

## Project Development Phase

### SPRINT DELIVERY – 4

<b>Team ID</b>	PNT2022TMID49367
<b>Project Name</b>	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

#IBM

organization = "janesh"

deviceType = "raspberrypi"

deviceId = "12345"

authMethod = "use-token-auth"

authToken = "12345678"

#Gpio

def mycommandCallback(cmd):

    print("Command Received: %s" %cmd.data['command'])

    status = cmd.data['command']

    if status=="lighton":

        print("LED is ON")

    elif status=="lightoff":

        print("LED 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

deviceCli.connect()

while True:

temp=random.randint(0,100)

hum=random.randint(0,100)data={'temp':temp,'hum':hum}

def myOnPublishCallback():

print("Published Temperature = %s C"%temp,"Humidity = %s %" %hum, "to

IBM Watson")

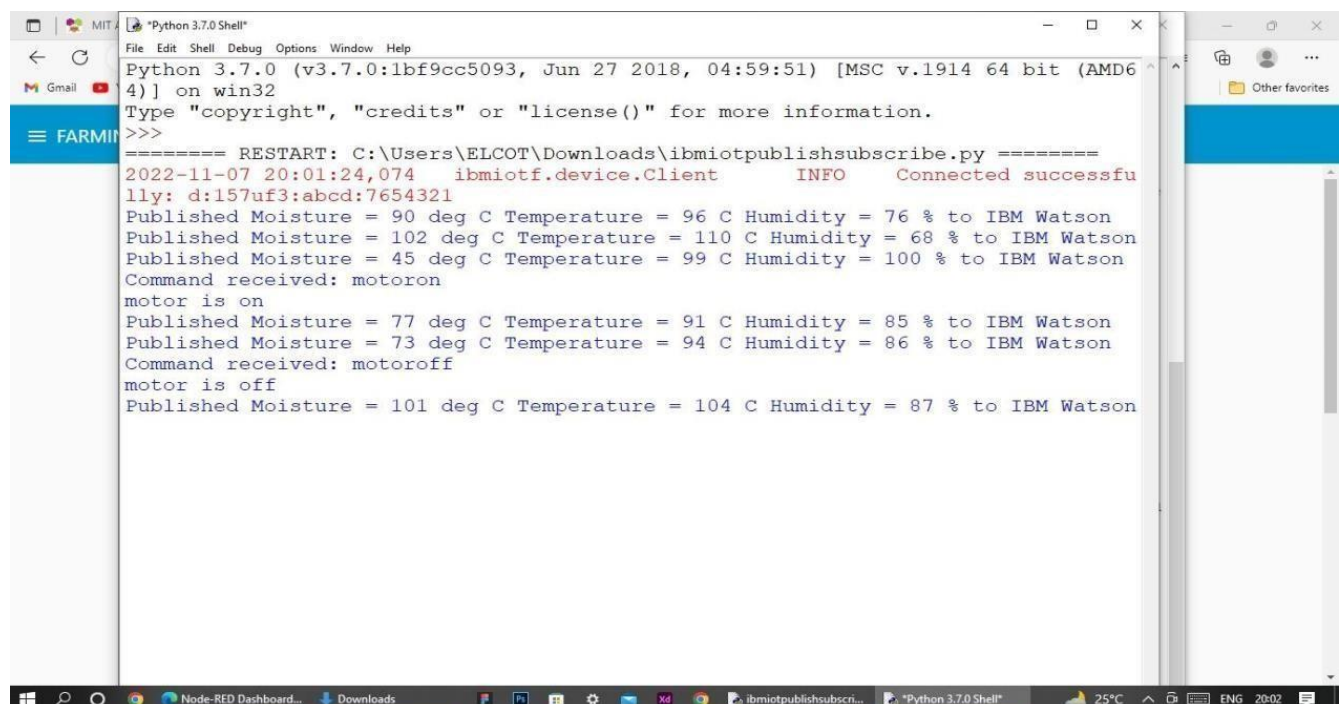
success = deviceCli.publishEvent("IoTSensor","json",data,qos=0,

on_publish=myOnPublishCallback)

