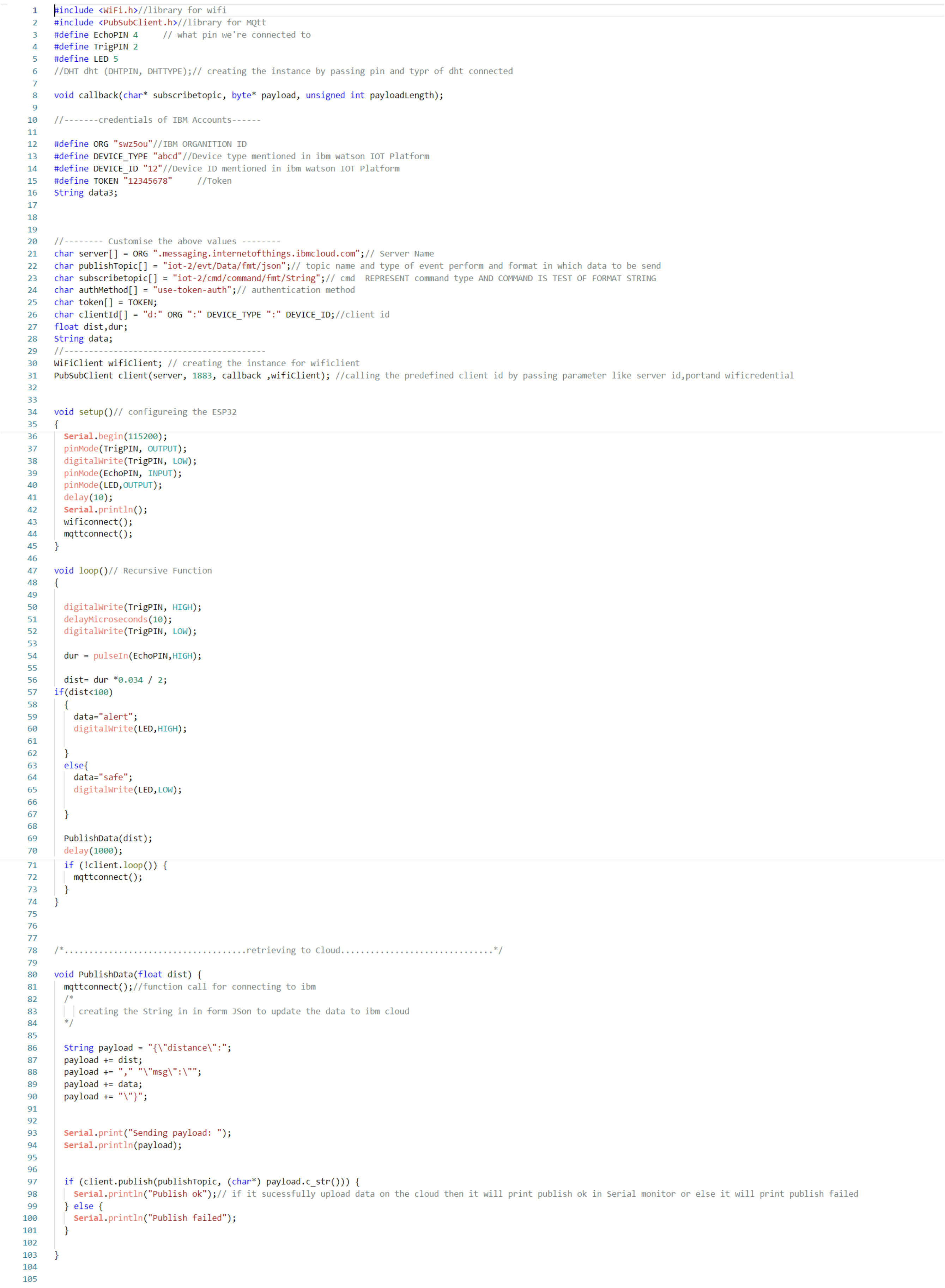
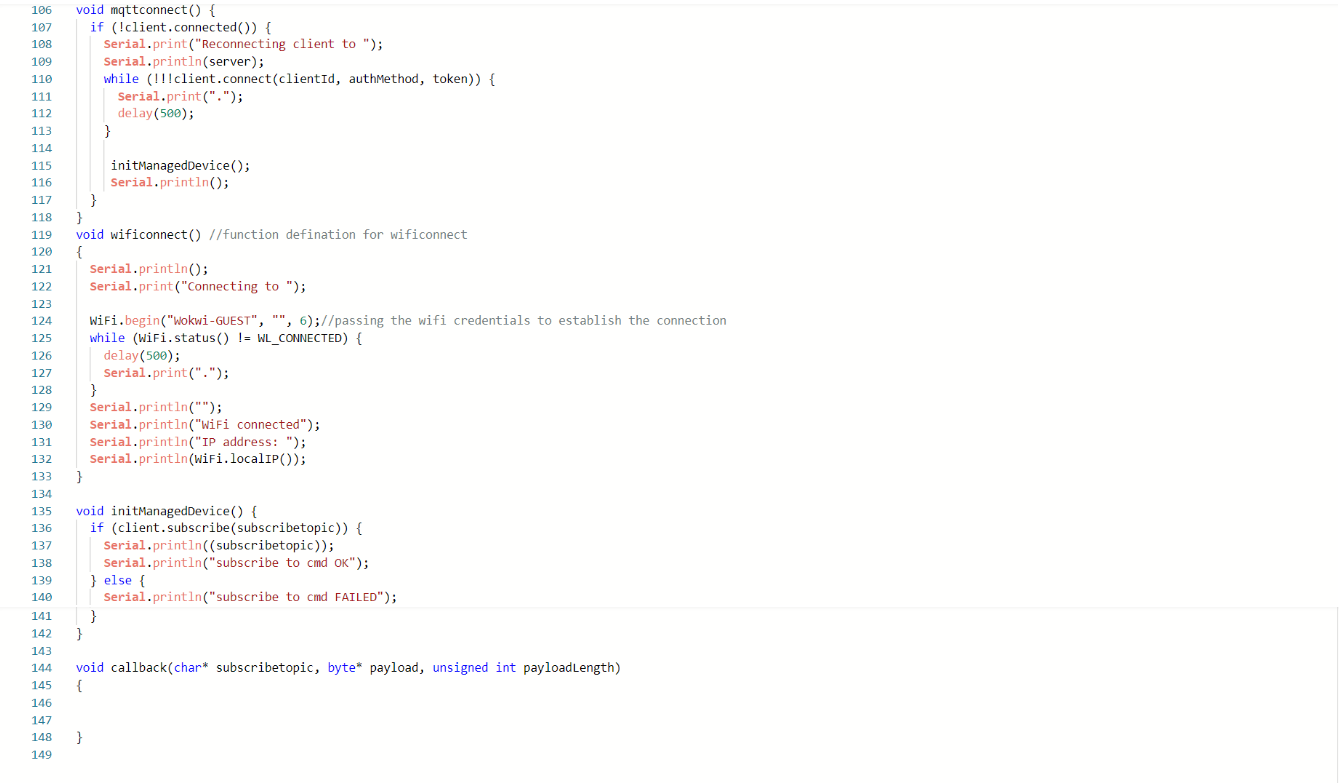
PUBLISH DATA TO THE IBM CLOUD

PYTHON SCRIPT

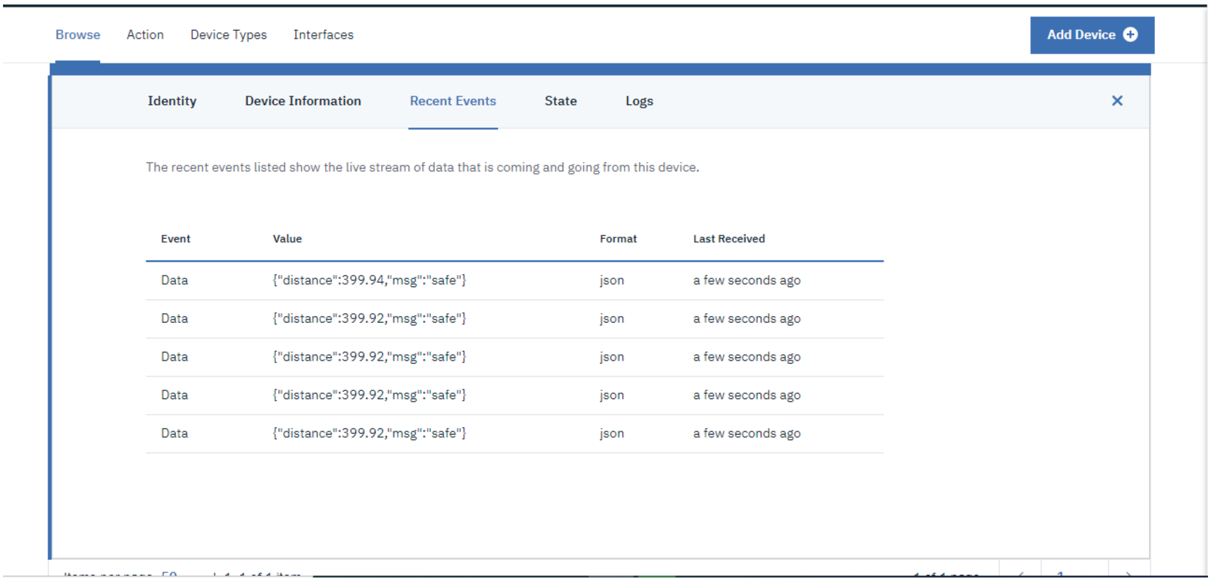


```
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQtt
#define EchoPIN 4     // what pin we're connected to
#define TrigPIN 2
#define LED 5
//DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and typr of dht connected

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

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

#define ORG "swz5ou"//IBM ORGANITION ID
#define DEVICE_TYPE "abcd"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "12"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "12345678"     //Token
String data3;



//-------- Customise the above values --------
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server Name
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of event perform and format in which data to be send
char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd  REPRESENT command type AND COMMAND IS TEST OF FORMAT STRING
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
float dist,dur;
String data;
//-----------------------------------------
WiFiClient wifiClient; // creating the instance for wificlient
PubSubClient client(server, 1883, callback ,wifiClient); //calling the predefined client id by passing parameter like server id,portand wificredential


void setup()// configureing the ESP32
{
  Serial.begin(115200);
  pinMode(TrigPIN, OUTPUT);
  digitalWrite(TrigPIN, LOW);
  pinMode(EchoPIN, INPUT);
  pinMode(LED,OUTPUT);
  delay(10);
  Serial.println();
  wificonnect();
  mqttconnect();
}

void loop()// Recursive Function
{

  digitalWrite(TrigPIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TrigPIN, LOW);

  dur = pulseIn(EchoPIN,HIGH);

  dist= dur *0.034 / 2;
if(dist<100)
  {
    data="alert";
    digitalWrite(LED,HIGH);

  }
  else{
    data="safe";
    digitalWrite(LED,LOW);

  }

  PublishData(dist);
  delay(1000);
  if (!client.loop()) {
    mqttconnect();
  }
}



/*...................................retrieving to Cloud..............................*/

void PublishData(float dist) {
  mqttconnect();//function call for connecting to ibm
  /*
     creating the String in in form JSon to update the data to ibm cloud
  */

  String payload = "{\"distance\":";
  payload += dist;
  payload += "," "\"msg\":\"";
  payload += data;
  payload += "\"}";


  Serial.print("Sending payload: ");
  Serial.println(payload);


  if (client.publish(publishTopic, (char*) payload.c_str())) {
    Serial.println("Publish ok");// if it sucessfully upload data on the cloud then it will print publish ok in Serial monitor or else it will print publish failed
  } else {
    Serial.println("Publish failed");
  }

}
```



```
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() //function defination for wificonnect
{
  Serial.println();
  Serial.print("Connecting to ");

  WiFi.begin("Wokwi-GUEST", "", 6);//passing the wifi credentials to establish the connection
  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)
{


}

```

DATA PUBLISH TO IBM



The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	{"distance":399.94,"msg":"safe"}	json	a few seconds ago
Data	{"distance":399.92,"msg":"safe"}	json	a few seconds ago
Data	{"distance":399.92,"msg":"safe"}	json	a few seconds ago
Data	{"distance":399.92,"msg":"safe"}	json	a few seconds ago
Data	{"distance":399.92,"msg":"safe"}	json	a few seconds ago