DR. MAHALINGAM COLLEGE OF ENGINEERING AND TECHNOLOGY,POLLACHI

Department of Computer Science and Engineering

Smart Farmer-IOT Enabled Smart FarmingApplication

IBM NALAIYATHIRAN

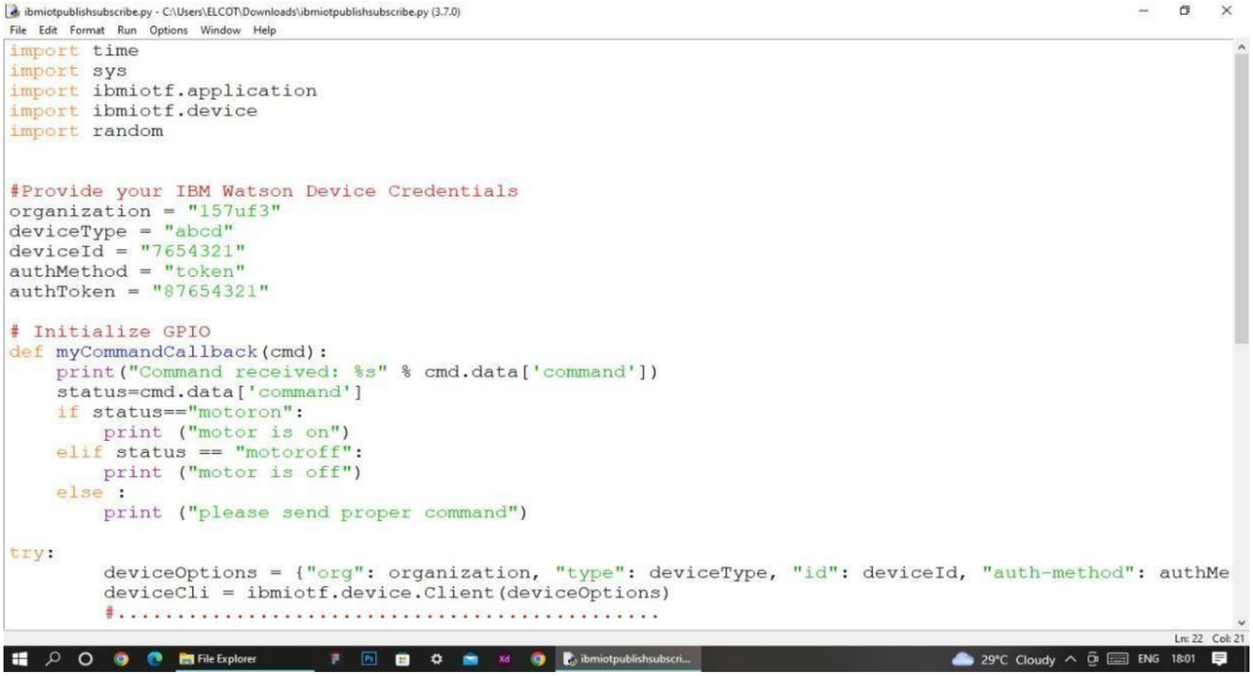
Sprint 4

TITLE	**Smart Farmer-IOT Enabled Smart Farming Application**
DOMAIN NAME	INTERNET OF THINGS
TEAM ID	PNT2022TMID08684
LEADER NAME	KRISHNAPRASATH U
TEAM MEMBER NAME	SIVAROHITH A GIRIPRASATH S S NIRUTHEESH R HARIHARASUTHAN M
MENTOR NAME	PRABHU K

