

## SPRINT-1

<b>Date</b>	18 November 2022
<b>Team ID</b>	PNT2022TMID06107
<b>Project Name</b>	Personal Assistance for Seniors Who Are Self-Reliant

### ESP-32 SIMULATION:

#### Source Code:

```
#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 "iucela"//IBM ORGANITION ID
#define DEVICE_TYPE "TestDevice"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "54321"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "dsV4JL8GjQvbPooovs"    //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(0x27,32,2);
```

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

```
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 = 13; i < payloadLength-2; i++) {
        //Serial.print((char)payload[i]);
        data3 += (char)payload[i];
    }

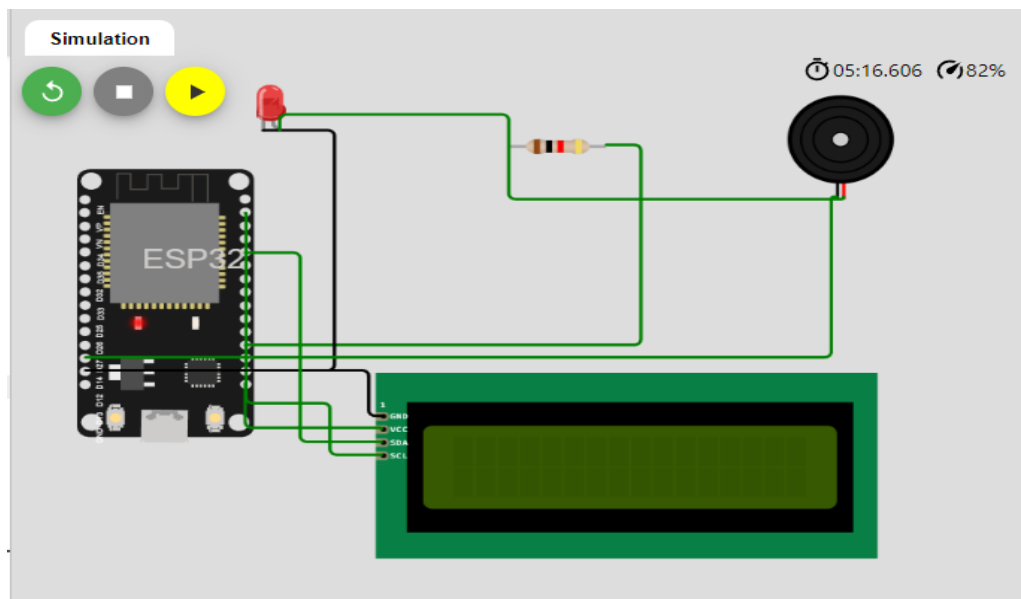
    Serial.println("Medicine Name: "+ data3);
    if(data3 != "")
    {
        lcd.init();

        lcd.print(data3);
    }
}

```

```
    digitalWrite(LED,HIGH);  
    tone(buzz, 100, 1000);  
    delay(2000);  
    digitalWrite(LED,LOW);  
    noTone(buzz);  
    delay(1000);  
  
    }  
  
    else  
    {  
    digitalWrite(LED,LOW);  
  
    }  
    data3="";  
    }
```

## CIRCUIT AND OUTPUT:



WhatsApp | Medicine Reminder | PNT2022TMID06107 | IBM | IBM Cloud | IBM Watson IoT Platform | Node-RED: node-r...

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```
105 Serial.println(subscribetopic);
106 for (int i = 13; i < payloadLength-2; i++) {
107   //Serial.print((char)payload[i]);
108   data3 += (char)payload[i];
109 }
110
111 Serial.println("Medicine Name: " + data3);
112 if(data3 != "")
113 {
114   lcd.init();
115
116   lcd.print(data3);
117   digitalWrite(LED,HIGH);
118   tone(buzz, 100, 1000);
119   delay(2000);
120   digitalWrite(LED,LOW);
121   noTone(buzz);
122   delay(1000);
123 }
124
125 else
126 {
127   digitalWrite(LED,LOW);
128 }
129 data3="";
130 }
131 }
132 }
```

Simulation

05:16.606 82%

Connecting to .....  
WiFi connected  
IP address:  
10.10.0.2  
Reconnecting client to iucela.messaging.internetofthings.ibmcloud.com  
iot-2/cmd/command/fmt/String  
subscribe to cmd OK

Type here to search | 24°C Cloudy | 20:30 | 18-11-2022

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area is titled 'Recent Events' and displays a table of events. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. The events are simulated and show a live stream of data. The device is identified as 54321, and the status is 'Disconnected'. The page also shows a pagination bar with 'Items per page 50' and '1-2 of 2 items'. The bottom status bar indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_test	{"data3":"Paracetamol"}	json	a few seconds ago
event_test	{"data3":"Paracetamol"}	json	a few seconds ago
event_test	{"data3":"Paracetamol"}	json	a few seconds ago
event_test	{"data3":"Paracetamol"}	json	a few seconds ago
event_test	{"data3":"Paracetamol"}	json	a few seconds ago

Items per page 50 | 1-2 of 2 items

1 Simulation running