

Project Development Phase Sprint III

Date	11 November 2022
Team ID	PNT2022TMID12305
Project Name	Signs with Smart Connectivity for better road safety

Sprint Targets :

Sprint	Functional Requirement (Epic)	UserStory Number	UserStory/Task	Story Points	Priority	Team Members
Sprint-3	Login	USN-5	As an administrator , I should have an account of the website	7	Low	Ghavanamani Naveen Maheshwaran Hariharan
Sprint-3	Dashboard	USN-6SSS	As an admin, I should be able to monitor and add sign nodes	13	Medium	Ghavanamani Naveen Maheshwaran Hariharan

Wokwi Simulation: <https://wokwi.com/projects/348178332935782994>

sketch.ino

diagram.json

libraries.txt

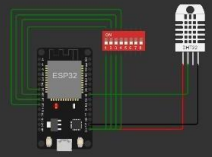
Library Manager

```
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 dht connect
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
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 a
24 char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd REPRESENT command type AND
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
33
34
```

Simulation

01:47.514

98%



temp:37.40
humidity:86.00
Sending payload:
{ "temp":37.40,"humidity":86.00,"North":0,"South":0,"East":0,"West":0}
Publish ok
Reconnecting client to psh4py.messaging.internetofthings.ibmcloud.com
.....

IoT Device – IoT Platform

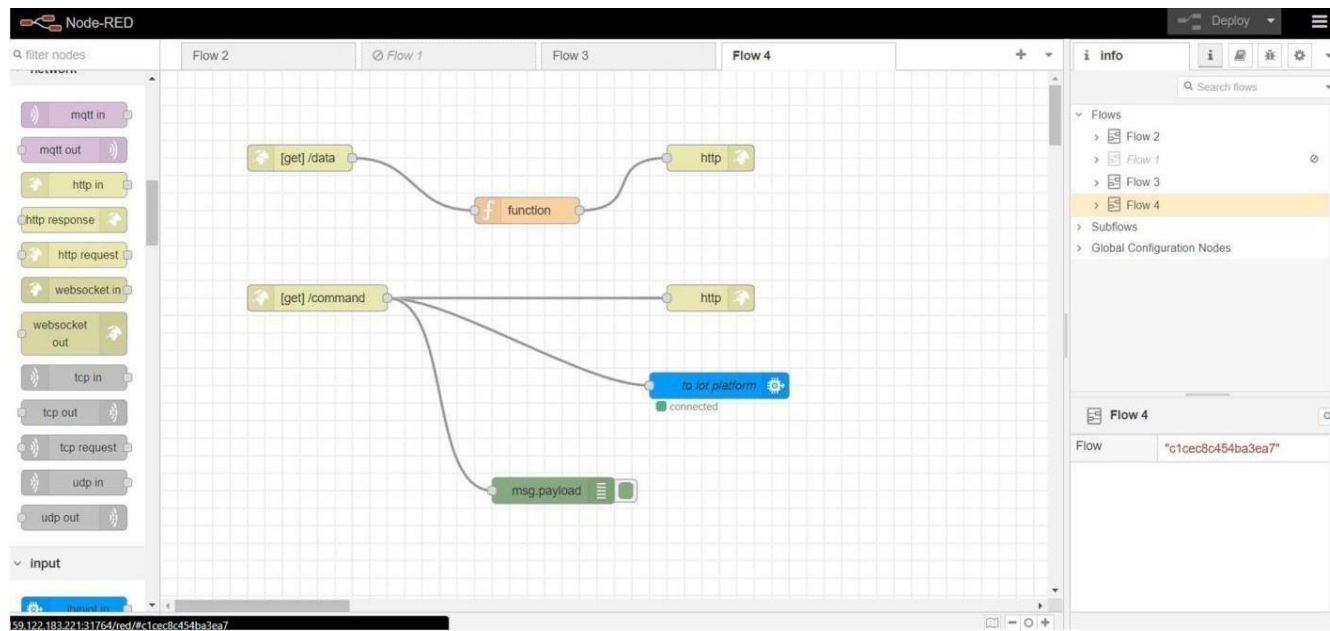
The screenshot displays the 'Recent Events' tab for a device with ID 0001. The device is currently 'Disconnected'. The interface includes a top navigation bar with 'Browse', 'Action', 'Device Types', and 'Interfaces', along with an 'Add Device' button. A left sidebar contains various icons for navigation. The main content area shows a table of recent events, each containing an event name, a JSON value, the format, and the time received. A status message at the bottom right indicates '1 Simulation running'.

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 – Connect with MIT AppInventor



Edit function node

Delete

Cancel

Done

⚙ Properties



🔖 Name

Name



⚙ Setup

On Start

On Message

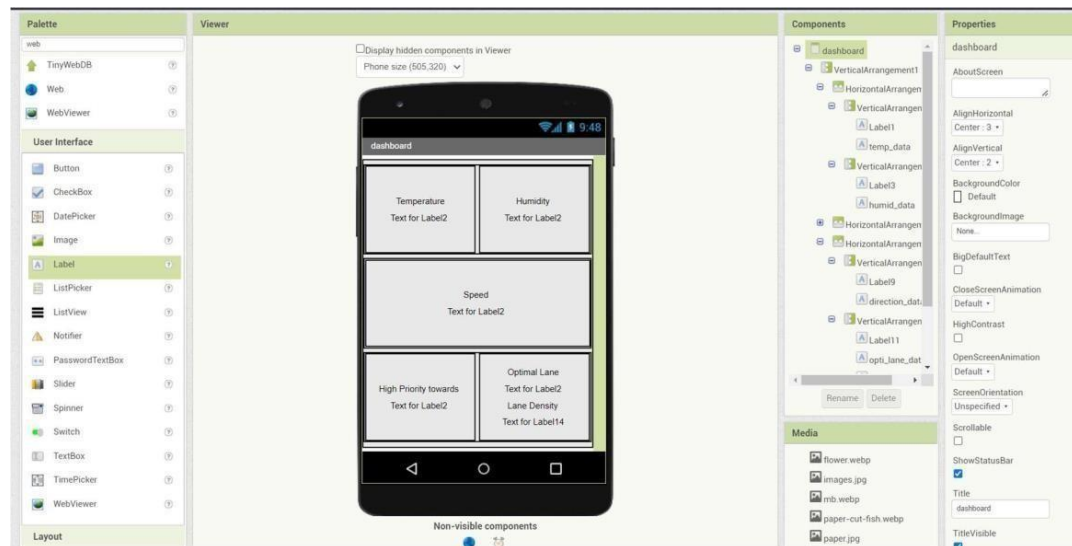
On Stop

```
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;
```

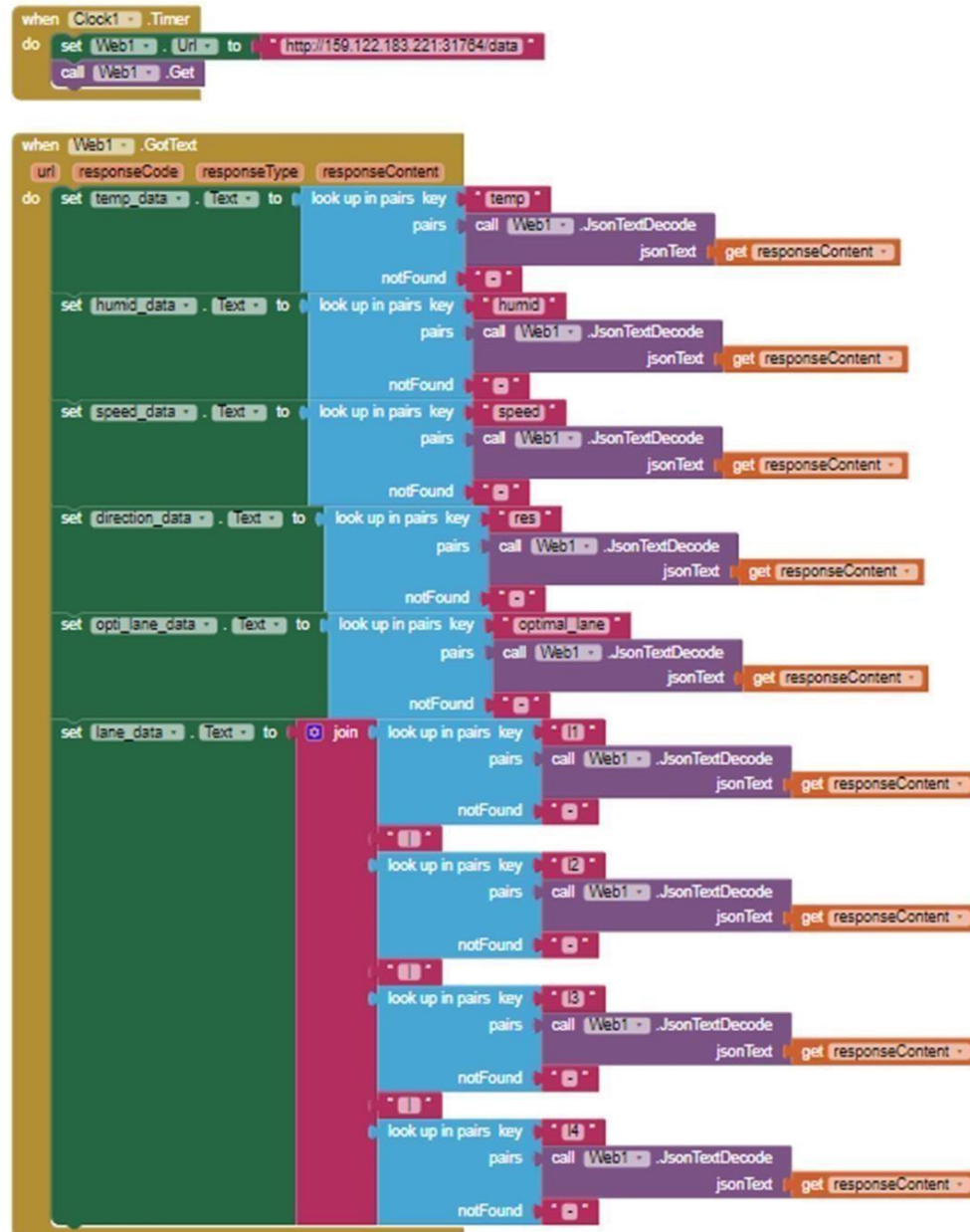
Output from Node red:

```
← → ↻ 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:

