

Project Development Phase

SPRINT - 3

Date	12 November 2022
Team ID	PNT2022TMID54322
Project Name	Signs with Smart Connectivity for Better Road Safety
Maximum Marks	20 Marks

Sprint-3	USN-1	Develop a python script to publish random sensor data such as temperature, humidity to the IBM IoT platform.
Sprint-3	USN-2	After developing python code, commands are received just print the statements which represent the control of the devices.
Sprint-3	USN-3	Publish Data to The IBM Cloud

USN-1: Develop a python script to publish random sensor data such as temperature, humidity to the IBM IoT platform.

PYTHON SCRIPT

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

#Provide your IBM Watson Device Credentials

```
organization = "efr0if"
deviceType = "rasberrypi"
deviceId = "123"
authMethod = "token"
authToken = "12345678"
```

#Intialize GPIO

```
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
```

```
    print ("led is on")
else:
    print("led is off")
```

#print(cmd)

```
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 "hello" with value "world" into the cloud as an event of type "greeting" 10 times

```
deviceCli.connect()
```

```
while True:
```

```
    #Get Sensor Data from DHT11
```

```
        temp=random.randint(0,100)
        humid=random.randint(0,100)
        data = {'temperature':temp, 'humidity':humid}
```

#print data

```
        def myOnPublishCallback():
            print("Published temperature=%s C" %temp,"humidity =%s %"
%humid,"to IBM Watson")
```

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

```
        if not success:
            print("Not connected to IoT")
            time.sleep(10)
```

```
        deviceCli.commandCallback= myCommandCallback
```

#Disconnect the device and application from the cloud

```
deviceCli.disconnect()
```

USN-2: After developing python code, commands are received just print the statements which represent the control of the devices.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Published temperature=93 C humidity=81 % to IBM Watson
Published temperature=77 C humidity=40 % to IBM Watson
Published temperature=72 C humidity=71 % to IBM Watson
Published temperature=19 C humidity=36 % to IBM Watson
Published temperature=61 C humidity=54 % to IBM Watson
Published temperature=49 C humidity=24 % to IBM Watson
Published temperature=78 C humidity=54 % to IBM Watson
Published temperature=74 C humidity=85 % to IBM Watson
Published temperature=73 C humidity=66 % to IBM Watson
Published temperature=60 C humidity=95 % to IBM Watson
Published temperature=27 C humidity=6 % to IBM Watson
Published temperature=51 C humidity=82 % to IBM Watson
Published temperature=30 C humidity=12 % to IBM Watson
Published temperature=65 C humidity=58 % to IBM Watson
Published temperature=93 C humidity=11 % to IBM Watson
Published temperature=0 C humidity=7 % to IBM Watson
Published temperature=1 C humidity=59 % to IBM Watson
Published temperature=3 C humidity=71 % to IBM Watson
Published temperature=96 C humidity=54 % to IBM Watson
Published temperature=60 C humidity=45 % to IBM Watson
Published temperature=82 C humidity=38 % to IBM Watson
Published temperature=15 C humidity=45 % to IBM Watson
Published temperature=95 C humidity=4 % to IBM Watson
Published temperature=7 C humidity=34 % to IBM Watson
Published temperature=87 C humidity=69 % to IBM Watson
Published temperature=53 C humidity=38 % to IBM Watson
Published temperature=77 C humidity=90 % to IBM Watson
Published temperature=18 C humidity=20 % to IBM Watson
Published temperature=41 C humidity=77 % to IBM Watson
Published temperature=85 C humidity=5 % to IBM Watson
Published temperature=64 C humidity=54 % to IBM Watson
Published temperature=81 C humidity=31 % to IBM Watson
Published temperature=25 C humidity=20 % to IBM Watson
Published temperature=74 C humidity=7 % to IBM Watson
Published temperature=28 C humidity=40 % to IBM Watson
Published temperature=82 C humidity=33 % to IBM Watson
Published temperature=59 C humidity=54 % to IBM Watson
Published temperature=34 C humidity=67 % to IBM Watson
Published temperature=47 C humidity=63 % to IBM Watson
Published temperature=24 C humidity=36 % to IBM Watson
Published temperature=51 C humidity=20 % to IBM Watson
Published temperature=95 C humidity=49 % to IBM Watson
```

USN-3: Publish Data to the IBM Cloud.

IBM Watson IoT Platform

Browse Action Device Types Interfaces

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added
> <input type="checkbox"/>	123	Connected	rasberry	Device	13 Nov 2022 11:21 AM

Items per page 50 | 1-1 of 1 item

1 of 1 page

IBM Watson IoT Platform

Device Type: raspberrypi

Events 1

New event type +

Event type name event_1 Send

Schedule 1 Every Minute

Payload

Specify the event payload in the editor window or by uploading a [CSV file](#).

```
0 {
1   "randomNumber": random(0, 100),
2   "temp": random(10, 80),
3   "hum": random(80, 100)
4 }
5
```

json a few seconds ago

Event	Value
event_1	{"randomNumber":46,"temp":33,"hum":85}
event_1	{"randomNumber":91,"temp":46,"hum":80}
event_1	{"randomNumber":83,"temp":13,"hum":99}
event_1	{"randomNumber":70,"temp":16,"hum":98}
event_1	{"randomNumber":61,"temp":16,"hum":96}

IBM Watson IoT Platform

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Add Device +

Identity Device Information Recent Events State Logs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	{"randomNumber":46,"temp":33,"hum":85}	json	a few seconds ago
event_1	{"randomNumber":91,"temp":46,"hum":80}	json	a few seconds ago
event_1	{"randomNumber":83,"temp":13,"hum":99}	json	a few seconds ago
event_1	{"randomNumber":70,"temp":16,"hum":98}	json	a few seconds ago
event_1	{"randomNumber":61,"temp":16,"hum":96}	json	a few seconds ago

1 Simulation running