

Project Development

Delivery Of Sprint-4

Date	13 Nov. 22
Team Id	PNT2022TMID51073
Project Name	SmartFarmer - IoT Enabled Smart Farming Application

PROGRAM

```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random


#Provide your IBM Watson Device Credentials

organization = "hzu4n4"

deviceType = "divya"

deviceId = "2411"

authMethod = "token"

authToken = " Z+d*VMnj0BTlJp*Tv"

global y

# Initialize GPIO


def myCommandCallback(cmd):

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

    status=cmd.data['command']
```

```

if status=="motoron":

    print ("motor is on")

if status=="motoroff" :

    print ("motor is off")

if status=="manual" :

    print ("Motor Control is in Manual Mode")

if status=="automatic" :

    print ("Motor control is in Automatic Mode")

if soilmoisture > 600:

    print ("motor is on")

```

```

#print(cmd)

```

```

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(0,100)

Humid=random.randint(0,100)

soilmoisture=random.randint(0,1023)

Phlevel=random.randint(0,14)

y=soilmoisture


data = { 'temp' : temp, 'Humid': Humid,'soilmoisture' : soilmoisture , 'Phlevel' : Phlevel }

#print data

def myOnPublishCallback():

    print ("Published Temperature = %s C" % temp, "Humidity = %s %" % Humid,"Soil Moisture is %s
    %" % soilmoisture,"PH level is %s" % Phlevel ,"to IBM Watson")


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

if not success:

    print("Not connected to IoTTF")

time.sleep(10)


deviceCli.commandCallback = myCommandCallback


# Disconnect the device and application from the cloud

deviceCli.disconnect()

```

```
Vabipy - C:/Users/ELCOT/AppData/Local/Programs/Python/Python37/Vabipy (3.7.4)
File Edit Format Run Options Window Help

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

#Provide your IBM Watson Device Credentials
organization = "hzu4n4"
deviceType = "abi"
deviceId = "2790"
authMethod = "token"
authToken = "ObNY5tR3)*hiq473Y0"
global y
# Initialize GPIO

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    if status=="motoroff" :
        print ("motor is off")
    if status=="manual" :
        print ("Motor Control is in Manual Mode")
    if status=="automatic" :
        print ("Motor control is in Automatic Mode")
        if soilmoisture > 600:
            print ("motor is on")

    #print(cmd)

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

except Exception as e:
    #.....

Ln: 42 Col: 57
```

