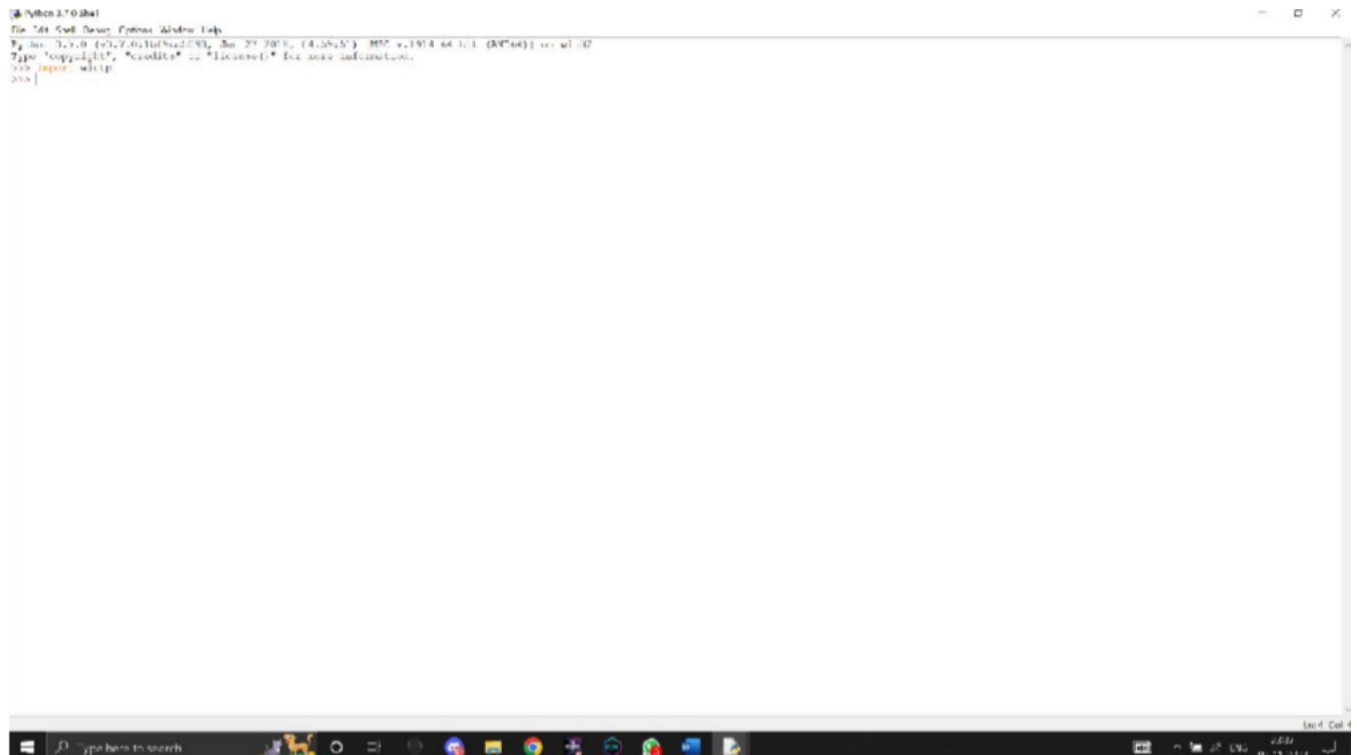


Develop the python code and subscribe to IBM IoT Platform

Date	25 October 2022
Team ID	PNT2022TMID27109
Project Name	Smart Farmer - IoT Enabled Smart Farming Application

Step 1: Import wiotp in python shell



```
Python 3.7 Shell
File Edit Shell Debug Console Window Help
Python 3.7.0 Shell [Python 3.7.0] (x64)
Type 'copyright', 'credits' or 'license()' for more information.
>>> import wiotp
>>>
```

Step 2 : write the code to connect with IBM Watson platform

```
File Edit Format Run Options Window Help
IBM Watson IoT Platform
$ pip install ws2tcp
import ws2tcp.device
import time
import random

myToken = {
    "clientId": "41a1d",
    "typeId": "TestDeviceType",
    "deviceId": "12345"
},
    "auth": {
        "token": "myVEMUCEnOp1c0u"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data["command"])
    cmd.data["command"]
    if(cmd=="motoron"):
        print("Motor is switched on")
    elif(cmd=="motoroft"):
        print("Motor is switched off")
    print(" ")

client = ws2tcp.device.DeviceClient(config=myToken, logEndpoint=None)
client.connect()

while True:
    soil = random.randint(0,100)
    temp = random.randint(20,120)
    hum = random.randint(0,100)
    myData = {"soil_moisture":soil,"temperature":temp,"humidity":hum}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
    print("Published data Successfully: %s" % myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)

client.disconnect()
```

Step 3 : Python is connected with IBM watson and the result is shown in the console

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Published data Successfully: 1s ['soil_moisture': 58, 'temperature': 22, 'humidity': 17]
Published data Successfully: 3s ['soil_moisture': 6, 'temperature': 107, 'humidity': 54]
Published data Successfully: 1s ['soil_moisture': 79, 'temperature': 24, 'humidity': 71]
Published data Successfully: 3s ['soil_moisture': 91, 'temperature': 85, 'humidity': 14]
Published data Successfully: 1s ['soil_moisture': 37, 'temperature': 1, 'humidity': 52]
Published data Successfully: 3s ['soil_moisture': 44, 'temperature': -14, 'humidity': 73]
Published data Successfully: 1s ['soil_moisture': 90, 'temperature': 109, 'humidity': 59]
Published data Successfully: 3s ['soil_moisture': 54, 'temperature': 19, 'humidity': 37]
Published data Successfully: 1s ['soil_moisture': 16, 'temperature': 17, 'humidity': 59]
Published data Successfully: 3s ['soil_moisture': 76, 'temperature': 45, 'humidity': 90]
Published data Successfully: 1s ['soil_moisture': 29, 'temperature': 70, 'humidity': 21]
Published data Successfully: 3s ['soil_moisture': 21, 'temperature': 27, 'humidity': 86]
Published data Successfully: 1s ['soil_moisture': 10, 'temperature': 73, 'humidity': 35]
Published data Successfully: 3s ['soil_moisture': 4, 'temperature': 72, 'humidity': 51]
Published data Successfully: 1s ['soil_moisture': 10, 'temperature': 35, 'humidity': 80]
Published data Successfully: 3s ['soil_moisture': 69, 'temperature': 2, 'humidity': 42]
Published data Successfully: 1s ['soil_moisture': 18, 'temperature': 99, 'humidity': 85]
Published data Successfully: 3s ['soil_moisture': 54, 'temperature': 21, 'humidity': 53]
Published data Successfully: 1s ['soil_moisture': 45, 'temperature': 33, 'humidity': 63]
Published data Successfully: 3s ['soil_moisture': 97, 'temperature': 1, 'humidity': 33]
Published data Successfully: 1s ['soil_moisture': 73, 'temperature': 96, 'humidity': 18]
Published data Successfully: 3s ['soil_moisture': 0, 'temperature': 31, 'humidity': 91]
Published data Successfully: 1s ['soil_moisture': 58, 'temperature': 95, 'humidity': 57]
Published data Successfully: 3s ['soil_moisture': 70, 'temperature': 20, 'humidity': 77]
Published data Successfully: 1s ['soil_moisture': 34, 'temperature': 2, 'humidity': 35]
Published data Successfully: 3s ['soil_moisture': 61, 'temperature': 11, 'humidity': 41]
Published data Successfully: 1s ['soil_moisture': 71, 'temperature': 93, 'humidity': 90]
Published data Successfully: 3s ['soil_moisture': 29, 'temperature': 174, 'humidity': 18]
Published data Successfully: 1s ['soil_moisture': 27, 'temperature': 76, 'humidity': 55]
Published data Successfully: 3s ['soil_moisture': 17, 'temperature': 89, 'humidity': 91]
Published data Successfully: 1s ['soil_moisture': 87, 'temperature': 113, 'humidity': 70]
Published data Successfully: 3s ['soil_moisture': 7, 'temperature': -13, 'humidity': 59]
Published data Successfully: 1s ['soil_moisture': 53, 'temperature': 3, 'humidity': 95]
Published data Successfully: 3s ['soil_moisture': 40, 'temperature': 124, 'humidity': 31]
Published data Successfully: 1s ['soil_moisture': 29, 'temperature': 56, 'humidity': 91]
Published data Successfully: 3s ['soil_moisture': 28, 'temperature': 6, 'humidity': 86]
Published data Successfully: 1s ['soil_moisture': 70, 'temperature': 21, 'humidity': 30]
Published data Successfully: 3s ['soil_moisture': 25, 'temperature': 96, 'humidity': 99]
Published data Successfully: 1s ['soil_moisture': 6, 'temperature': 10, 'humidity': 69]
Published data Successfully: 3s ['soil_moisture': 60, 'temperature': 2, 'humidity': 96]
Published data Successfully: 1s ['soil_moisture': 70, 'temperature': 83, 'humidity': 0]
Published data Successfully: 3s ['soil_moisture': 45, 'temperature': 36, 'humidity': 11]
Published data Successfully: 1s ['soil_moisture': 30, 'temperature': 37, 'humidity': 85]
Published data Successfully: 3s ['soil_moisture': 71, 'temperature': 36, 'humidity': 93]
Published data Successfully: 1s ['soil_moisture': 14, 'temperature': 26, 'humidity': 0]
Published data Successfully: 3s ['soil_moisture': 40, 'temperature': 16, 'humidity': 25]
```

Step 4 : As the python code is connected to IBM IoT platform ,then run the program.

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes tabs for 'Developer Api - Fast...', 'Application Details - I...', 'Node-RED : node-red', 'IBM Watson IoT Platf...', 'IBM', 'IBM-EPBL/IBM-Proje...', '(3) WhatsApp', and a plus icon. The browser address bar shows the URL '4lmir6.internetofthings.ibmcloud.com/dashboard/devices/browse'. The main header of the IBM Watson IoT Platform includes a user profile icon, a help icon, and the email '310819106086@smartinternz.com' with ID '4lmir6'. The left sidebar contains icons for 'Browse', 'Action', 'Device Types', and 'Interfaces'. The 'Browse' tab is active, showing a list of devices. The 'Recent Events' tab is selected, displaying a table of events. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. The events are JSON payloads containing sensor data. The status '1 Simulation running' is visible at the bottom right.

Event	Value	Format	Last Received
event_test	{"soil":27,"temp":27,"hum":60}	json	a few seconds ago
event_test	{"soil":50,"temp":46,"hum":58}	json	a few seconds ago
status	{"soil_moisture":63,"temperature":41,"humidity"...	json	a few seconds ago
event_test	{"soil":31,"temp":14,"hum":20}	json	a few seconds ago
event_test	{"soil":14,"temp":12,"hum":70}	json	a few seconds ago

Items per page 50 | 1-1 of 1 item

1 Simulation running

Result :

The Python Code is developed and Subscribed to IBM IoT Platform successfully.