

DEVELOP A PYTHON SCRIPT

TEAM ID	PNT2022TMID14066
PROJECT NAME	Signs with Smart Connectivity for Better Road Safety

STEPS TO DEVELOP A PYTHON SCRIPT:

STEP-1: Install Python IDLE 3.7 from any browser.

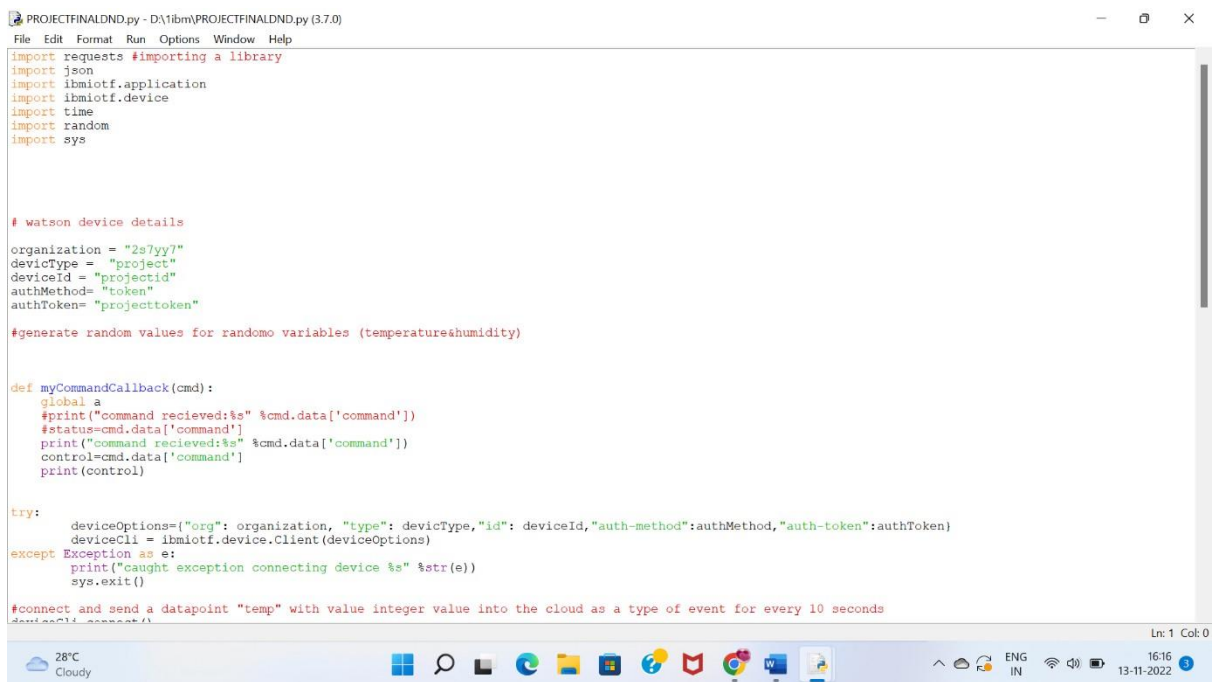
STEP-2: Open PYTHON IDLE. Click on File->New file. A new screen opens.

STEP-3: Develop a python program to satisfy the required needs.

STEP-4: Save the file and click Run-> Run Module.

STEP-5: The program gets executed and it reports any error if present, else produces the output.