OUTPUT

```
"Python 3.7.4 Shell"
File Edit Shell Debug Options Window Help

Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=== RESTART: C:/Users/ELCOT/AppData/Local/Programs/Python/Python37/Vabipy.py ===
2022-11-12 19:13:16,346 ibmiotf.device.Client INFO Connected successfully: d:hzu4n4:abi:2790
Published Temperature = 66 C Humidity = 75 % Soil Moisture is 471 % PH level is 3 to IBM Watson
Published Temperature = 95 C Humidity = 80 % Soil Moisture is 26 % PH level is 5 to IBM Watson
Published Temperature = 37 C Humidity = 98 % Soil Moisture is 781 % PH level is 3 to IBM Watson
Published Temperature = 27 C Humidity = 5 % Soil Moisture is 497 % PH level is 11 to IBM Watson
Published Temperature = 22 C Humidity = 49 % Soil Moisture is 979 % PH level is 9 to IBM Watson
Published Temperature = 5 C Humidity = 17 % Soil Moisture is 548 % PH level is 11 to IBM Watson
Published Temperature = 63 C Humidity = 24 % Soil Moisture is 376 % PH level is 4 to IBM Watson
Published Temperature = 76 C Humidity = 70 % Soil Moisture is 284 % PH level is 3 to IBM Watson
Published Temperature = 27 C Humidity = 64 % Soil Moisture is 359 % PH level is 5 to IBM Watson
Published Temperature = 18 C Humidity = 92 % Soil Moisture is 780 % PH level is 13 to IBM Watson
Published Temperature = 5 C Humidity = 71 % Soil Moisture is 883 % PH level is 11 to IBM Watson
Published Temperature = 19 C Humidity = 80 % Soil Moisture is 258 % PH level is 8 to IBM Watson
Published Temperature = 88 C Humidity = 37 % Soil Moisture is 331 % PH level is 6 to IBM Watson
Published Temperature = 6 C Humidity = 22 % Soil Moisture is 157 % PH level is 7 to IBM Watson
Published Temperature = 19 C Humidity = 65 % Soil Moisture is 171 % PH level is 10 to IBM Watson
Published Temperature = 94 C Humidity = 93 % Soil Moisture is 818 % PH level is 7 to IBM Watson
Published Temperature = 86 C Humidity = 22 % Soil Moisture is 520 % PH level is 6 to IBM Watson
Published Temperature = 19 C Humidity = 58 % Soil Moisture is 542 % PH level is 3 to IBM Watson
Published Temperature = 26 C Humidity = 8 % Soil Moisture is 224 % PH level is 2 to IBM Watson
Published Temperature = 24 C Humidity = 93 % Soil Moisture is 922 % PH level is 3 to IBM Watson
Published Temperature = 9 C Humidity = 5 % Soil Moisture is 977 % PH level is 6 to IBM Watson
Published Temperature = 45 C Humidity = 100 % Soil Moisture is 900 % PH level is 8 to IBM Watson
Published Temperature = 64 C Humidity = 54 % Soil Moisture is 598 % PH level is 7 to IBM Watson
Published Temperature = 30 C Humidity = 87 % Soil Moisture is 469 % PH level is 10 to IBM Watson
Published Temperature = 58 C Humidity = 82 % Soil Moisture is 20 % PH level is 9 to IBM Watson
Published Temperature = 81 C Humidity = 100 % Soil Moisture is 576 % PH level is 0 to IBM Watson
Published Temperature = 76 C Humidity = 86 % Soil Moisture is 818 % PH level is 10 to IBM Watson
Published Temperature = 24 C Humidity = 75 % Soil Moisture is 716 % PH level is 1 to IBM Watson
Published Temperature = 95 C Humidity = 50 % Soil Moisture is 52 % PH level is 6 to IBM Watson
Published Temperature = 70 C Humidity = 63 % Soil Moisture is 445 % PH level is 13 to IBM Watson
Published Temperature = 38 C Humidity = 7 % Soil Moisture is 184 % PH level is 4 to IBM Watson
Published Temperature = 91 C Humidity = 0 % Soil Moisture is 877 % PH level is 11 to IBM Watson
Published Temperature = 19 C Humidity = 51 % Soil Moisture is 331 % PH level is 2 to IBM Watson
```

