Python Script

```python
import paho.mqtt.client as mqtt
import time
import random
import json


def run():
    ORG = "nnj60r"
    DEVICE_TYPE = "IBM"
    DEVICE_ID = "IBM-2"
    TOKEN = "vA91c?4n?3WeS-2qnf"

    server = ORG + ".messaging.internetofthings.ibmcloud.com"
    pubTopic1 = "iot-2/evt/temp/fmt/json"
    pubTopic2 = "iot-2/evt/pH/fmt/json"
    pubTopic3 = "iot-2/evt/turb/fmt/json"
    # pubTopic3="iot-2/evt/wf/fmt/json";
    token = TOKEN
    authMethod = "use-token-auth"
    clientId = "d:" + ORG + " : " + DEVICE_TYPE + " : " + DEVICE_ID
    mqttc = mqtt.Client(client_id=clientId)
    mqttc.username_pw_set(authMethod, token)
    mqttc.connect(server, 1883, 60)
```

```python
    while True:
        try:
            # Print the values to the serial port
            temperature_c = random.randint(30, 40)*1.0
            temperature_f = temperature_c * (9/5) + 32.0
            pH = random.randint(0, 14) * 1.0
            turb = random.uniform(1, 2)
            print("Temp: {:.2f} F / {} C pH: {} Turbidity:{:.2f}NTU".format(
                temperature_f, temperature_c, pH, turb))
            payload = {"temp": temperature_c, "pH": pH, "turb": round(turb, 2)}
            mqttc.publish(pubTopic1, json.dumps(payload))
            # mqttc.publish(pubTopic2, pH)
            # mqttc.publish(pubTopic3,round (turb,2))
            print("Published")
            time.sleep(10)

        except RuntimeError as error:
            print(error.args[0])
            time.sleep(2.0)
        except Exception as error:
            print("Error encountered!")
            time.sleep(5.0)
    mqttc.loop_forever()


if __name__ == '__main__':
    run()
```

Python Script

```
(mlproj) Musique-Kavin:downloads kavin2161$ python3 main2.py
Temp: 91.40 F / 33.0 C pH: 12.0 Turbidity:1.20NTU
Published
Temp: 98.60 F / 37.0 C pH: 4.0 Turbidity:1.19NTU
Published
Temp: 100.40 F / 38.0 C pH: 9.0 Turbidity:1.06NTU
Published
Temp: 98.60 F / 37.0 C pH: 12.0 Turbidity:1.79NTU
Published
Temp: 87.80 F / 31.0 C pH: 14.0 Turbidity:1.07NTU
Published
Temp: 104.00 F / 40.0 C pH: 5.0 Turbidity:1.28NTU
Published
Temp: 95.00 F / 35.0 C pH: 4.0 Turbidity:1.46NTU
Published
Temp: 89.60 F / 32.0 C pH: 13.0 Turbidity:1.01NTU
Published
Temp: 93.20 F / 34.0 C pH: 9.0 Turbidity:1.85NTU
Published
Temp: 86.00 F / 30.0 C pH: 13.0 Turbidity:1.83NTU
Published
Temp: 86.00 F / 30.0 C pH: 3.0 Turbidity:1.42NTU
Published
Temp: 86.00 F / 30.0 C pH: 14.0 Turbidity:1.86NTU
Published
Temp: 98.60 F / 37.0 C pH: 7.0 Turbidity:1.57NTU
Published
Temp: 93.20 F / 34.0 C pH: 7.0 Turbidity:1.65NTU
Published
Temp: 89.60 F / 32.0 C pH: 14.0 Turbidity:1.09NTU
Published
Temp: 89.60 F / 32.0 C pH: 7.0 Turbidity:1.41NTU
Published
Temp: 100.40 F / 38.0 C pH: 12.0 Turbidity:1.48NTU
Published
Temp: 89.60 F / 32.0 C pH: 3.0 Turbidity:1.10NTU
Published
Temp: 102.20 F / 39.0 C pH: 7.0 Turbidity:1.91NTU
Published
Temp: 89.60 F / 32.0 C pH: 4.0 Turbidity:1.38NTU
Published
Temp: 91.40 F / 33.0 C pH: 5.0 Turbidity:1.93NTU
Published
Temp: 89.60 F / 32.0 C pH: 1.0 Turbidity:1.19NTU
Published
Temp: 87.80 F / 31.0 C pH: 0.0 Turbidity:1.60NTU
Published
Temp: 100.40 F / 38.0 C pH: 12.0 Turbidity:1.26NTU
Published
Temp: 91.40 F / 33.0 C pH: 2.0 Turbidity:1.14NTU
Published
```