

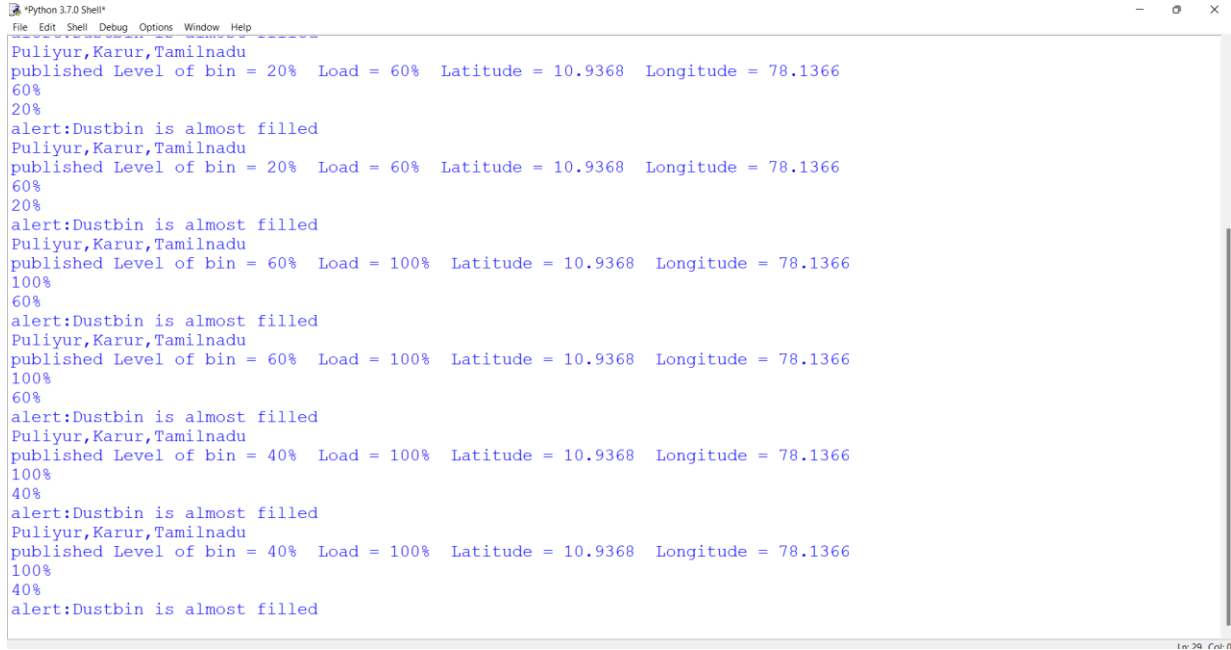
SPRINT I

Team ID	PNT2022TMID21348
Project Name	Smart Waste Management System for metropolitan cities

WORK DONE IN SPRINT 1:

- Python code is developed and then tested whether the code is generating random sensor data or not

SCREENSHOT:



```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
Puliyur,Karur,Tamilnadu
published Level of bin = 20% Load = 60% Latitude = 10.9368 Longitude = 78.1366
60%
20%
alert:Dustbin is almost filled
Puliyur,Karur,Tamilnadu
published Level of bin = 20% Load = 60% Latitude = 10.9368 Longitude = 78.1366
60%
20%
alert:Dustbin is almost filled
Puliyur,Karur,Tamilnadu
published Level of bin = 60% Load = 100% Latitude = 10.9368 Longitude = 78.1366
100%
60%
alert:Dustbin is almost filled
Puliyur,Karur,Tamilnadu
published Level of bin = 60% Load = 100% Latitude = 10.9368 Longitude = 78.1366
100%
60%
alert:Dustbin is almost filled
Puliyur,Karur,Tamilnadu
published Level of bin = 40% Load = 100% Latitude = 10.9368 Longitude = 78.1366
100%
40%
alert:Dustbin is almost filled
Puliyur,Karur,Tamilnadu
published Level of bin = 40% Load = 100% Latitude = 10.9368 Longitude = 78.1366
100%
40%
alert:Dustbin is almost filled
```

CODE:

```
import time
import random
import sys
import requests
import json
import ibmiotf.application
```

```

import ibmiotf.device

# watson device details

organization = "3w5ire"
devicType = "Dustbin"
deviceId = "DustbinID"
authMethod= "token"
authToken= "987654321"

#generate random values for random variables (Distance and load)

def myCommandCallback(cmd):
    global a
    print("command recieved:%s" %cmd.data['command'])
    control=cmd.data['command']
    print(control)

try:
    deviceOptions={"org": organization, "type": devicType,"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 "Distance" with value integer value into the cloud as a type of
event for every 10 seconds
deviceCli.connect()

while True:
    lat=10.9368
    lon=78.1366
    Distance= random.randint(1,75)

```

```

Loadcell= random.randint(0,20)
data= {'dist':Distance,'load':Loadcell,'latitude':lat,'longitude':lon}
if Loadcell<5 and Loadcell>0:
    load="20% "
elif Loadcell<10 and Loadcell>5:
    load="40% "
elif Loadcell<15 and Loadcell>10:
    load="60% "
elif Loadcell<18 and Loadcell>15:
    load="80% "
elif Loadcell<20 and Loadcell>18:
    load="90% "
else:
    load="100% "

if Distance<7 and Distance>1:
    level="90% "
elif Distance<15 and Distance>7:
    level="80% "
elif Distance<30 and Distance>15:
    level="60% "
elif Distance<45 and Distance>30:
    level="40% "
elif Distance<60 and Distance>45:
    level="20% "
elif Distance<75 and Distance>60:
    level="10% "
else:
    level="0% "

if(distance=="90% " or load=="90% "):
    warn={'Alert':'Dustbin is almost filled'}

def myOnPublishCallback(latitude=10.9368,longitude=78.1366):
    print("Puliyur,Karur,Tamilnadu")
    print("published Level of bin = %s " %level,"Load = %s " %load, "Latitude = %s "
%latitude,"Longitude = %s " %longitude)

```

```
print(load)
print(level)
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 connected to ibmiot")
    time.sleep(20)
```

```
deviceCli.commandCallback=myCommandCallback
#disconnect the device
deviceCli.disconnect()
```