TEAM ID PNT2022TMID34190

IOT ENABLED SMART FARMING APPLICATION

SPRINT DELIVERY – 4

Receiving commands from IBM cloud using Python program

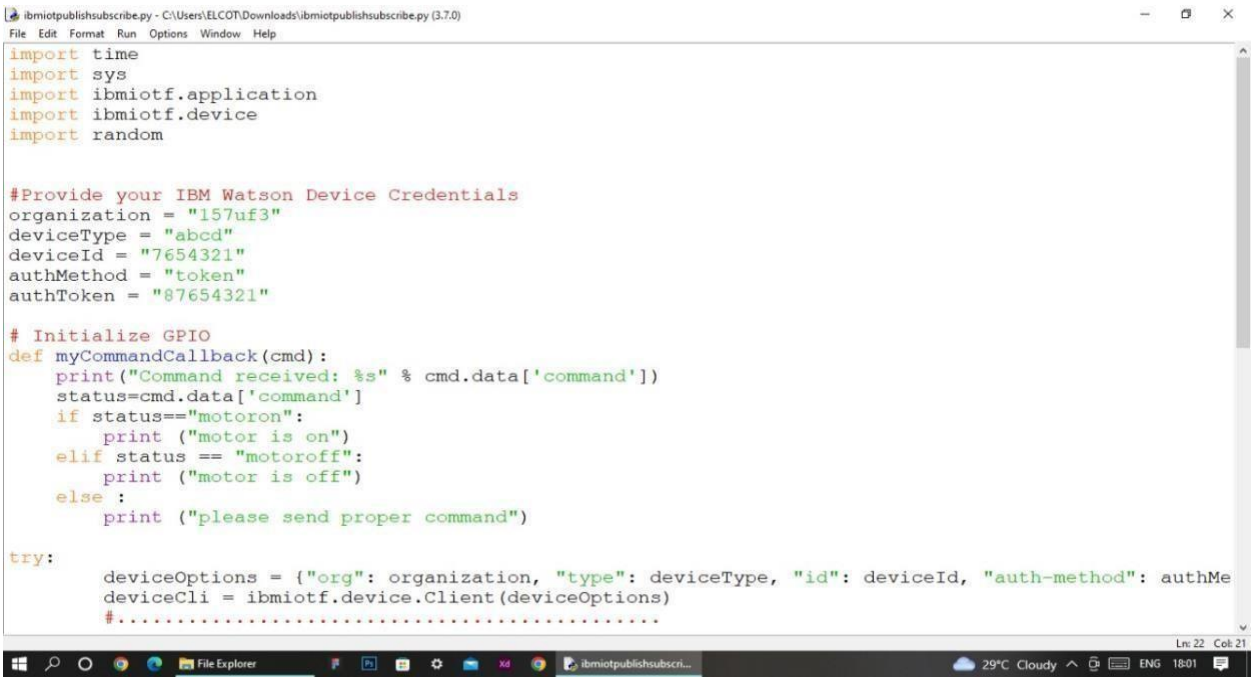
```
import time import sys
import ibmiotf.application  import
ibmiotf.device import random


#Provide your IBM Watson Device Credentials
organization = "0hzydu"
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:
```

