Smart Farmer-IOT Enabled Smart Farming Application

SPRINT DELIVERY- 4

TITLE	Smart Farmer-IOT Enabled Smart Farming Application
DOMAIN NAME	INTERNET OF THINGS
TEAM ID	PNT2022TMID21357

Receiving commands from IBM cloud using Python program

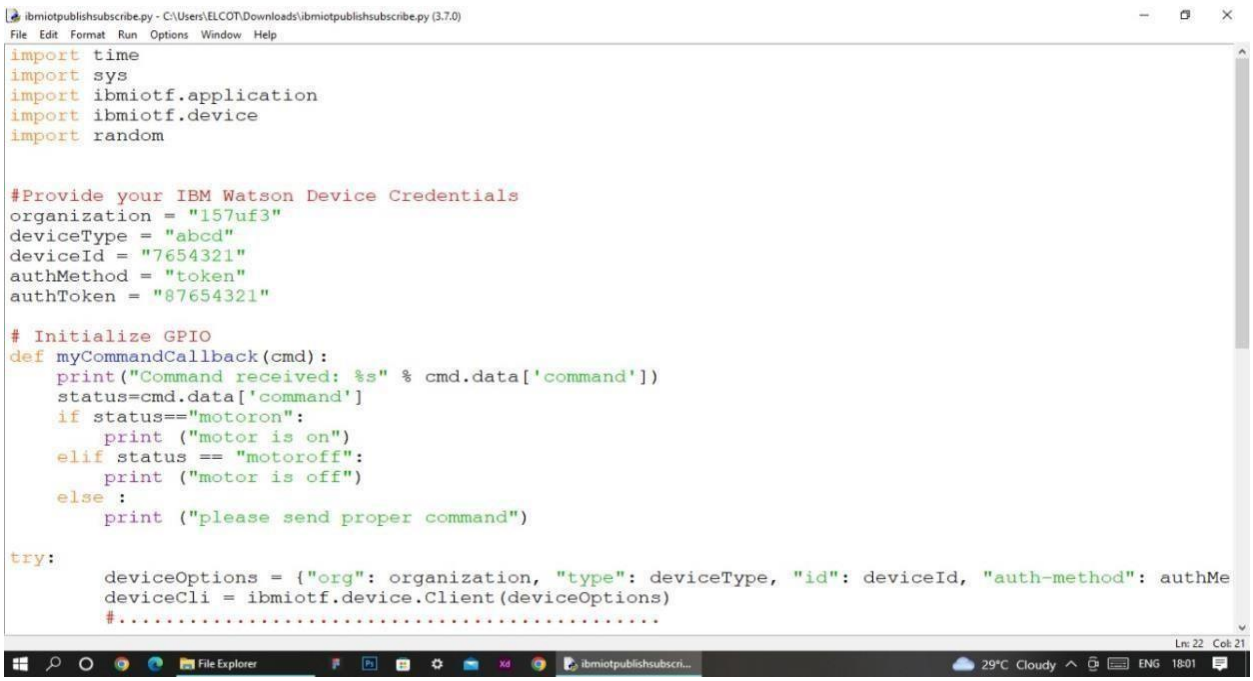
```
 import time import sys
import
ibmiotf.application
import ibmiotf.device import random

#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
:
```

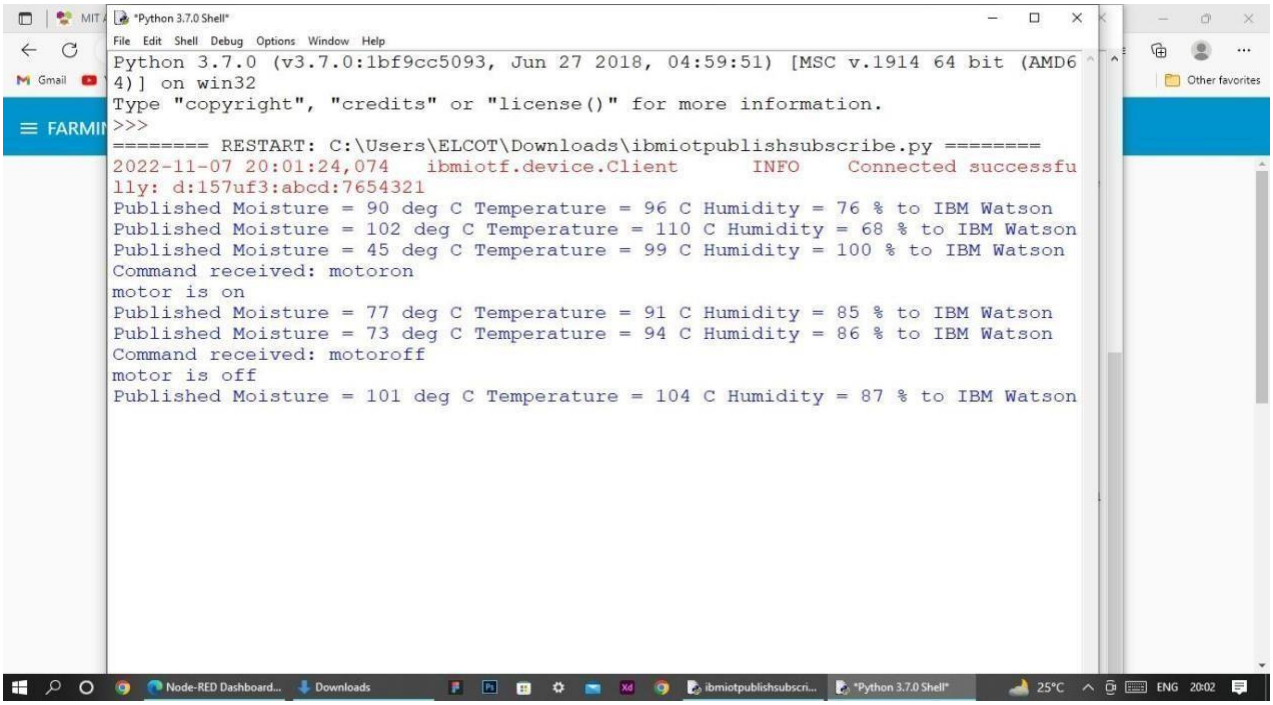
```
        print ("please send proper command")


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 #

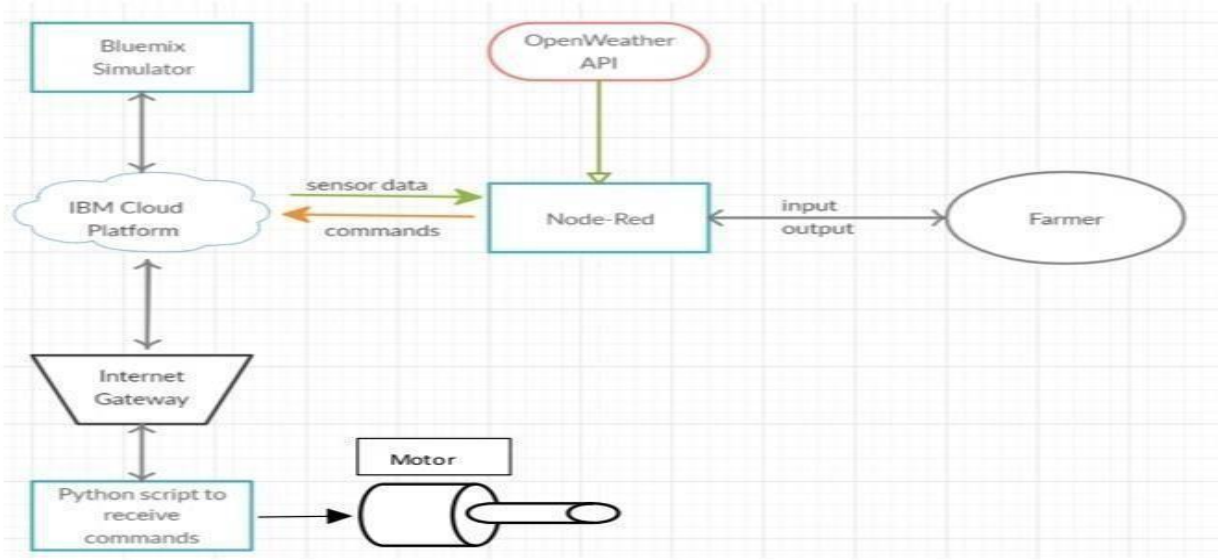
Disconnect the device and application from the cloud

deviceCli.disconnect()

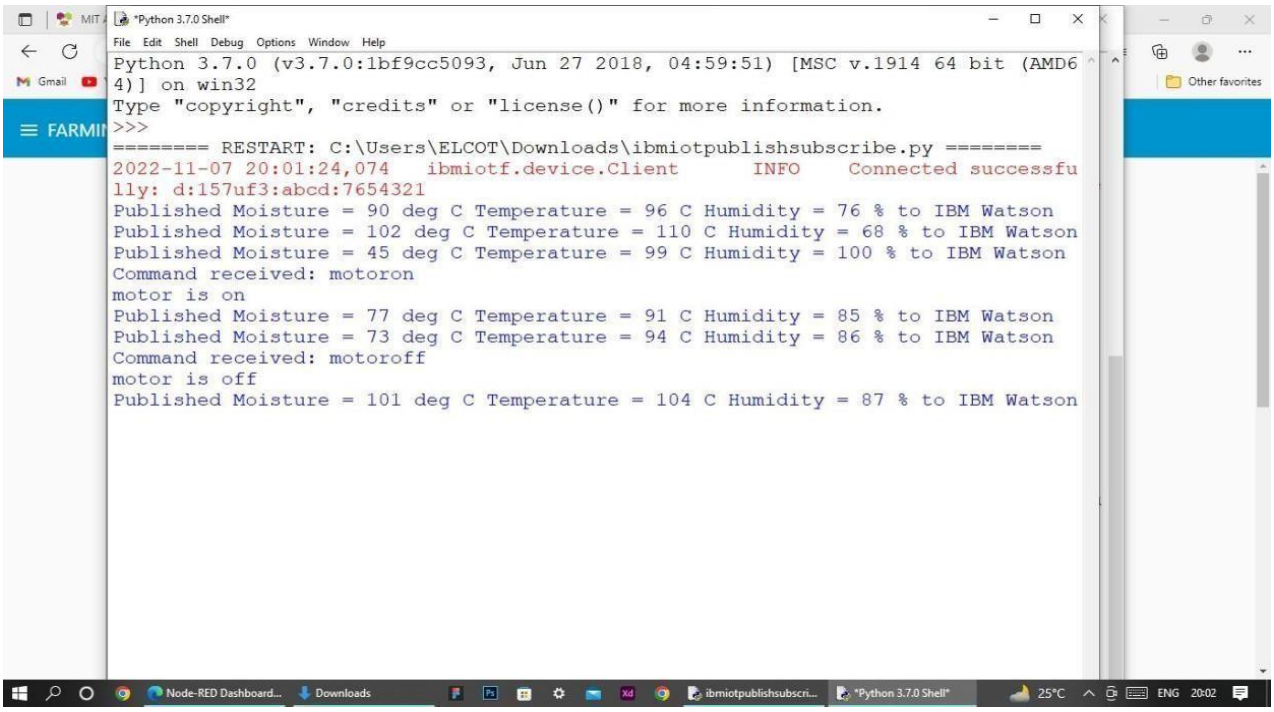


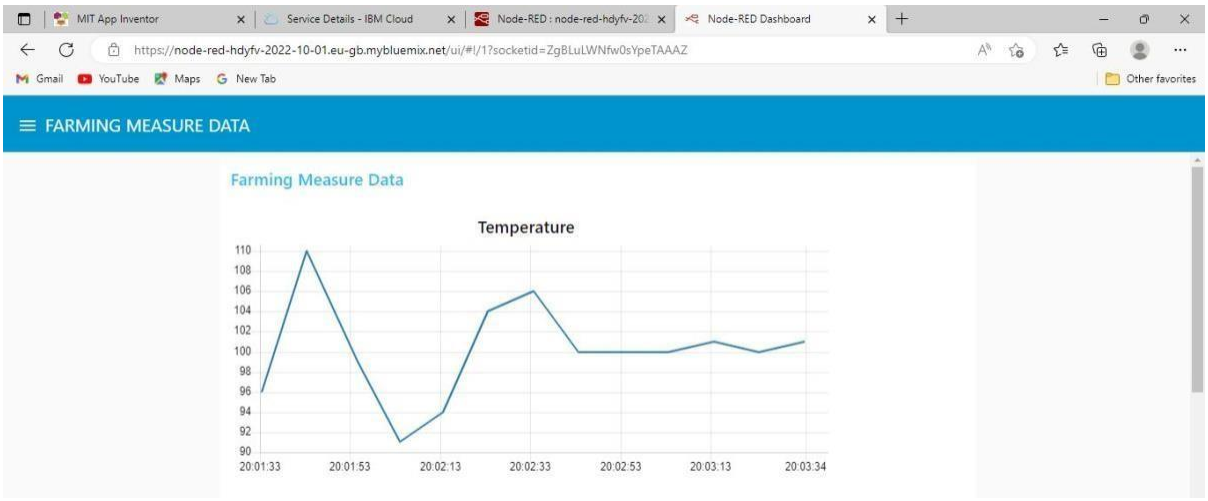


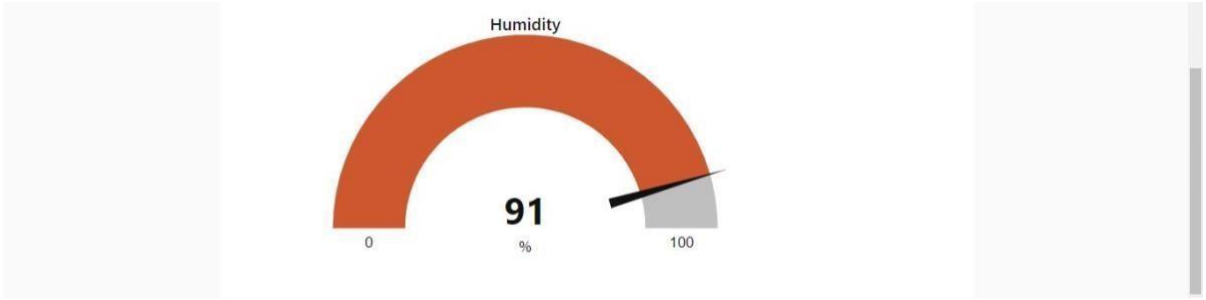
Flow Chart

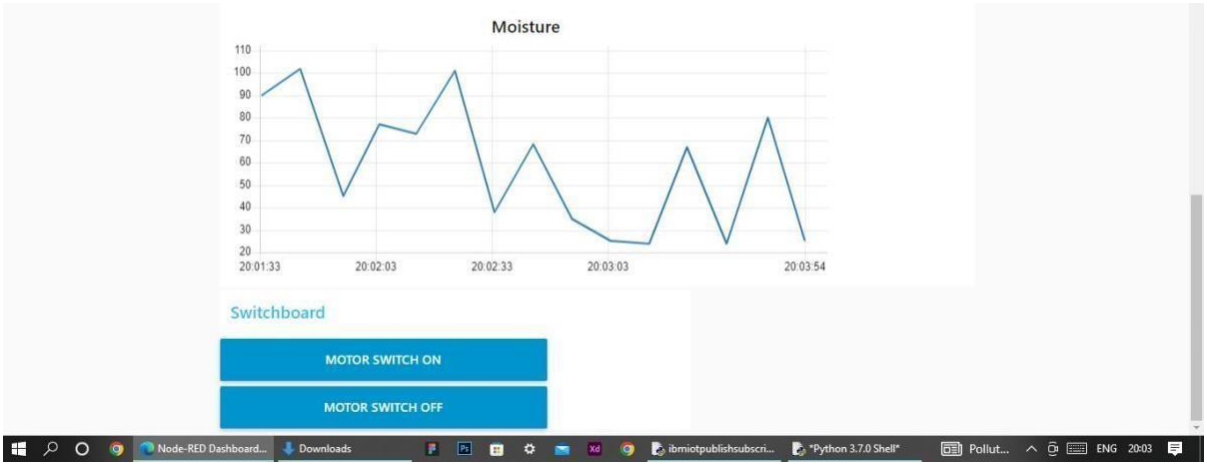


Observations & Results









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.

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.