PYTHON CODE:



```
PROJECTFINALDND.py - D:\1bm\PROJECTFINALDND.py (3.7.0)
File Edit Format Run Options Window Help
import requests #importing a library
import json
import ibmiotf.application
import ibmiotf.device
import time
import random
import sys

# watson device details
organization = "2s7yy7"
deviceType = "project"
deviceId = "projectid"
authMethod = "token"
authToken = "projecttoken"

#generate random values for random variables (temperaturehumidity)

def myCommandCallback(cmd):
    global a
    #print("command recieved:%s" %cmd.data['command'])
    #status=cmd.data['command']
    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 "temp" with value integer value into the cloud as a type of event for every 10 seconds
deviceCli.connect()
```

```
PROJECTFINALDND.py - D:\ibm\PROJECTFINALDND.py (3.7.0)
File Edit Format Run Options Window Help
#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:
    #get sensor data from DHT11

    a = "https://api.openweathermap.org/data/2.5/weather?q=Chennai,%20IN&appid=e2bea247ed9ad643a04d9a8e55499d5f"
    r=requests.get(url=a)
    data=r.json()

    Temp= data['main']['temp']
    Humd= data['main']['humidity']
    data= {'temp':Temp,'humid':Humd}
    dist=random.randint(0,20)
    dis={'dista':dist}

    if (Humd<100):
        warn={'alert':'PLEASE SLOW DOWN!!!!!!'}
    if (dist<20):
        insta={'inst':'stop'}

    def myOnPublishCallback():
        print("published Temperature = %s c" %Temp,"humidity:%s %" %Humd)
        print(warn)
        print(dis)

    success=deviceCli.publishEvent ("IoTSensor","json",insta,qos=0,on_publish= myOnPublishCallback)
    success=deviceCli.publishEvent ("IoTSensor","json",data,qos=0,on_publish= myOnPublishCallback)
    success=deviceCli.publishEvent ("IoTSensor","json",warn,qos=0,on_publish= myOnPublishCallback)
    success=deviceCli.publishEvent ("IoTSensor","json",dis,qos=0,on_publish= myOnPublishCallback)

Ln: 1 Col: 0
```

```
PROJECTFINALDND.py - D:\ibm\PROJECTFINALDND.py (3.7.0)
File Edit Format Run Options Window Help
data= {'temp':Temp,'humid':Humd}
dist=random.randint(0,20)
dis={'dista':dist}

if (Humd<100):
    warn={'alert':'PLEASE SLOW DOWN!!!!!!'}
if (dist<20):
    insta={'inst':'stop'}

def myOnPublishCallback():
    print("published Temperature = %s c" %Temp,"humidity:%s %" %Humd)
    print(warn)
    print(dis)

    success=deviceCli.publishEvent ("IoTSensor","json",insta,qos=0,on_publish= myOnPublishCallback)
    success=deviceCli.publishEvent ("IoTSensor","json",data,qos=0,on_publish= myOnPublishCallback)
    success=deviceCli.publishEvent ("IoTSensor","json",warn,qos=0,on_publish= myOnPublishCallback)
    success=deviceCli.publishEvent ("IoTSensor","json",dis,qos=0,on_publish= myOnPublishCallback)

    if not success:
        print("not connected to ibmiot")
        time.sleep(1)

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

Ln: 1 Col: 0
```

OUTPUT:

The screenshot shows a Windows desktop with a taskbar at the bottom. The taskbar includes the Start button, a search icon, and several application icons: File Explorer, Microsoft Edge, a folder icon, a blue icon, a red icon, a green icon, and a yellow icon. The system tray at the bottom right shows the date and time as 16:19 on 13-11-2022, along with icons for network, volume, and power.

The main focus is a terminal window titled "Python 3.7.0 Shell". The terminal displays the following content:

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.

===== RESTART: D:\lib\PROJECTFINALDND.py =====
2022-11-13 16:19:45,474 ibmiotf.device.Client INFO Connected successfully
lly: d:2s7yy7:project:projectId

Temp= data['ma published Temperature = 301.14 c humidity:89 %
Humd= data['ma
data=r.json() {'alert': 'PLEASE SLOW DOWN!!!!!!'}
data= {'temp':2 ('dista': 1)
dist=random.ra published Temperature = 301.14 c humidity:89 %
dis=({'dista':d ('alert': 'PLEASE SLOW DOWN!!!!!!')
('dista': 1)
if (Humd<100): published Temperature = 301.14 c humidity:89 %
warn=({'ale ('alert': 'PLEASE SLOW DOWN!!!!!!')
if (dist<20): ('dista': 1)
insta=({'im published Temperature = 301.14 c humidity:89 %
{'alert': 'PLEASE SLOW DOWN!!!!!!'}
('dista': 1)
published Temperature = 301.14 c humidity:89 %
def myOnPublis {'alert': 'PLEASE SLOW DOWN!!!!!!'}
{'dista': 15)
published Temperature = 301.14 c humidity:89 %
print("pub ('dista': 15)
print(warn ('alert': 'PLEASE SLOW DOWN!!!!!!')
print(dis) ('dista': 15)
published Temperature = 301.14 c humidity:89 %
{'alert': 'PLEASE SLOW DOWN!!!!!!'}
('dista': 15)
published Temperature = 301.14 c humidity:89 %
{'alert': 'PLEASE SLOW DOWN!!!!!!'}
('dista': 15)

success=device
success=device
success=device
success=device

if not success:
print("not
```

The terminal window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The status bar at the bottom of the terminal window shows "Ln: 5 Col: 0".