IBM WATSON CLOUD OUTPUT

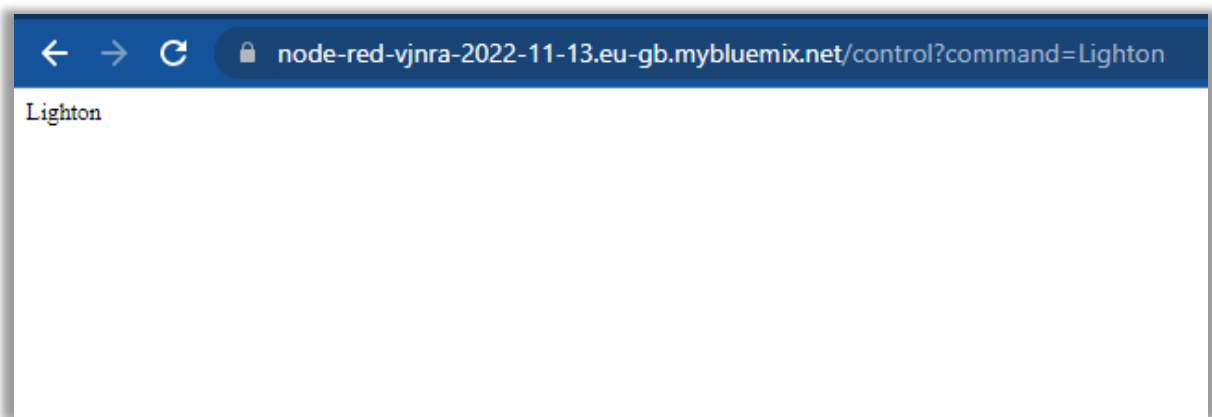
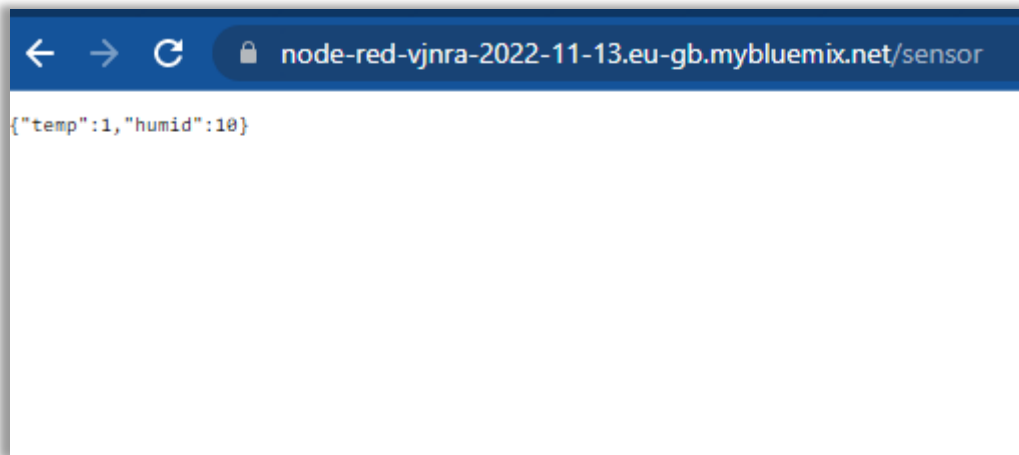
The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area is titled 'Recent Events' and displays a table of events. Below the table, there is a summary bar for a device with ID '2790', status 'Disconnected', and a timestamp 'Nov 12, 2022 7:09 PM'. The bottom right corner indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{ "Temperature": 98, "Humidity": 39 }	json	a few seconds ago
event_1	{ "Temperature": 58, "Humidity": 68 }	json	a few seconds ago
event_1	{ "Temperature": 72, "Humidity": 39 }	json	a few seconds ago
event_1	{ "Temperature": 69, "Humidity": 64 }	json	a minute ago
event_1	{ "Temperature": 6, "Humidity": 24 }	json	a minute ago