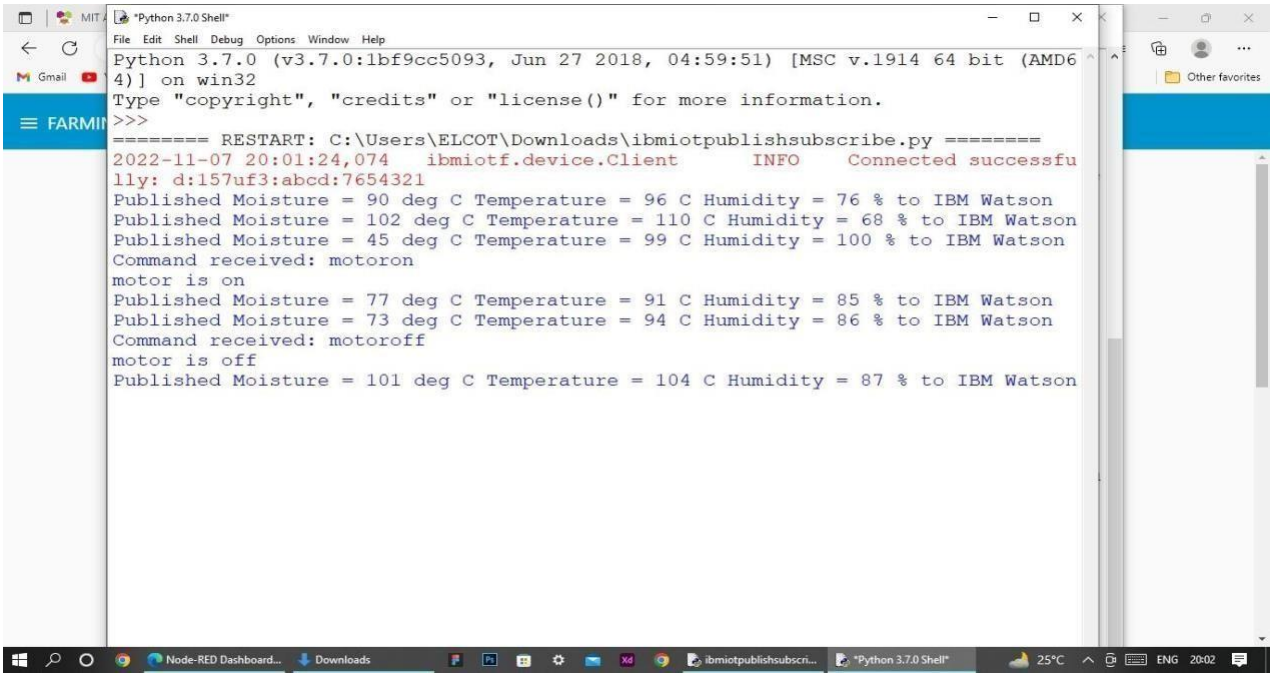
```
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId,
"auth-method": authMethod, "auth-token": authToken}

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")

 uccess = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)

 if not success:

       print("Not connected to IoTF")        time.sleep(10)
```

deviceCli.commandCallback = myCommandCallback #

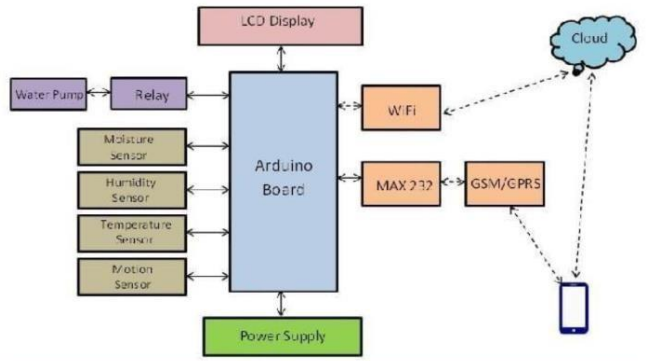
Disconnect the device and application from the cloud

deviceCli.disconnect()

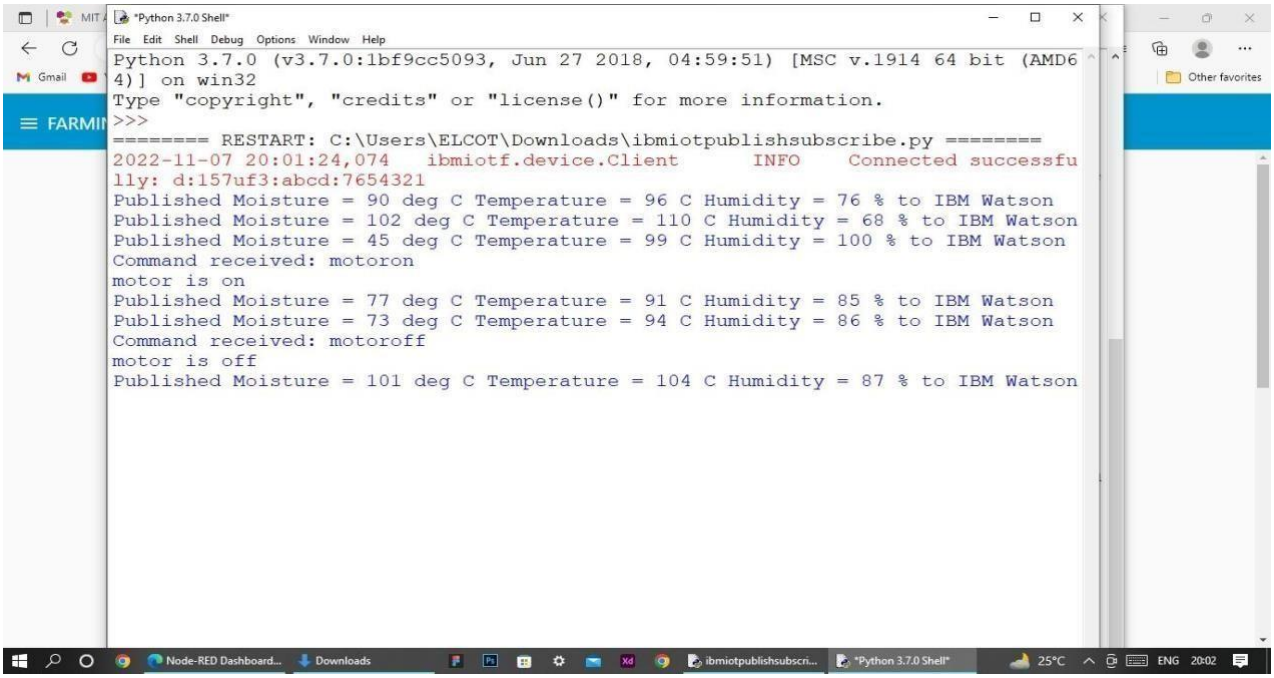


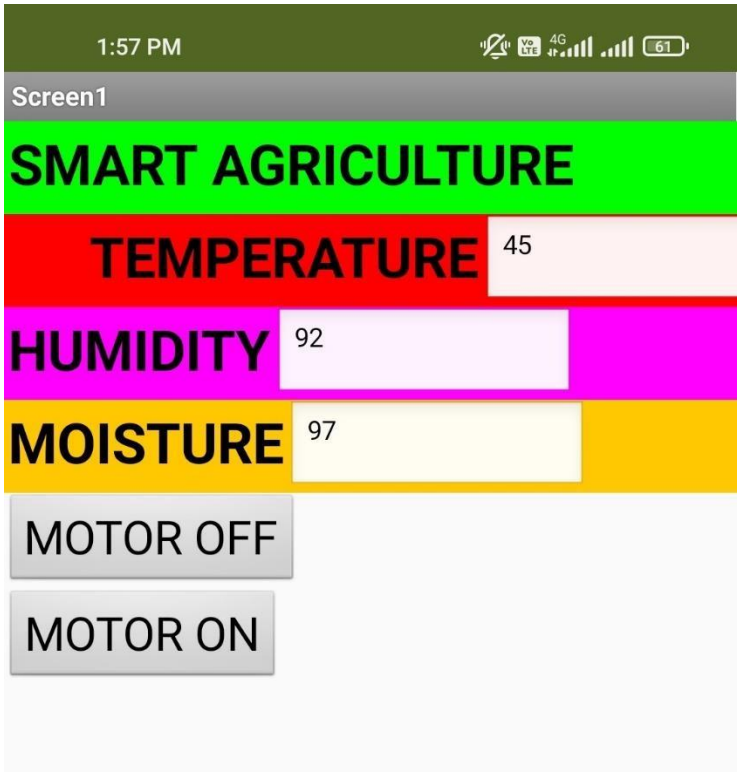


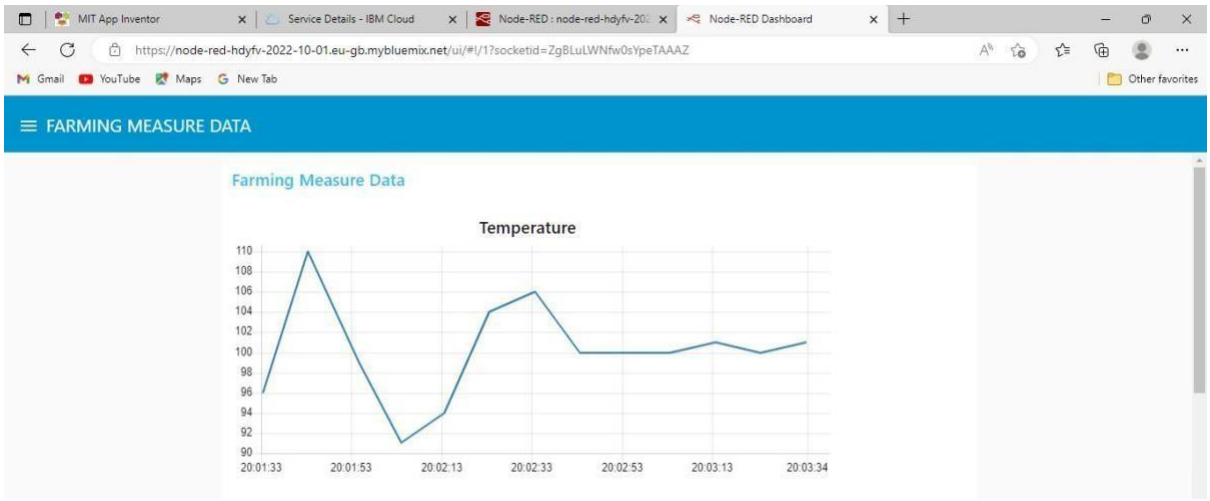
Flow Chart

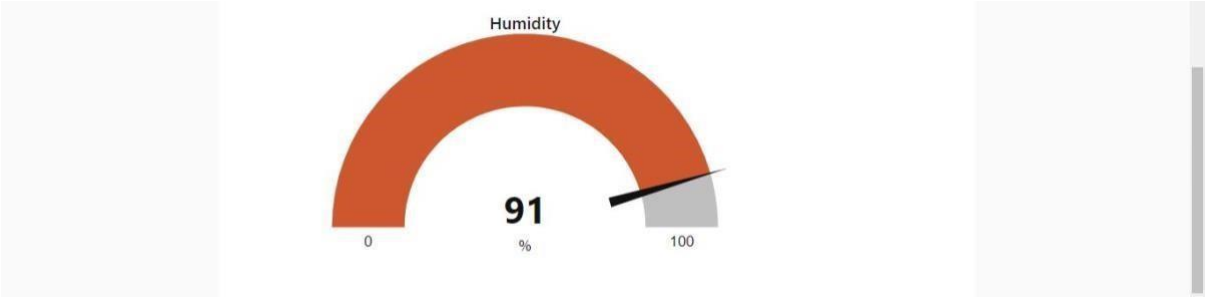


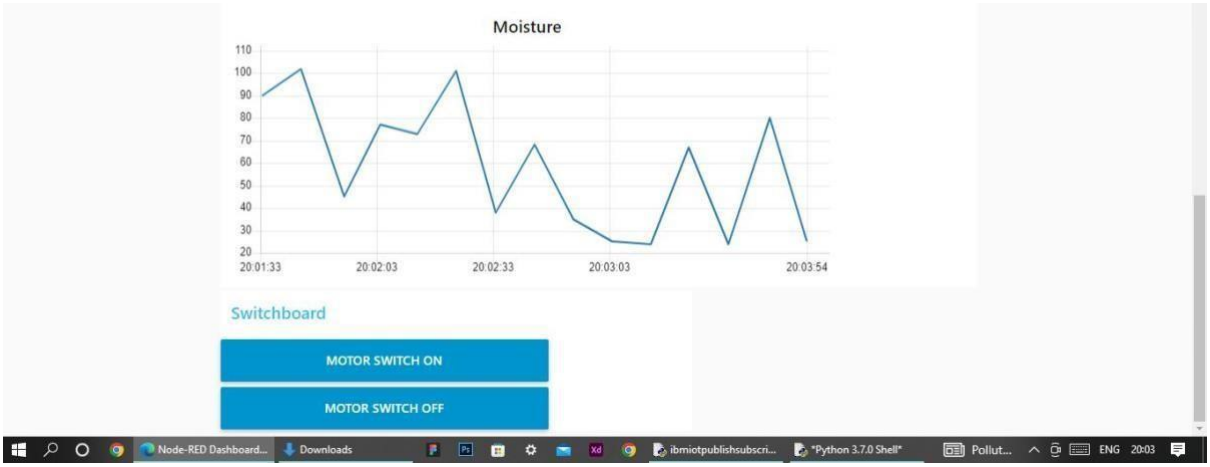
Observations & Results




1:57 PM
Screen1
SMART AGRICULTURE
TEMPERATURE
45
HUMIDITY
92
MOISTURE
97
MOTOR OFF
MOTOR ON


MIT App Inventor
Service Details - IBM Cloud
Node-RED : node-red-hdyfv-20
Node-RED Dashboard
https://node-red-hdyfv-2022-10-01.eu-gb.mybluemix.net/ui/#!/1?socketid=ZgBLuLWNfw0sYpeTAAAZ
Gmail
YouTube
Maps
New Tab
Other favorites
FARMING MEASURE DATA
Farming Measure Data
Temperature
110
108
106
104
102
100
98
96
94
92
90
20:01:33
20:01:53
20:02:13
20:02:33
20:02:53
20:03:13
20:03:34


Humidity
91
%
0
100



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.