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
Credentialsorganization = "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 anevent
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()
```


ibmiotpublishsubscribe.py - C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py (3.7.0)
File Edit Format Run Options Window Help
Ln: 22 Col: 21
File Explorer
ibmiotpublishsubscri...
29°C Cloudy
ENG 18:01

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import sys
import ibmiotf.application
import ibmiotf.device
import random


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    status=cmd.data['command']
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        print ("motor is on")
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        print ("motor is off")
    else :
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try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMe
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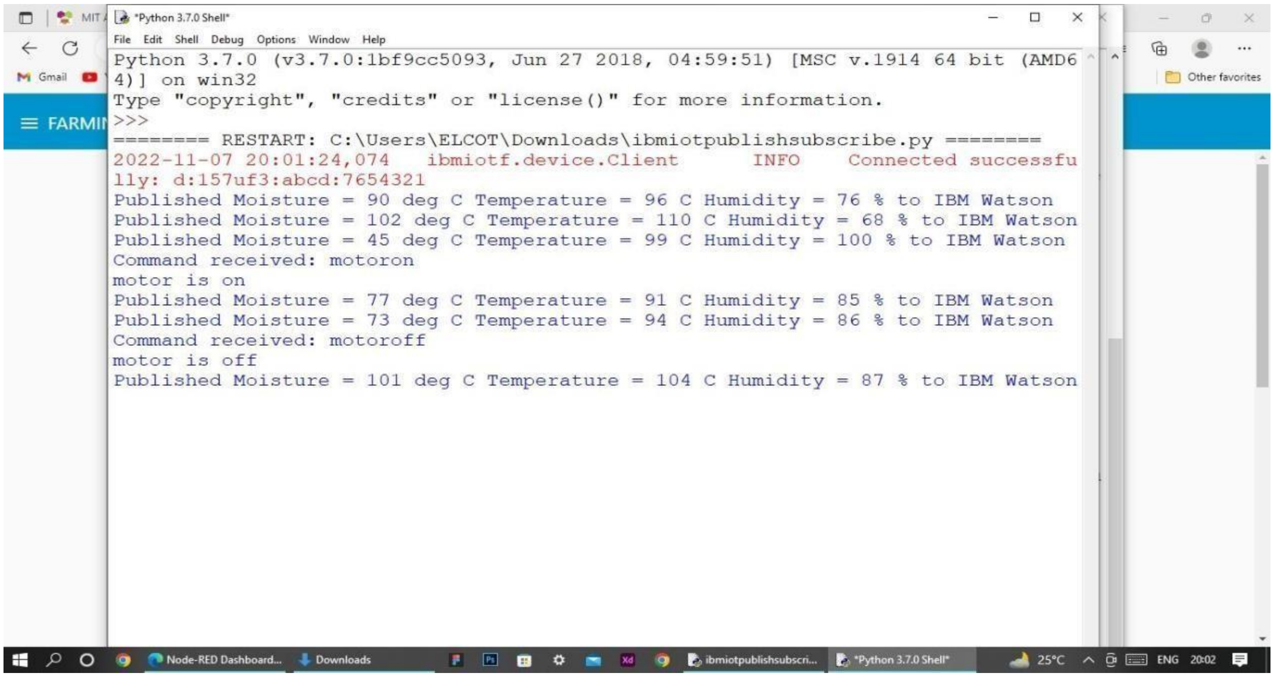
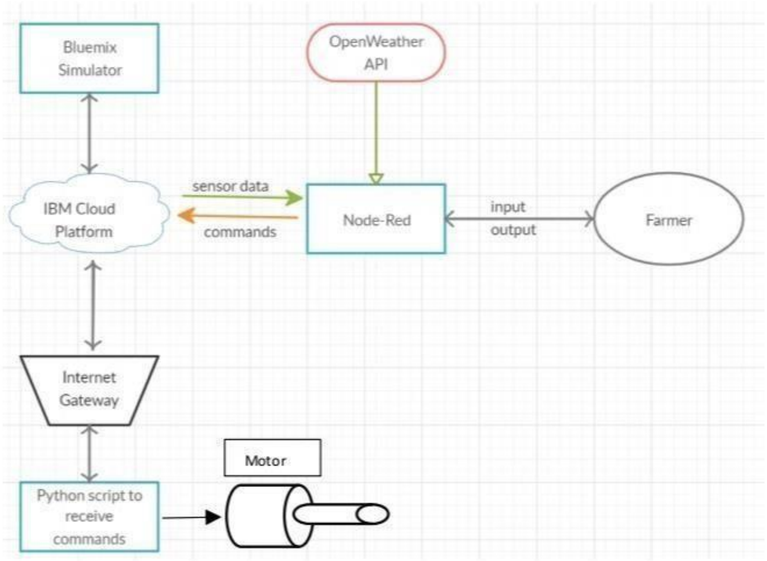
```