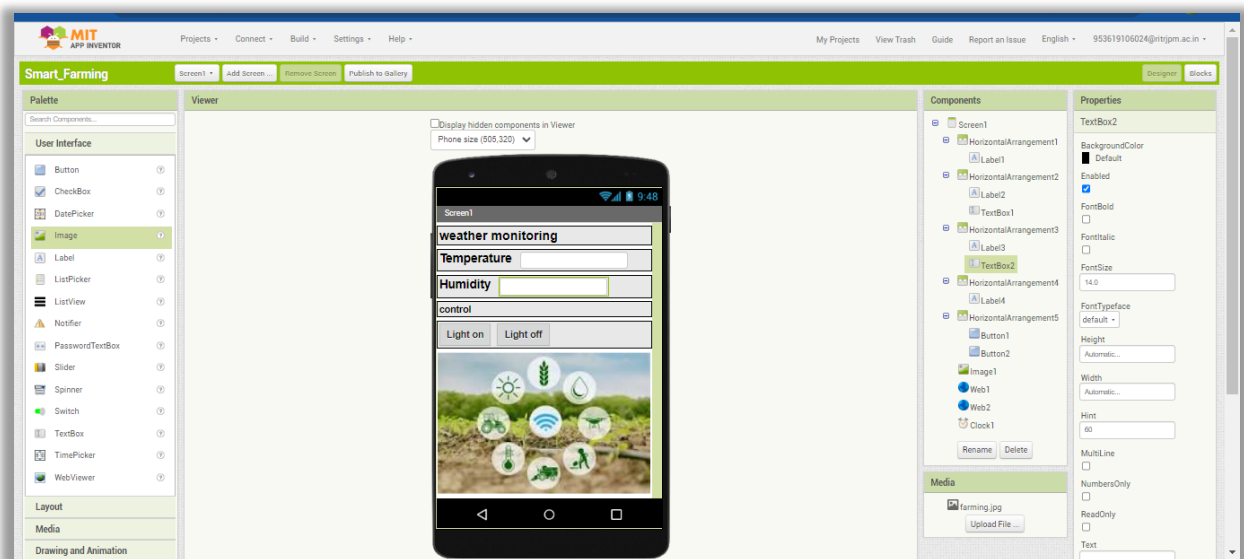
NODE-RED OUTPUT

The screenshot shows the Node-RED web interface. The main workspace displays a flow titled 'Flow 1' with several nodes: 'IBM IoT' (connected), 'msg payload', 'Temperature Node', 'Humidity', '[get] /sensor', 'httpfunctionnode', 'http', 'Light on', 'Light off', 'commandfunction node', and 'http'. The right sidebar shows the 'debug' console with a list of messages, including temperature and humidity data points.

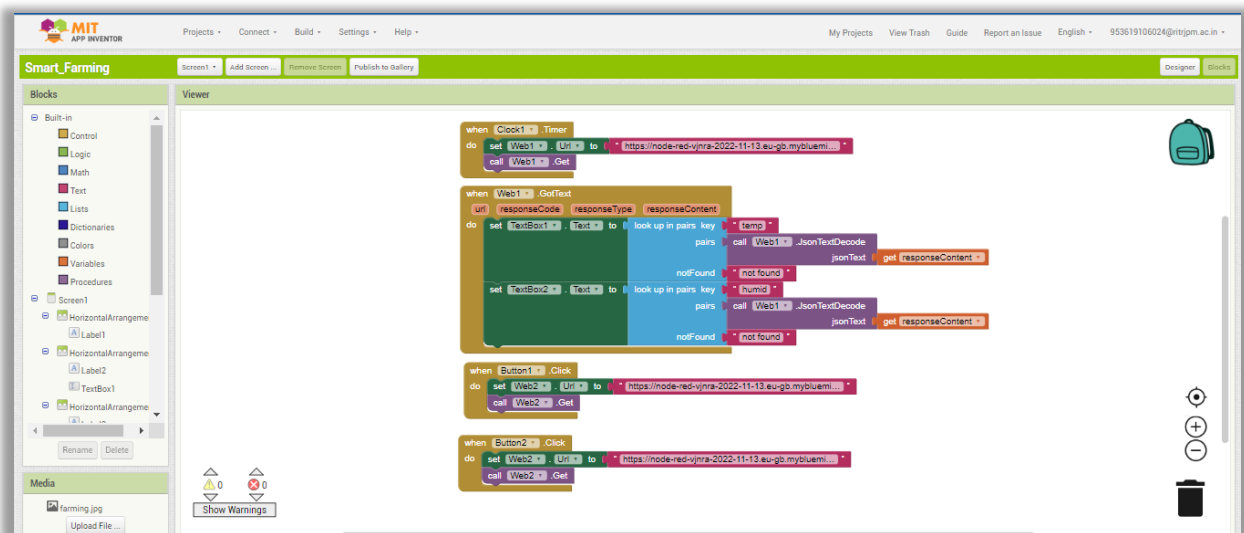
The screenshot shows the 'control' page of the Node-RED web interface. It features two large circular gauges for 'Humidity' and 'Temperature'. The 'Humidity' gauge shows a value of 10, and the 'Temperature' gauge shows a value of 22. Below each gauge are two buttons: 'LIGHT ON' and 'LIGHT OFF'.



MIT APP INVENTOR – DESINGER



MIT APP INVENTOR – BLOCK



MIT APP INVENTOR – OUTPUT

6:17 PM 10.5KB/s

VoLTE 4G 30

Screen1

weather monitoring

Temperature 5

Humidity 16

control

Light on

Light off

