

Sprint – 1

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Data Generation:

Using random function in python, the required sensor data have been generated and published to IBM Watson IoT Platform.

Python Source Code:

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

# Provide your IBM Watson Device Credentials

organization = "domlyv"
deviceType = "abcd"
deviceId = "12"
authMethod = "token"
authToken = "12345678"

try:

    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-
method": authMethod, "auth-token": authToken}
    deviceCli =ibmiotf.device.Client(deviceOptions)
    deviceCli.connect()

# .....

except ibmiotf.ConnectionException as e:

    print("Caught exception connecting device: %s" % str(e))
    sys.exit()
```

while True:

```
temp = random.randint(0, 100)
```

```
hum = random.randint(0, 100)
```

```
gas = random.randint(0, 100)
```

```
mydata = {'temp': temp, 'hum': hum, 'gas': gas}
```

```
def on_publish():
```

```
    print("Published Temperature = %s C" % temp, "Humidity = %s %% " % hum, "Gas Concentration = %s" % gas, "to IBM Watson")
```

```
    success = deviceCli.publishEvent("IOTSensor", "json", mydata, qos=0, on_publish=on_publish)
```

```
    if not success:
```

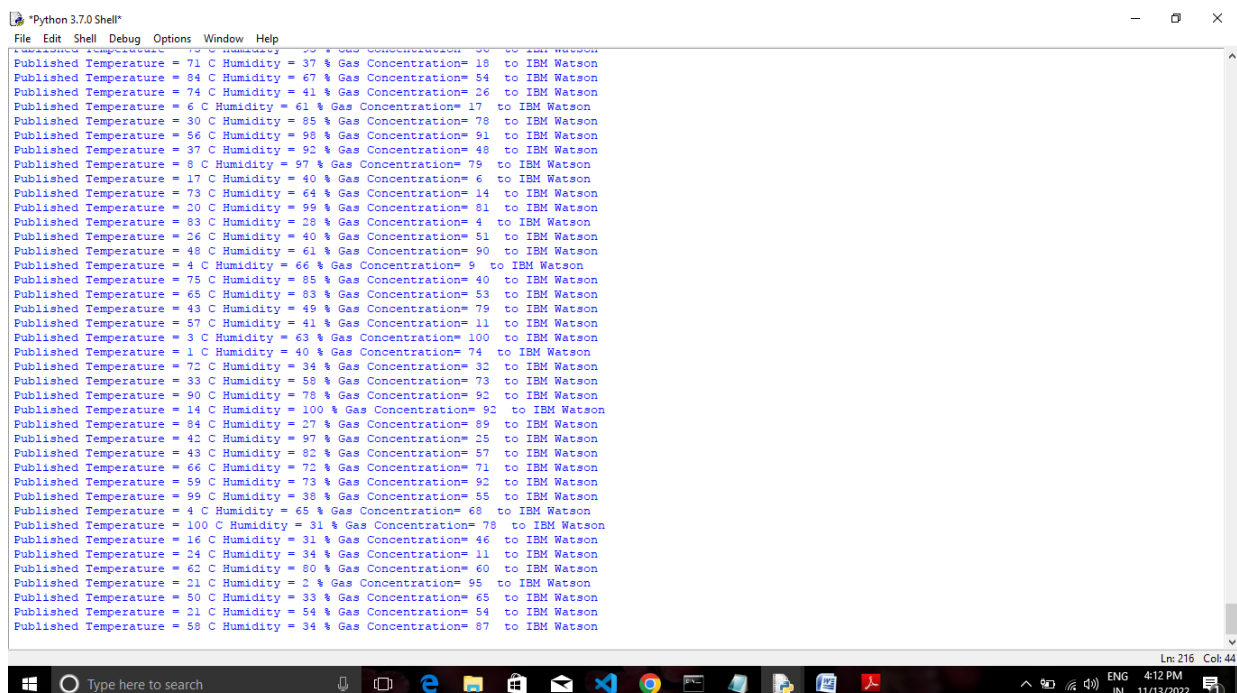
```
        print("Not connected to IoT")
```

```
        time.sleep(2)
```

Disconnect the device and application from the cloud