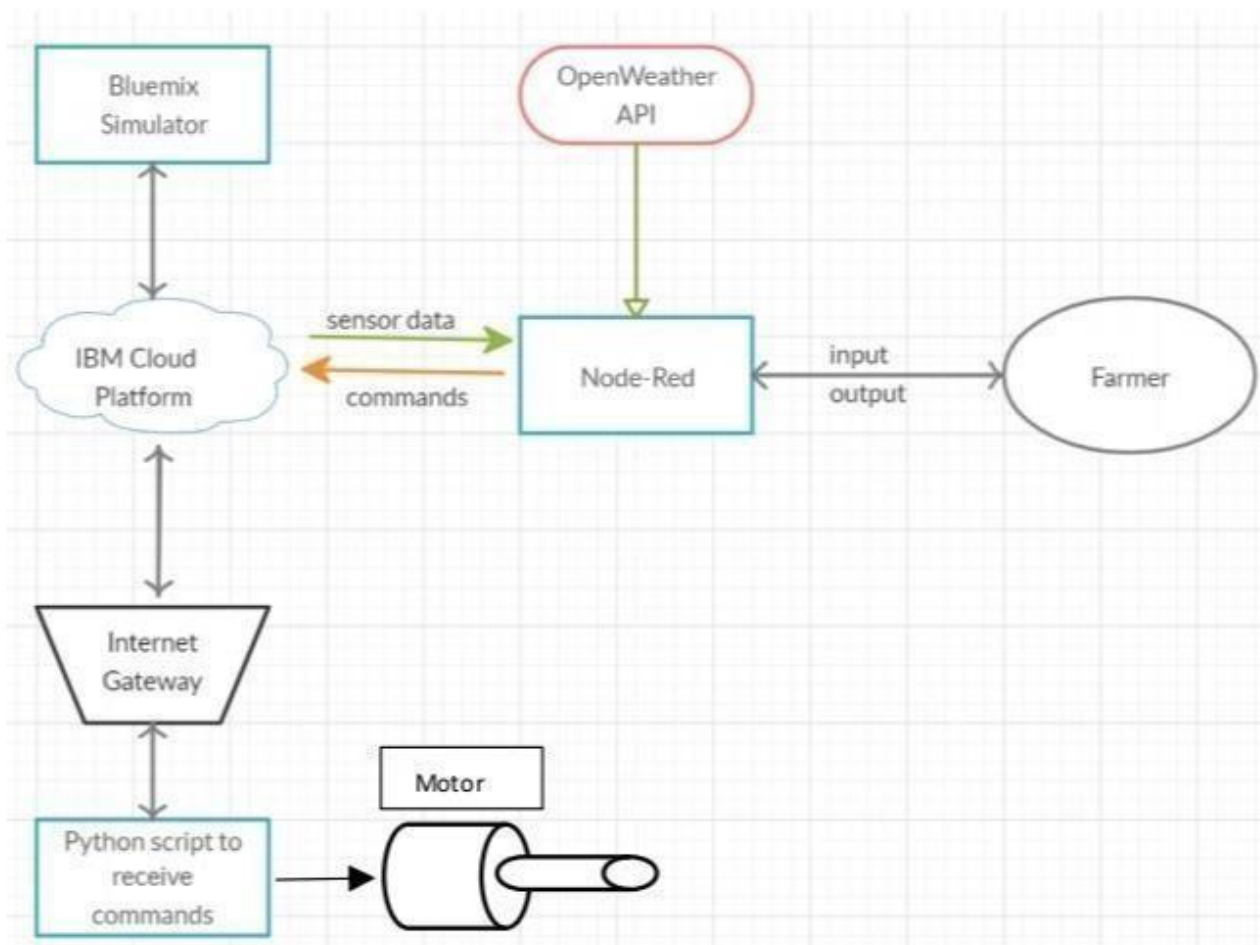
if not success:

print("Not connected to IoT")

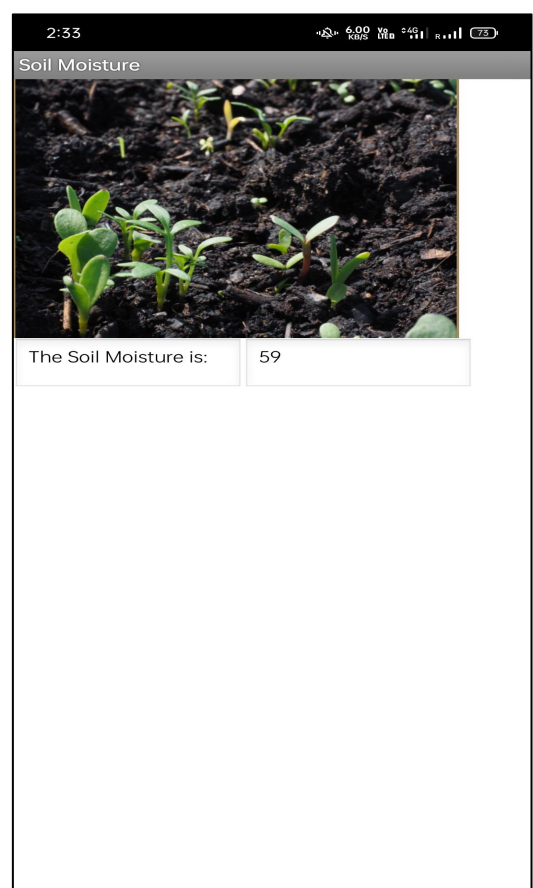
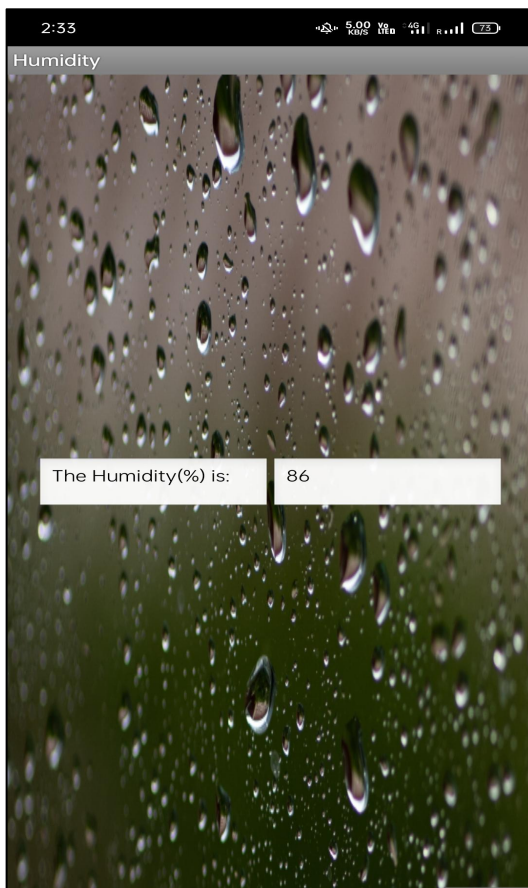
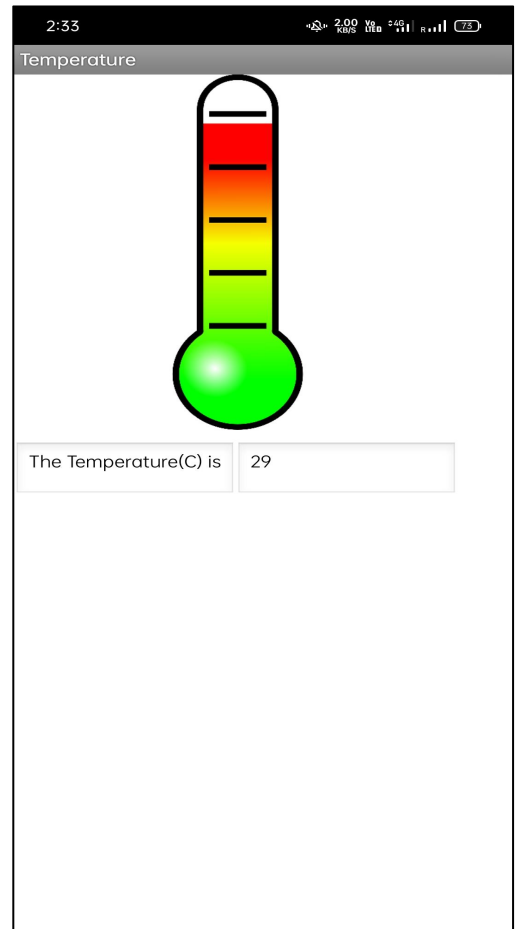
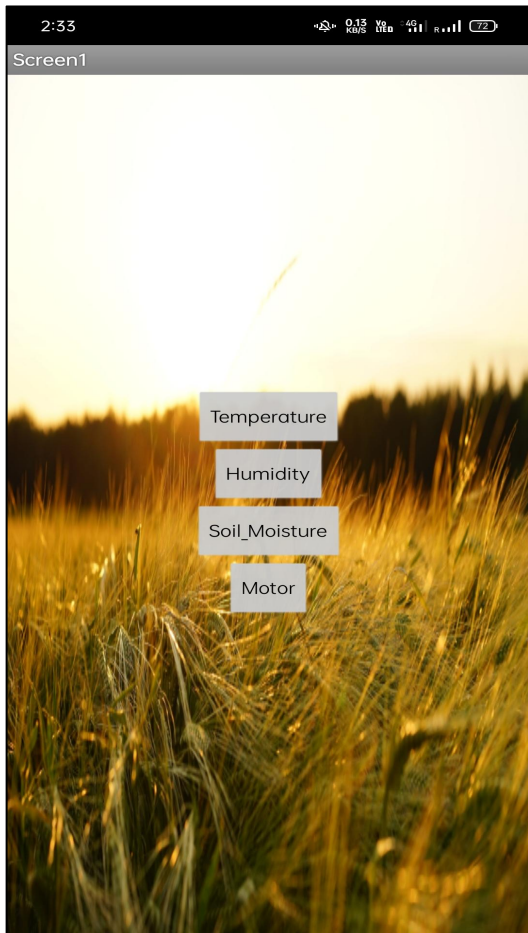
time.sleep(10)
```



