

SPRINT 1

Date	7 november 2022
Team ID	PNT2022TMID39519
Project Name	Project – Signs with Smart Connectivity for Better Road Safety

Wokwi Simulation: [Adhifinal_iot.ino - Wokwi Arduino and ESP32 Simulator](#)

The screenshot displays the Wokwi simulation environment. On the left, the 'sketch.ino' file is open, showing the following code:

```
1 #include <WiFi.h> // library for wifi
2 #include <PubSubClient.h> // library for MQTT
3 #include "DHT.h" // Library for dht11
4 #define DHTPIN 5 // what pin we're connected to
5 #define DHTTYPE DHT22 // define type of sensor DHT 11
6
7 DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type of dht connect
8
9 void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);
10
11 //-----credentials of IBM Accounts-----
12
13 #define ORG "psh4py" // IBM ORGANIZATION ID
14 #define DEVICE_TYPE "alert-device" // Device type mentioned in IBM Watson IoT Platform
15 #define DEVICE_ID "4571" // Device ID mentioned in IBM Watson IoT Platform
16 #define TOKEN "12345678" // Token
17 String data3;
18 float h, t;
19
20
21 //-----Customise the above values-----
22 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
23 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name and type of event perform a
24 char subscribetopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT command type AND
25 char authMethod[] = "use-token-auth"; // authentication method
26 char token[] = TOKEN;
27 char clientid[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; // client id
28
29 //-----
30
31 WiFiClient wificlient; // creating the instance for wificlient
32 PubSubClient client(server, 1883, callback, wificlient); // calling the predefined client
```

On the right, the 'Simulation' window shows a visual representation of the ESP32 microcontroller connected to a DHT22 digital temperature and humidity sensor. The sensor is connected to the ESP32 via a 4-pin header. The output window below the simulation shows the following data:

```
{ "temp": 37.40, "humidity": 86.00, "North": 0, "South": 0, "East": 0, "West": 0 }
Publish ok
temp: 37.40
humidity: 86.00
Sending payload:
{ "temp": 37.40, "humidity": 86.00, "North": 0, "South": 0, "East": 0, "West": 0 }
Publish ok
```

The bottom of the screen shows a Windows taskbar with various application icons and a system tray indicating the time as 18:05 on 13-11-2022.

IoT Device – IoT Platform

4571

Connected

alert-device

Device

Identity

Device Information

Recent Events

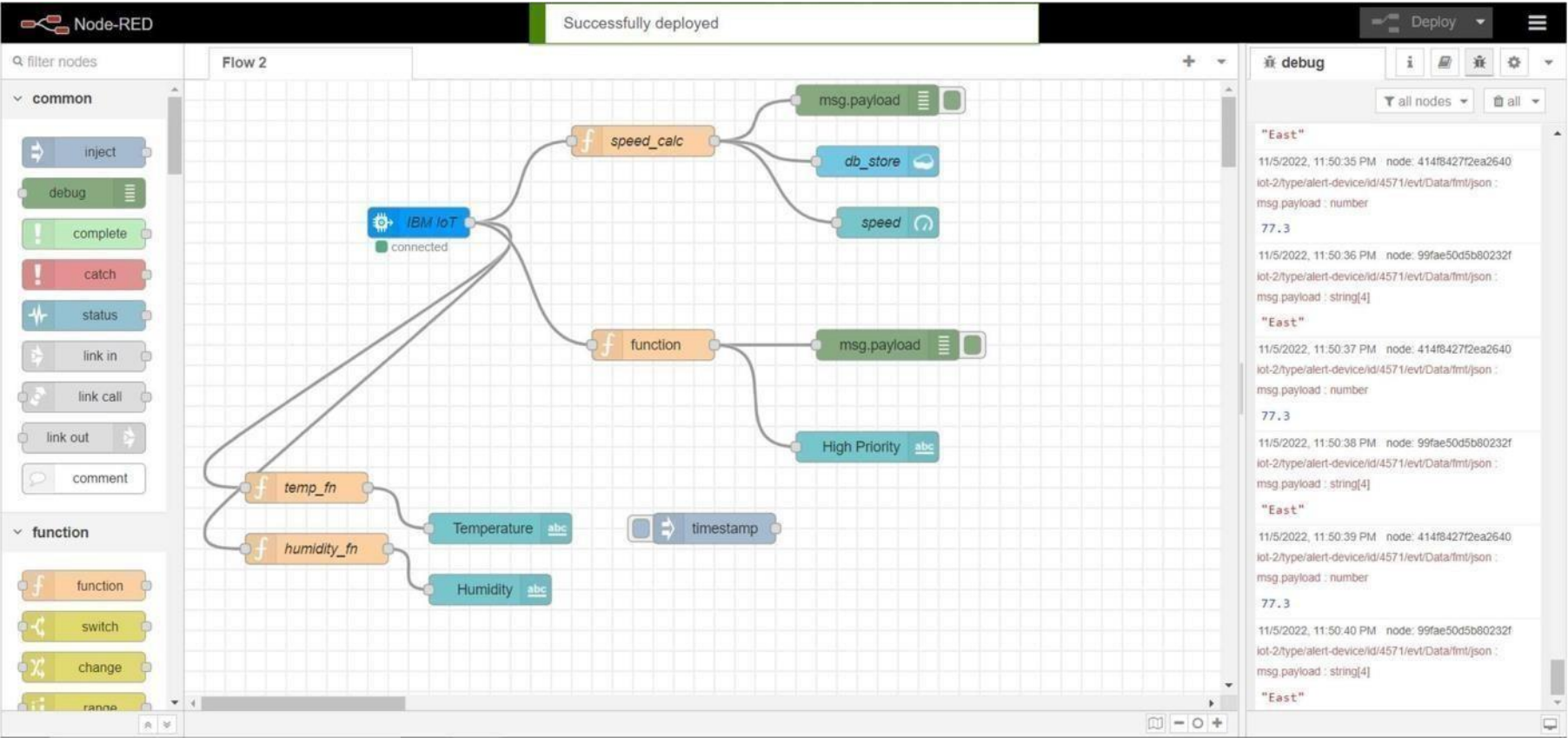
State

Logs

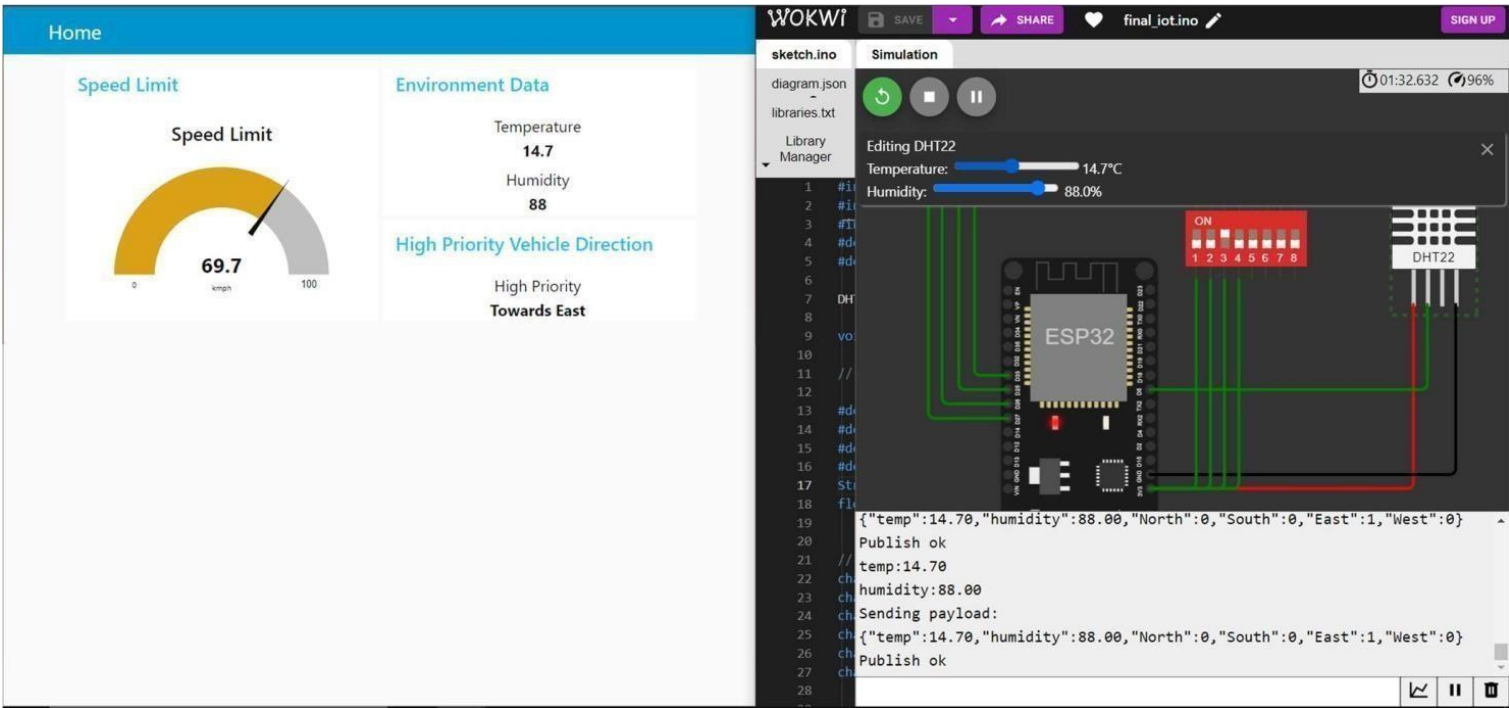
The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	{"temp":23.4,"humidity":63,"North":1,"South":0,...	json	a few seconds ago
Data	{"temp":23.4,"humidity":63,"North":1,"South":0,...	json	a few seconds ago
Data	{"temp":23.4,"humidity":63,"North":1,"South":0,...	json	a few seconds ago

Node Red



Node Red Web UI



Cloudant Database

↔

data_iot

⋮

📊

All Documents

+

🔍

Query

🔐

Permissions

🔄

Changes

📄

Design Documents

+

👤

Log Out

Document ID

⚙️ Options

{ } JSON

📖

🔔

☐

Table

Metadata

{ } JSON

📄

Create Document

	_id	payload
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d8de45a	35
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d904e58	60
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d90c3f9	45.5
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d92a313	60
<input type="checkbox"/>	2314e7571ab5925365e082f191bb2c9c	52.5
<input type="checkbox"/>	26939bb99e5c84bed4f6a20342a22ab2	35
<input type="checkbox"/>	26939bb99e5c84bed4f6a20342a7ccd5	44
<input type="checkbox"/>	3ffa1240575d0cd0d7f848833802e389	55
<input type="checkbox"/>	48a3afbcf5f840466e09ed279d3c3451	53
<input type="checkbox"/>	48a3afbcf5f840466e09ed279d3c5b7c	53
<input type="checkbox"/>	48a3afbcf5f840466e09ed279d3c9545	53
<input type="checkbox"/>	52730057f2d5fde2d21dfaaaabc10dc8	55

Showing 2 of 3 columns. ☐ Show all columns.

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