

SPRINT 1

Date	7 november 2022
Team ID	PNT2022TMID00922
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 web-based IDE. On the left, the 'sketch.ino' file is open, showing C++ code for an ESP32 connected to a DHT22 sensor and an MQTT client. The code includes headers for WiFi, PubSubClient, and DHT. It defines the DHT22 sensor on pin 5 and configures an MQTT client to connect to IBM Watson IoT Platform. The main loop publishes temperature and humidity data to a specific MQTT topic.

On the right, the 'Simulation' tab is active, showing a virtual circuit. An ESP32 module is connected to a DHT22 digital temperature and humidity sensor. The sensor's VCC pin is connected to the ESP32's 5V pin, and its GND pin is connected to the ESP32's GND pin. The data pin is connected to the ESP32's D0 pin. A red 'ON' switch is shown in the circuit.

Below the simulation, a terminal window displays the output of the code. It shows the temperature and humidity values being read from the sensor and published to the MQTT topic. The output is as follows:

```
{ "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 the Windows taskbar with various application icons and the system clock indicating 18:05 on 13-11-2022.

IoT Device – IoT Platform

4571

Connected

alert-device

Device

Identity

Device Information

Recent Events

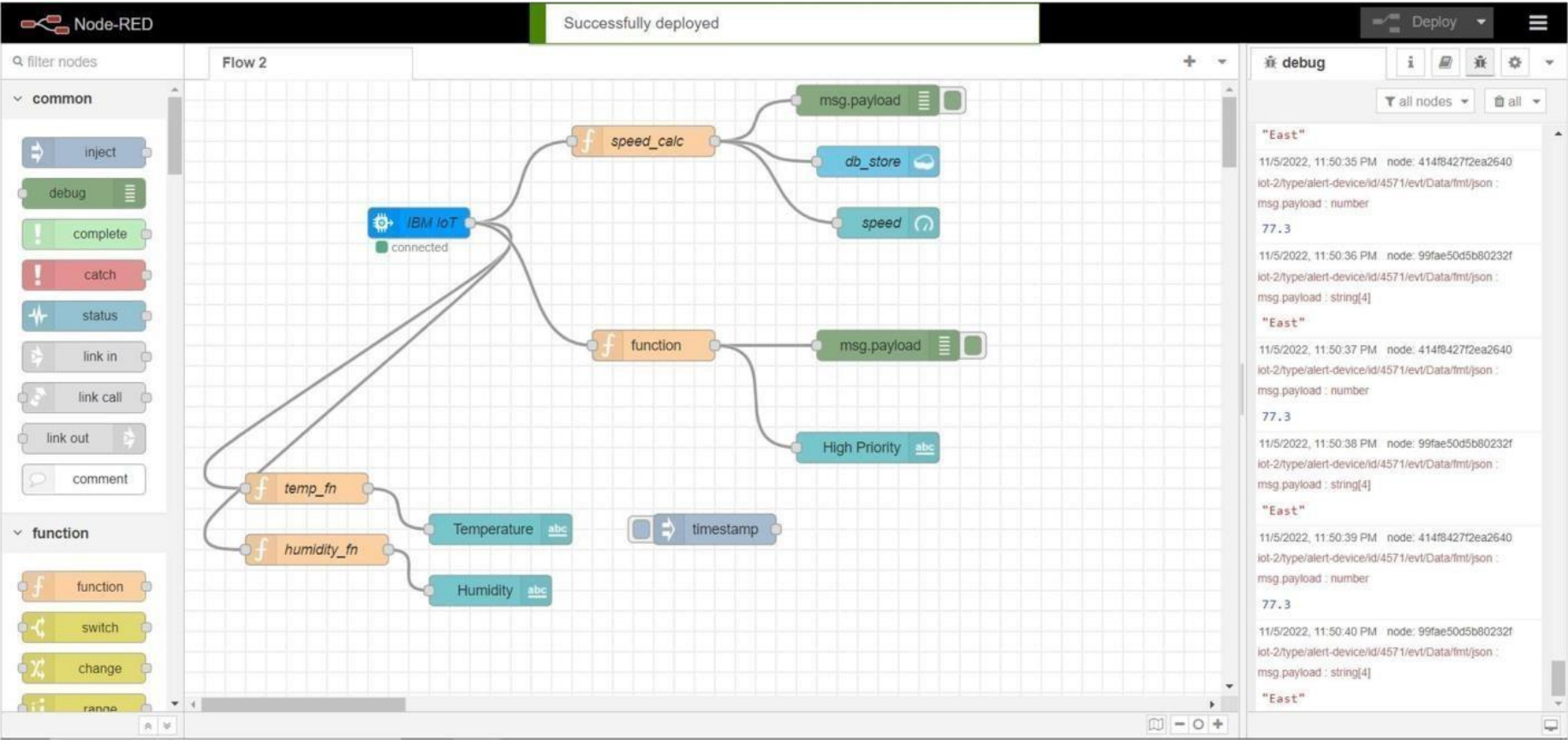
State

Logs

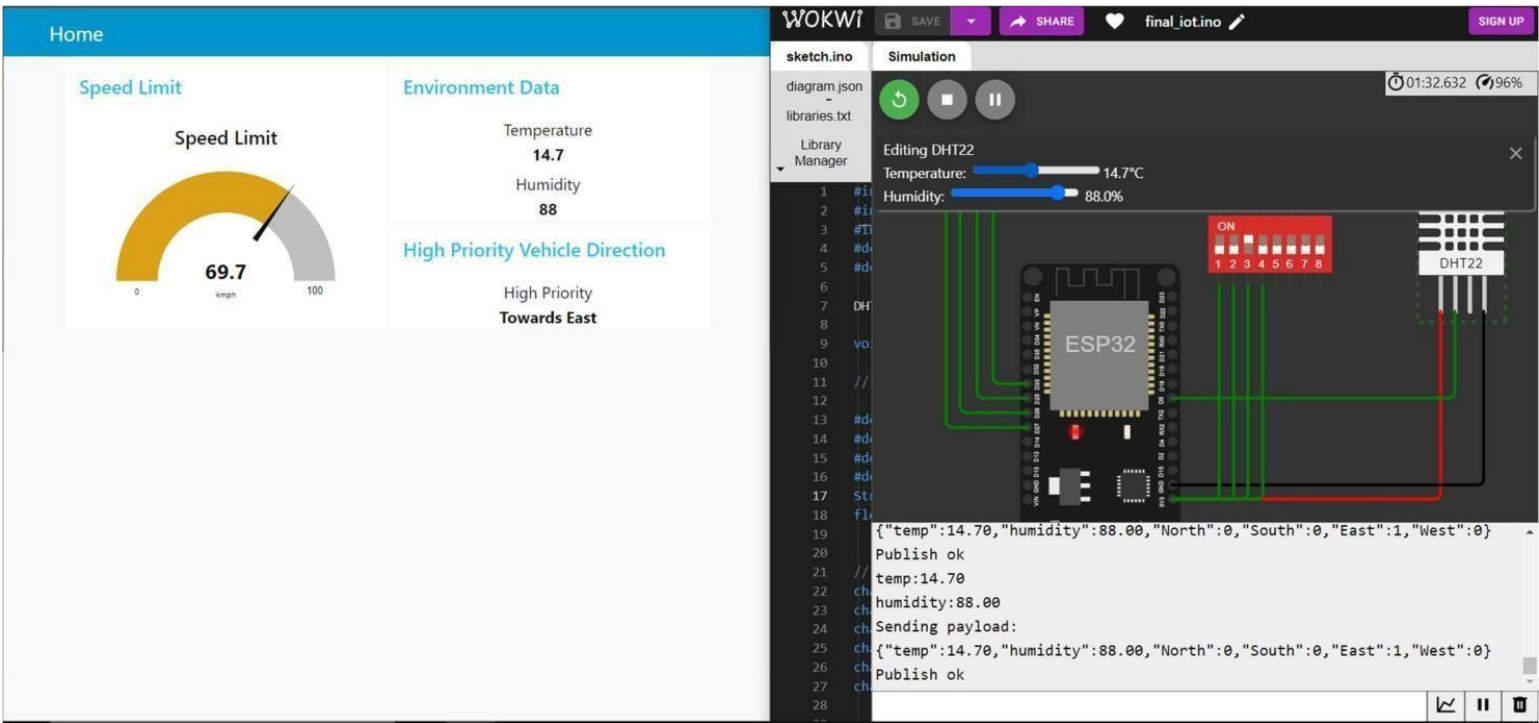
The recent events listed show the live stream of data that is coming and going from this device.

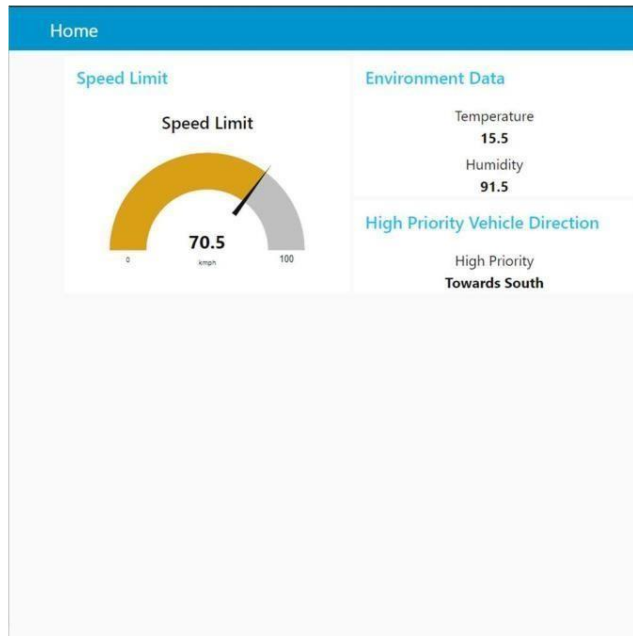
Event	Value	Format	Last Received
Data	{"temp":23.4,"humidity":63,"North":1,"South":0,...	json	a few seconds ago
Data	{"temp":23.4,"humidity":63,"North":1,"South":0,...	json	a few seconds ago
Data	{"temp":23.4,"humidity":63,"North":1,"South":0,...	json	a few seconds ago

Node Red



Node Red Web UI





WOKWI

SAVE SHARE final_iotino SIGN IN

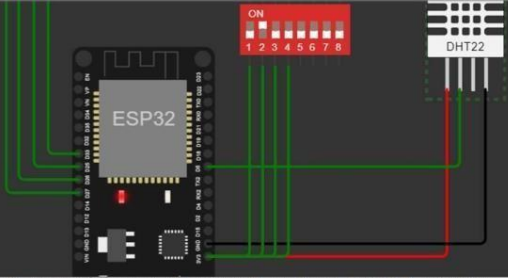
sketch.ino diagram.json libraries.txt Library Manager

Simulation 02:23:068 91%

Editing DHT22

Temperature: 15.5°C

Humidity: 91.5%



```
1 //
2 //
3 #include <DHT.h>
4 #define DHTPIN 4
5 #define DHTTYPE DHT22
6 DHT dht(DHTPIN, DHTTYPE);
7 void setup() {
8   dht.begin();
9 }
10 //
11 //
12 //
13 #define JSON "{\"temp\":\"15.50\",\"humidity\":\"91.50\",\"North\":\"0\",\"South\":\"1\",\"East\":\"0\",\"West\":\"0\"}"
14 #define CH "ch"
15 #define ST "temp:15.50\nhumidity:91.50\nSending payload:\n{"temp\":\"15.50\",\"humidity\":\"91.50\",\"North\":\"0\",\"South\":\"1\",\"East\":\"0\",\"West\":\"0\"}"
16 #define FL "Publish ok\n"
17
18 float temp;
19
20 {"temp":15.50,"humidity":91.50,"North":0,"South":1,"East":0,"West":0}
21 Publish ok
22 //
23 temp:15.50
24 ch humidity:91.50
25 ch Sending payload:
26 {"temp":15.50,"humidity":91.50,"North":0,"South":1,"East":0,"West":0}
27 ch Publish ok
28
```

Cloudant Database

data_iot

All Documents

Query

Permissions

Changes

Design Documents

Document ID

Options

{ } JSON

Create Document

Table

Metadata

{ } JSON

	_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.

Showing document 1 - 20.

Documents per page: 20