

## **Assignment – 4**

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**Application Id – SPS\_APL\_20210012580**

**Aim -** Develop a mobile application that takes the user input and sends it to IoT device (python code). print the received data in python shell.

Keep a text box to accept the user input.integrate a submit button.  
whenever user enters the text input in text box and clicks the button the data should be sent to IBM cloud using URL(HTTP API).

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**Requirement –**

1. IBM cloud service
2. MIT app developer
3. Python
4. MIT AI companion app

**Working -** Here we use the IOT device(python code) to send the home status like room temperature, humidity , fan status , light status to the mobile app.

Based on the data we use 4 buttons to send the data back to the IOT device to change the status of light and fan. Which will also be reflected on the app.

We also use a text box to take some random message input from the user and send it to the IOT device when a button is pressed which is printed on the python shell .

## Python Code –

```
import wiotp.sdk.device
import time
import random

myConfig = {
    "identity": {
        "orgId": "d7luey",
        "typeId": "HomeStatus",
        "deviceId": "5683"
    },
    "auth": {
        "token": "12345678"
    }
}

lightsts = "OFF"
fansts = "OFF"
msgs = "HY"

def myCommandCallback(cmd):
    global lightsts
    global fansts
    global msgs
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']
    if(m=="lighton"):
        lightsts = "ON"
    elif(m=="lightoff"):
        lightsts = "OFF"
    elif(m=="fanon"):
        fansts = "ON"
    elif(m=="fanoff"):
        fansts = "OFF"
    else:
        msgs = cmd.data['command']

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

while True:
    roomTemp=random.randint(-10,60)
    humidity=random.randint(0,100)
    myData={'temperature':roomTemp, 'humidity':humidity,'light':lightsts,'fan':fansts,'mess':msgs}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
    print("Published data Successfully: %s", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)

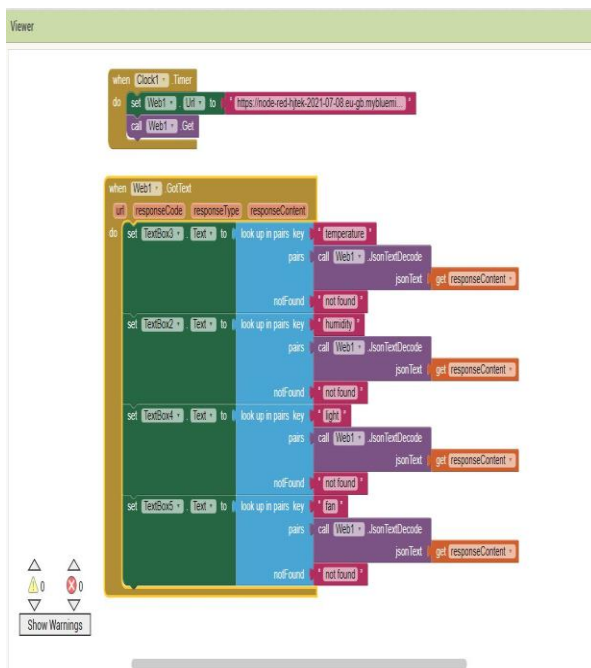
client.disconnect()
```

## Results –

### 1. Front end



### 2. Back end



### 3. Mobile outputs

4G 4G 10:23 100% LTE2 47

Screen1

HOME REMOTE

ROOM TEMPERATURE

49

HUMIDITY

69

LIGHT STATUS

ON

FAN STATUS

ON

LIGHT ON

LIGHT OFF

FAN ON

FAN OFF

open windows

SEND MESSAGE

4G 4G 10:24 100% LTE2 47

Screen1

HOME REMOTE

ROOM TEMPERATURE

50

HUMIDITY

84

LIGHT STATUS

ON

FAN STATUS

ON

LIGHT ON

LIGHT OFF

FAN ON

FAN OFF

start motor

SEND MESSAGE

### 4. Python shell Output

```
File Edit Shell Debug Options Window Help
===== RESTART: D:\PROJECTS AND CODES\PYTHON\home_status_with_mobile app.py =====
2021-07-16 22:23:01.449 wiotsdk.device.client.DeviceClient INFO Connected successfully: dtd7luey:HomeStatus:5683
Published data Successfully: %s {'temperature': 0, 'humidity': 67, 'light': 'OFF', 'fan': 'OFF', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 18, 'humidity': 68, 'light': 'OFF', 'fan': 'OFF', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 13, 'humidity': 13, 'light': 'OFF', 'fan': 'OFF', 'mess': 'HY'}
Message received from IBM IoT Platform: fanon
Published data Successfully: %s {'temperature': 5, 'humidity': 42, 'light': 'OFF', 'fan': 'ON', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 44, 'humidity': 57, 'light': 'OFF', 'fan': 'ON', 'mess': 'HY'}
Message received from IBM IoT Platform: lighton
Published data Successfully: %s {'temperature': 60, 'humidity': 65, 'light': 'ON', 'fan': 'ON', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 27, 'humidity': 85, 'light': 'ON', 'fan': 'ON', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 37, 'humidity': 43, 'light': 'ON', 'fan': 'ON', 'mess': 'HY'}
Published data Successfully: %s {'temperature': -10, 'humidity': 96, 'light': 'ON', 'fan': 'ON', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 56, 'humidity': 16, 'light': 'ON', 'fan': 'ON', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 1, 'humidity': 4, 'light': 'ON', 'fan': 'ON', 'mess': 'HY'}
Published data Successfully: %s {'temperature': 29, 'humidity': 51, 'light': 'ON', 'fan': 'ON', 'mess': 'HY'}
Message received from IBM IoT Platform: open windows
Published data Successfully: %s {'temperature': 9, 'humidity': 9, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 50, 'humidity': 22, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': -3, 'humidity': 9, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 22, 'humidity': 55, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': -9, 'humidity': 54, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 10, 'humidity': 79, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 8, 'humidity': 92, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': -1, 'humidity': 72, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 55, 'humidity': 43, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 24, 'humidity': 31, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 19, 'humidity': 8, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 49, 'humidity': 69, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': -9, 'humidity': 35, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 44, 'humidity': 4, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 17, 'humidity': 75, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': 23, 'humidity': 33, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Published data Successfully: %s {'temperature': -10, 'humidity': 96, 'light': 'ON', 'fan': 'ON', 'mess': 'open windows'}
Message received from IBM IoT Platform: start motor
Published data Successfully: %s {'temperature': 37, 'humidity': 37, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 59, 'humidity': 49, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 50, 'humidity': 84, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 48, 'humidity': 29, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 54, 'humidity': 88, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 46, 'humidity': 75, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 19, 'humidity': 31, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 53, 'humidity': 97, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 26, 'humidity': 23, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 32, 'humidity': 99, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Published data Successfully: %s {'temperature': 53, 'humidity': 12, 'light': 'ON', 'fan': 'ON', 'mess': 'start motor'}
Ln: 258 Col: 0
```