

# Project Development Phase

## Sprint – I

Date	14 November 2022
Team id	PNT2022TMID51225
Project name	Signs with smart connectivity for better road safety

### Sprint targets:

Sprint	Functional requirements	USN	User story/Task	Story points	Priority	Team members
Sprint-1	Speed limit	USN-1	As a passanger, I should know speed limit	10	High	Rithiga Angelin Sukirtha Snekapriyatharshinie
Sprint-1	Vehicle's priority	USN-2	Simulating the circuits	2	Low	Rithiga Sankareswari
Sprint-1	Weather speed limit	USN-3	As a user, I should know the weather conditions	8	Medium	Snekapriyatharshinie Monika

### Wowki Simulation:

Wowki simulation- <https://wokwi.com/projects/348366856752464467>

The screenshot displays the Wokwi web-based simulation environment. On the left, the 'sketch.ino' file is open, showing an Arduino sketch that includes libraries for WiFi, MQTT, and the DHT sensor. The code defines a DHT22 sensor on pin 5 and implements a callback function to publish sensor data to an MQTT topic. The right pane shows the 'Simulation' view with a visual representation of the ESP32 and DHT22 components connected by wires. Below the simulation, a terminal window shows the output of the program, including the temperature (37.40°C) and humidity (86.00%) being published to the MQTT topic.

```
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
8
9 void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
10
11 //-----credentials of IBM Accounts-----
12
13 #define ORG "twhdrg" //IBM ORGANITION ID
14 #define DEVICE_TYPE "Sample_one" //Device type mentioned in ibm watson IOT Plat
15 #define DEVICE_ID "4054" //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 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
30 //-----
```

Simulation interface showing a terminal output:

```
temp:37.40, humidity:86.00, North:0, South:0, East:0, West:0
Publish ok
temp:37.40
humidity:86.00
Sending payload:
{"temp":37.40,"humidity":86.00,"North":0,"South":0,"East":0,"West":0}
Publish ok
temp:37.40
```

## IoT Device in IoT Platform:

The screenshot shows an IoT Platform interface with a sidebar on the left containing icons for various functions. The main area displays details for a device with ID 4054, which is currently 'Disconnected'. The device is of type 'Sample\_one' and has a 'Class ID' of 'Device'. It was added on 'Nov 7, 2022 10:15 PM'. Below this, there are tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, showing a table of events. A message states: 'The recent events listed show the live stream of data that is coming and going from this device.'

Event	Value	Format	Last Received
event_1	{"temperature":40,"humidity":38}	json	a few seconds ago
event_1	{"temperature":21,"humidity":72}	json	a few seconds ago
event_1	{"temperature":28,"humidity":74}	json	a few seconds ago
event_1	{"temperature":15,"humidity":32}	json	a few seconds ago
event_1	{"temperature":47,"humidity":26}	json	a few seconds ago

At the bottom, it indicates '1 Simulation running'.

## Node red:



