SPRINT 3
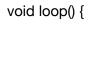
TEAM ID	PNT2022TMID27193
PROJECT NAME	Gas leakage monitoring and alerting system for industries.

```cpp
#include <WiFi.h> #include <PubSubClient.h>

void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);

//-------credentials of IBM Accounts------

#define ORG "ohyeah"//IBM ORGANITION ID

#define DEVICE_TYPE "NODEMCU"//Device type mentioned in ibm watson IOT

Platform#define DEVICE_ID "ASHFAQ1824"//Device ID mentioned in ibm

watson IOT Platform #define TOKEN "ashlord" //Token String

data3;

char server[] = ORG

".messaging.internetofthings.ibmcloud.com";char

publishTopic[] = "iot-2/evt/Gas/fmt/json"; char

publishTopic2[] = "iot-2/evt/Loc/fmt/json"; char

subscribetopic[]

= "iot-2/cmd/home/fmt/String"; char authMethod[] =

"use-token-auth"; char token[] = TOKEN;

char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;

WiFiClient wifiClient;

PubSubClient client(server, 1883,

callback ,wifiClient); const int gasSensor = A0;

#define SOUND_SPEED 0.034int gasValue = 0;

String latitude =

"0.000000"; String

longitude = "0.000000";

void setup()

{

  Serial.begin(11520

0);wificonnect();

mqttconnect(); }
```

```
void loop() {
```

```arduino
gasValue =
random(600,750);
Serial.print("Gas Value: ");
Serial.println(gasValue);
delay(1000);
PublishData(gasValue);
delay(1000); if(gasValue >
700)
{
latitude = "13.148760";
longitude = "80.229100";
PublishString(latitude,
longitude);
}
if (!client.loop())
{
mqttconnect();
}
Serial.println();
Serial.println("_____");
Serial.println(); delay(3000); }
void PublishData(int gas)
{
mqttconnect();
String payload = "{\"Gas
Value\":"; payload += gas;
payload += "}";
Serial.print("Sending payload Gas:
");Serial.println(payload);
if (client.publish(publishTopic, (char*) payload.c_str()))
{
Serial.println("Gas is Published");
}
else
{
```

```
Serial.println("Gas is not Published");
}}
void PublishString(String lat, String lon)
{
mqttconnect();
String payload2 =
"{\"d\":{\"Latitude\":";payload2 +=
lat; payload2 += ","""\"Longitude\":";
payload2 +=lon; payload2 +="}}";
Serial.print("Sending Payload Location: ");
Serial.println(payload2);if (client.publish(publishTopic2,
(char*) payload2.c_str()))
{
Serial.println("Location is Published");
}
else
{
Serial.println("Location is not Published");
}} void
mqttconnect()
{
if (!client.connected())
{
Serial.print("Reconnecting client to ");
Serial.println(server);while (!!!client.connect(clientId,
authMethod, token))
{
Serial.print(".");
delay(500); }
initManagedDevice()
;Serial.println();
}} void
wificonnect()
{ Serial.printl
n();
```

```
Serial.print("Connecting to ");
```

```cpp
WiFi.begin("Wokwi-GUEST", "", 6);

while(WiFi.status() !=
WL_CONNECTED)

{ delay(500);

Serial.print(".");

}

Serial.println("");

Serial.println("WiFi

connected");Serial.println("IP

address: ");

Serial.println(WiFi.localIP());

} void

initManagedDevice

()

{

if (client.subscribe(subscribetopic))

{

Serial.println((subscribetopic));

Serial.println("subscribe to cmd OK");

}

else

{

Serial.println("subscribe to cmd FAILED");

} }

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++)

{

//Serial.print((char)payload[i]);

data3 += (char)payload[i];

}

Serial.println("data: "+

data3);data3="";
```

}