## FLOW CHART:



## MOBILE APPLICATION:



2:33

0.45 Vb 24G 72

Motor

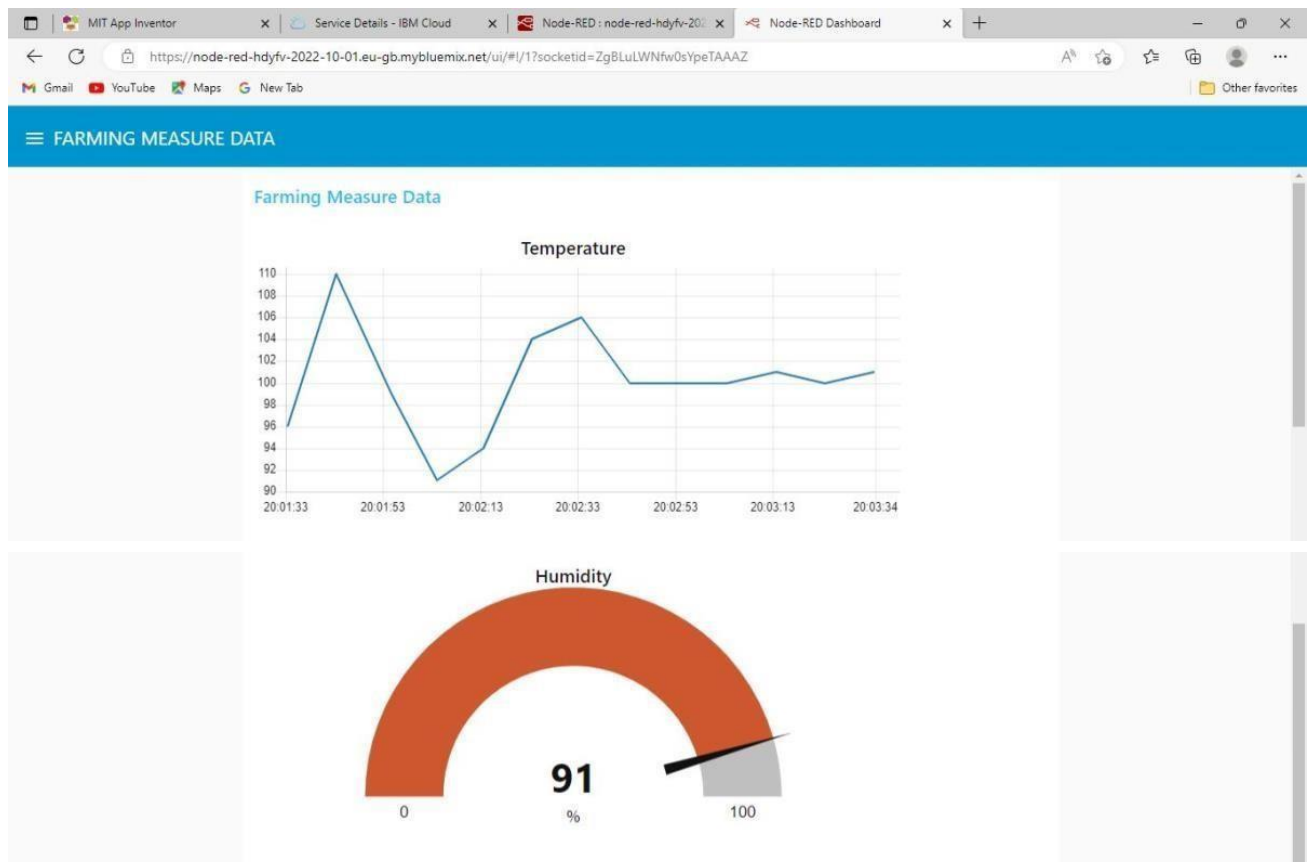


Motor ON/OFF

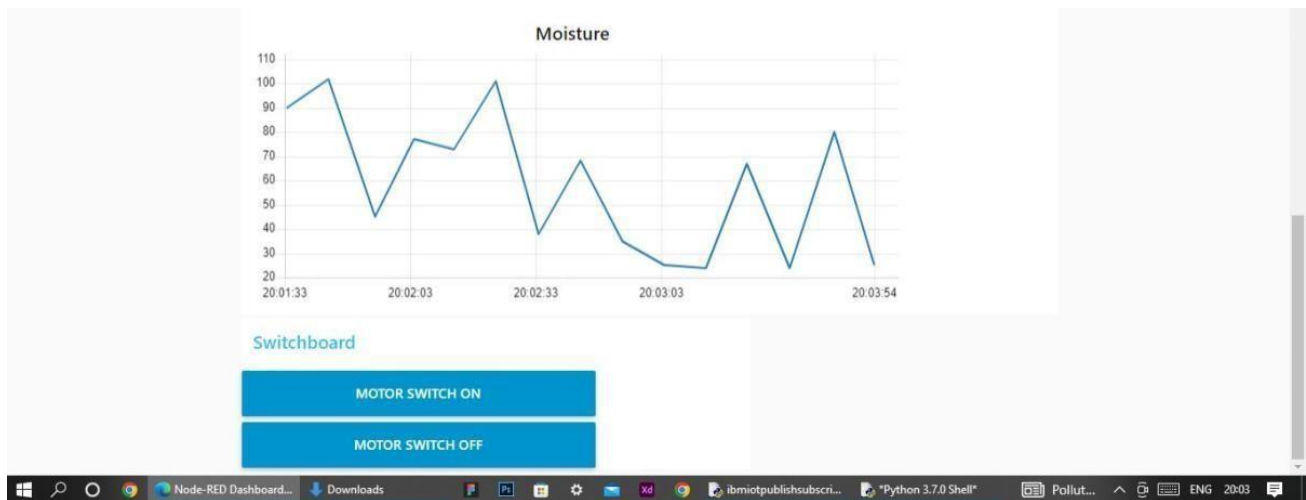


## OBSERVATION & RESULTS:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] 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 successfully: 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
```







### **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.