SPRINT 4

Date	15 November 2022
Team ID	PNT2022TMID03604
Project Name	Smart Farmer – IOT Enabled Smart Farming Application

IOT ENABLED SMART FARMING APPLICATION

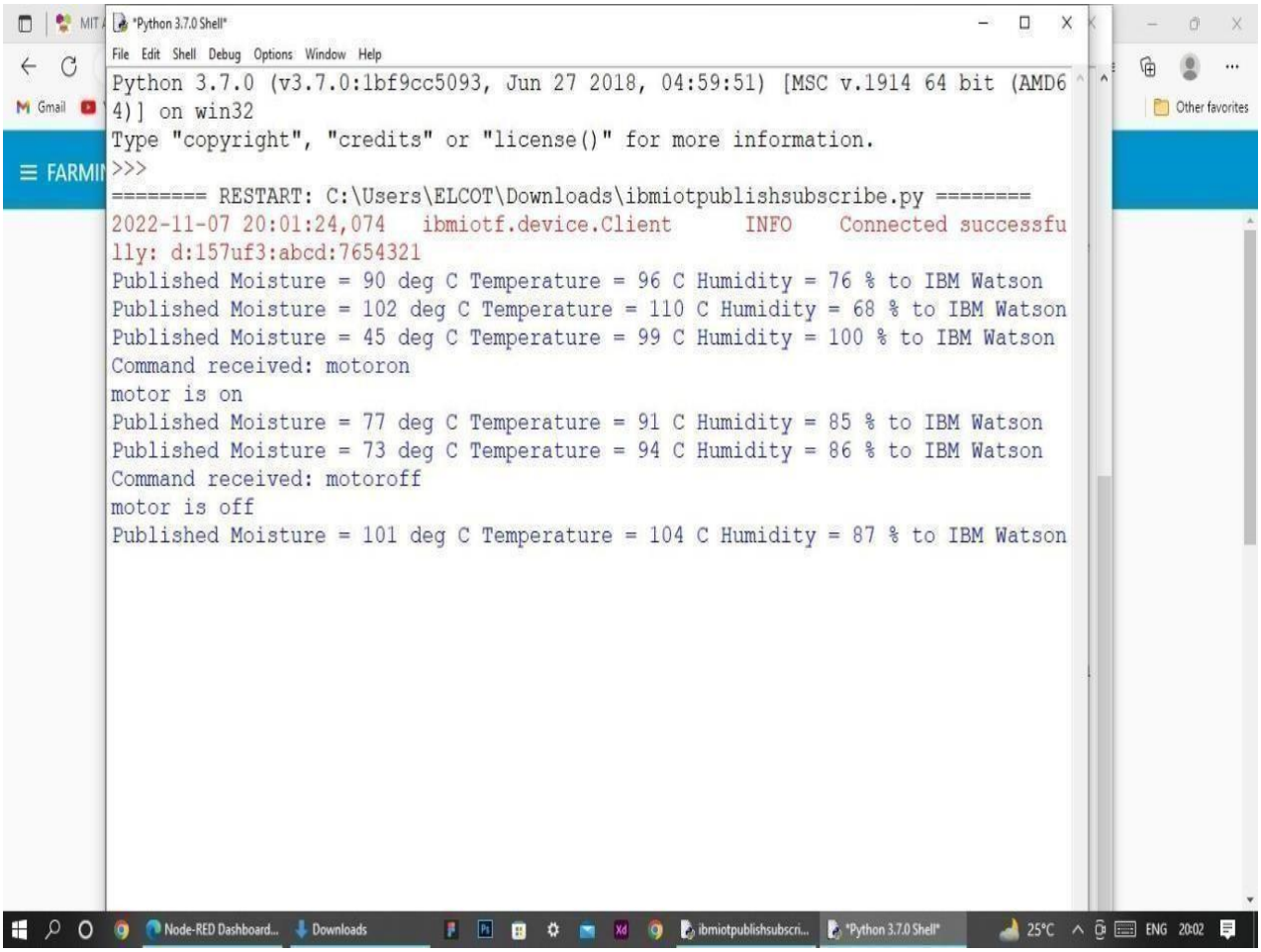
SPRINT DELIVERY – 4

Receiving commands from IBM cloud using Python program:

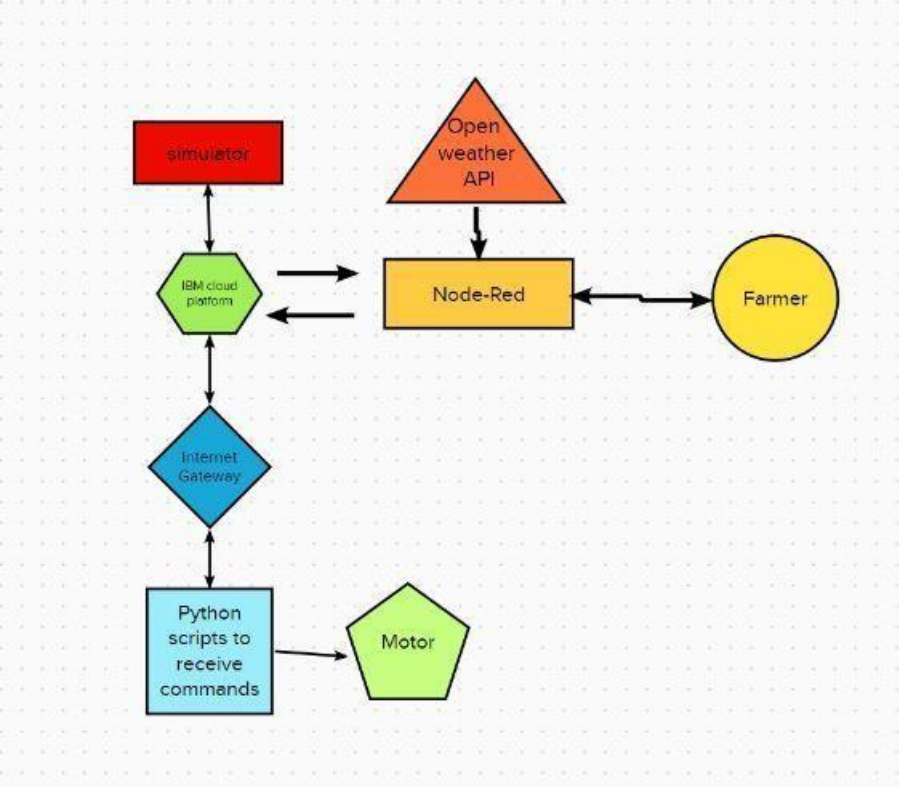
```
import time

 importsys

import ibmiotf.application

import ibmiotf.device

importrandom


#Provide your IBM Watson Device Credentials

organization = " nicw4y"

deviceType = " NodeMCU"

deviceId = "12376"

authMethod = "token"

authToken = "harsha@23"


# 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()
```

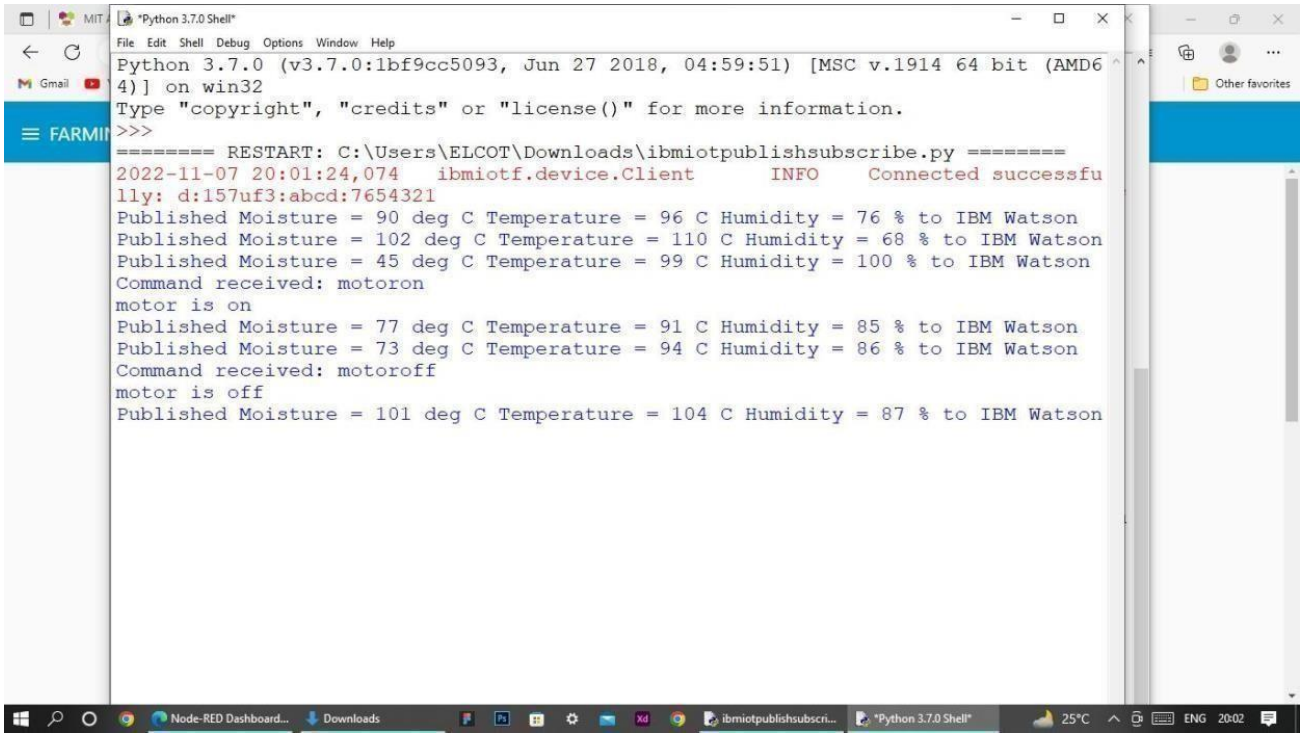
```
# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    elif status == "motoroff":
        print ("motor is off")
    else :
        print ("please send proper command")

try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMe
        deviceCli = ibmiotf.device.Client(deviceOptions)
        #.....................................
```

