Project Development Phase
Sprint 1

Date	28 October 2022
Team ID	PNT2022TMID01046
Project Name	Smart waste management system for metropolitan cities
Maximum Marks	8 Marks

Python script and output

In sprint 1 we have developed the code for smart waste management and seen output in python idle.

```
import requests
imporjson
importibmiotf.application
importibmiotf.device
import time
import random
import sys

# watson device details
organization ="iufdwo"
devicType = "ESP32_Controller"
deviceId ="BME280_Sensor"
authMethod ="token"
authToken ="12345678"


# generate random values for randomo variables (temperature&humidity)
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, "authmethod": authMethod, "authtoken":
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 "temp" with value integer value into the cloud as a type of event for every 10 seconds
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 = 'Risk warning:' 'Dumpster poundage getting high, Time to collect :) 90 %'
elif distance < 40 and distance > 16:
    dist = 'Risk warning:' 'dumpster is above 60%'
    elif distance < 60and distance > 41: dist =
'Risk warning:' '40 %'
else:
dist = 'Risk warning:' '17 %'

if
```

```
    load == "90 %" or distance == "90 %":
warn = 'alert :' ' Dumpster poundage getting high, Time to collect :)'
elif load == "60 %" or
distance == "60 %":
warn = 'alert :'
'dumpster is above 60%' else:
warn = 'alert :' 'No need to collect right now '


def myOnPublishCallback(lat=10.678991, long=78.177731):
    print("Gandigramam, Karur")
    print("published distance = %s " % distance, "loadcell:%s "
          % loadcell, "lon = %s " % long, "lat = %s" % lat)
    print(load)
    print(dist)
    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(30)

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

Python 3.7.8 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.8 (tags/v3.7.8:4b47a5b6ba, Jun 28 2020, 08:53:46) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:\Users\aksha\OneDrive\Desktop\bin4.py ==========
2022-11-12 14:34:04,621   ibmiotf.device.Client      INFO    Connected successfully: d:ms9s4l:Project:TMID01046
Chennai
published distance = 26  loadcell:12  lon = 78.135731  lat = 10.939091
0 %
Risk warning:dumpster is above 60%
alert :No need to collect right now
Chennai
published distance = 26  loadcell:12  lon = 78.135731  lat = 10.939091
0 %
Risk warning:dumpster is above 60%
alert :No need to collect right now
Chennai
published distance = 59  loadcell:8  lon = 78.135731  lat = 10.939091
0 %
Risk warning:40 %
alert :No need to collect right now
Chennai
published distance = 59  loadcell:8  lon = 78.135731  lat = 10.939091
0 %
Risk warning:40 %
alert :No need to collect right now
Chennai
published distance = 59  loadcell:8  lon = 78.135731  lat = 10.939091
0 %
Risk warning:40 %
alert :No need to collect right now
Chennai
published distance = 59  loadcell:8  lon = 78.135731  lat = 10.939091
0 %
Risk warning:40 %
alert :No need to collect right now
Chennai
published distance = 63  loadcell:15  lon = 78.135731  lat = 10.939091
0 %
Risk warning:17 %
alert :No need to collect right now
Chennai
published distance = 63  loadcell:15  lon = 78.135731  lat = 10.939091
0 %
Risk warning:17 %
alert :No need to collect right now
Chennai
published distance = 32  loadcell:12  lon = 78.135731  lat = 10.939091
```

Ln: 5 Col: 0