

DEVELOP A PYTHON SCRIPT

TEAM ID	PNT2022TMID04740
PROJECT	Smart waste management system for metropolitan cities

STEPS:

- 1.Open python IDLE
- 2.Click new file and type the program
- 3.Save it and click on run ,then run module
- 4.Output will be appeared in the IDLE window.

PYTHON SCRIPT:

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

# watson device details
organization = "j5bxb7"
devicType = "IOT123edevicetype"
deviceId = "IOTece4"
authMethod= "token"
authToken= "e2)-17xkqIFMvm3@II"

#generate random values for random variables (temperature&humidity)

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

try:
    deviceOptions={"org": organization, "type": devicType,"id":
deviceId,"authmethod":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 "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 < 60 and distance > 41:

        dist = 'Risk warning:' '40 %'

    else:

        dist = 'Risk warning:' '17 %'

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

```

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    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

```

OUTPUT:

spr4.py - C:/Users/ELCOT/AppData/Local/Programs/Python/Python37/spr4.py (3.7.0)

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```
import ibmiotf.device
import time
import random
import sys

# watson device details
organization = "j5bxb7"
deviceType = "IOT123edevicetype"
deviceId = "IOTece4"
authMethod= "token"
authToken= "e2)-l7xkqIFMvm3@lI"
#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": deviceType,"id": deviceId}
    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 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:
```

Python 3.7.0 Shell

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```
>>>
=== RESTART: C:/Users/ELCOT/AppData/Local/Programs/Python/Python37/spr4.py ===
2022-11-15 20:06:50,185 ibmiotf.device.Client INFO Connected successfully: d:j5bxb7:IOT123edevicetype:IOTece4
Gandigramam, Karur
published distance = 45 loadcell:15 lon = 78.177731 lat = 10.678991
0 %
Risk warning:40 %
alert :No need to collect right now
Gandigramam, Karur
published distance = 45 loadcell:15 lon = 78.177731 lat = 10.678991
0 %
Risk warning:40 %
alert :No need to collect right now
Gandigramam, Karur
published distance = 53 loadcell:5 lon = 78.177731 lat = 10.678991
0 %
Risk warning:40 %
alert :No need to collect right now
Gandigramam, Karur
published distance = 53 loadcell:5 lon = 78.177731 lat = 10.678991
0 %
Risk warning:40 %
alert :No need to collect right now
Gandigramam, Karur
published distance = 33 loadcell:10 lon = 78.177731 lat = 10.678991
0 %
Risk warning:dumpster is above 60%
alert :No need to collect right now
Gandigramam, Karur
published distance = 33 loadcell:10 lon = 78.177731 lat = 10.678991
0 %
Risk warning:dumpster is above 60%
alert :No need to collect right now
Gandigramam, Karur
published distance = 20 loadcell:14 lon = 78.177731 lat = 10.678991
```