IOT ENABLED SMART FARMING APPLICATION

SPRINT DELIVERY – 4

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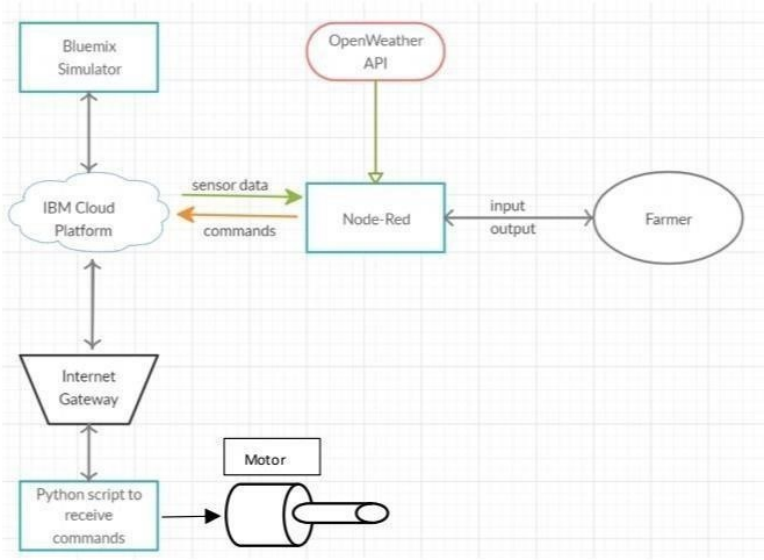
5.5 Receiving commands from IBM cloud using Python program

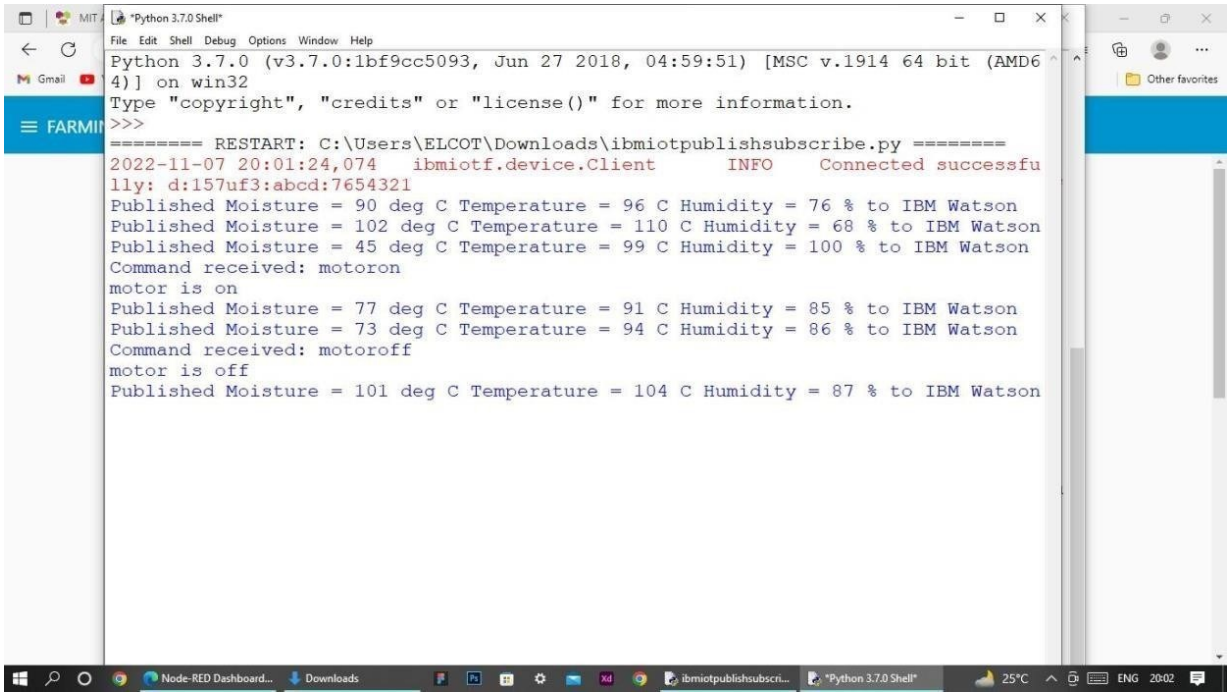
```
import time import
sys
import ibmiotf.application
import ibmiotf.device import
random

#Provide your IBM Watson Device Credentials
organization = "x0cl0i”
deviceType="nodemcu" device Id = "sensor "
authMethod = "use-token-auth" authToken =
"6GsCaVQ3-PfYy+j3ts”

# 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)
          #.....
```

