

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: Then click 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:

The image displays three screenshots of a Python script, likely for simulating an IBM Watson IoT device. The script is written in Python 3.7.4 and uses the `requests`, `json`, `ibmiotf`, `time`, `random`, and `sys` modules.

Left Screenshot: Shows the initial imports and device configuration. The device is named "B1H1J2" and is configured with a Watson IoT organization and device ID. It also shows the generation of random values for temperature and humidity.

Middle Screenshot: Shows the `myCommandCallback` function, which handles incoming commands. It prints the command received and the control data. The function also handles exceptions when connecting to the device.

Right Screenshot: Shows the main loop of the script. It connects to the Watson IoT cloud and sends a datapoint "temp" with a value integer value into the cloud as a type of event for every 10 seconds. The script also includes logic to generate random values for distance and load cell, and to send a "Risk warning" message when the load cell is high.

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

# Watson device details
organization = "myOrg"
deviceType = "B1H1J2"
deviceId = "B1H1J2"
authMethod = "token"
authToken = "123456789"

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

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

try:
    deviceOptions={"org": organization, "type": deviceType,
    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
deviceCli.connect()

while True:
    distance= random.randint(10,70)
    loadcell= random.randint(5,15)
    data= {'dist':distance,'load':loadcell}

    distance= random.randint(10,70)
    loadcell= random.randint(5,15)
    data= {'dist':distance,'load':loadcell}

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

try:
    deviceOptions={"org": organization, "type": deviceType,
    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
deviceCli.connect()

while True:
    distance= random.randint(10,70)
    loadcell= random.randint(5,15)
    data= {'dist':distance,'load':loadcell}

    distance= random.randint(10,70)
    loadcell= random.randint(5,15)
    data= {'dist':distance,'load':loadcell}

    if loadcell < 13 and loadcell > 15:
        load = "90 %"

... (The script continues with more logic for sending data and handling warnings) ...


```


