

Project Development Phase
Sprint III

Date	13 November 2022
Team ID	PNT2022TMID21418
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-3	Login	USN-5	As an administrator , I should have an account of the website	7	Low	Thillai Nivetha Shakinsha Priyadharshini Dhanushya
Sprint-3	Dashboard	USN-6SSS	As an admin, I should be able to monitor and add sign nodes	13	Medium	Thillai Nivetha Shakinsha Priyadharshini Dhanushya

Wokwi Simulation: <https://wokwi.com/projects/348578517287436883>

WOKWI

SAVE

SHARE

Docs

sketch.ino

diagram.json

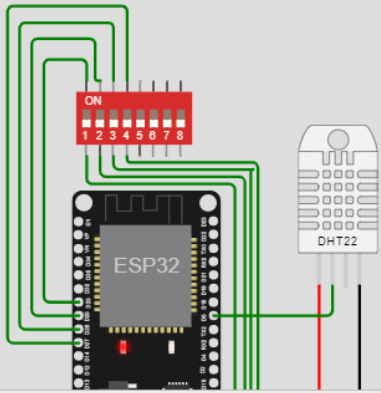
libraries.txt

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 typr of
8
9 void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
10
11 //-----credentials of IBM Accounts-----
12
13 #define ORG "4qbK92" //IBM ORGANITION ID
14 #define DEVICE_TYPE "rasperryPi" //Device type mentioned in ibm watson IOT Plat
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 even
24 char subscribetopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT comma
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
```

Simulation

00:07.659 103%



```
{ "temp": 24.00, "humidity": 40.00, "North": 0, "South": 0, "East": 0, "West": 0 }
```

Publish ok

temp:24.00

humidity:40.00

Sending payload:

```
{ "temp": 24.00, "humidity": 40.00, "North": 0, "South": 0, "East": 0, "West": 0 }
```

Publish ok

IoT Device – IoT Platform

Watson IoT Platform

shakinsha@student.lice.edu
ID: 4qbk92

Browse

Action

Device Types

Interfaces

Add Device +

12345

Connected

raspberrypi

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":24,"humidity":40,"North":0,"South":0,"E...	json	a few seconds ago
Data	{"temp":24,"humidity":40,"North":0,"South":0,"E...	json	a few seconds ago
Data	{"temp":24,"humidity":40,"North":0,"South":0,"E...	json	a few seconds ago
Data	{"temp":24,"humidity":40,"North":0,"South":0,"E...	json	a few seconds ago
Data	{"temp":24,"humidity":40,"North":0,"South":0,"E...	json	a few seconds ago

>

☐

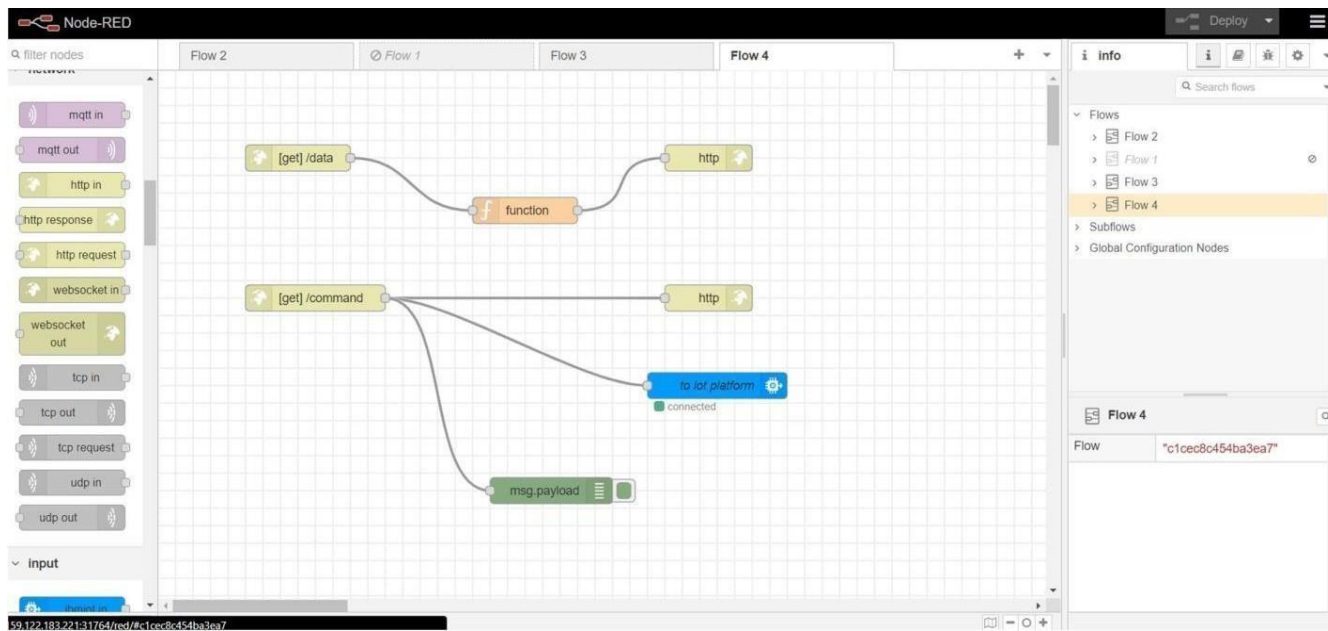
34567

Disconnected

raspberrypi

Device

Node Red – Connect with MIT AppInventor



Edit function node

Delete

Cancel

Done

⚙ Properties



📌 Name

Name



⚙ Setup

On Start

On Message

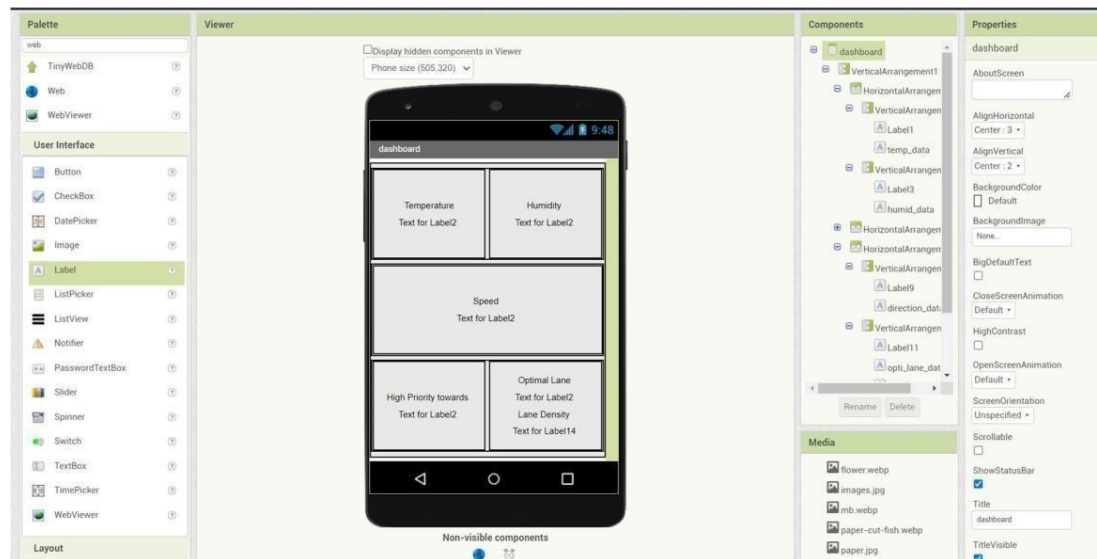
On Stop

```
1 msg.payload = {  
2   "temp":global.get("temp"),  
3   "humid":global.get("humid"),  
4   "speed":global.get("speed"),  
5   "n":global.get("n"),  
6   "s":global.get("s"),  
7   "e":global.get("e"),  
8   "w":global.get("w"),  
9   "res":global.get("res"),  
10  "l1":global.get("l1"),  
11  "l2":global.get("l2"),  
12  "l3":global.get("l3"),  
13  "l4":global.get("l4"),  
14  "optimal_lane":global.get("optimal_lane")  
15 };  
16 };  
17  
18 return msg;
```

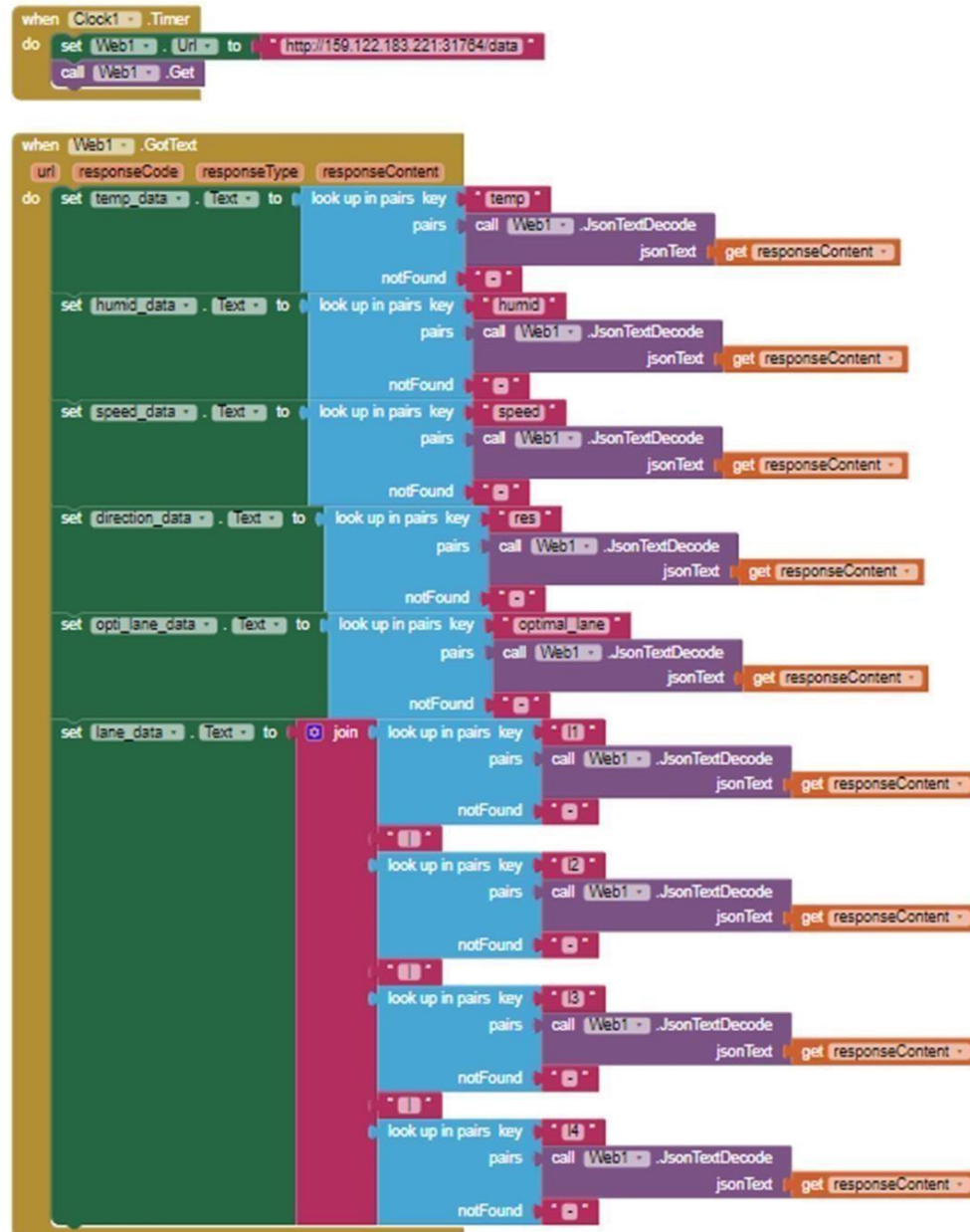
Output from Node red:

```
← → ↻ ⚠ Not secure | 159.122.183.221:31764/data  
Google YouTube MATLAB Document... LaTeX Base | Online... ECE Notes Seniors' Download - Know... see eSim Sanskrit Word List...  
{ "temp":14.9,"humid":86,"speed":80,"n":0,"s":0,"e":0,"w":1,"res":"West","11":69,"12":99,"13":19,"14":40,"optimal_lane":"Lane 3" }
```

MIT App Inventor UI design:



MIT App Inventor Backend design:



Sprint 3 delivery:

(OUTPUT) Display from MIT App:

