

PROJECT DEVELOPEMENT PHASE

DELIVERY OF SPRINT – 3

Date	08 November 2022
Team ID	PNT2022TMID43114
Project Name	Smart Waste Management System For Metropolitan Cities

PYTHON CODE : [To connect IBM WATSON]

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

```
#Provide your IBM Watson Device Credentials
```

```
organization = "80bbqy "
deviceType = "cse2019"
deviceId = "ganesh1601"
authMethod = "token"
authToken = "!8-vkyUJA+QxM-L+uf "
```

```
# Initialize GPIO
```

```
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
        print ("led is on")
    else :
        print ("led is off")
```

```
#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
```

```
    level=random.randint(0,100)
```

```
    weight=random.randint(0,100)
```

```
    data = { 'level' : level, 'weight': weight }
```

```
    #print data
```

```
    def myOnPublishCallback():
```

```
        print ("Published level = %s C" % level, "weight = %s %% "  
% weight, "to IBM Watson")
```

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

```
qos=0, on_publish=myOnPublishCallback)
    if not success:
        print("Not connected to IoT")
        time.sleep(1)
```

```
deviceCli.commandCallback = myCommandCallback
```

```
if (level>=75):
    print("Full LED ON")
```

```
# Disconnect the device and application from the cloud
deviceCli.disconnect()
```

OUTPUT :

The screenshot displays the IBM Watson IoT Platform dashboard. The top navigation bar includes tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area shows the details for a device named 'ganesh1601', which is 'Connected' and has a 'cse2019' device type. The 'Recent Events' tab is selected, showing a table of live data events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events listed are from 'IoTSensor' and 'event_1', all in 'json' format, received 'a few seconds ago'. A status message at the bottom right indicates '1 Simulation running'.

Event	Value	Format	Last Received
IoTSensor	{"level":91,"weight":50}	json	a few seconds ago
IoTSensor	{"level":95,"weight":0}	json	a few seconds ago
event_1	{"Temperature":46,"Humidity":60}	json	a few seconds ago
IoTSensor	{"level":8,"weight":36}	json	a few seconds ago
IoTSensor	{"level":83,"weight":60}	json	a few seconds ago

```

Python 3.7.4 Shell
File Edit Shell Debug Options Window Help

Full LED ON
Published level=10 C weight=41 % to IBM Watson
Published level=19 C weight=86 % to IBM Watson
Published level=26 C weight=52 % to IBM Watson
Published level=71 C weight=10 % to IBM Watson
Published level=15 C weight=21 % to IBM Watson
Published level=95 C weight=8 % to IBM Watson
Full LED ON
Published level=98 C weight=54 % to IBM Watson
Full LED ON
Published level=39 C weight=39 % to IBM Watson
Published level=70 C weight=31 % to IBM Watson
Published level=73 C weight=98 % to IBM Watson
Published level=75 C weight=51 % to IBM Watson
Full LED ON
Published level=22 C weight=38 % to IBM Watson
Published level=13 C weight=52 % to IBM Watson
Published level=73 C weight=45 % to IBM Watson
Published level=30 C weight=20 % to IBM Watson
Published level=66 C weight=96 % to IBM Watson
Published level=27 C weight=88 % to IBM Watson
Published level=37 C weight=88 % to IBM Watson
Published level=12 C weight=23 % to IBM Watson
Published level=72 C weight=14 % to IBM Watson
Published level=45 C weight=17 % to IBM Watson
Published level=65 C weight=24 % to IBM Watson
Published level=72 C weight=78 % to IBM Watson
Published level=96 C weight=96 % to IBM Watson
Full LED ON
Published level=90 C weight=95 % to IBM Watson
Full LED ON
Published level=8 C weight=98 % to IBM Watson
Published level=98 C weight=23 % to IBM Watson
Full LED ON
Published level=78 C weight=43 % to IBM Watson
Full LED ON
Published level=17 C weight=59 % to IBM Watson
Published level=45 C weight=17 % to IBM Watson
Published level=98 C weight=62 % to IBM Watson
Full LED ON
Published level=65 C weight=41 % to IBM Watson

```

```

sample.py - C:/Users/ELCOT/AppData/Local/Programs/Python/Python37/sample.py ...
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 = "80bbqy"
deviceType = "cse2019"
deviceId = "ganeshi601"
authMethod = "token"
authToken = "!8-vkyUJA+QxM-L+uf"

# Initialize GPIO

def myCommandCallback(cmd):
    print("Command received:%s"%cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
        print ("led is on")
    else :
        print ("led is off")

    #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
deviceCli.connect()

while True:

```

Ln: 12 Col: 19 Col: 1

Node-RED : node-red x Node-RED Dashboard x IBM Cloud x IBM Watson IoT Platform x Python 3.7.0 Shell

https://node-red-gulrx-2022-11-03.au-syd.mybluemix.net/ui/#/0?socketid=oN7ZScRDCyQyLmatAAA

Lenovo Gmail YouTube Maps WhatsApp Telegram Web AWS Learn from top co...

