SPRINT – 2

Date	16 November 2022
Team ID	PNT2022TMID26515
Project Name	Smart Waste Management System for Metropolitan cities
Maximum Marks	4 Marks

Python Code

```
import time import sys

import ibmiotf.application

import ibmiotf.device import

random

#Provide your IBM Watson

Device Credentials

organization

= "2melo1" deviceType =

"waste" deviceId = "1234" authMethod =

"token" authToken = "12345678"

# Initialize GPIO

def myCommandCallback(cmd):

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

status=cmd.data['command']

if status=="waste level":

    print ("waste level monitored")

  else :

    print ("weight level monitored")
```

```python
    #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 %%" % 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 IOTF")

  time.sleep(20)



deviceCli.commandCallback = myCommandCallback



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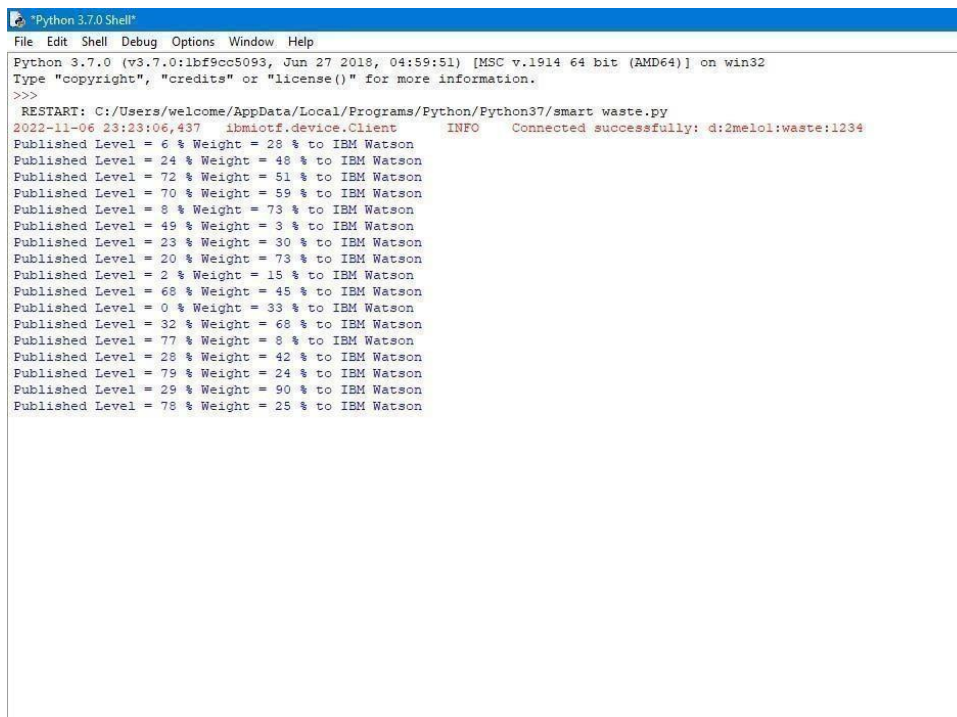
OUTPUT:


```
Python 3.7.0 Shell
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:/Users/welcome/AppData/Local/Programs/Python/Python37/smart waste.py
2022-11-06 23:23:06,437  ibmiotf.device.Client    INFO    Connected successfully: d:2melol:waste:1234
Published Level = 6 % Weight = 28 % to IBM Watson
Published Level = 24 % Weight = 48 % to IBM Watson
Published Level = 72 % Weight = 51 % to IBM Watson
Published Level = 70 % Weight = 59 % to IBM Watson
Published Level = 8 % Weight = 73 % to IBM Watson
Published Level = 49 % Weight = 3 % to IBM Watson
Published Level = 23 % Weight = 30 % to IBM Watson
Published Level = 20 % Weight = 73 % to IBM Watson
Published Level = 2 % Weight = 15 % to IBM Watson
Published Level = 68 % Weight = 45 % to IBM Watson
Published Level = 0 % Weight = 33 % to IBM Watson
Published Level = 32 % Weight = 68 % to IBM Watson
Published Level = 77 % Weight = 8 % to IBM Watson
Published Level = 28 % Weight = 42 % to IBM Watson
Published Level = 79 % Weight = 24 % to IBM Watson
Published Level = 29 % Weight = 90 % to IBM Watson
Published Level = 78 % Weight = 25 % to IBM Watson
```

NODE RED INPUT AND OUPUT:

Node-RED flow editor showing Flow 1 with IBM IoT node connected to msg.payload, Level function node connected to Garbage Level, and Weight function node connected to Trash Weight. Debug panel displays sensor messages.

Smart Waste dashboard — Garbage Monitoring showing Trash Weight gauge at 68 and Garbage Level gauge at 32.