Sprint-1

Date	14 November 2022
Team ID	PNT22022TMID14319
Project Name	Industry - specific intelligent fire management system

Program:

```
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQtt

#include "DHT.h"// Library for dht11

#define DHTPIN 15   // what pin we're connected to

#define DHTTYPE DHT22   // 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 "zbgr67"//IBM ORGANITION ID
```

#define DEVICE_TYPE "fershidevicetype"//Device type mentioned in ibm watson IOT Platform

#define DEVICE_ID "fershideviceid"//Device ID mentioned in ibm watson IOT Platform

#define TOKEN "fershiageona" //Token

String data3; float t;

//-------- 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[] = "usetoken-auth";// authentication method char token[] = TOKEN; char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id

//---------------------------------------

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(LED,OUTPUT);
delay(10);
Serial.println();   wificonnect();   mqttconnect();


}  void loop()// Recursive
Function
{
 t = dht.readTemperature();
  Serial.print("temperature:");
  Serial.println(t);


  PublishData(t);   delay(1000);   if
(!client.loop()) {     mqttconnect();


  }
}




/*.....retrieving to
Cloud.....*/
 void PublishData(float temp) {    mqttconnect();//function call for
```

connecting to ibm

/* creating the String in in form JSon to update the data to ibm cloud */

String payload = "{\"temperature\":"; payload

+= temp; payload += "}";

Serial.print("Sending payload: ");

Serial.println(payload); if

(client.publish(publishTopic, (char*) payload.c_str()))

{

Serial.println("Publish ok");// if it sucessfully upload data on the cloud then it will print publish ok in Serial monitor or else it will print publish failed

} else {

Serial.println("Publish failed");

}

} void mqttconnect() { if

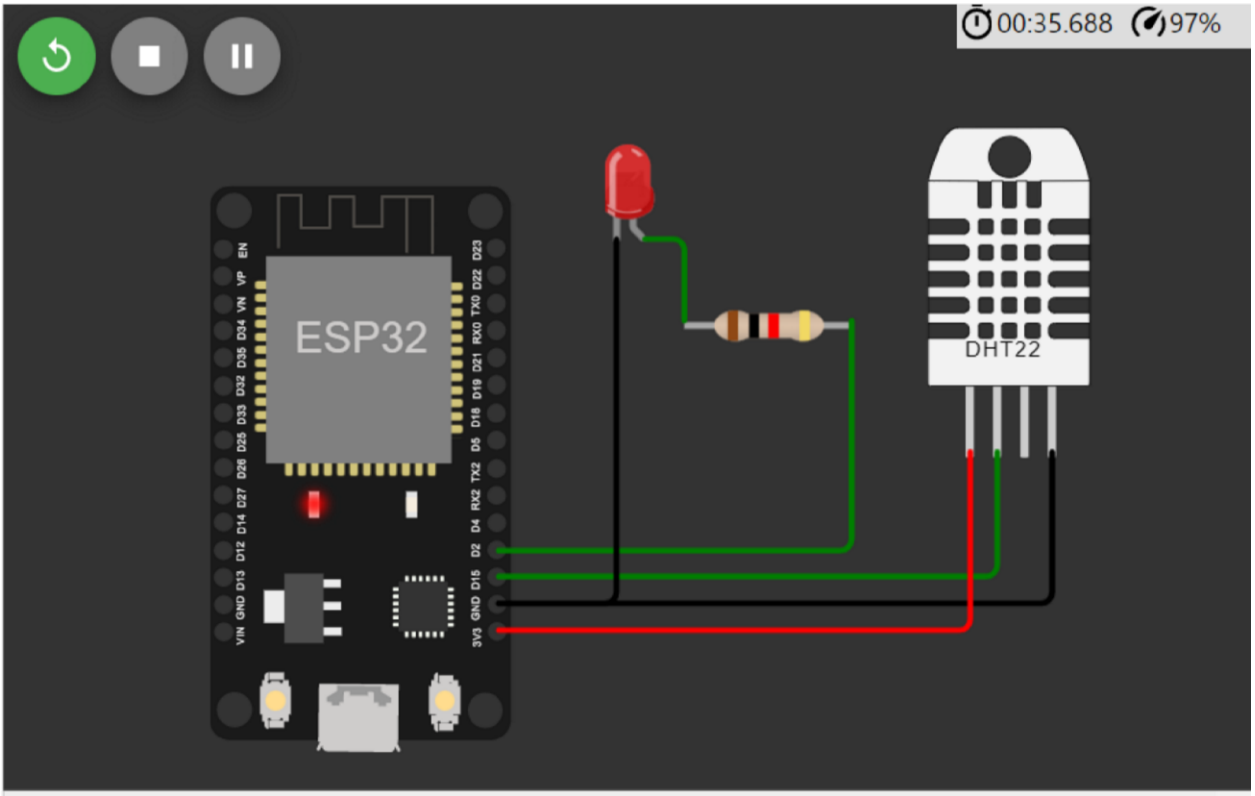
(!client.connected()) {

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("data: "+ data3);   if(data3=="lighton")
```

```
  {
Serial.println(data3); digitalWrite(LED,HIGH);


 }    else
  {
Serial.println(data3); digitalWrite(LED,LOW);
   } data3="";


}
```




```
temperature:24.00
Sending payload: {"temperature":24.00}
Publish ok
```