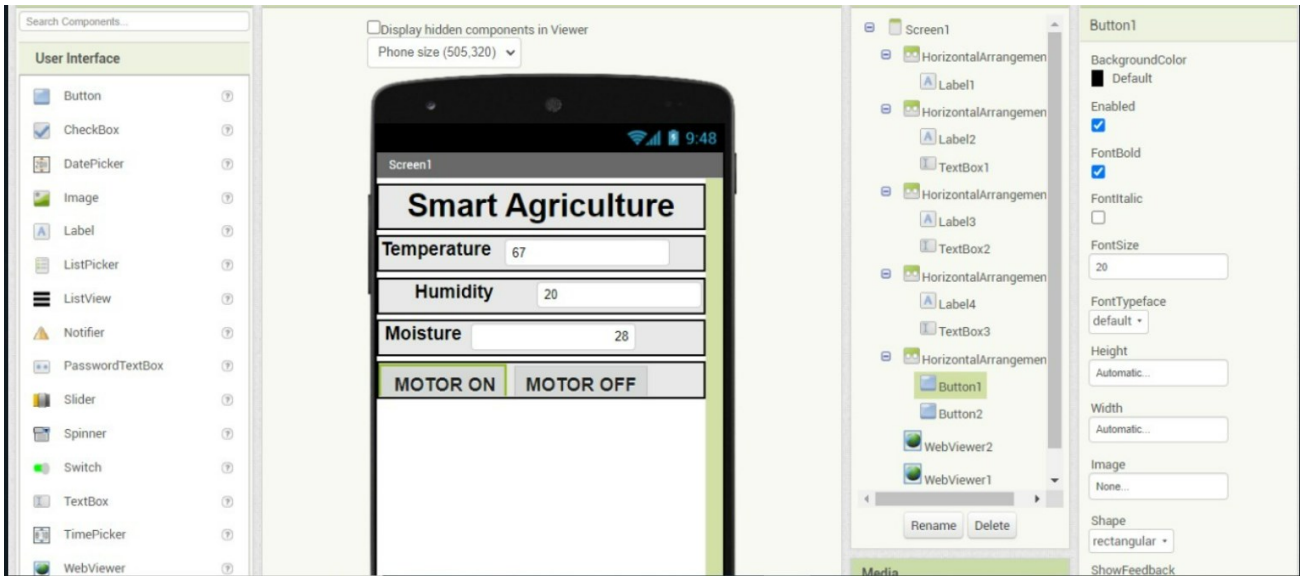
```
except Exception as e:
        print("Caught exception connecting device: %s" % str(e))
sys.exit()
# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting" 10 times deviceCli.connect()


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
                          de
f
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(
```

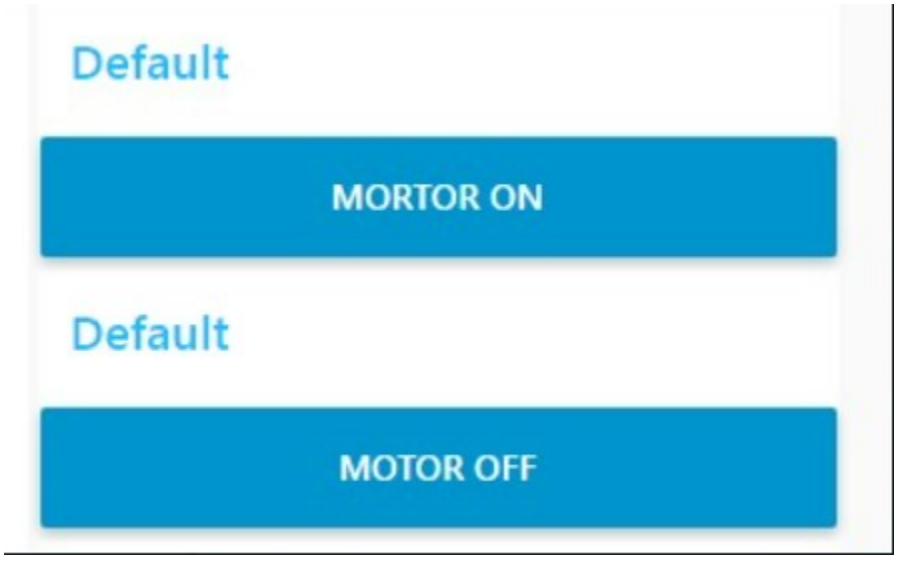
6. Flow Chart

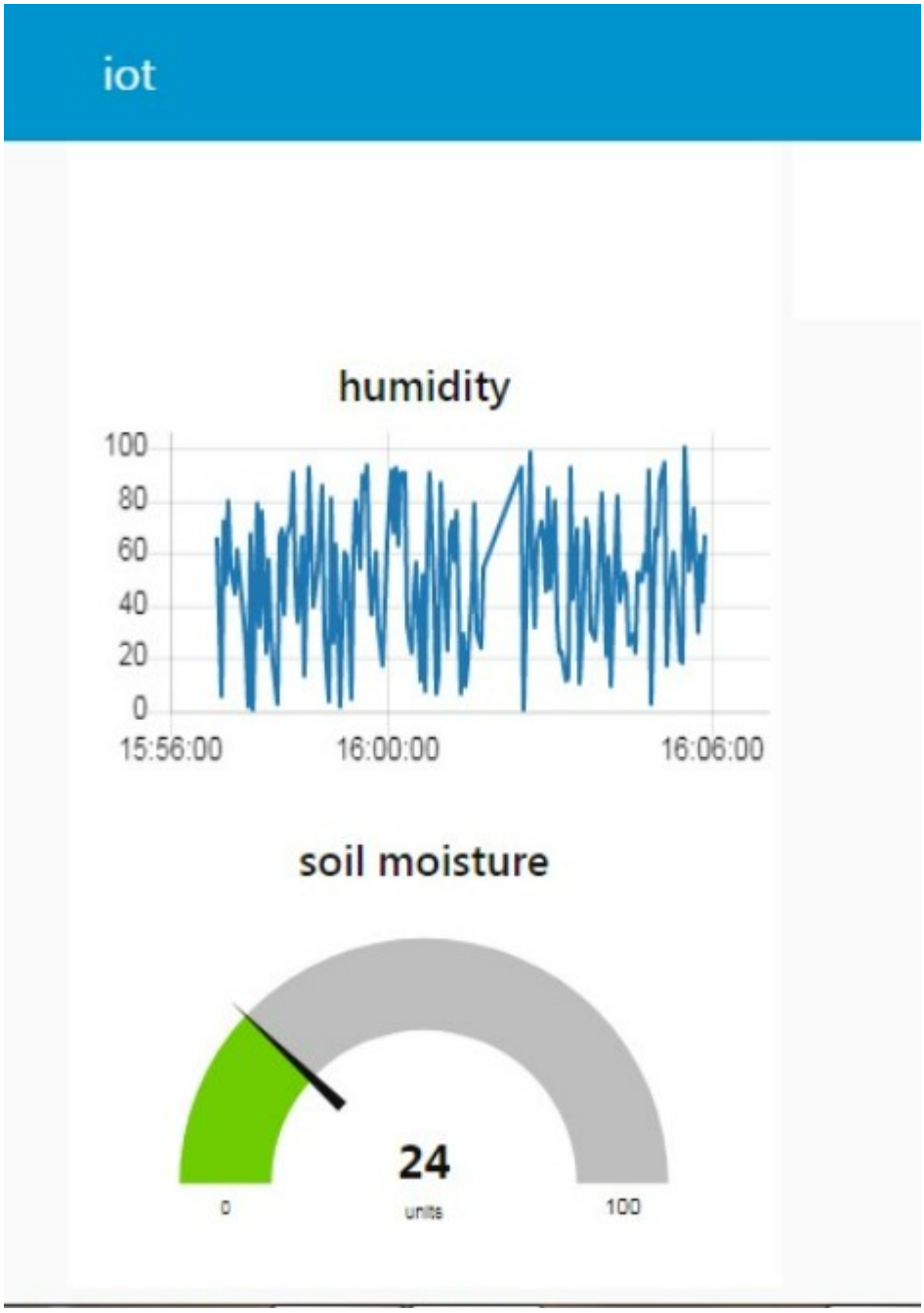


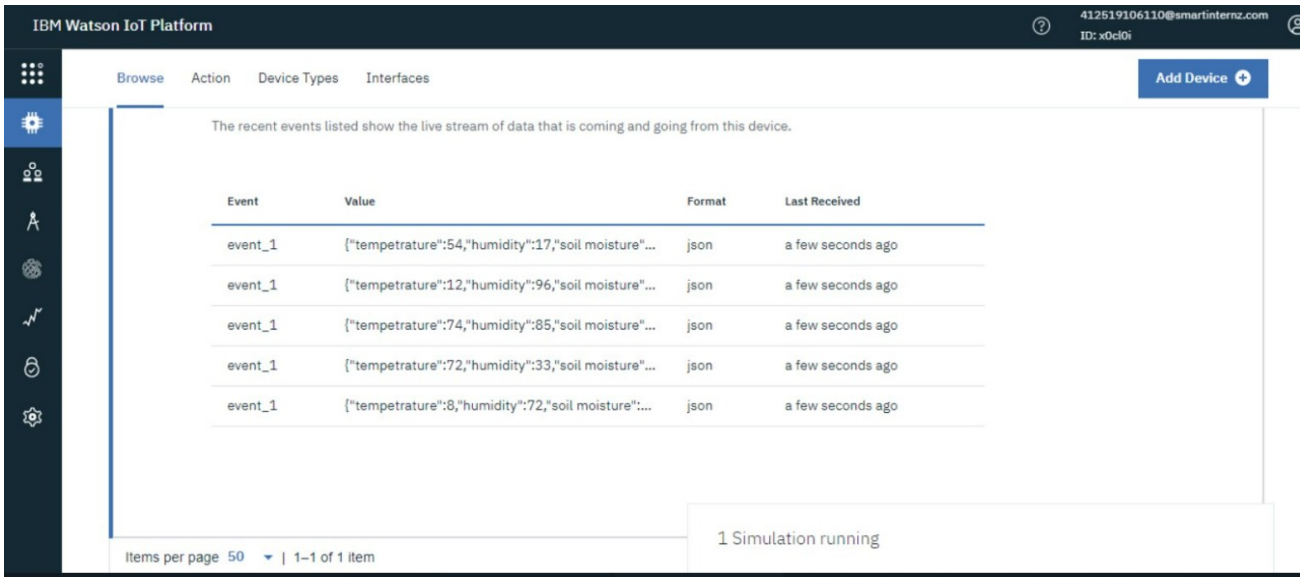
7. Observations & Results




Search Components...
User Interface
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Display hidden components in Viewer
Phone size (505,320)
9:48
Screen1
Smart Agriculture
Temperature
67
Humidity
20
Moisture
28
MOTOR ON
MOTOR OFF
Screen1
HorizontalArrangemen
Label1
HorizontalArrangemen
Label2
TextBox1
HorizontalArrangemen
Label3
TextBox2
HorizontalArrangemen
Label4
TextBox3
HorizontalArrangemen
Button1
Button2
WebViewer2
WebViewer1
Rename
Delete
Button1
BackgroundColor
Default
Enabled
FontBold
FontItalic
FontSize
20
FontTypeface
default
Height
Automatic...
Width
Automatic...
Image
None...
Shape
rectangular
ShowFeedback


Default
MORTOR ON
Default
MOTOR OFF


iot
humidity
100
80
60
40
20
0
15:56:00
16:00:00
16:06:00
soil moisture
24
units
0
100


IBM Watson IoT Platform
412519106110@smartinternz.com
ID: xOcl0i
Browse
Action
Device Types
Interfaces
Add Device
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
event_1
{"tempetrature":54,"humidity":17,"soil moisture"...
json
a few seconds ago
event_1
{"tempetrature":12,"humidity":96,"soil moisture"...
json
a few seconds ago
event_1
{"tempetrature":74,"humidity":85,"soil moisture"...
json
a few seconds ago
event_1
{"tempetrature":72,"humidity":33,"soil moisture"...
json
a few seconds ago
event_1
{"tempetrature":8,"humidity":72,"soil moisture":...
json
a few seconds ago
Items per page 50
1–1 of 1 item
1 Simulation running