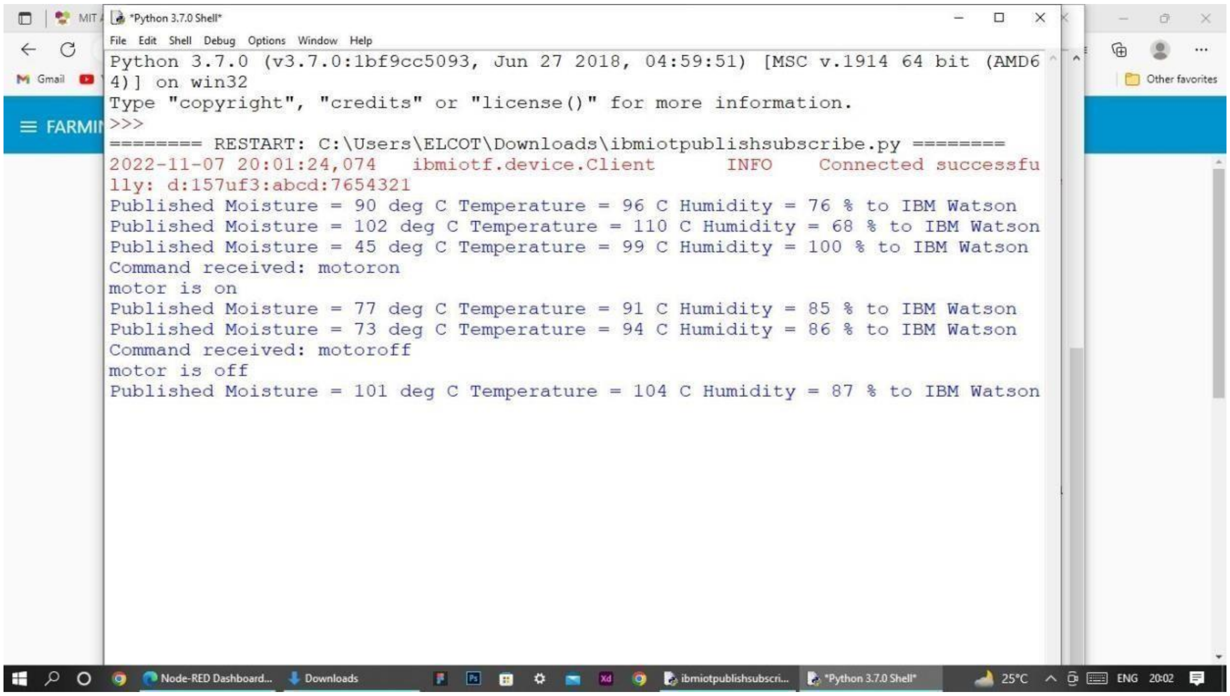


```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD6
4)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py ========
2022-11-07 20:01:24,074   ibmiotf.device.Client      INFO    Connected successfu
lly: d:157uf3: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
```

