Project Development Phase Sprint II

Date	13 November 2022
Team ID	PNT2022TMID14814
Project Name	Signs with Smart Connectivity for better road safety

SPRINT TARGETS:

Sprint	Functional Requirement (Epic)	User Story 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	Ajai Balaji P Dheepak Kumaar A S Vamsi Krishna D Gowshik Ram S

WOKWI   SAVE   SHARE   final_iot.ino   Docs

sketch.ino   diagram.json   libraries.txt   Library Manager
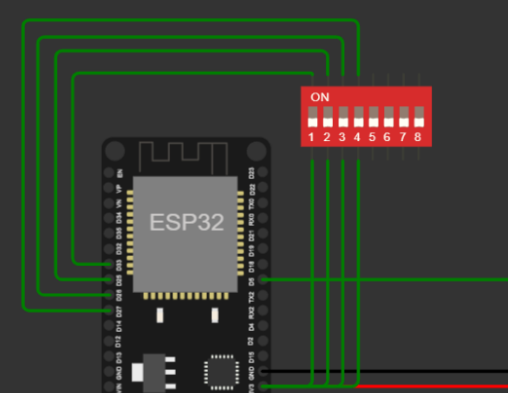
Simulation

```
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 typr of dht connected
8
9   void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);
10
11  //-------credentials of IBM Accounts------
12
13  #define ORG "c3wgxl"//IBM ORGANISATION ID
14  #define DEVICE_TYPE "ajai"//Device type mentioned in ibm watson IOT Platform
15  #define DEVICE_ID "12345"//Device ID mentioned in ibm watson IOT Platform
16  #define TOKEN "123456789"      //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 and format in which dat
24  char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd  REPRESENT command type AND COMMAND IS TEST OF FO
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 id by passing paramet
33
34
35  void setup()// configureing the ESP32
```

```
Connecting to ....
WiFi connected
IP address:
10.10.0.2
Reconnecting client to
c3wgxl.messaging.internetofthings.ibmcloud.com
```

IoT Device – IoT Platform

	12345	Connected	ajai	Device

Identity   Device Information   Recent Events   State   Logs
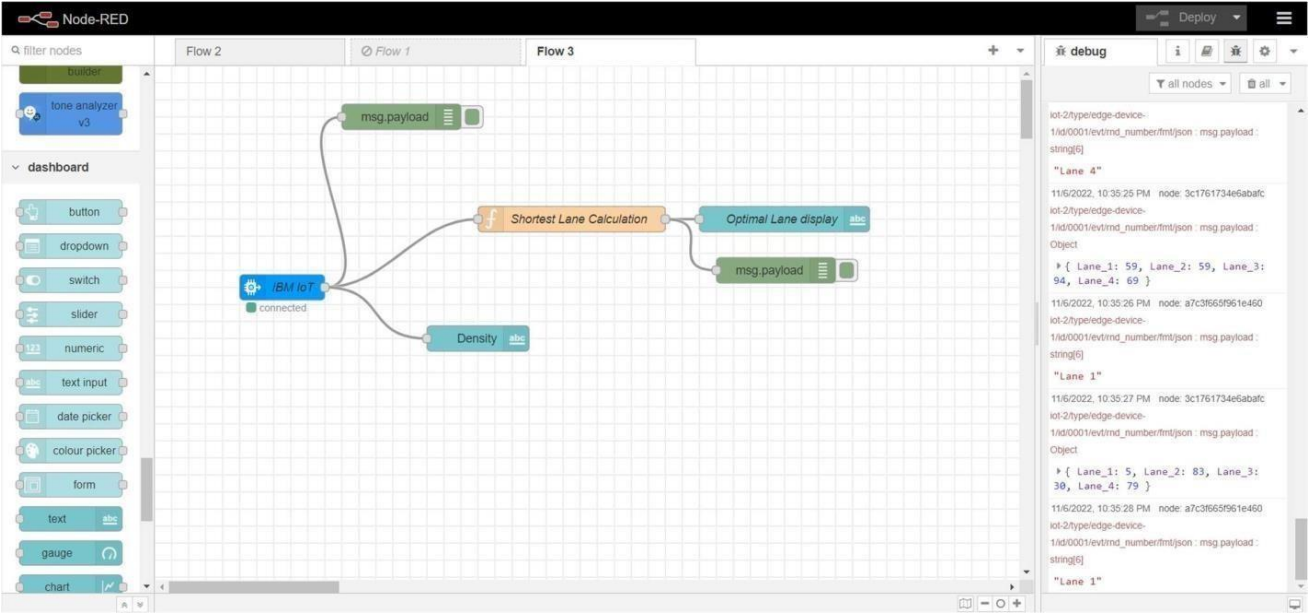
The recent events listed show the live stream of data that is coming and going from this device.

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

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