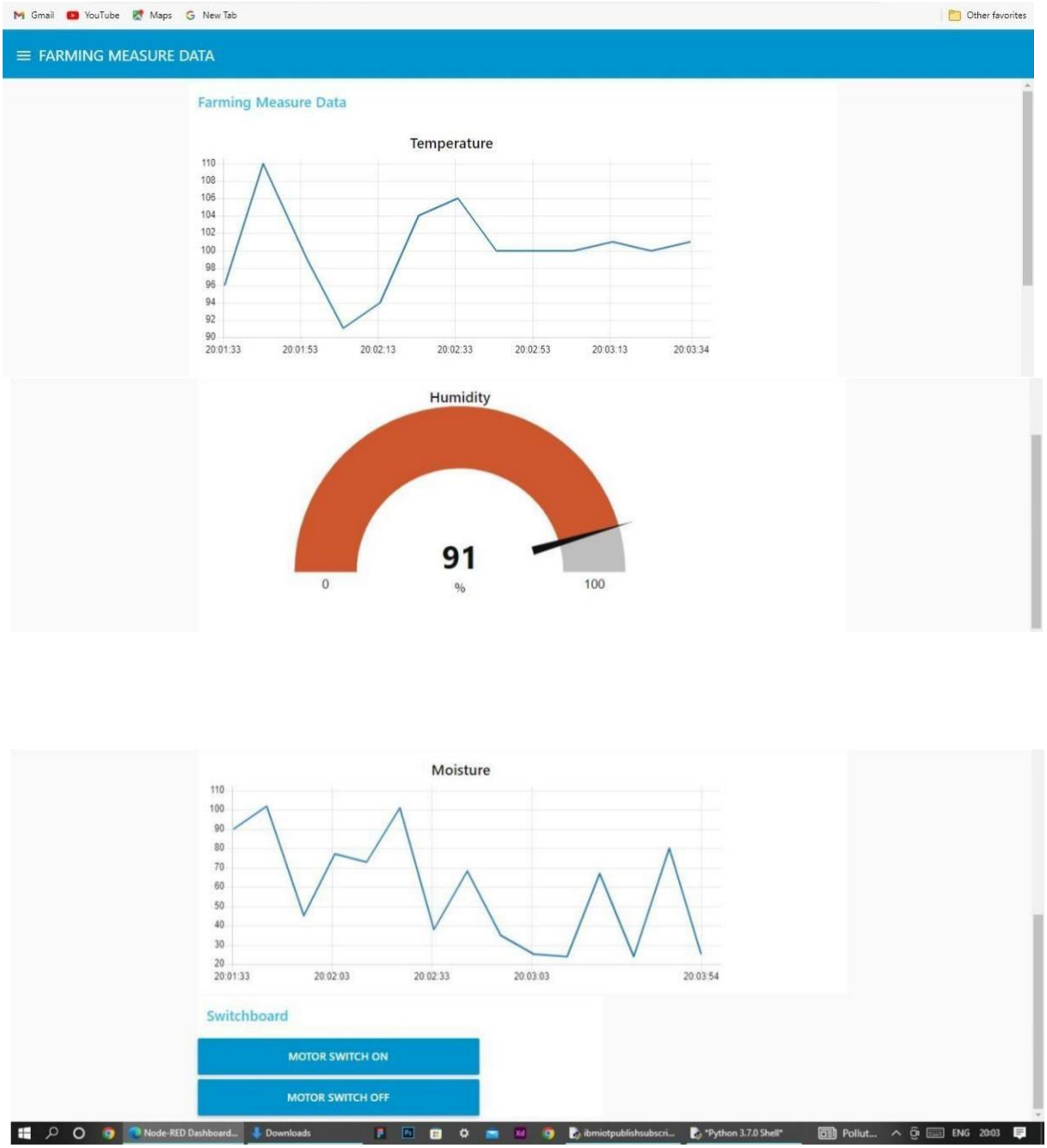
6.Flow Chart



7.Observations & Results




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

10.Bibliography

IBM cloud reference: https://cloud.ibm.com/

OpenWeather : https://openweathermap.org/