

USER INTERFACE CREATION

Date	10 November 2022
Team ID	PNT2022TMID54463
Project Name	Industry-Specific Intelligent Fire Management System

WOWKI PLATFORM:

The screenshot displays the Arduino IDE interface. The left pane shows a C++ sketch for an ESP32-based IoT fire management system. The sketch includes libraries for WiFi, DHT, and MQTT, and implements logic for temperature and humidity monitoring, gas detection, and status reporting to a cloud server. The right pane shows a simulation of the ESP32 board with a breadboard circuit. Below the simulation, a console window displays the runtime output, including connection status, IP address, and sensor data.

```
1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 #include <time.h>
4 #include "DHTesp.h"
5 #define tempPin 15
6 void callback(char* topic, byte* payload, unsigned int payloadLength);
7 #define ORG "jescj"
8 #define DEVICE_TYPE "ESP32_Controller"
9 #define DEVICE_ID "P0000"
10 #define TOKEN "Vz8Kwag8pqqhJs"
11 String data;
12 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
13 char publishTopic[] = "iot-2/evt/Data/ftt/json";
14 char subscribeTopic[] = "iot-2/cmd/test/ftt/String";
15 char authMethod[] = "use-token-auth";
16 char token[] = TOKEN;
17 char clientId[] = "id:ORG:" + ORG + ":" + DEVICE_TYPE + ":" + DEVICE_ID;
18 WiFiClient wifiClient;
19 PubSubClient client(server, 1883, callback, wifiClient);
20
21 const int DHT_PIN = 15;
22
23 DHTesp dhtSensor;
24
25
26 bool exhaust_fan_on = false;
27 bool sprinkler_on = false;
28
29 float temperature = 0;
30 int gas = 0;
31 int flame = 0;
32
33 String flame_status = "";
34 String accident_status = "";
35 String sprinkler_status = "";
36
37 void setup() {
38   Serial.begin(99900);
39   wifiConnect();
40   mqttConnect();
41   dhtSensor.setup(DHT_PIN, DHTesp::DHT22);
42 }
43
44
45
46
47 void loop() {
```

Simulation

Connecting to.....
WiFi CONNECTED
IP address:
10.10.0.2
Reconnecting to jescj.messaging.internetofthings.ibmcloud.com
iot-2/cmd/test/ftt/String
subscribe to cmd ok

Temperature: 66.18°C
Humidity: 6.0%

Sending payload: {"temp":66.18,"ALERT!!":"temperature greater than 38"}
publish ok
Flame Status : Fire is Detected
Sending payload: {"hum":6.00,"ALERT!!":"humidity less than 30"}
publish ok
Gas Status : Gas leakage Detected
Sprinkler Status : working
Exhaust fan Status : working

IBM CLOUD:

Browse Action Device Types Interfaces
Add Device +

	ID	Status	Firmware	Type	Last Seen	User	
>	<input type="checkbox"/> 12345	Disconnected	NodeMCU	Device	19 Oct 2022 00:46	purni1812@gmail.com	
>	<input type="checkbox"/> BME280_Sensor	Disconnected	ESP32_Controller	Device	2 Nov 2022 04:48	purni1812@gmail.com	
▼	<input checked="" type="checkbox"/> PURNI	Connected	ESP32_Controller	Device	9 Nov 2022 01:01	purni1812@gmail.com	→ ...

Identity Device Information Recent Events State Logs
X

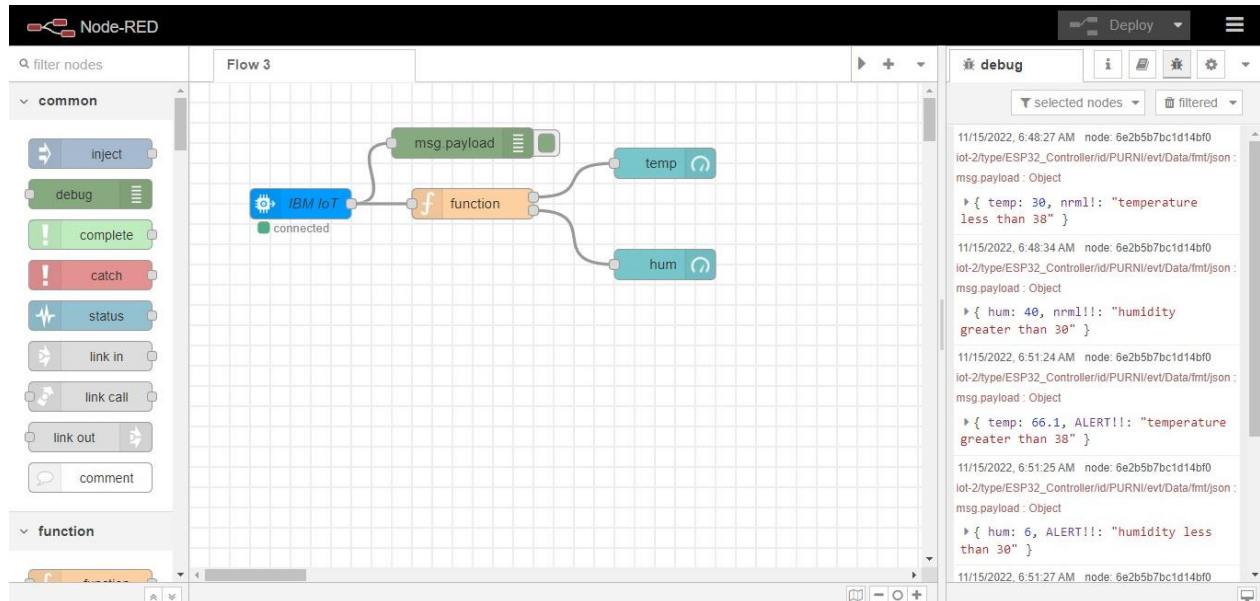
The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	{"hum":6,"ALERT!":"humidity less than 30"}	json	a few seconds ago
Data	{"temp":66.1,"ALERT!":"temperature greater tha..."}	json	a few seconds ago

>	<input type="checkbox"/> PVSIM	Disconnected	NodeMCU	Device	10 Nov 2022 00:36	purni1812@gmail.com
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NODE RED:



USER INTERFACE:

