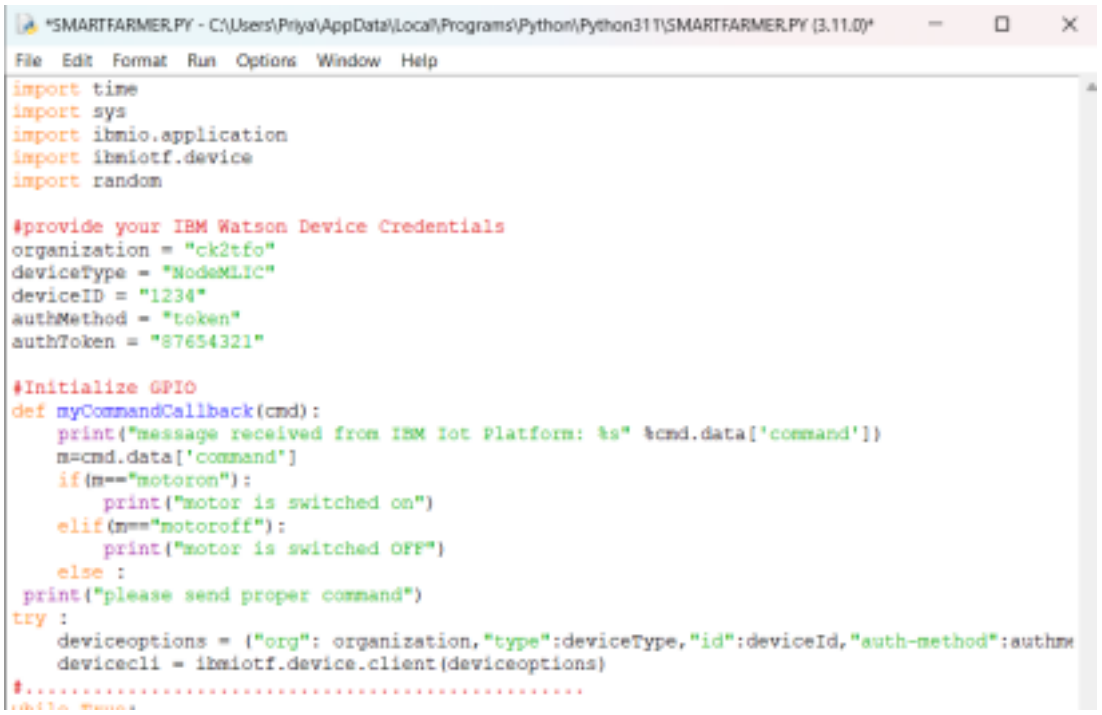
SPRINT 4

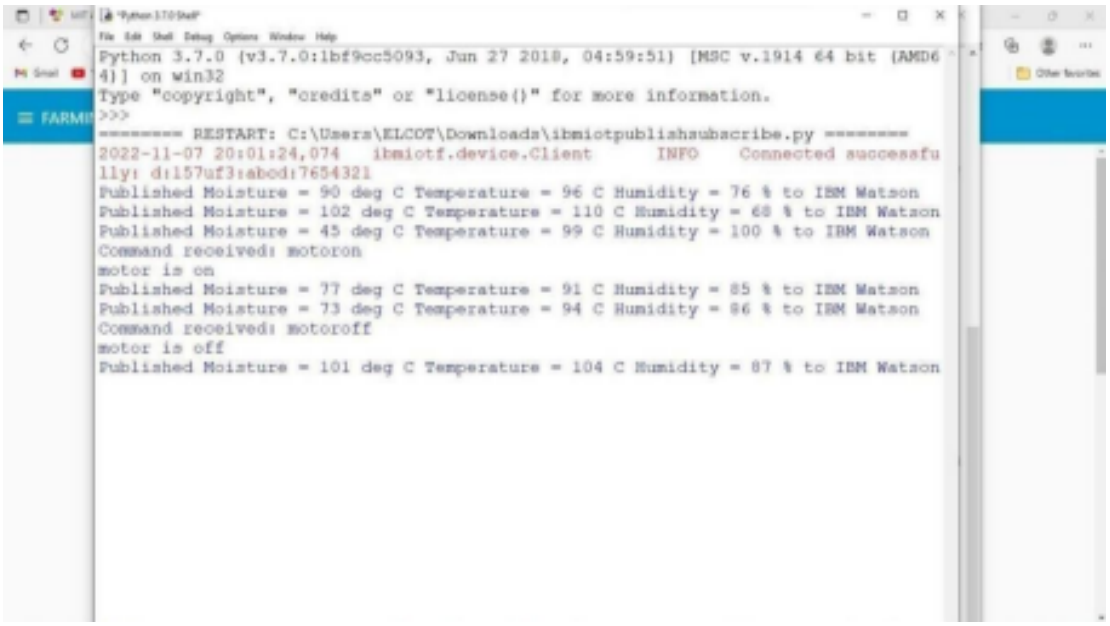
Date	16 NOVEMBER 2022
Team ID	PNT2022TMID02143
Project Name	Smart Farmer-IoT Enabled Smart Farming Application

