

**Project Development  
Phase Sprint II**

Date	7 November 2022
Team ID	PNT2022TMID09351
Project Name	Signs with Smart Connectivity for better road safety

**SPRINT TARGETS:**

Sprint	Functional Requirement (Epic)	UserStory Number	User Story / Task	Story Points	Priority	Team Members
Sprint-2	Safe Ride	USN-4	As a traveler , I should have a hustie free journey	20	Medium	Seenuvasan V Pradeep R Shriraam B Seshadri KS

Wokwi Simulation: <https://wokwi.com/projects/348216301620036179>

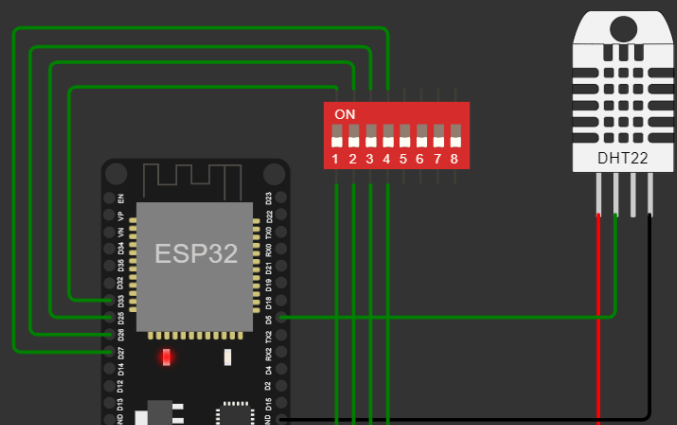
WOKWI

sketch.ino diagram.json libraries.txt Library Manager

```
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* subscribtopic, byte* payload, unsigned int payloadLength);
10
11 //-----credentials of IBM Accounts-----
12
13 #define ORG "psh4py"//IBM ORGANITION 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 subscribtopic[] = "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
33
34
35 void setup()// configureing the ESP32
```

Simulation

00:10.891 104%



ON 1 2 3 4 5 6 7 8

ESP32

DHT22

```
{ "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
```

26°C Mostly cloudy

18:31 13-11-2022

**Device ID**    **Status**    **Device Type**    **Class ID**    **Date Added**    **Descriptive Location**

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
0001	Disconnected	edge-device-1	Device	Nov 5, 2022 8:56 PM	

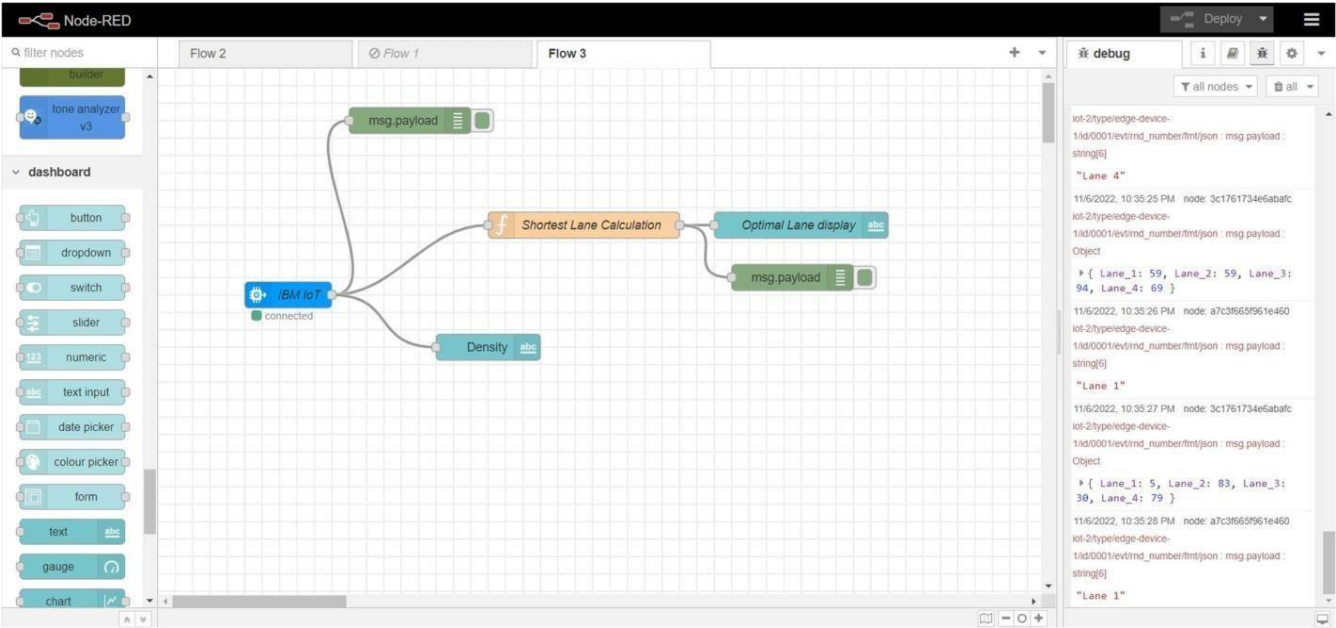
**Identity**    **Device Information**    **Recent Events**    **State**    **Logs**

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

Event	Value	Format	Last Received
rnd_number	{"Lane_1":5,"Lane_2":83,"Lane_3":30,"Lane_4":...}	json	a few seconds ago
rnd_number	{"Lane_1":59,"Lane_2":59,"Lane_3":94,"Lane_4":...}	json	a few seconds ago
rnd_number	{"Lane_1":93,"Lane_2":88,"Lane_3":49,"Lane_4":...}	json	a few seconds ago
rnd_number	{"Lane_1":2,"Lane_2":61,"Lane_3":21,"Lane_4":...}	json	a few seconds ago
rnd_number	{"Lane_1":70,"Lane_2":11,"Lane_3":69,"Lane_4":...}	json	a few seconds ago

1 Simulation running

Node Red



## Edit function node

Delete

Cancel

Done

### Properties

Name

Shortest Lane Calculation

Setup

On Start

On Message

On Stop

```
1 var l1 = msg.payload.Lane_1;
2 var l2 = msg.payload.Lane_2;
3 var l3 = msg.payload.Lane_3;
4 var l4 = msg.payload.Lane_4;
5
6 mini = Math.min(l1,l2,l3,l4);
7
8 res = "-";
9
10 switch(mini) {
11     case l1: res = "Lane 1"; break;
12     case l2: res = "Lane 2"; break;
13     case l3: res = "Lane 3"; break;
14     case l4: res = "Lane 4"; break;
15 }
16
17 msg.payload = res;
18
19 return msg;
```

# Node Red Web UI

