Sprint Delivery – 3

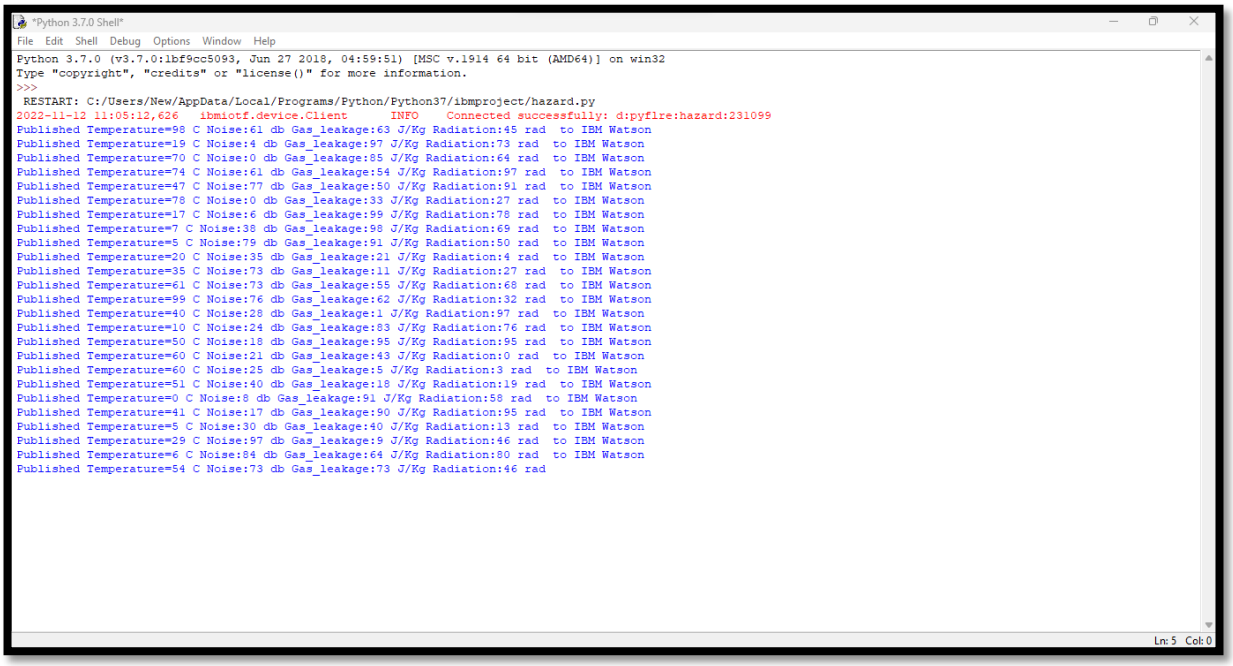
Date	17 November 2022
Team ID	PNT2022TMID28572
Project Name	Hazardous Area Monitoring for Industrial Power plant powered by IoT
Maximum Marks	4 Marks

```
#include <WiFi.h>
#include <PubSubClient.h>
 #include <DHT.h>
WiFiClient wifiClient;
String data3;
#define DHTTYPE DHT11
#define DHTPIN 4
#define MQTPIN 34 DHT dht(DHTPIN, DHTTYPE);
#define ORG "v6wg8x"
#define DEVICE_TYPE "projectFinal"
 #define DEVICE_ID "FinalDeliverable"
#define TOKEN "A1ymH))p*JB&iMWNpY"
#define speed 0.034
void callback(char* topic, byte* playload, unsigned int payloadLength); char server[] = ORG
".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Data/fmt/json";
char topic[] = "iot-2/cmd/test/fmt/String"; char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, callback , wifiClient); void publishData();
String command; String data = "";
long duration; float dist;
void setup()
{
Serial.begin(115200);
 dht.begin();
 wifiConnect();
```

```
mqttConnect();
}
void loop()
{
publishData();
delay(500);
if (!client.loop())
 {
 mqttConnect();
}
void wifiConnect() {
Serial.print("Connecting to ");
Serial.print("Wifi");
WiFi.begin("MyWIFI","1234567890");
while (WiFi.status() != WL_CONNECTED) { delay(500);
Serial.print(".");
}
Serial.print("WiFi connected, IP address: ");
 Serial.println(WiFi.localIP());
}
void mqttConnect() {
if (!client.connected()) {
Serial.print("Reconnecting MQTT client to ");
 Serial.println(server);
while (!client.connect(clientId, authMethod, token)) {
Serial.print(".");
delay(500);
}
initManagedDevice();
Serial.println();
}
}
void initManagedDevice() {
if (client.subscribe(topic)) { Serial.println("IBM subscribe to cmd OK");
} else {
Serial.println("subscribe to cmd FAILED");
```

```
}
}
void publishData()
{
int sensorValue = analogRead(MQTPIN); //MQT 135 connected to GPIO 34 (Analog ADC1_CH6)
Serial.print("AirQua=");
Serial.print(sensorValue, DEC);
Serial.println(" PPM");
float humid = dht.readHumidity();
float temp = dht.readTemperature(true);
String payload = "{\"Humidity\":"; payload += humid;
payload += "}";
if (client.publish(publishTopic, (char*) payload.c_str())) { Serial.println("Publish OK");
}
payload = "{\"Temperature\":"; payload += temp;
payload += "}";
if (client.publish(publishTopic, (char*) payload.c_str())) { Serial.println("Publish OK");
}
payload = "{\"Air Quality\":"; payload += String(sensorValue); payload += "}";
if (client.publish(publishTopic, (char*) payload.c_str())) { Serial.println("Publish OK");
}
 void callback(char* subscribeTopic, byte* payload, unsigned int payloadLength) {
Serial.print("callback invoked for topic:"); Serial.println(subscribeTopic);
for (int i = 0; i < payloadLength; i++) { dist += (char)payload[i];
}
Serial.println("data:" + data3); if (data3 == "lighton") {
Serial.println(data3);
}
data3 = "";
}
```

