

# Project Development Phase

## Sprint – II

Date	14 November 2022
Team id	PNT2022TMID08723
Project name	Signs with smart connectivity for better road safety

### Sprint targets:

Sprint	Functional requirements	USN	User story/Task	Story points	Priority	Team members
Sprint-2	Safe Ride	USN-4	As a passanger, I should have a Safe journey	20	Medium	Sabarivasan Sudeendra Arun vignesh

### Wowki Simulation:

Wowki simulation- <https://wokwi.com/projects/348366856752464467>

WOKWI

SAVE

SHARE

final\_iot

Docs

sketch.ino

diagram.json

libraries.txt

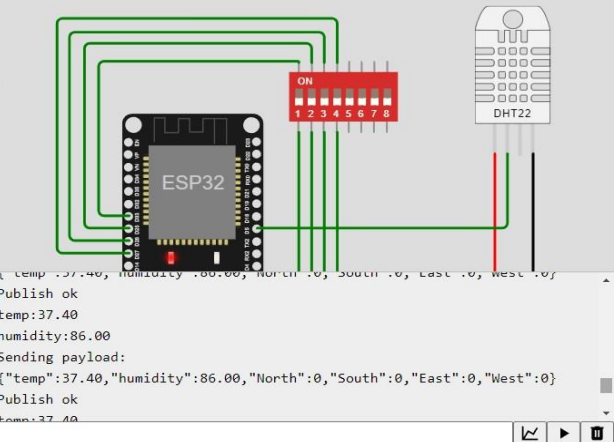
Library Manager

```
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
8
9 void callback(char* topic, byte* payload, unsigned int payloadLength)
10
11 //-----credentials of IBM Accounts-----
12
13 #define ORG "twidrq" //IBM ORGANIZATION ID
14 #define DEVICE_TYPE "Sample_one" //Device type mentioned in ibm watson IOT Plat
15 #define DEVICE_ID "4054" //Device ID mentioned in ibm watson IOT Platform
16 #define TOKEN "12345678" //Token
17 String data;
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 even
24 char subscribeTopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT comm
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 //-----
```

Simulation

02:15:539

81%



temp:37.40, humidity:86.00, North:0, South:0, East:0, West:0

Publish ok

temp:37.40

humidity:86.00

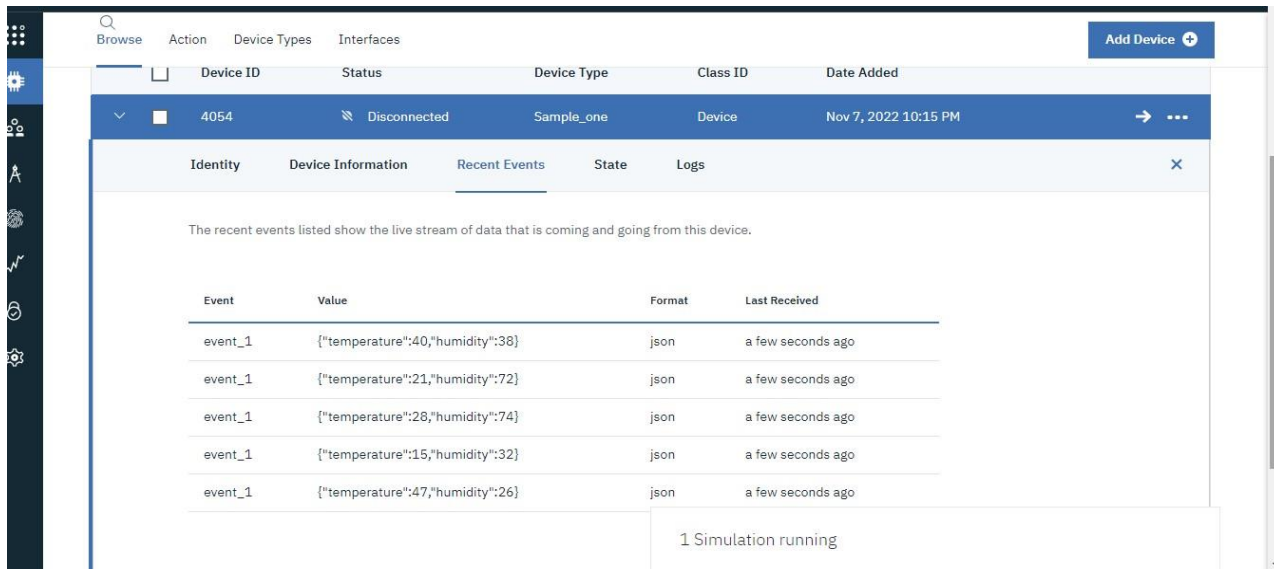
Sending payload:

{"temp":37.40,"humidity":86.00,"North":0,"South":0,"East":0,"West":0}

Publish ok

temp:37.40

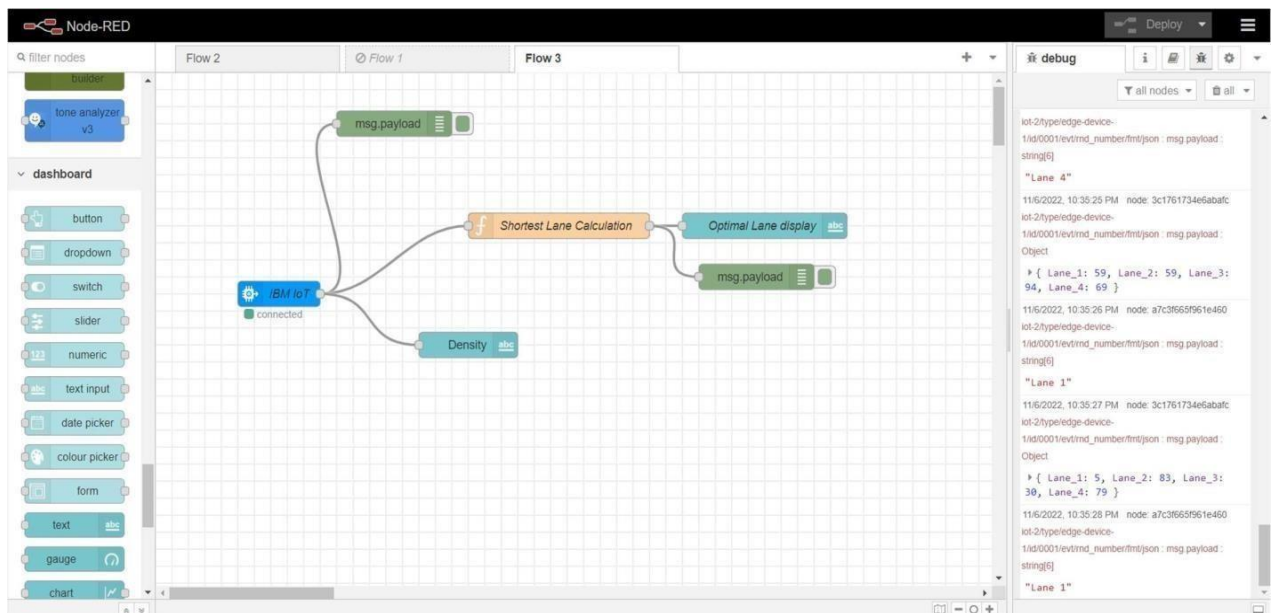
## IoT Device in IoT Platform:



The screenshot shows an IoT Platform interface. At the top, there are tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. A table lists devices with columns: Device ID, Status, Device Type, Class ID, and Date Added. The device 'Sample\_one' (ID 4054) is shown as 'Disconnected'. Below this, a 'Recent Events' tab is active, displaying a table of events. The events table has columns: Event, Value, Format, and Last Received. The events show a stream of temperature and humidity data. At the bottom, it indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{"temperature":40,"humidity":38}	json	a few seconds ago
event_1	{"temperature":21,"humidity":72}	json	a few seconds ago
event_1	{"temperature":28,"humidity":74}	json	a few seconds ago
event_1	{"temperature":15,"humidity":32}	json	a few seconds ago
event_1	{"temperature":47,"humidity":26}	json	a few seconds ago

## 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

Home

Speed Limit

Speed Limit



71.1

Environment Data

Temperature

16.1

Humidity

76.5

High Priority Vehicle Direction

High Priority

Towards North

Lane Density

Optimal Lane

Lane 1

Density

5 | 83 | 30 | 79