Develop a Python Script

Team ID	**PNT2022TMID04607**
Project Name	Smart Waste Management System in Metropolitan Cities.

Step 1 : Open Python IDLE

Step 2 :Type the program

Step 3 : Then Click on file & Save the document.

Step 4 : Then click on Run, Click run module.

Step 5 : Output will be appeared in the IDLE Window.

Python Script :

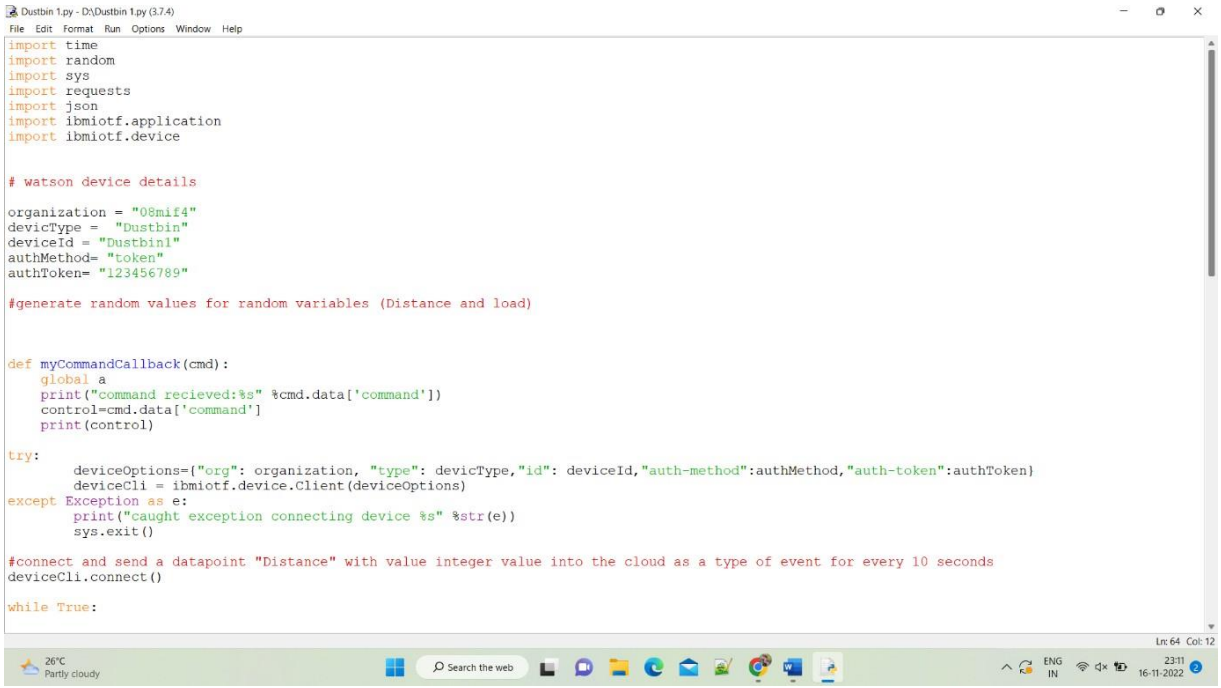
```
import time
import random
import sys
import requests
import json
import ibmiotf.application
import ibmiotf.device



# watson device details


Organization ID3ly7la
Device Type123456789
Device ID123456789
Authentication Methoduse-token-auth
Authentication Token@pR7yNP@Y4h3bT5jnW

#generate random values for random variables (Distance and load)
```

```
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,"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" with value integer value into the cloud as a type of event for every 10 seconds
deviceCli.connect()


while True:


   Distance= random.randint(1,75)
   Loadcell= random.randint(0,20)
   data= {'dist':Distance,'load':Loadcell}
   if Loadcell<5 and Loadcell>0:
      load="20%"
   elif Loadcell<10 and Loadcell>5:
      load="40%"
```

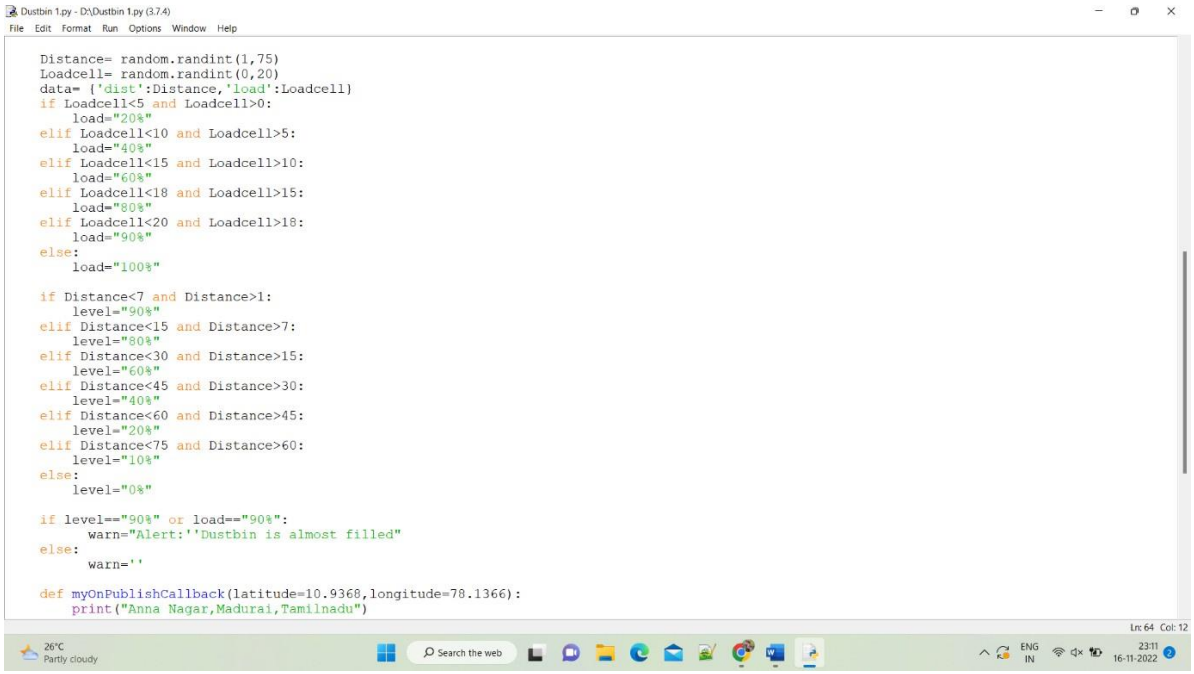
```
elif Loadcell<15 and Loadcell>10:
   load="60%"
elif Loadcell<18 and Loadcell>15:
   load="80%"
elif Loadcell<20 and Loadcell>18:
   load="90%"
else:
   load="100%"

if Distance<7 and Distance>1:
   level="90%"
elif Distance<15 and Distance>7:
   level="80%"
elif Distance<30 and Distance>15:
   level="60%"
elif Distance<45 and Distance>30:
   level="40%"
elif Distance<60 and Distance>45:
   level="20%"
elif Distance<75 and Distance>60:
   level="10%"
else:
   level="0%"

if level=="90%" or load=="90%":
     warn="Alert:''Dustbin is almost filled"
else:
     warn=''
```

```
    def myOnPublishCallback(latitude=10.9368,longitude=78.1366):
        print("Anna Nagar,Madurai,Tamilnadu")
        print("published Level of bin = %s " %level,"Load = %s " %load, "Latitude = %s "
%latitude,"Longitude = %s " %longitude)
        print(load)
        print(level)
        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(20)




    deviceCli.commandCallback=myCommandCallback
#disconnect the device
deviceCli.disconnect()
```

Code Snap :



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


# watson device details

organization = "08mif4"
devicType =  "Dustbin"
deviceId = "Dustbin1"
authMethod= "token"
authToken= "123456789"

#generate random values for random variables (Distance and load)



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,"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" with value integer value into the cloud as a type of event for every 10 seconds
deviceCli.connect()

while True:
```



```
    Distance= random.randint(1,75)
    Loadcell= random.randint(0,20)
    data= {'dist':Distance,'load':Loadcell}
    if Loadcell<5 and Loadcell>0:
        load="20%"
    elif Loadcell<10 and Loadcell>5:
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    elif Loadcell<15 and Loadcell>10:
        load="60%"
    elif Loadcell<18 and Loadcell>15:
        load="80%"
    elif Loadcell<20 and Loadcell>18:
        load="90%"
    else:
        load="100%"

    if Distance<7 and Distance>1:
        level="90%"
    elif Distance<15 and Distance>7:
        level="80%"
    elif Distance<30 and Distance>15:
        level="60%"
    elif Distance<45 and Distance>30:
        level="40%"
    elif Distance<60 and Distance>45:
        level="20%"
    elif Distance<75 and Distance>60:
        level="10%"
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    if level=="90%" or load=="90%":
          warn="Alert:''Dustbin is almost filled"
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          warn=''

    def myOnPublishCallback(latitude=10.9368,longitude=78.1366):
        print("Anna Nagar,Madurai,Tamilnadu")
```
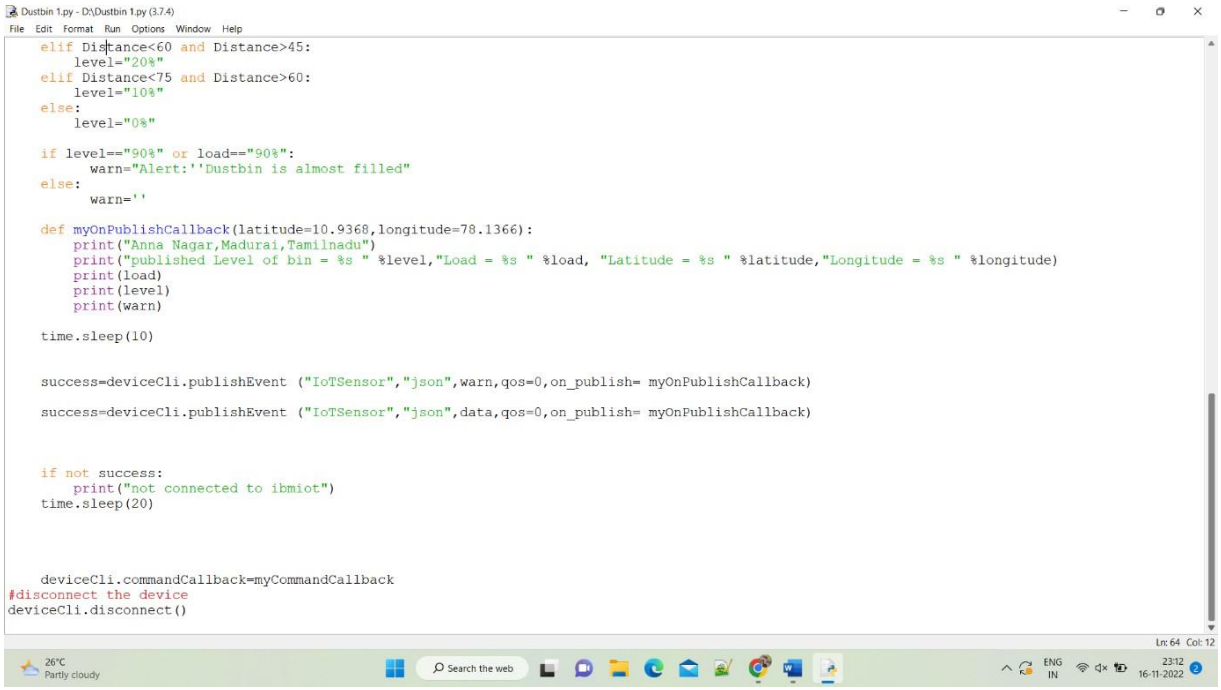
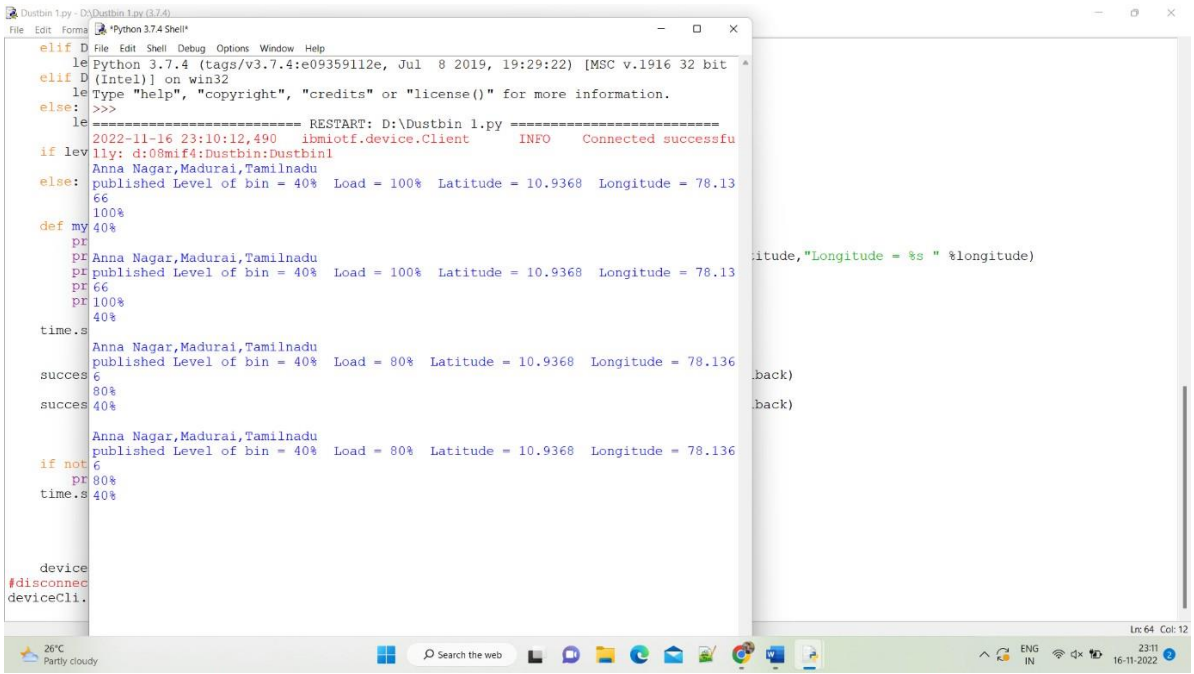


Dustbin 1.py - D:\Dustbin 1.py (3.7.4)
File Edit Format Run Options Window Help
elif Distance<60 and Distance>45:
level="20%"
elif Distance<75 and Distance>60:
level="10%"
else:
level="0%"
if level=="90%" or load=="90%":
warn="Alert:''Dustbin is almost filled"
else:
warn=''
def myOnPublishCallback(latitude=10.9368,longitude=78.1366):
print("Anna Nagar,Madurai,Tamilnadu")
print("published Level of bin = %s " %level,"Load = %s " %load, "Latitude = %s " %latitude,"Longitude = %s " %longitude)
print(load)
print(level)
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(20)
deviceCli.commandCallback=myCommandCallback
#disconnect the device
deviceCli.disconnect()
Ln: 64 Col: 12
26°C
Partly cloudy
Search the web
ENG
IN
23:12
16-11-2022

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, 19:29:22) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:\Dustbin 1.py ==========
2022-11-16 23:10:12,490 ibmiotf.device.Client INFO Connected successfully: d:08mif4:Dustbin:Dustbin1
Anna Nagar,Madurai,Tamilnadu
published Level of bin = 40% Load = 100% Latitude = 10.9368 Longitude = 78.1366
100%
40%
Anna Nagar,Madurai,Tamilnadu
published Level of bin = 40% Load = 100% Latitude = 10.9368 Longitude = 78.1366
100%
40%
Anna Nagar,Madurai,Tamilnadu
published Level of bin = 40% Load = 80% Latitude = 10.9368 Longitude = 78.1366
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40%
Anna Nagar,Madurai,Tamilnadu
published Level of bin = 40% Load = 80% Latitude = 10.9368 Longitude = 78.1366
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Ln: 64 Col: 12
26°C
Partly cloudy
Search the web
ENG
IN
23:11
16-11-2022