MONITORING

5unit

LIGHT ON

LIGHT OFF

GARBAGE LEVEL

99 units

File Edit Shell Debug Options Window Help

Published level = 81 C weight = 55 % to IBM Watson
Published level = 100 C weight = 47 % to IBM Watson
Published level = 11 C weight = 30 % to IBM Watson
Published level = 12 C weight = 20 % to IBM Watson
Published level = 22 C weight = 71 % to IBM Watson
Published level = 95 C weight = 61 % to IBM Watson
Published level = 39 C weight = 99 % to IBM Watson
Published level = 54 C weight = 65 % to IBM Watson
Published level = 14 C weight = 14 % to IBM Watson
Published level = 42 C weight = 58 % to IBM Watson
Published level = 85 C weight = 37 % to IBM Watson
Published level = 69 C weight = 12 % to IBM Watson
Command received: lighton
led is on
Published level = 73 C weight = 1 % to IBM Watson
Published level = 74 C weight = 13 % to IBM Watson
Published level = 25 C weight = 64 % to IBM Watson
Published level = 27 C weight = 69 % to IBM Watson
Published level = 50 C weight = 79 % to IBM Watson
Published level = 12 C weight = 19 % to IBM Watson
Published level = 78 C weight = 32 % to IBM Watson
Published level = 88 C weight = 18 % to IBM Watson
Published level = 41 C weight = 8 % to IBM Watson
Published level = 44 C weight = 82 % to IBM Watson
Published level = 40 C weight = 39 % to IBM Watson
Published level = 19 C weight = 59 % to IBM Watson
Published level = 42 C weight = 77 % to IBM Watson
Published level = 19 C weight = 46 % to IBM Watson
Published level = 20 C weight = 65 % to IBM Watson
Published level = 99 C weight = 4 % to IBM Watson
Published level = 99 C weight = 33 % to IBM Watson

node-red-pzeww-2022-11-09-eu-gb.mybluemix.net/red/#flow/af8258b9f89d608d

Node-RED

Flow 1

common

- inject
- debug
- complete
- catch
- status
- link in
- link call
- link out
- comment

function

- function
- switch
- change
- range
- template
- delay

msg.payload

LEVEL

WEIGHT

GARBAGE LEVEL

TRASH WEIGHT

Light on

Light off

IBM IoT

NK

debug

all nodes

11/17/2022, 3:59:32 PM node: d9a77b7efec78b50
id:
2/type/cse2019/ldlganesh1601/levIoT/Sensor/mj/son :
msg.payload : number
14

11/17/2022, 3:59:32 PM node: d9a77b7efec78b50
id:
2/type/cse2019/ldlganesh1601/levIoT/Sensor/mj/son :
msg.payload : number
14

11/17/2022, 3:59:32 PM node: d9a77b7efec78b50
id:
2/type/cse2019/ldlganesh1601/levIoT/Sensor/mj/son :
msg.payload : number
32

11/17/2022, 3:59:32 PM node: d9a77b7efec78b50
id:
2/type/cse2019/ldlganesh1601/levIoT/Sensor/mj/son :
msg.payload : number
26

11/17/2022, 3:59:32 PM node: d9a77b7efec78b50
id:
2/type/cse2019/ldlganesh1601/levIoT/Sensor/mj/son :
msg.payload : Object
{ level: 82, weight: 27 }

11/17/2022, 3:59:32 PM node: d9a77b7efec78b50
id:
2/type/cse2019/ldlganesh1601/levIoT/Sensor/mj/son :
msg.payload : number
82

25°C Cloudy 03:59 PM 17-11-2022

Drafts (1 x)

IBM-Pro x

IBM x

https://c x

IBM Clo x

IBM Wa x

Node-R x

Python f x

Downlo x

Node-R x

+

▼

—

□

×

←

→

↻

node-red-pzeww-2022-11-09.eu-gb.mybluemix.net/ui/#/07socketid=GWdDcW-T1zgJSd98AAAP

🔍

🔗

☆

⚙

🖼

🔥

⋮

Gmail

YouTube

Maps


cn cia2 - abineshgaj...

Task results PLK1E...

Home


MONITORING

TRASH WEIGHT




LIGHT ON

LIGHT OFF



GARBAGE LEVEL



Windows logo

Search

Calendar

Edge

File Explorer

Mail

WhatsApp

Chrome

Taskbar icons

Word

Excel

PowerPoint

25°C Cloudy

📶

🔋

🔊

ENG

04:19 PM

17-11-2022

🗨 2