

Project Development Phase

Sprint – II

Date	14 November 2022
Team id	PNT2022TMID51172
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	Poorna Swathika

Wowki Simulation:

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

The screenshot displays the Wokwi web-based development environment. On the left, the 'sketch.ino' file is open, showing C++ code that includes libraries for WiFi, MQTT, and DHT11. The code defines an ESP32 board and a DHT22 sensor connected to pins 5 and 22. It sets up an MQTT client to connect to an IBM Watson IoT Platform, using predefined credentials and a token. The code includes a callback function to handle incoming data and a loop that publishes sensor data (temperature and humidity) to a specific MQTT topic. On the right, the 'Simulation' window shows a visual representation of the ESP32 and DHT22 sensor connected by wires. Below the hardware view, the console output shows the simulation running, with messages like 'Publish ok', 'temp:37.40', 'humidity:86.00', and the JSON payload being sent: '{"temp":37.40,"humidity":86.00,"North":0,"South":0,"East":0,"West":0}'.

IoT Device in IoT Platform:

Device ID: 4054, Status: Disconnected, Device Type: Sample_one, Class ID: Device, Date Added: Nov 7, 2022 10:15 PM

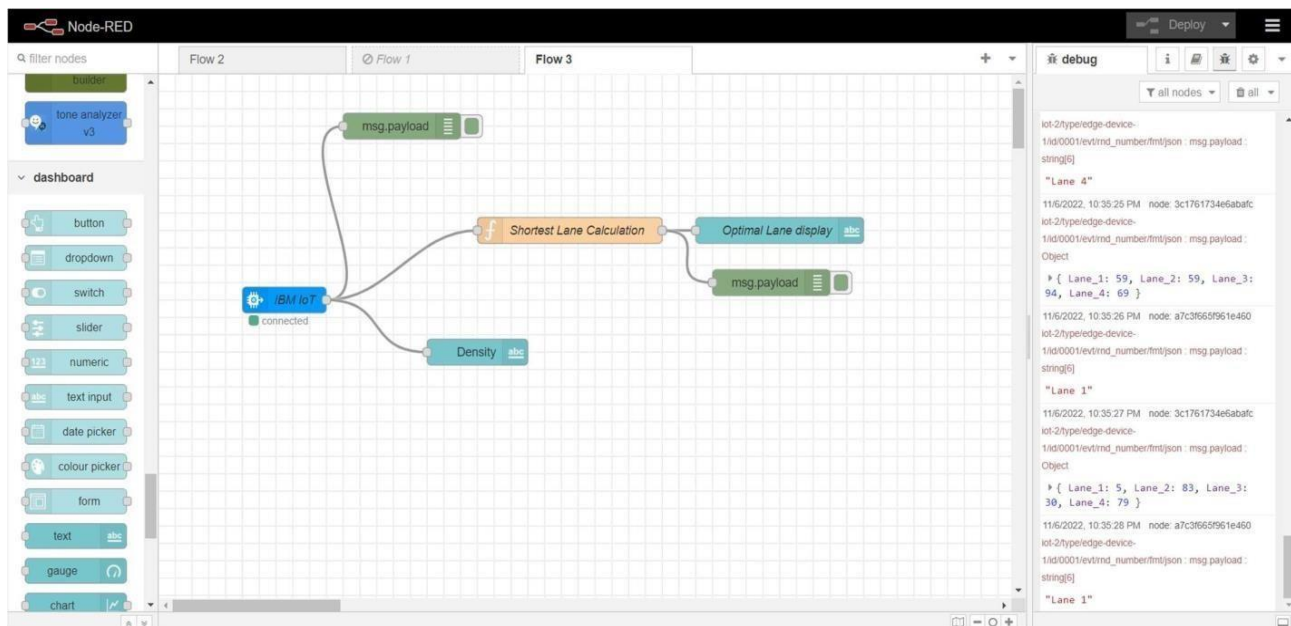
Identity | Device Information | **Recent Events** | State | Logs

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

Event	Value	Format	Last Received
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

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

Home

Speed Limit

Speed Limit



71.1
km/h

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