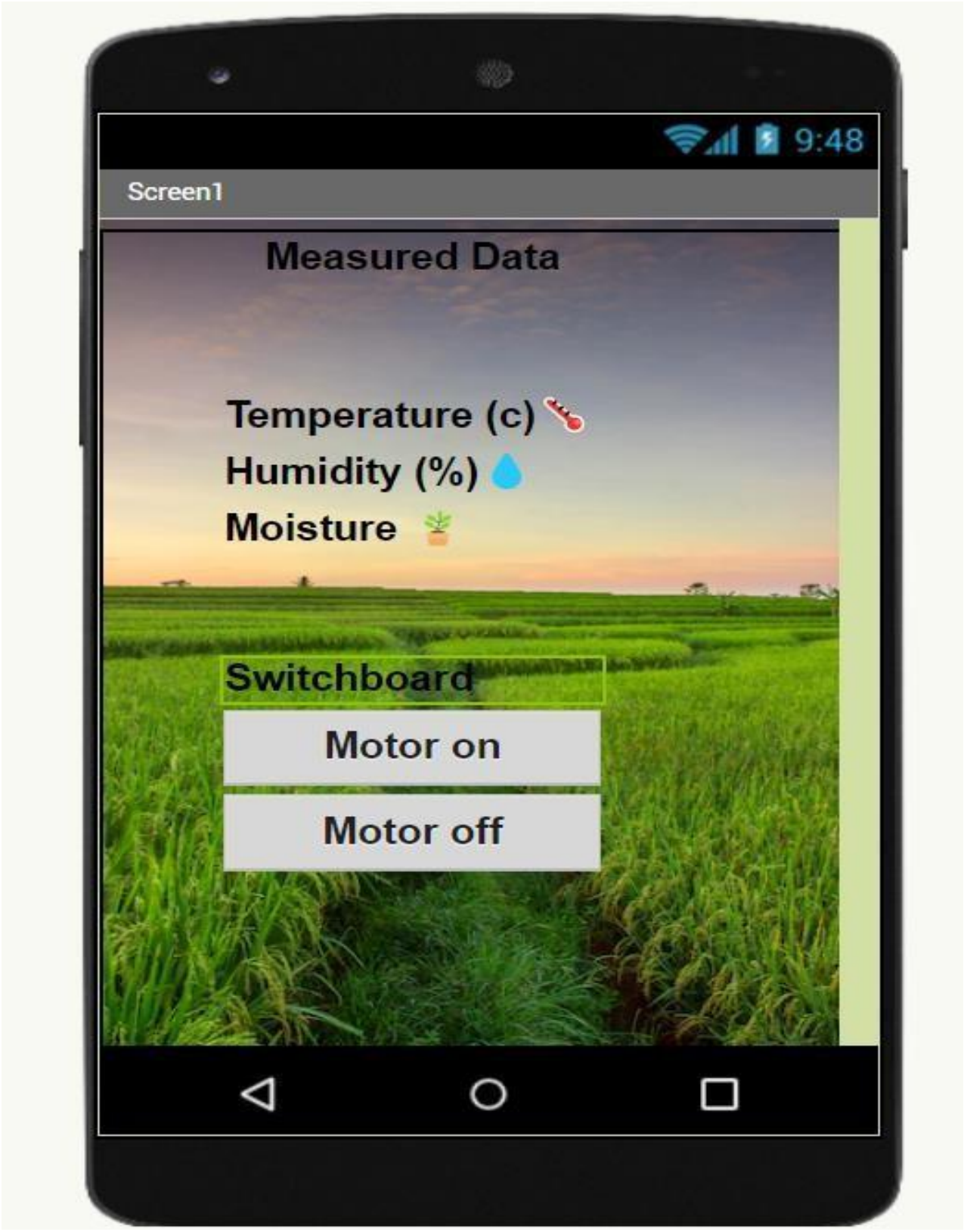


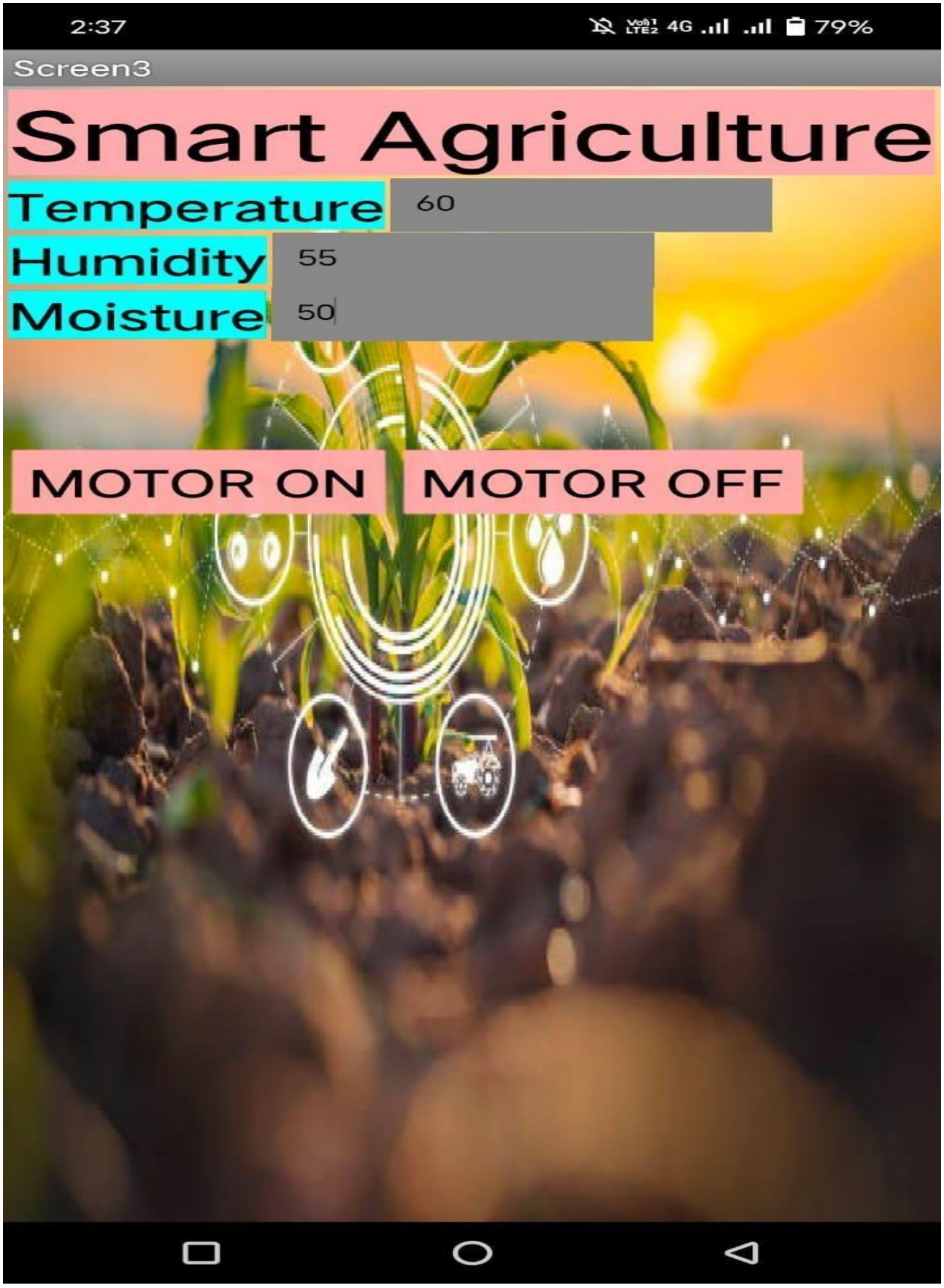
Flow Chart:

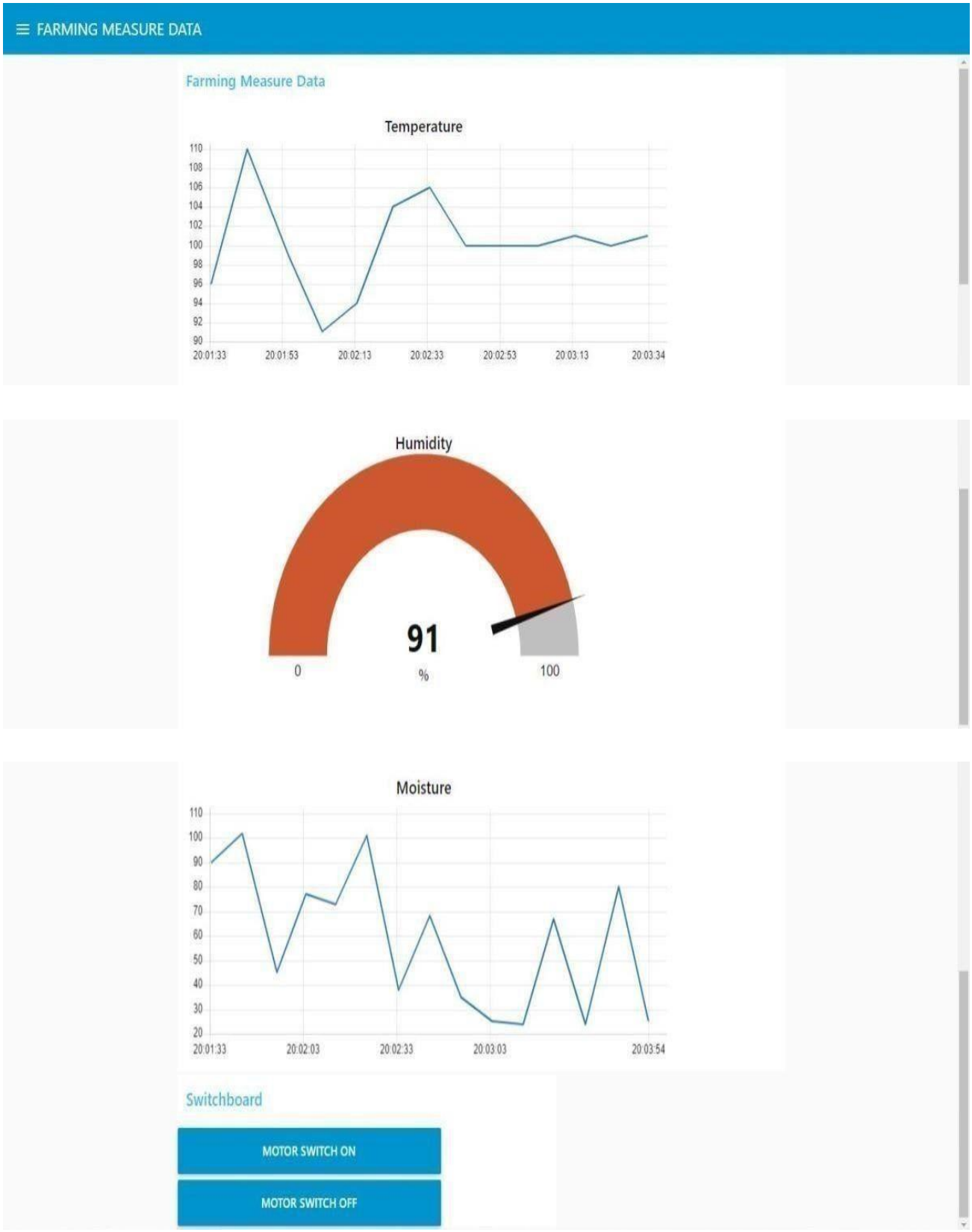


Observations &Results:




9:48
Screen1
Measured Data
Temperature (c)
Humidity (%)
Moisture
Switchboard
Motor on
Motor off


2:37
79%
Screen3
Smart Agriculture
Temperature
60
Humidity
55
Moisture
50
MOTOR ON
MOTOR OFF


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
Moisture
110
100
90
80
70
60
50
40
30
20
20:01:33
20:02:03
20:02:33
20:03:03
20:03:54
Switchboard
MOTOR SWITCH ON
MOTOR SWITCH OFF

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.