Sprint 4

Team ID	PNT2022TMID22874
Project Name	Personal Assistance for Seniors Who Are SelfReliant

Code for Simulation:

```
#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 LED 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 "64yf7x"//IBM ORGANITION ID
#define DEVICE_TYPE "b11m3edevicetype"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "b11m3edeviceid"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "-&EMtr7l-v-Gz2G))e"      //Token
String data3="";
int buzz= 13;

//-------- 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(buzz, OUTPUT);
  pinMode(LED,OUTPUT);
  delay(10);
  Serial.println();
  wificonnect();
  mqttconnect();
}

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

}



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

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 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("Medicine Name: "+ data3);
  if(data3 != "")
  {
    lcd.init();

    lcd.print(data3);
   digitalWrite(LED,HIGH);
   tone(buzz, 100, 1000);
   delay(2000);
   digitalWrite(LED,LOW);
   noTone(buzz);
   delay(1000);

  }
```

```
  else
  {
digitalWrite(LED,LOW);

  }
data3="";
}
```

Output: