

## SPRINT – 1

### Simulation Creation (Connect Sensor with Python Code)

Date	15 November 2022
Project Name	Smart Waste Management System for Metropolitan Cities
Project ID	PNT2022TMID03917

#### PYTHON CODE

```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random

#Provide your IBM Watson Device Credentials

organization = "ykru5d"

deviceType = "GarbageBin_1"

deviceId = "Garbage1"

authMethod = "token"

authToken = "DKD_K)lt0Yn!yQleUf"

# Initialize GPIO

def myCommandCallback(cmd):

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

    status=cmd.data['command']

    if status =="lighton":

        print("led in on")

    else :

        print ("led is off")

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:

    #Get Sensor Data from DHT11

    time.sleep(5)

    ult_son=random.randint(0,80)

    weight=random.randint(0,100)

    lat = round(random.uniform(11.03, 11.50), 6)

    long = round(random.uniform(76.80, 76.90), 6)

    gps = str(lat) + str(',') + str(long)

    data = {'Ultrasonic' : ult_son, 'Weight' : weight , 'GPS' : gps}

    #print data

    def myOnPublishCallback():

        print ("Published Ultrasonic Sensor = %s Cm" %ult_son, "Bin Weight:%s kg" %weight, "GPS
Location: %s" %gps)

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

        if not success:

            print("Not connected to IoT")

    time.sleep(1)

    deviceCli.commandCallback = myCommandCallback

    # Disconnect the device and application from the cloud

    deviceCli.disconnect()

```

## Output:

```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=== RESTART: C:/Users/sriabirami/OneDrive/Desktop/ibm project/finalcode.py ===
2022-11-19 23:52:19,874 ibmiotf.device.Client INFO Connected successfully: d:ykru5d:GarbageBin_1:Garbage1
Published Ultrasonic Sensor = 31 Cm Bin Weight:25 kg GPS Location: 11.168118,76.808367
Published Ultrasonic Sensor = 12 Cm Bin Weight:94 kg GPS Location: 11.293141,76.843188
Published Ultrasonic Sensor = 54 Cm Bin Weight:15 kg GPS Location: 11.330683,76.831059
Published Ultrasonic Sensor = 25 Cm Bin Weight:40 kg GPS Location: 11.109043,76.841675
Published Ultrasonic Sensor = 17 Cm Bin Weight:48 kg GPS Location: 11.352442,76.8381
```

## NODERED FLOW FOR SENSOR , GPS AND WEIGHT

