SPRINT – 2

Date	17 October 2022
Team ID	PNT2022TMID05219
Project Name	Project – Smart Waste Management system for metropolitan cities

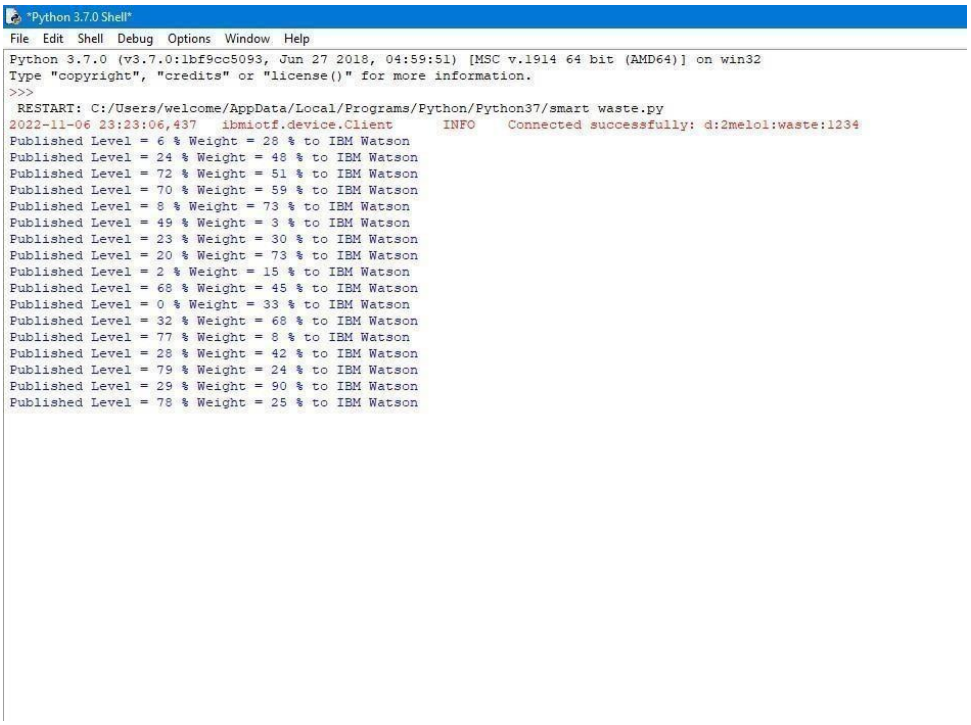
Python Code

```
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")
```

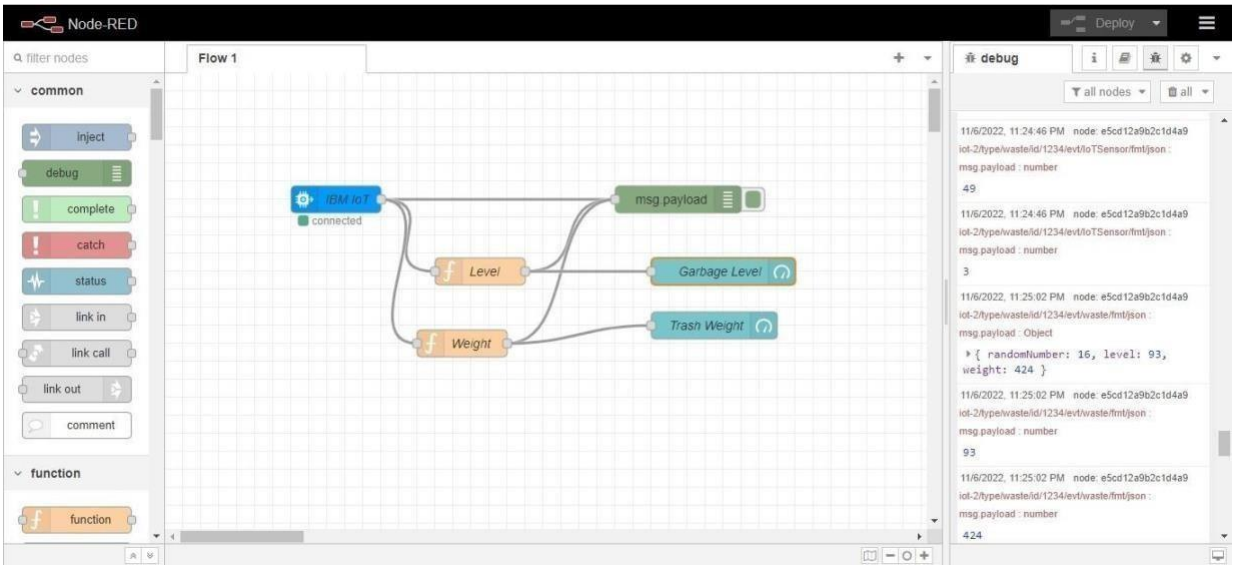
```
#print(cmd)
try:
deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method":authMethod,
"auth-token": authToken} deviceCli = ibmiotf.device.Client(deviceOptions)
        #.....................................

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:



NODE RED INPUT AND OUPUT:


Node-RED
Deploy
filter nodes
Flow 1
debug
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
IBM IoT
connected
Level
Weight
msg payload
Garbage Level
Trash Weight
all nodes
all
11/6/2022, 11:24:46 PM node: e5cd12a9b2c1d4a9
iot-2/type/waste/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
49
11/6/2022, 11:24:46 PM node: e5cd12a9b2c1d4a9
iot-2/type/waste/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
3
11/6/2022, 11:25:02 PM node: e5cd12a9b2c1d4a9
iot-2/type/waste/id/1234/evt/waste/fmt/json :
msg.payload : Object
{ randomNumber: 16, level: 93, weight: 424 }
11/6/2022, 11:25:02 PM node: e5cd12a9b2c1d4a9
iot-2/type/waste/id/1234/evt/waste/fmt/json :
msg.payload : number
93
11/6/2022, 11:25:02 PM node: e5cd12a9b2c1d4a9
iot-2/type/waste/id/1234/evt/waste/fmt/json :
msg.payload : number
424


Smart Waste
Garbage Monitoring
Trash Weight
68
0
10
Garbage Level
32
0
10