```
deviceCli.disconnect()
```

Output:



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Published Temperature = 75 C Humidity = 37 % Gas Concentration= 36 to IBM Watson
Published Temperature = 71 C Humidity = 37 % Gas Concentration= 18 to IBM Watson
Published Temperature = 84 C Humidity = 67 % Gas Concentration= 54 to IBM Watson
Published Temperature = 74 C Humidity = 41 % Gas Concentration= 26 to IBM Watson
Published Temperature = 6 C Humidity = 61 % Gas Concentration= 17 to IBM Watson
Published Temperature = 30 C Humidity = 85 % Gas Concentration= 78 to IBM Watson
Published Temperature = 56 C Humidity = 98 % Gas Concentration= 91 to IBM Watson
Published Temperature = 37 C Humidity = 92 % Gas Concentration= 48 to IBM Watson
Published Temperature = 8 C Humidity = 97 % Gas Concentration= 79 to IBM Watson
Published Temperature = 17 C Humidity = 40 % Gas Concentration= 6 to IBM Watson
Published Temperature = 73 C Humidity = 64 % Gas Concentration= 14 to IBM Watson
Published Temperature = 20 C Humidity = 99 % Gas Concentration= 91 to IBM Watson
Published Temperature = 83 C Humidity = 28 % Gas Concentration= 4 to IBM Watson
Published Temperature = 26 C Humidity = 40 % Gas Concentration= 51 to IBM Watson
Published Temperature = 48 C Humidity = 61 % Gas Concentration= 90 to IBM Watson
Published Temperature = 4 C Humidity = 66 % Gas Concentration= 9 to IBM Watson
Published Temperature = 75 C Humidity = 85 % Gas Concentration= 40 to IBM Watson
Published Temperature = 65 C Humidity = 83 % Gas Concentration= 53 to IBM Watson
Published Temperature = 43 C Humidity = 49 % Gas Concentration= 79 to IBM Watson
Published Temperature = 57 C Humidity = 41 % Gas Concentration= 11 to IBM Watson
Published Temperature = 3 C Humidity = 63 % Gas Concentration= 100 to IBM Watson
Published Temperature = 1 C Humidity = 40 % Gas Concentration= 74 to IBM Watson
Published Temperature = 72 C Humidity = 34 % Gas Concentration= 32 to IBM Watson
Published Temperature = 33 C Humidity = 58 % Gas Concentration= 73 to IBM Watson
Published Temperature = 90 C Humidity = 78 % Gas Concentration= 92 to IBM Watson
Published Temperature = 14 C Humidity = 100 % Gas Concentration= 92 to IBM Watson
Published Temperature = 84 C Humidity = 27 % Gas Concentration= 89 to IBM Watson
Published Temperature = 42 C Humidity = 97 % Gas Concentration= 25 to IBM Watson
Published Temperature = 43 C Humidity = 82 % Gas Concentration= 57 to IBM Watson
Published Temperature = 66 C Humidity = 72 % Gas Concentration= 71 to IBM Watson
Published Temperature = 59 C Humidity = 73 % Gas Concentration= 92 to IBM Watson
Published Temperature = 99 C Humidity = 38 % Gas Concentration= 55 to IBM Watson
Published Temperature = 4 C Humidity = 65 % Gas Concentration= 68 to IBM Watson
Published Temperature = 100 C Humidity = 31 % Gas Concentration= 78 to IBM Watson
Published Temperature = 16 C Humidity = 31 % Gas Concentration= 46 to IBM Watson
Published Temperature = 24 C Humidity = 34 % Gas Concentration= 11 to IBM Watson
Published Temperature = 62 C Humidity = 80 % Gas Concentration= 60 to IBM Watson
Published Temperature = 21 C Humidity = 2 % Gas Concentration= 95 to IBM Watson
Published Temperature = 50 C Humidity = 33 % Gas Concentration= 65 to IBM Watson
Published Temperature = 21 C Humidity = 54 % Gas Concentration= 54 to IBM Watson
Published Temperature = 58 C Humidity = 34 % Gas Concentration= 87 to IBM Watson
```

Output:

IBM Watson IoT Platform

12 Connected abcd Device Oct 14, 2022 6:17 PM

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 |
|-----------|-------------------------------|--------|-------------------|
| IoTSensor | {"temp":72,"hum":34,"gas":32} | json | a few seconds ago |
| IoTSensor | {"temp":1,"hum":40,"gas":74} | json | a few seconds ago |
| IoTSensor | {"temp":3,"hum":63,"gas":100} | json | a few seconds ago |
| IoTSensor | {"temp":57,"hum":41,"gas":11} | json | a few seconds ago |
| IoTSensor | {"temp":43,"hum":49,"gas":79} | json | a few seconds ago |

Event Generation:

Source code is deployed on IBM Watson IoT platform to generate sensor data.

Source Code:

```
{  
  "gas": random(0, 100),  
  "temp": random(0, 100),  
  "hum": random(0, 100)  
}
```

Output:

IBM Watson IoT Platform

Device Type: abcd

Events 1

New event type +

Event type name eventflow Send

Schedule 1 Every Minute

Payload

Specify the event payload in the editor window or by uploading a CSV file.

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

Upload a CSV file

| Event | Value |
|-----------|-------------------------------|
| eventflow | {"gas":61,"Temp":67,"Hum":30} |
| eventflow | {"gas":85,"Temp":15,"Hum":4} |
| eventflow | {"gas":66,"Temp":63,"Hum":94} |
| eventflow | {"gas":95,"Temp":9,"Hum":94} |
| eventflow | {"gas":35,"Temp":64,"Hum":50} |