

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 IBM Watson Device Credentials

organization = "u7bs6g"
deviceType = "GasSensor"
deviceId = "121"
authMethod = "token"
authToken = "987654321"

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("IOTGasSensor", "json", mydata, qos=0, on_publish=on_publish)
```

```
    if not success:
```

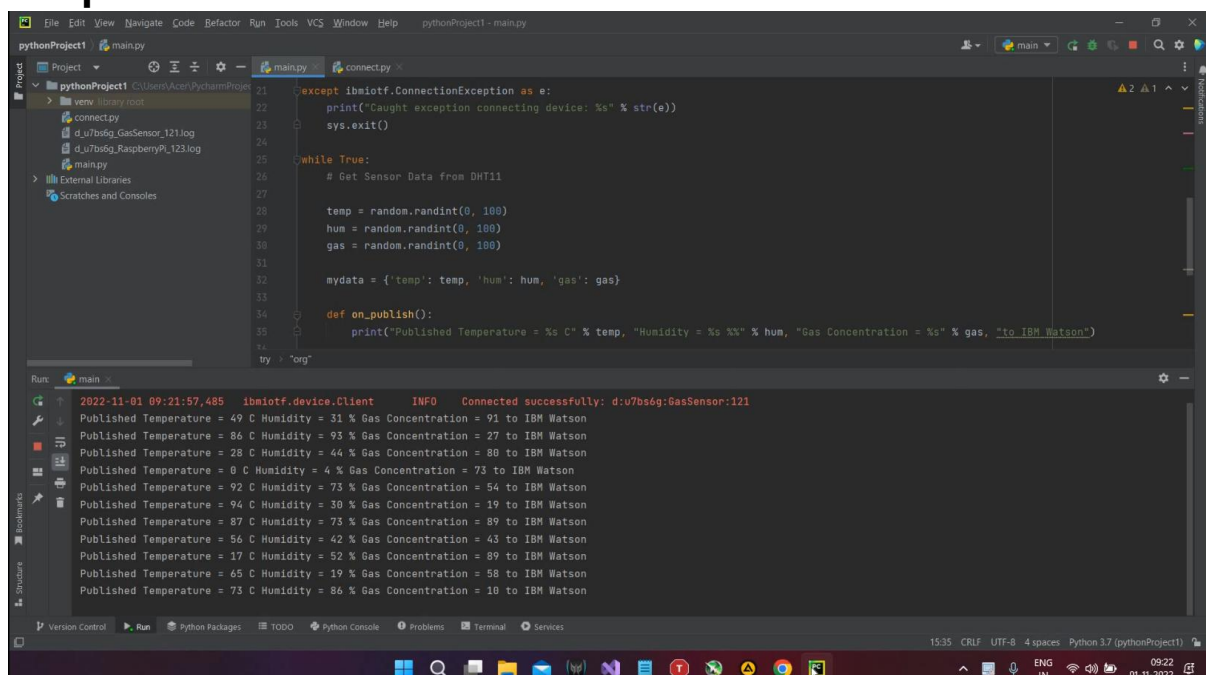
```
        print("Not connected to IoT")
```

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

Disconnect the device and application from the cloud

```
deviceCli.disconnect()
```

Output:



The screenshot shows a Python IDE with a project named 'pythonProject1'. The code in 'main.py' is as follows:

```
21 except ibmiotf.ConnectionException as e:
22     print("Caught exception connecting device: %s" % str(e))
23     sys.exit()
24
25 while True:
26     # Get Sensor Data from DHT11
27
28     temp = random.randint(0, 100)
29     hum = random.randint(0, 100)
30     gas = random.randint(0, 100)
31
32     mydata = {'temp': temp, 'hum': hum, 'gas': gas}
33
34     def on_publish():
35         print("Published Temperature = %s C" % temp, "Humidity = %s %" % hum, "Gas Concentration = %s" % gas, "to IBM Watson")
36
37     try:
38         org
```

The output console shows the following messages:

```
2022-11-01 09:21:57,485 ibmiotf.device.Client INFO Connected successfully: d:u7bs6g:GasSensor:121
Published Temperature = 49 C Humidity = 31 % Gas Concentration = 91 to IBM Watson
Published Temperature = 86 C Humidity = 93 % Gas Concentration = 27 to IBM Watson
Published Temperature = 28 C Humidity = 44 % Gas Concentration = 80 to IBM Watson
Published Temperature = 0 C Humidity = 4 % Gas Concentration = 73 to IBM Watson
Published Temperature = 92 C Humidity = 73 % Gas Concentration = 54 to IBM Watson
Published Temperature = 94 C Humidity = 30 % Gas Concentration = 19 to IBM Watson
Published Temperature = 87 C Humidity = 73 % Gas Concentration = 89 to IBM Watson
Published Temperature = 56 C Humidity = 42 % Gas Concentration = 43 to IBM Watson
Published Temperature = 17 C Humidity = 52 % Gas Concentration = 89 to IBM Watson
Published Temperature = 65 C Humidity = 19 % Gas Concentration = 58 to IBM Watson
Published Temperature = 73 C Humidity = 86 % Gas Concentration = 10 to IBM Watson
```