MUTHAYAMMAL ENGINEERING COLLEGE

Department of Electronics and Communication Engineering

Smart Farmer-IOT Enabled Smart Farming Application

IBM NALAIYATHIRAN

SPRINT DELIVERY – 4

TITLE	**Smart Farmer-IOT Enabled Smart Farming Application**
DOMAIN NAME	INTERNET OF THINGS
TEAM ID	PNT2022TMID19105
LEADER NAME	B. BALA KRISHNA
TEAM MEMBER NAME	I.RAVI KIRAN G.SUMANTH REDDY J.BHUVANESWAR
MENTOR NAME	SUBHASUNDHARI

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

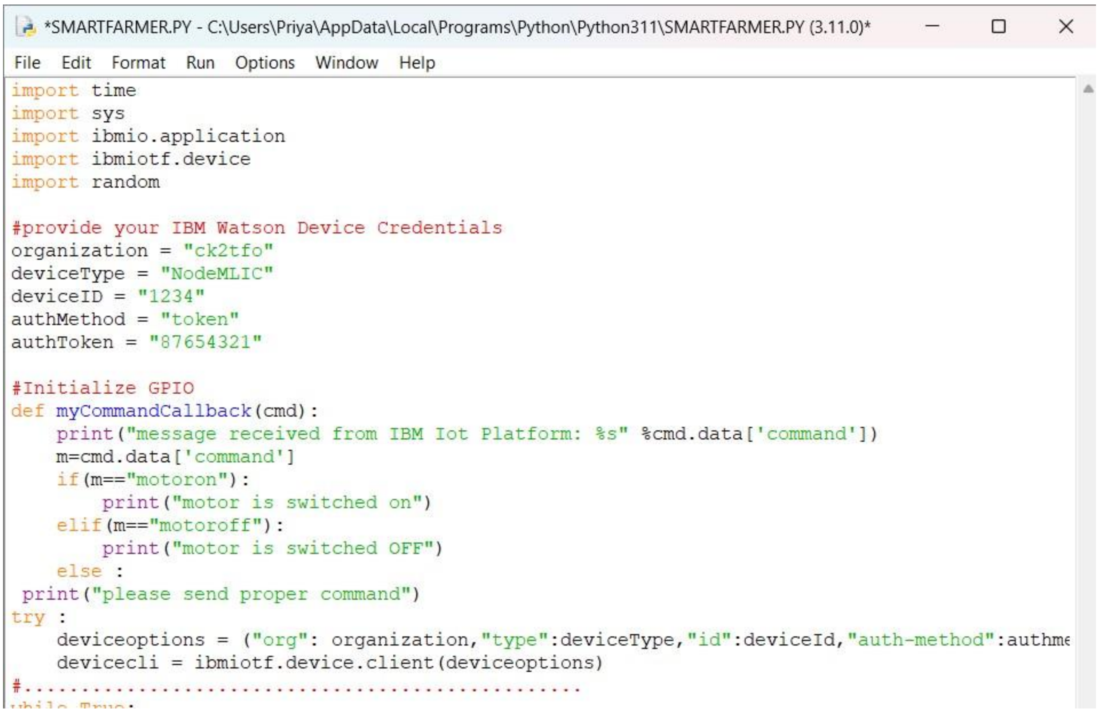
= deviceCli.publishEvent("IoTSensor", "json", data,

qos=0,on_publish=myOnPublishCallback) if not success: print("Not connected to IoTF")

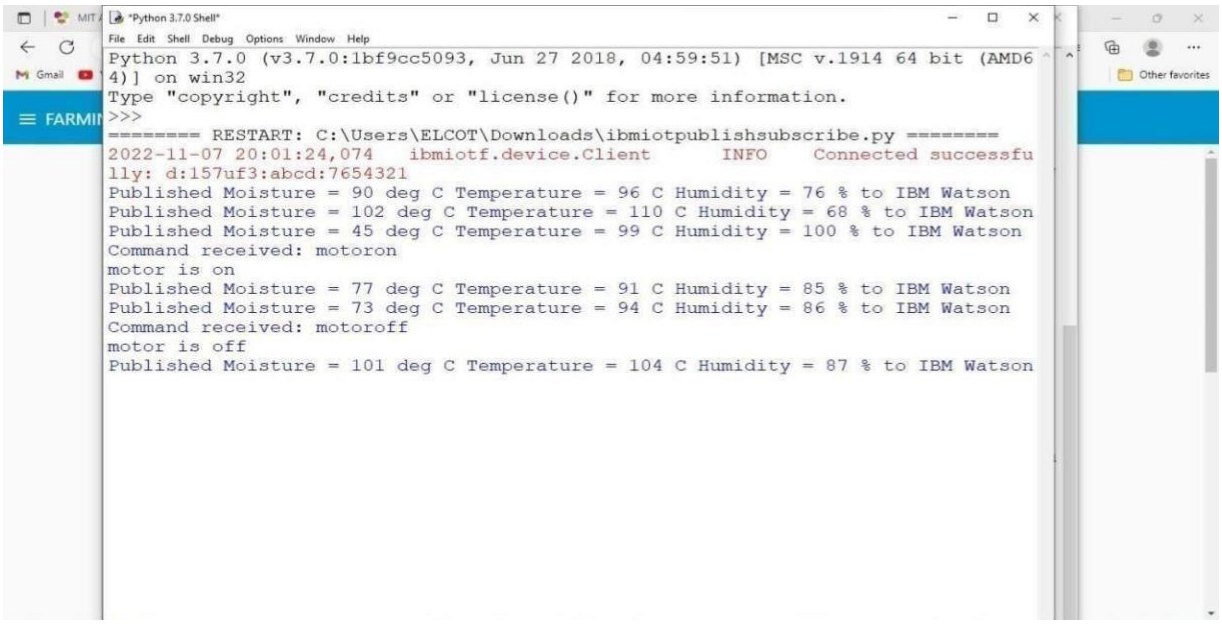
time.sleep(10) deviceCli.commandCallback =

myCommandCallback # Disconnect the device and

application from the cloud deviceCli.disconnect()

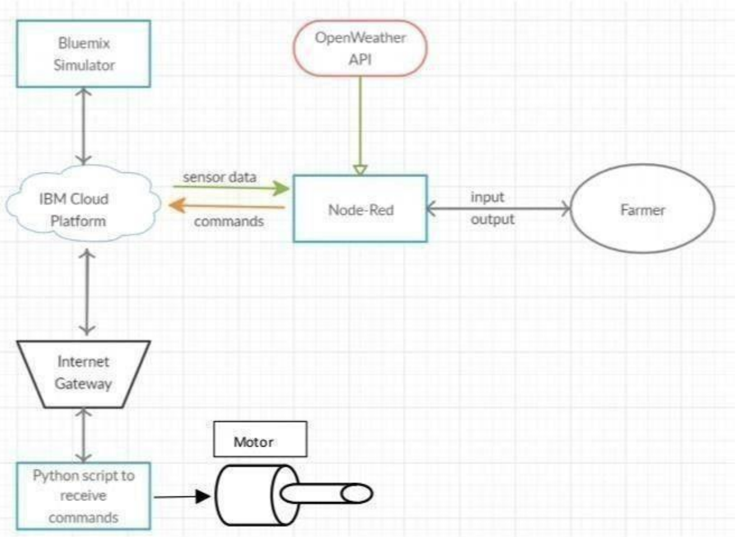

SMARTFARMER.PY - C:\Users\Priya\AppData\Local\Programs\Python\Python311\SMARTFARMER.PY (3.11.0)
File
Edit
Format
Run
Options
Window
Help

```
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":authme
    devicecli = ibmiotf.device.client(deviceoptions)
#..................................................
while True:
```

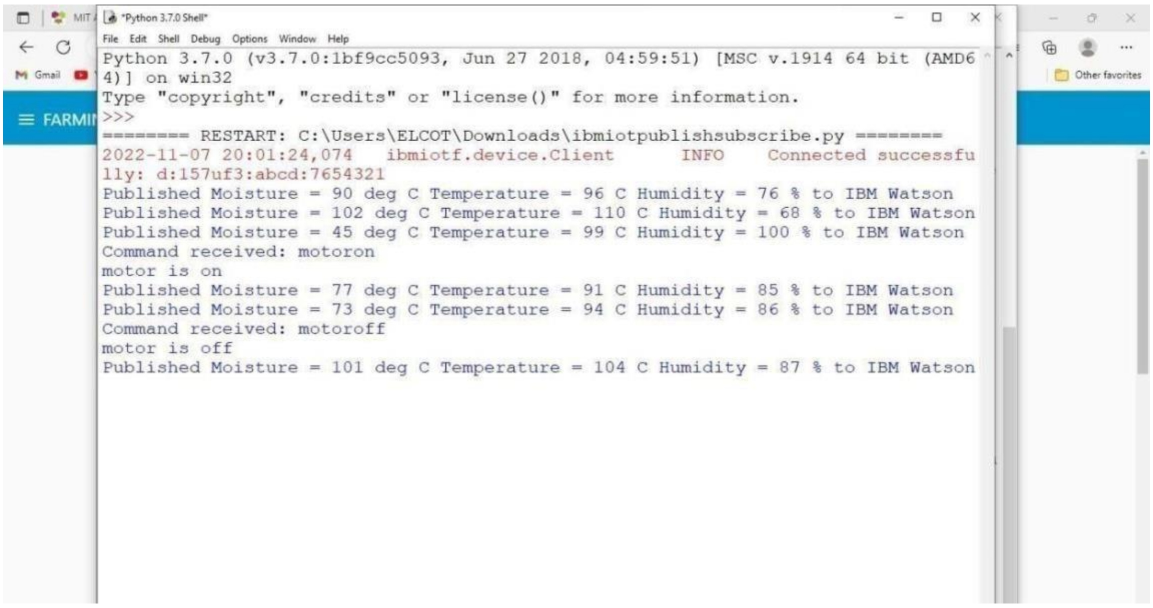


```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD6
4)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py ========
2022-11-07 20:01:24,074   ibmiotf.device.Client      INFO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

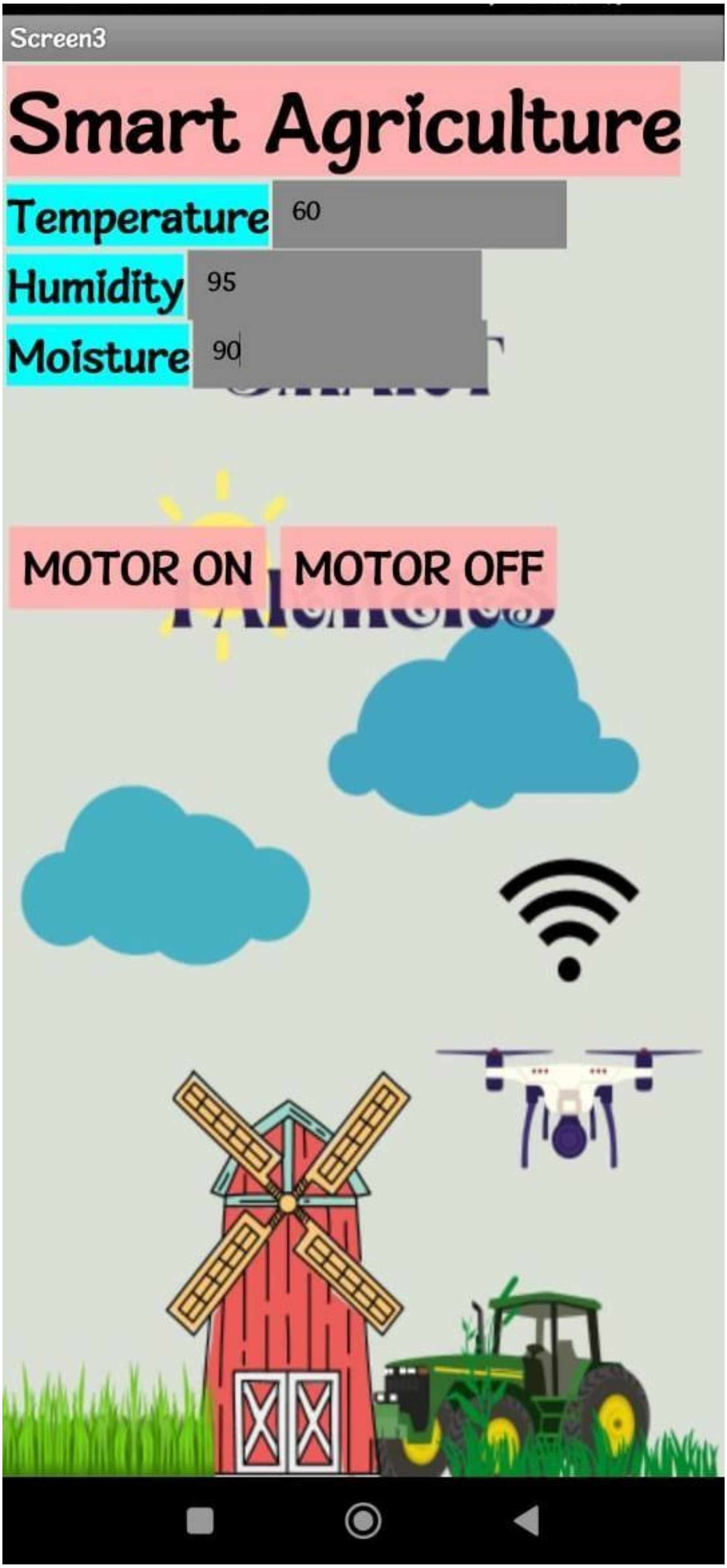
Flow Chart



Observations & Results



```
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
```



Screen3

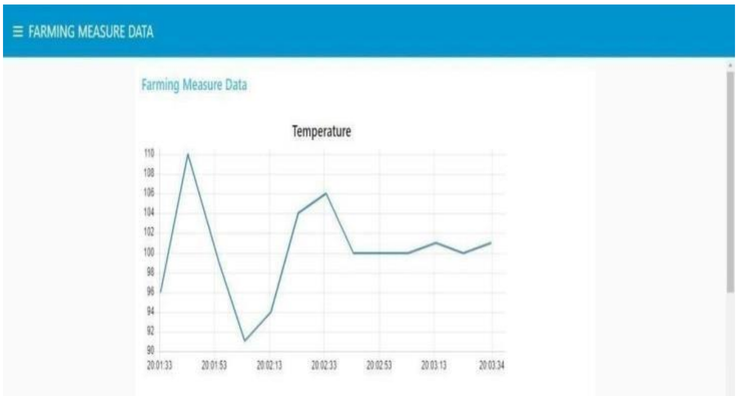
Smart Agriculture

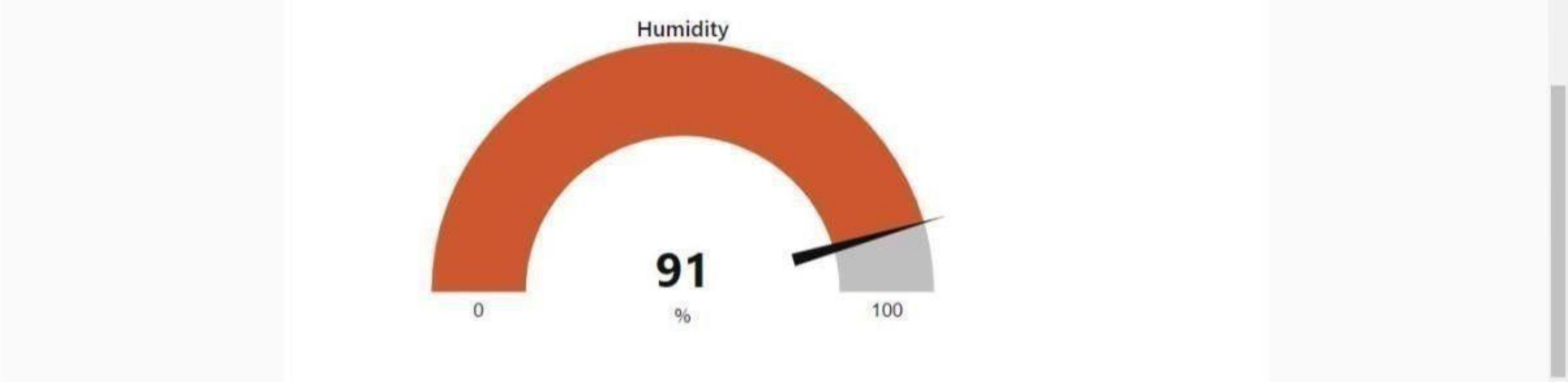
Temperature 60

Humidity 95

Moisture 90

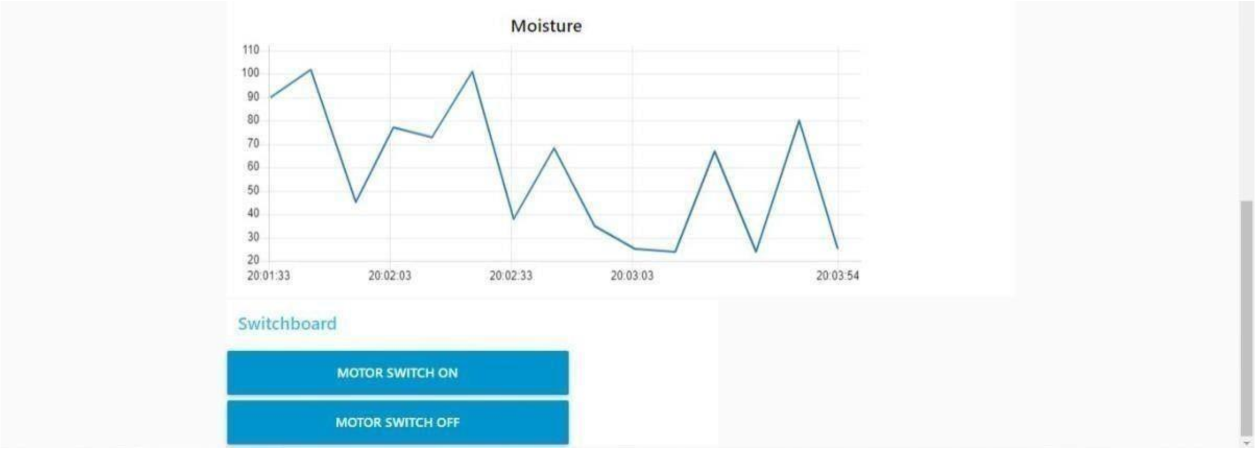
Temperature





Humidity

Moisture



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.