

SPRINT-1

Date	15 November 2022
Team ID	PNT2022TMID42807
Project Name	Project - Smart waste management system for metropolitan cities

PYTHON CODE AND SIMULATION OUTPUT

Code:

```
import requests
```

```
import json
```

```
import ibmiotf.application
```

```
import ibmiotf.device
```

```
import time
```

```
import random
```

```
import sys
```

```
organization = "kvnnui"
```

```
deviceType="swm"
```

```
deviceId="1234"
```

```
authMethod="token"
```

```
authToken="987654321"
```

```
def myCommandCallback(cmd):
```

```
    global a
```

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

```
control=cmd.data['command']  
print(control)
```

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()
```

```
deviceCli.connect()
```

while True:

```
    distance= random.randint(10,70)
```

```
    loadcell= random.randint(5,15)
```

```
    data= {'dist':distance,'load':loadcell}
```

```
    if loadcell < 13 and loadcell > 15:
```

```
        load= "90 %"
```

```
    elif loadcell < 8 and loadcell > 12:
```

```
        load= "60 %"
```

```
    elif loadcell < 4 and loadcell > 7:
```

```
        load= "40 %"
```

```
    else:
```

```
        load = "0 %"
```

```
    if distance < 15:
```

```
dist = 'Warning:' 'Trash is getting high, Time to collect 90 %'
```

```
elif distance < 40 and distance >16:
```

```
    dist = 'Warning:' 'Trash is above 70 %'
```

```
elif distance < 60 and distance > 41:
```

```
    dist = 'Warning:' '40 %'
```

```
else:
```

```
    dist = 'Warning:' '17 %'
```

```
if load == "90 %" or distance == "90 %":
```

```
    warn = 'alert:' ' Warning: Trash poundage getting high, Time to collect'
```

```
elif load == "60%" or distance == "60 %":
```

```
    warn = 'alert:' 'Trash is above 60%'
```

```
else :
```

```
    warn = 'alert:' 'No need to collect right now'
```

```
def myOnPublishCallback(lat=11.0168,long=76.9558):
```

```
    print("Coimbatore")
```

```
    print("published distance = %s" %distance, "loadcell:%s" %loadcell, "lon= %s"%long,"lat=%s" %lat)
```

```
    print(warn)
```

```
time.sleep(10)
```

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

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

```
if not success:
```

```
    print("not connnected to ibmiot")
```

```
time.sleep(20)
```

```
deviceCli.commandCallback=myCommandCallback
```

```
deviceCli.disconnect()
```

Output:

code.py - C:\Users\ELCOT\AppData\Local\Programs\Python\Python37-32\code.py (3.7.8)

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```
dist = 'Warning:' 'Trash is getting high, Time to collect 90 %'

elif distance < 40 and distance >16:
    dist = 'Warning:' 'Trash is above 70 %'

elif distance < 60 and distance > 41:
    dist = 'Warning:' '40 %'
else:
    dist = 'Warning:' '17 %'

if load == "90 %" or distance == "90 %":
    warn = 'alert:' 'Warning: Trash poundage getting high, Time to collect'

elif load == "60%" or distance == "60 %":
    warn = 'alert:' 'Trash is above 60%'

else :
    warn = 'alert:' 'No need to collect right now'

def myOnPublishCallback(lat=11.0168,lon=76.9558):
    print("Coimbatore")
    print("published distance = %s" %distance, "loadcell:%s" %loadcell, "lon= %s" %lon)
    print(warn)
    time.sleep(10)
    success=deviceCli.publishEvent ("IoTSensor","json", warn,qos=0,on_publish= myOnPu
    success=deviceCli.publishEvent ("IoTSensor","json", data,qos=0,on_publish= myOnPu

if not success:
    print("not connected to ibmiot")
    time.sleep(20)

deviceCli.commandCallback=myCommandCallback
deviceCli.disconnect()
```

Python 3.7.8 Shell

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```
Python 3.7.8 (tags/v3.7.8:4b47a5b6ba, Jun 28 2020, 07:55:33) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\ELCOT\AppData\Local\Programs\Python\Python37-32\code.py ====
2022-11-15 02:40:06,388 ibmiotf.device.Client INFO Connected successful
ly: d:\kvnmai:swm:1234
Coimbatore
published distance = 10 loadcell:11 lon= 76.9558 lat=11.0168
alert:No need to collect right now
Coimbatore
published distance = 10 loadcell:11 lon= 76.9558 lat=11.0168
alert:No need to collect right now
Coimbatore
published distance = 44 loadcell:6 lon= 76.9558 lat=11.0168
alert:No need to collect right now
Coimbatore
published distance = 44 loadcell:6 lon= 76.9558 lat=11.0168
alert:No need to collect right now
Coimbatore
published distance = 19 loadcell:7 lon= 76.9558 lat=11.0168
alert:No need to collect right now
Coimbatore
published distance = 19 loadcell:7 lon= 76.9558 lat=11.0168
alert:No need to collect right now
Coimbatore
published distance = 42 loadcell:6 lon= 76.9558 lat=11.0168
alert:No need to collect right now
Coimbatore
published distance = 42 loadcell:6 lon= 76.9558 lat=11.0168
alert:No need to collect right now
```

Ln: 5 Col: 0