Output:


Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:/Users/New/AppData/Local/Programs/Python/Python37/ibmproject/hazard.py
2022-11-12 11:05:12,626 ibmiotf.device.Client INFO Connected successfully: d:pyflre:hazard:231099
Published Temperature=98 C Noise:61 db Gas_leakage:63 J/Kg Radiation:45 rad to IBM Watson
Published Temperature=19 C Noise:4 db Gas_leakage:97 J/Kg Radiation:73 rad to IBM Watson
Published Temperature=70 C Noise:0 db Gas_leakage:85 J/Kg Radiation:64 rad to IBM Watson
Published Temperature=74 C Noise:61 db Gas_leakage:54 J/Kg Radiation:97 rad to IBM Watson
Published Temperature=47 C Noise:77 db Gas_leakage:50 J/Kg Radiation:91 rad to IBM Watson
Published Temperature=78 C Noise:0 db Gas_leakage:33 J/Kg Radiation:27 rad to IBM Watson
Published Temperature=17 C Noise:6 db Gas_leakage:99 J/Kg Radiation:78 rad to IBM Watson
Published Temperature=7 C Noise:38 db Gas_leakage:98 J/Kg Radiation:69 rad to IBM Watson
Published Temperature=5 C Noise:79 db Gas_leakage:91 J/Kg Radiation:50 rad to IBM Watson
Published Temperature=20 C Noise:35 db Gas_leakage:21 J/Kg Radiation:4 rad to IBM Watson
Published Temperature=35 C Noise:73 db Gas_leakage:11 J/Kg Radiation:27 rad to IBM Watson
Published Temperature=61 C Noise:73 db Gas_leakage:55 J/Kg Radiation:68 rad to IBM Watson
Published Temperature=99 C Noise:76 db Gas_leakage:62 J/Kg Radiation:32 rad to IBM Watson
Published Temperature=40 C Noise:28 db Gas_leakage:1 J/Kg Radiation:97 rad to IBM Watson
Published Temperature=10 C Noise:24 db Gas_leakage:83 J/Kg Radiation:76 rad to IBM Watson
Published Temperature=50 C Noise:18 db Gas_leakage:95 J/Kg Radiation:95 rad to IBM Watson
Published Temperature=60 C Noise:21 db Gas_leakage:43 J/Kg Radiation:0 rad to IBM Watson
Published Temperature=60 C Noise:25 db Gas_leakage:5 J/Kg Radiation:3 rad to IBM Watson
Published Temperature=51 C Noise:40 db Gas_leakage:18 J/Kg Radiation:19 rad to IBM Watson
Published Temperature=0 C Noise:8 db Gas_leakage:91 J/Kg Radiation:58 rad to IBM Watson
Published Temperature=41 C Noise:17 db Gas_leakage:90 J/Kg Radiation:95 rad to IBM Watson
Published Temperature=5 C Noise:30 db Gas_leakage:40 J/Kg Radiation:13 rad to IBM Watson
Published Temperature=29 C Noise:97 db Gas_leakage:9 J/Kg Radiation:46 rad to IBM Watson
Published Temperature=6 C Noise:84 db Gas_leakage:64 J/Kg Radiation:80 rad to IBM Watson
Published Temperature=54 C Noise:73 db Gas_leakage:73 J/Kg Radiation:46 rad
Ln: 5 Col: 0