

Sprint-4

Teamid:PNT2022TMID25143

Projecttitle:PersonalAssistanceforseniorswhoareSelf-reliant

Devicesimulationcode:

```
#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 dht(DHTPIN, DHTTYPE); //creating the instance by passing pin and type of dht connected
void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);

//-----credentialsofIBMAccounts-----

#define ORG "kizp10" //IBMORGANITIONID
#define DEVICE_TYPE "IOTdevice" //DevicetypementionedinibmwatsonIOTPlatform
#define DEVICE_ID "1234567890" //Device ID mentioned in ibm watson IOT Platform
#define TOKEN "1234567890" //Token
String data3 = "";
int buzz = 13;

//-----Customisetheabovevalues-----
char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
char publishTopic[] = "iot-2/evt/Data/fmt/json"; //topicnameandtypeofeventperformandformatinwhichdatatobesent
char subscribetopic[] = "iot-2/cmd/command/fmt/String"; //cmdREPRESENTcommandtypeANDCOMMANDISTESTOFFORMAT STRING
char authMethod[] = "use-token-auth"; //authenticationmethod
char token[] = TOKEN;
char clientId[] = "d:ORG:DEVICE_TYPE":DEVICE_ID; //clientidLiquidCrystal_I2C lcd(0x27, 16, 2);
```

```

//-----
WiFiClient wifiClient; //creating the instance for wifi client
PubSubClient client(server, 1883, callback, wifiClient); //calling the predefined client i
d by passing parameter like server id, port and wifi credential
void setup() //configureing the ESP32
{
    Serial.begin(115200);
    pinMode(LED, OUTPUT);
    delay(10);
    Serial.println();
    wifiConnect();
    mqttConnect();
}

void loop() //Recursive Function
{
    if (!client.loop())
    {
        mqttConnect();
    }
}

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

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 definition for wifi connect
{
    Serial.println();
    Serial.print("Connecting to");

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

```

```

while(WiFi.status()!=WL_CONNECTED){delay(5
    00);
    Serial.print(".");
}
Serial.println("");Serial.println
("WiFi
connected");Serial.println("IP
address:
");Serial.println(WiFi.localIP())
;
}

voidinitManagedDevice(){
    if (client.subscribe(subscribetopic))
        {Serial.println((subscribetopic));Serial.println("
subscribetocmdOK");
        }else{
            Serial.println("subscribetocmdFAILED");
        }
}

voidcallback(char*subscribetopic,byte*payload,unsignedintpayloadLength)
{

    Serial.print("callbackinvokedfortopic:");
    Serial.println(subscribetopic);
    for(inti=0;i<payloadLength;i++){
        //Serial.print((char)payload[i]);data
        3+=(char)payload[i];
    }

    Serial.println("Pleasetake"+data3);if(data
    3!= "")
    {
        lcd.init();lcd.print("Tak
        e"+data3);

digitalWrite(LED,HIGH);
delay(20000);digitalWri
te(LED,LOW);

    }

    else
    {
digitalWrite(LED,LOW);

```

```
}  
data3="";
```

```
}
```

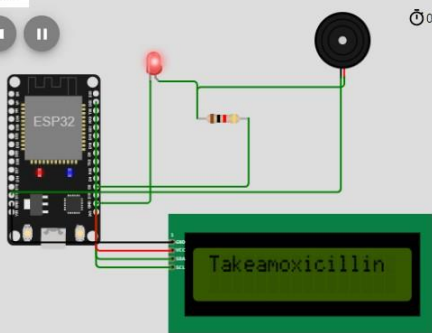
WOKWI

esp32-dht22.ino

```
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2 #include <PubSubClient.h> //library for MQTT  
3 #include <LiquidCrystal_I2C.h>  
4 #include "DHT.h" // Library for dht11  
5 #define DHTPIN 15 // what pin we're connected to  
6 #define DHTTYPE DHT11 // define type of sensor DHT 11  
7 #define LED 2  
8 DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type of  
9 void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)  
10  
11  
12 //-----credentials of IBM Accounts-----  
13  
14 #define ORG "kizp10" //IBM ORGANIZATION ID  
15 #define DEVICE_TYPE "IOTdevice" //Device type mentioned in ibm watson IOT Platform  
16 #define DEVICE_ID "1234567890" //Device ID mentioned in ibm watson IOT Platform  
17 #define TOKEN "1234567890" //Token  
18 String data3="";  
19 int buzz= 13;  
20  
21 //----- Customise the above values -----  
22 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name  
23 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name and type of event  
24 char subscribetopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT command  
25 char authMethod[] = "use-token-auth"; // authentication method  
26 char token[] = TOKEN;  
27 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //client id  
28 LiquidCrystal_I2C lcd(0x27,16,2);  
29  
30 //-----
```

Simulation

00:27.582 103%



Reconnecting client to kizp10.messaging.internetofthings.ibmcloud.com
iot-2/cmd/command/fmt/String
subscribe to cmd OK
callback invoked for topic: iot-2/cmd/command/fmt/String
Please take amoxicillin

Type here to search

2:41 PM
24-Nov-22