}

SPRINT – 3

Project Title: Personal Assistance for Seniors who Are Self-Reliant

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IoT Device

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 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 "1l6lvg"//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="";
}
```