

SPRINT 3

Date	11 NOV 2022
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Project	Personal Assistance for Seniors who Are SelfReliant

Iot device program :

```
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQTT
#include <LiquidCrystal_I2C.h>
#include "DHT.h"// Library for dht11
#define DHTPIN 15 // what pin we're connected to
#define DHTTYPE DHT11 // define type of sensor DHT 11
#define Buzzer 2

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 "1l6lvq"//IBM ORGANITION ID
#define DEVICE_TYPE "nodeMCU"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "12345"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "?nUW@lkY)OglhHt)i6" //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
```

```
LiquidCrystal_I2C lcd(0x27,16,2);
```

```
//-----
```

```
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);
```

```
    dht.begin();
```

```
    pinMode(Buzzer,OUTPUT);
```

```
    delay(10);
```

```
    Serial.println();
```

```
    wificonnect();
```

```
    mqttconnect();
```

```
}
```

```
void loop()// Recursive Function
```

```
{
```

```
    if (!client.loop()) {
```

```
        mqttconnect();
```

```
    } }
```

```
void PublishData(float temp, float humid) {
```

```
    mqttconnect();//function call for connecting to ibm
```

```

}

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 FAIBuzzer");
}
}

```

```
}  
}
```

```
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("Medicine Name: "+ data3);  
    if(data3 != "")  
    {    lcd.init();  
    lcd.print(data3);  
    digitalWrite(Buzzer,HIGH);  
    delay(20000);  
    digitalWrite(Buzzer,LOW);  
    }  
    else  
    {  
    digitalWrite(Buzzer,LOW);  
    }  
    data3="";  
}
```