

Develop a python script

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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: Thenclick on Run then Run Module

Step 5: 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 =
"4yi0vc"     devicType =
"BIN1"      deviceId =
"BIN1ID"     authMethod=
"token"      authToken=
"123456789"
```

```
#generate random values for random 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,"auth-
method":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 < 60

```

```

and 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

```

Screenshots Python script:

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

# Watson device details
organization = "4y10vc"
deviceType = "BINI"
deviceId = "BINIID"
authMethod = "token"
authToken = "123456789"

# Generate random values for random variables (temperature, humidity)

def myCommandCallback(cmd):
    global a
    print("Command received: %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 "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: 'Dumper poundage getting high, Time to collect :)' 90 %"
    elif distance < 40 and distance > 14:
        dist = "Risk warning: 'Dumper is above 60%'"

    deviceCli.sendDatapoint("temp", {"dist": dist, "load": load})
    time.sleep(10)
```


