

DEVELOP A PYTHON SCRIPT

Team ID	PNT2022TMID04593
Project Name	Smart waste management system for metropolitan cities

Step 1: Open python idle

Step2: Type the program

Step 3: Then click on file and save the document

Step 4: Then click on Run then Run Module

Step 5: output will be appeared in the idle window

PYTHON SCRIPT

```
import time
```

```
import sys
```

```
import ibmiotf.application
```

```
import ibmiotf.device
```

```
import random
```

```
#Provide your IBM Watson Device Credentials
```

```
organization = "kmqq03"
```

```
deviceType = "BIN1"
```

```
deviceId = "BINID"
```

```
authMethod= "token"
```

```
authToken = "123456789"
```

```
#generate random values for random variables for distance and loadcell
```

```
def myCommandCallback(cmd): global a
```

```
print("command recieved:%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()
```

```
# connect and send a datapoint "distance and loadcell" 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 < 60 and distance > 41: dist = 'Risk warning:' '40 %'
else:
dist = 'Risk warning:' '17 %'

if load == "90 %" or distance == "90 %":
warn = 'alert :' 'Risk Warning: 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=10.939091,long=78.135731): print("Chennai")
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(10)
```

```
deviceCli.commandCallback=myCommandCallback
```

```
#disconnect the device deviceCli.disconnect()
```

Screenshots Python script :

```
bin4.py - C:\Users\aksha\OneDrive\Desktop\bin4.py (3.7.8)
File Edit Format Run Options Window Help
# Project : Smart Waste Management
# Team ID : PNT2022TMID01046
import requests
import json
import ibmiotf.application
import ibmiotf.device
import time
import random
import sys

# watson device details

organization = "ms9s41"
devicetype = "BIN1"
deviceId = "BIN1ID"
authMethod= "token"
authToken= "123456789"

#generate random values for randomo variables for distance and loadcell

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

try:
    deviceOptions={"org": organization, "type": devicetype,"id": deviceId,"auth-method":a
    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 and loadcell" with value integer value into the cloud
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 = "60 %"

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 09:56:00,870 ibmiotf.device.Client INFO Connected successfully: d:ms9s4
l:BIN1:BIN1ID
Chennai
published distance = 38 loadcell:10 lon = 78.135731 lat = 10.939091
0 %
Risk warning:dumpster is above 60%
alert :No need to collect right now
Chennai
published distance = 38 loadcell:10 lon = 78.135731 lat = 10.939091
0 %
Risk warning:dumpster is above 60%
alert :No need to collect right now
Chennai
published distance = 38 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 = 38 loadcell:12 lon = 78.135731 lat = 10.939091
0 %
Risk warning:dumpster is above 60%
alert :No need to collect right now
```