

Project Development Phase Sprint II

Date	05 November 2022
Team ID	PNT2022TMID35906
Project Name	Signs with Smart Connectivity for better road safety

Sprint Targets

Sprint-2	Safer Ride	USN-4	As a traveller, I should have a hustle free journey	20	Medium	Rohinth Ram R V, Siva Chokkalingam S, Atchayapriya M, Deepa Jothi K
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Wokwi Simulation: <https://wokwi.com/projects/347494122536305235>

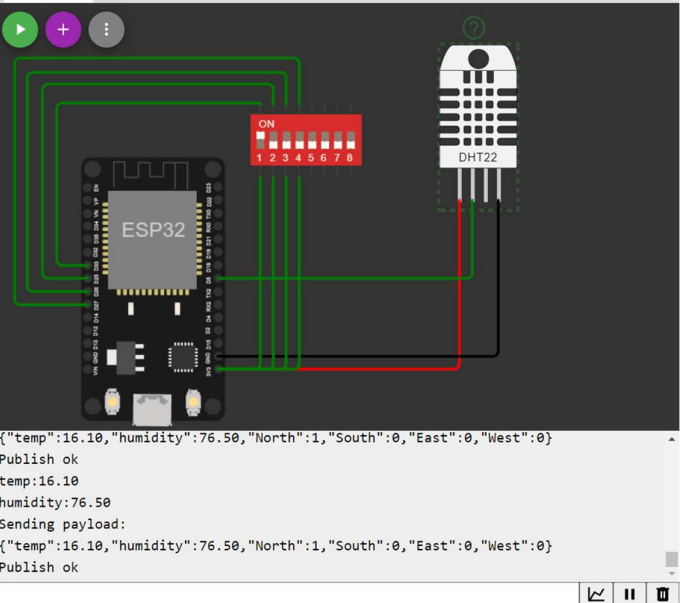
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```

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 connecte
8
9 void callback(char* subscribetopic, 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 //----- Customise the above values -----
21 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
22 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name and type of event perform an
23 char subscribetopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT command type AND
24 char authMethod[] = "use-token-auth"; // authentication method
25 char token[] = TOKEN;
26 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //client id
27
28 //-----
29
30 WiFiClient wifiClient; // creating the instance for wifiClient
31 PubSubClient client(server, 1883, callback, wifiClient); //calling the predefined client
32
33
34
35 void setup() // configuring the ESP32

```

Simulation



IoT Device – IoT Platform

IBM Watson IoT Platform

2019504571@smartinternz.com
ID: psh4py

Browse Action Device Types Interfaces

Add Device +

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

Node-RED

Deploy

filter nodes

Flow 2 Flow 1 **Flow 3**

builder

tone analyzer v3

dashboard

- button
- dropdown
- switch
- slider
- numeric
- text input
- date picker
- colour picker
- form
- text
- gauge
- chart

msg.payload

Shortest Lane Calculation

Optimal Lane display

Density

debug

```
iot-2/type/edge-device-1/d/0001/evtrnd_number/fmt/json : msg.payload : string[6]
" Lane 4 "
11/6/2022, 10:35:25 PM node: 3c1761734e6abafc
iot-2/type/edge-device-1/d/0001/evtrnd_number/fmt/json : msg.payload : Object
{ Lane_1: 59, Lane_2: 59, Lane_3: 94, Lane_4: 69 }
11/6/2022, 10:35:26 PM node: a7c3f65f961e460
iot-2/type/edge-device-1/d/0001/evtrnd_number/fmt/json : msg.payload : string[6]
" Lane 1 "
11/6/2022, 10:35:27 PM node: 3c1761734e6abafc
iot-2/type/edge-device-1/d/0001/evtrnd_number/fmt/json : msg.payload : Object
{ Lane_1: 5, Lane_2: 83, Lane_3: 30, Lane_4: 79 }
11/6/2022, 10:35:28 PM node: a7c3f65f961e460
iot-2/type/edge-device-1/d/0001/evtrnd_number/fmt/json : msg.payload : string[6]
" Lane 1 "
```

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

