

Project Development Phase
Sprint I

Date	13 November 2022
Team ID	PNT2022TMID41867
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-1	Dynamic Speed Limit	USN-1	As a traveller , It is Essential form to know the speed limit	10	High	Saranya Sandhiya Santhiya Sathikala Kariyaraman
Sprint-1	Priority Vehicle	USN-2	Simulating the circuits and experimenting	2	High	Saranya Sandhiya Santhiya Sakthikala Kariyaraman
Sprint-1	Weather Speed Limit	USN-3	As a user ,I should be aware of weather influence on speed limit for safer ride		Medium	Saranya Sandhiya Santhiya Sakthikala Kariyaraman

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

The screenshot displays the Wokwi web-based IDE. The left pane shows an Arduino sketch for an IoT project. The sketch includes libraries for WiFi, MQTT, and DHT, and is configured to connect to IBM Watson IoT Platform using a token-based authentication method. The right pane shows a 3D simulation of an Arduino Uno connected to a DHT22 sensor. Below the simulation, a console window displays the output of the program, showing temperature and humidity readings, and the successful sending of a JSON payload to the IoT platform.

```
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 ORGANIZATION 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 40
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

4571

Connected

alert-device

Device

Identity

Device Information

Recent Events

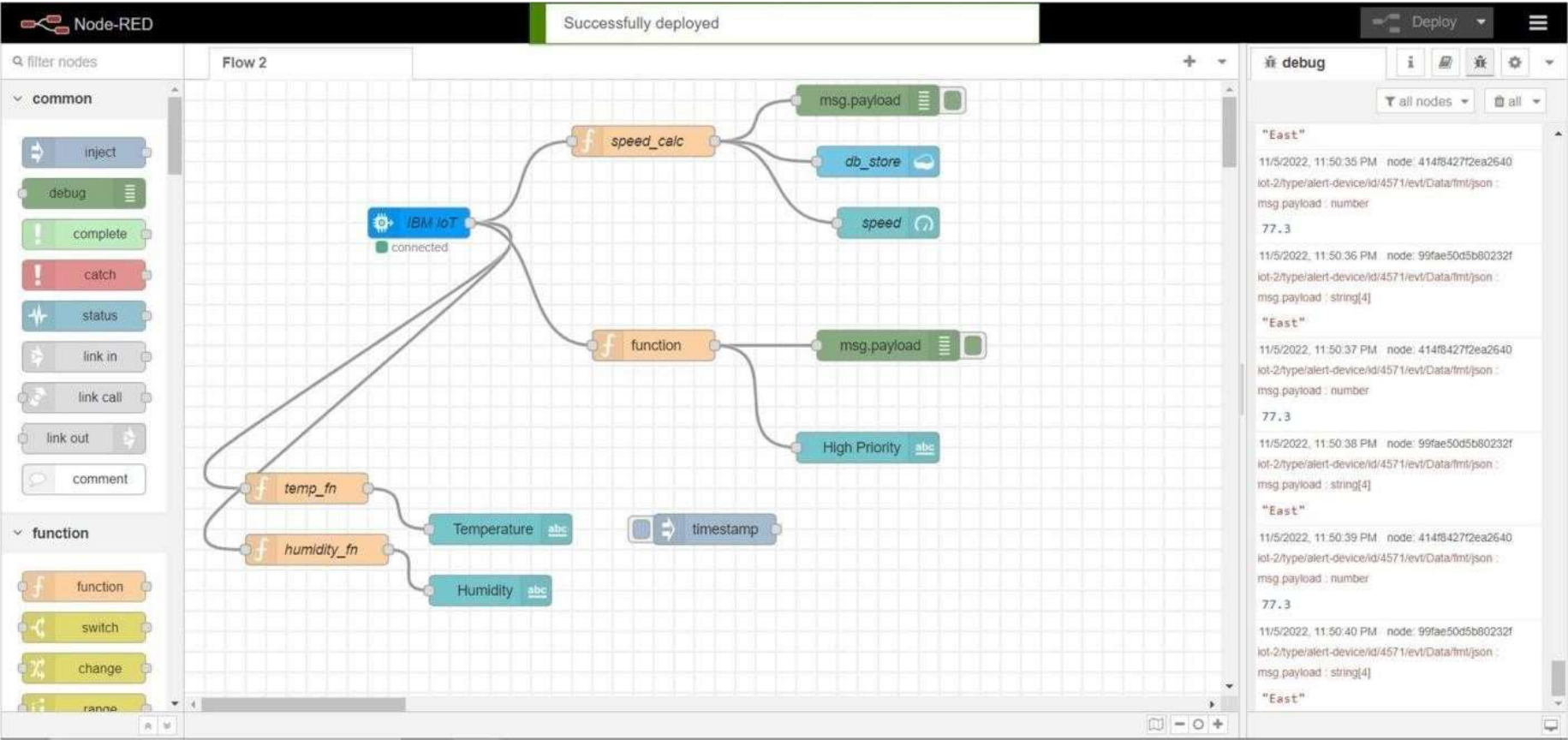
State

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



Speed Limit

Speed Limit



A semi-circular gauge with an orange arc and a grey segment. The needle points to 80 on a scale from 0 to 100. The text '80 km/h' is displayed in the center.

Speed Limit
80 km/h

Environment Data

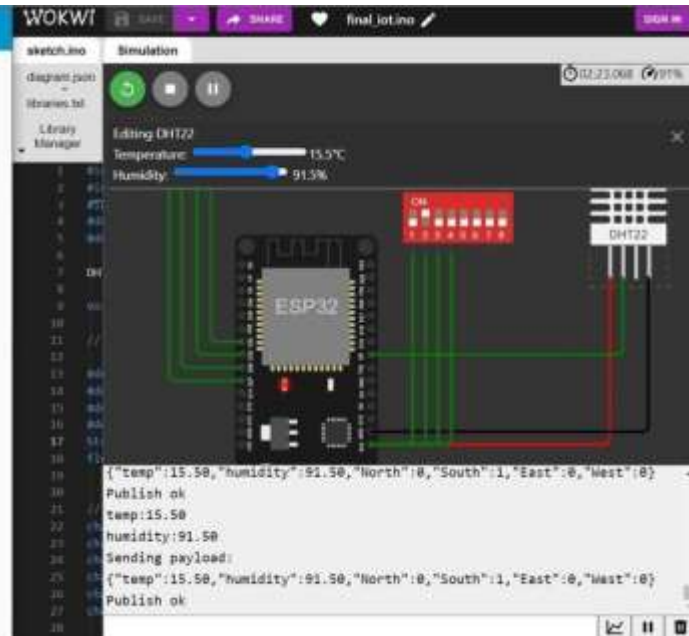
Temperature
23.4

Humidity
63

High Priority Vehicle Direction

High Priority
Towards North

The screenshot displays the Wokwi IoT simulator interface. On the left, a 'Speed Limit' sign is shown with a yellow arc and a needle pointing to 69.7. On the right, 'Environment Data' is displayed, showing a temperature of 14.7°C and humidity of 88%. Below this, a 'High Priority Vehicle Direction' indicator shows 'High Priority Towards East'. The right side of the image shows the Wokwi IDE with a sketch of an ESP32 microcontroller connected to a DHT22 sensor. The code in the background is a C++ sketch that reads sensor data and publishes it to a cloud service.



Cloudant Database

data_iot

All Documents

Query

Permissions

Changes

Design Documents

Document ID

Options

2500

Table

Metadata

JSON

Create Document

	_id	payload
<input type="checkbox"/>	060cc88d44fa211288e9cdf07f8bae69a	35
<input type="checkbox"/>	060cc88d44fa211288e9cdf07f904e58	60
<input type="checkbox"/>	060cc88d44fa211288e9cdf07f90c3f9	45.5
<input type="checkbox"/>	060cc88d44fa211288e9cdf07f92a313	60
<input type="checkbox"/>	2314e7571ae59253a5e082f191bb6c9c	52.5
<input type="checkbox"/>	269394e99e5c84ba04f6a20342a22ab2	35
<input type="checkbox"/>	26939e699e5c84ba04f6a20342a7ccf5	44
<input type="checkbox"/>	3ffa1240575e9cc0d7f048833802a389	55
<input type="checkbox"/>	48a3abcf5f840466e09ed279d3c3451	53
<input type="checkbox"/>	48a3abcf5f840466e09ed279d3c5b7c	53
<input type="checkbox"/>	48a3abcf5f840466e09ed279d3c9545	53
<input type="checkbox"/>	527306572e5f6e2d21f8aaab610dc8	55

Showing 2 of 3 columns. ☐ Show all columns.

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