RECEIVING COMMANDS FROM IBM CLOUD USING PYTHON PROGRAM

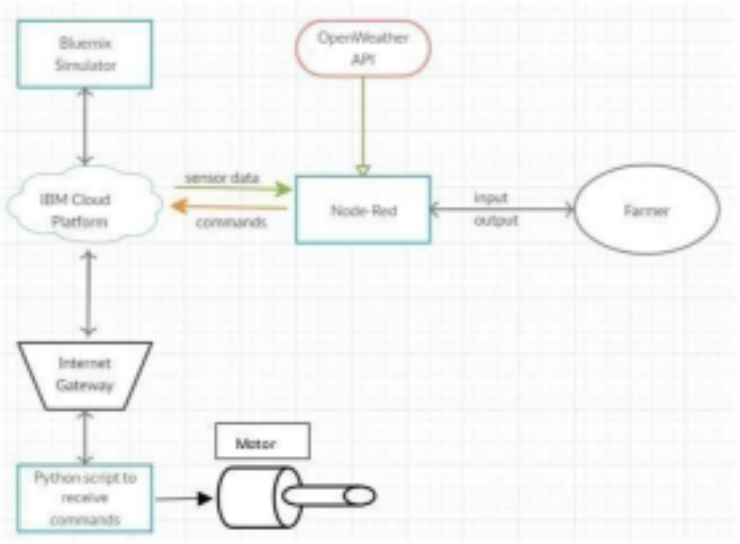
```
import time import
sys
import ibmiotf.application
import ibmiotf.device import
random

# Provide your IBM Watson Device Credentials
"orgId": "ck2tfo",
"typeId": "NodeMLIC",
"deviceId": "1234"
"token" : "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()
```

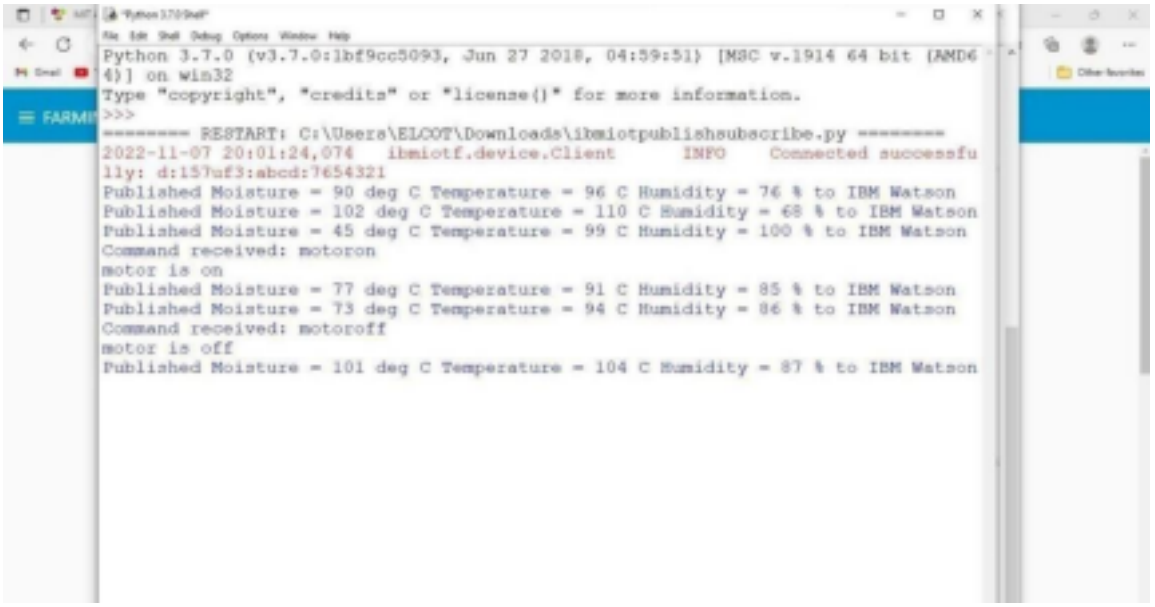

SMARTFARMER.PY - C:\Users\Priya\AppData\Local\Programs\Python\Python311\SMARTFARMER.PY (3.11.0)
File Edit Format Run Options Window Help
import time
import sys
import ibmio.application
import ibmiotf.device
import random
#provide your IBM Watson Device Credentials
organization = "ck2tfo"
deviceType = "NodeMLIC"
deviceID = "1234"
authMethod = "token"
authToken = "87654321"
#Initialize GPIO
def myCommandCallback(cmd):
print("message received from IBM Iot Platform: %s" %cmd.data['command'])
m=cmd.data['command']
if(m=="motoron"):
print("motor is switched on")
elif(m=="motoroff"):
print("motor is switched OFF")
else :
print("please send proper command")
try :
deviceoptions = {"org": organization,"type":deviceType,"id":deviceId,"auth-method":authm
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:abod: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 :

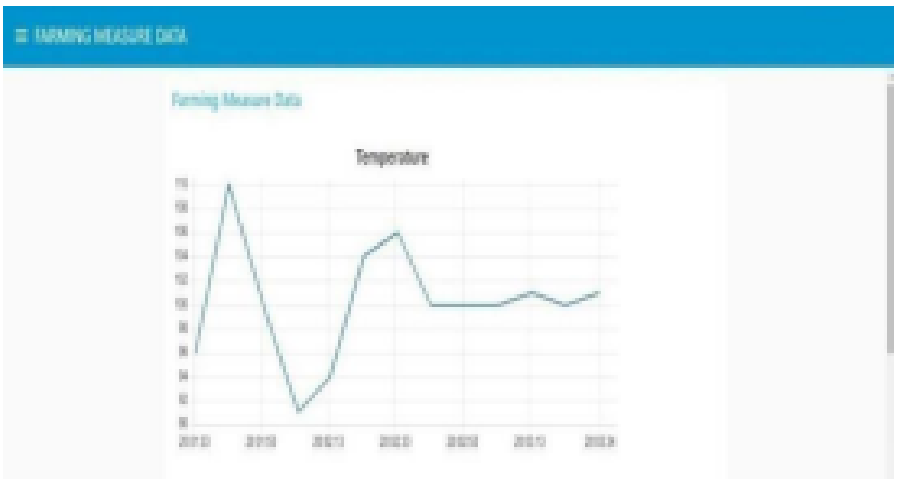


OBSERVATION AND RESULT :

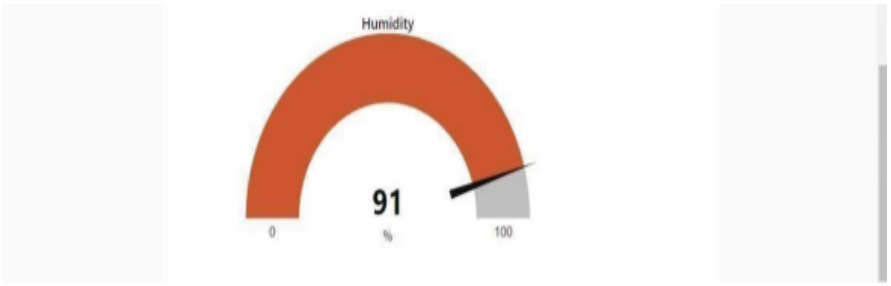



Screen3
Smart Agriculture
Temperature
60
Humidity
95
Moisture
90
MOTOR ON
MOTOR OFF

TEMPERATURE



HUMIDITY



MOISTURE

ADVANTAGES AND 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.

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.

BIBLIOGRAPHY

IBM cloud reference: https://cloud.ibm.com/
IoT simulator : https://watson-iot-sensor-simulator.mybluemix.net/
OpenWeather : https://openweathermap.org/