6. Flow Chart



7. Observations & Results



```
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motor is off
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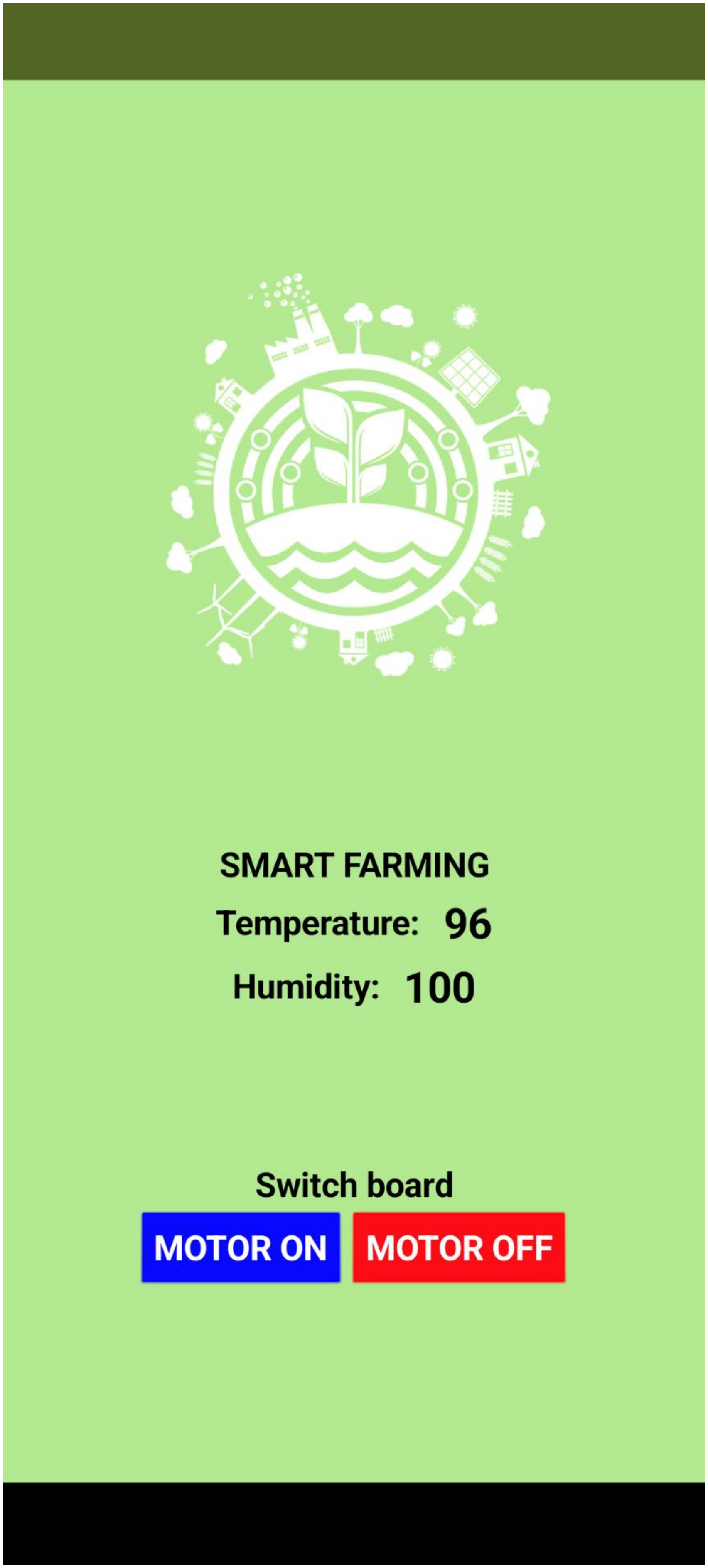
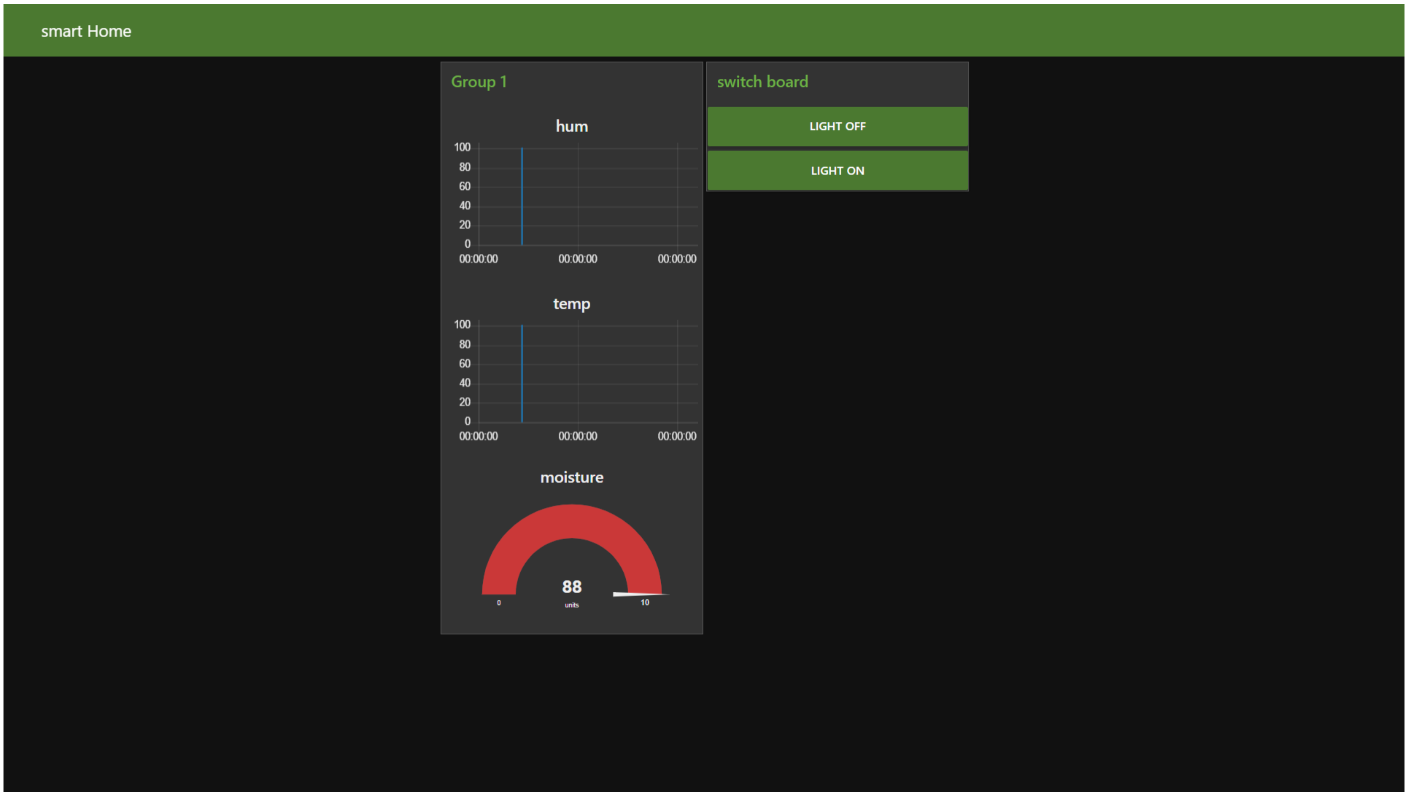


SMART FARMING

Temperature: 96

Humidity: 100

Switch board


smart Home
Group 1
hum
100
80
60
40
20
0
00:00:00
00:00:00
00:00:00
temp
100
80
60
40
20
0
00:00:00
00:00:00
00:00:00
moisture
88
units
0
10
switch board
LIGHT OFF
LIGHT ON

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/

IoT simulator : https://watson-iot-sensor-simulator.mybluemix.net/

Open Weather : https://openweathermap.org/