

Project Development PhaseSprint I

Date	13 November 2022
Team ID	PNT2022TMID14352
Project Name	Signs with Smart Connectivity for better road safety

SPRINT TARGETS:

Sprint	Functional Requirement (Epic)	UserStory Number	UserStory/Task	StoryPoints	Priority	Team Members
Sprint-1	Dynamic Speed Limit	USN-1	As a traveller , It is Essential form to know the speed limit	10	High	Pavithra Rohini Naresh Mallisri
Sprint-1	Priority Vehicle	USN-2	Simulating the circuitsandexperimenting	2	High	Pavithra Rohini Naresh Mallisri
Sprint-1	Weather Speed Limit	USN-3	As a user ,I should be aware of weather influence on speed limit for safer ride		Medium	Pavithra Rohini Naresh Mallisri

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

IBM final_iot.ino copy - Wokwi Arduino x +

wokwi.com/projects/348178332935782994

Gmail YouTube J Jenkov WP KPR Insta java sql Netflix hotstar UI/UX - Great Learn... Smart Connected Si... IBM Smart Road Safety... IBM-EPBL/IBM-Proj...

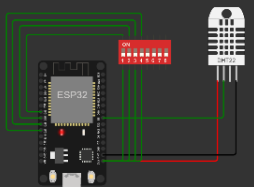
WOKWI SAVE SHARE final_iot.ino copy Docs

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 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
.....

Type here to search

23°C Cloudy 08:23 13-11-2022

IoT Device – IoT Platform

4571

Connected

alert-device

Device

Identity

Device Information

Recent Events

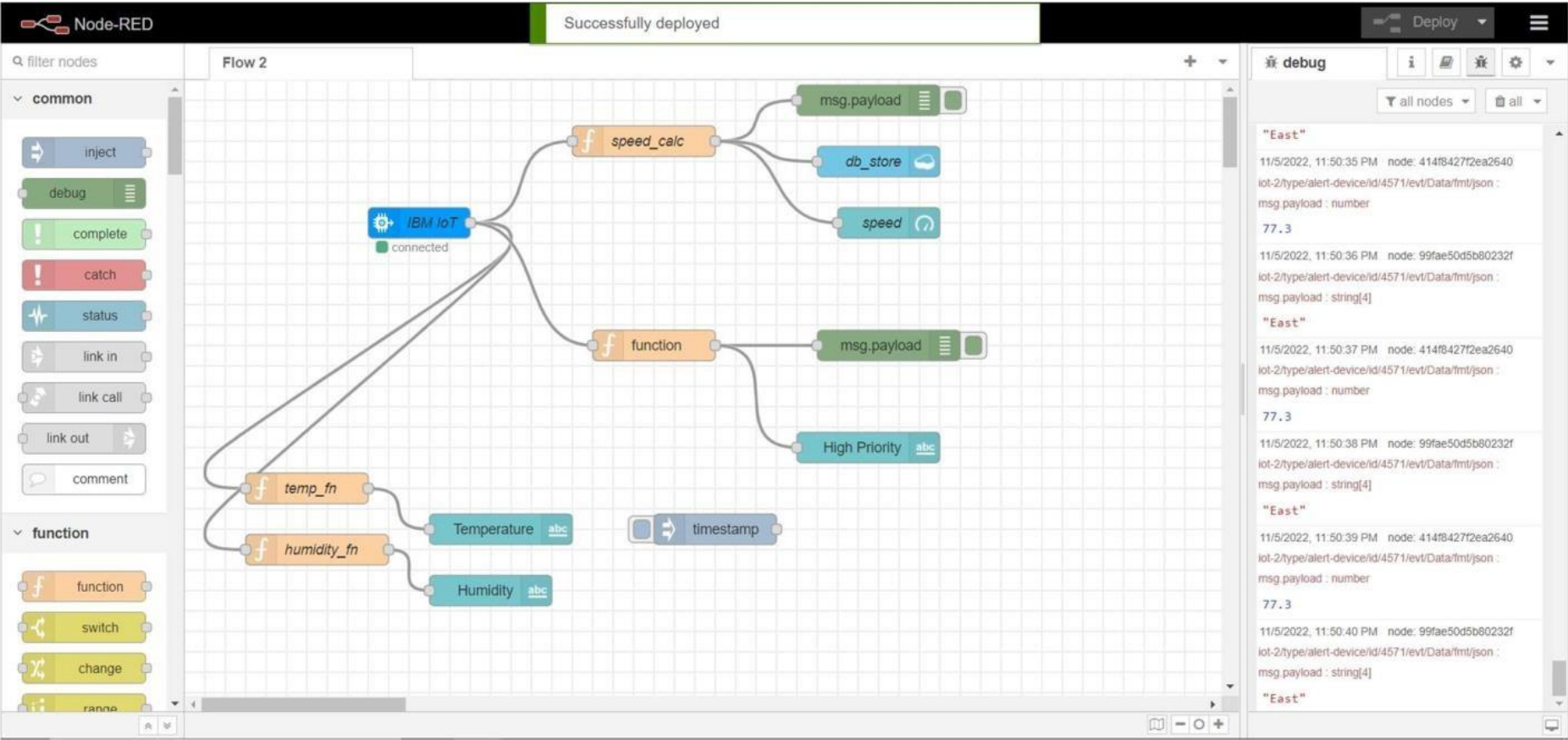
State

Logs

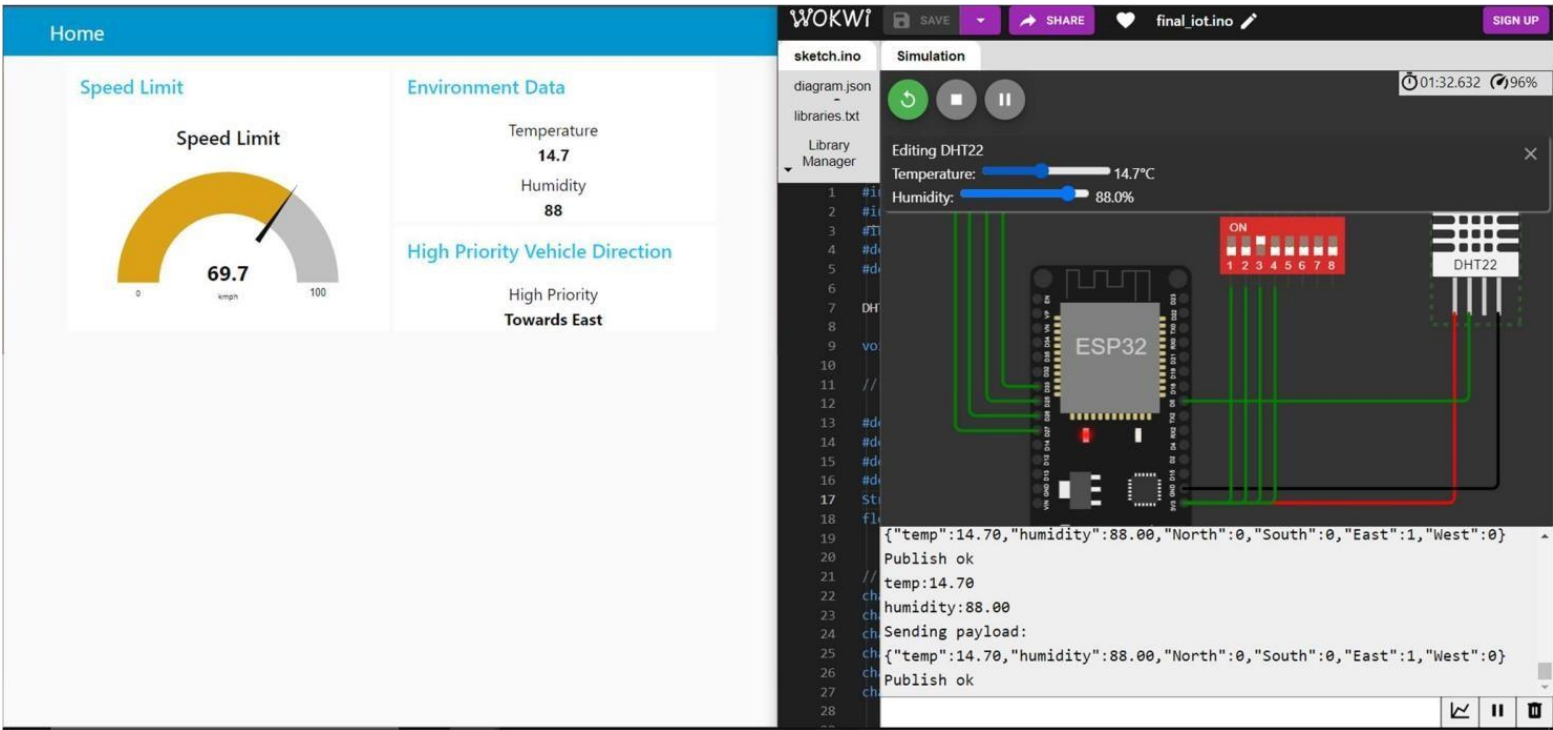
The recent events listed show the live stream of data that is coming and going from this device.

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



Node Red Web UI



Home

Speed Limit

Speed Limit

70.5

0100

kmph

Environment Data

Temperature

15.5

Humidity

91.5

High Priority Vehicle Direction

High Priority

Towards South

WOKWI

SAVE

SHARE

final_iot.ino

SIGN IN

sketch.ino

Simulation

diagram.json

libraries.txt

Library Manager

02:23:068 91%

Editing DHT22

Temperature: 15.5°C

Humidity: 91.5%

ON

12345678

DHT22

ESP32

```
1 //
2 //
3 #include <DHT.h>
4 #define DHTPIN 4
5 #define DHTTYPE DHT22
6 DHT dht(DHTPIN, DHTTYPE);
7
8 void setup() {
9   pinMode(13, OUTPUT);
10 }
11
12 //
13 #define JSON_TEMP "{\"temp\":15.50,\"humidity\":91.50,\"North\":0,\"South\":1,\"East\":0,\"West\":0}"
14 #define JSON_HUMIDITY "{\"temp\":15.50,\"humidity\":91.50,\"North\":0,\"South\":1,\"East\":0,\"West\":0}"
15 #define JSON_DIRECTION "{\"temp\":15.50,\"humidity\":91.50,\"North\":0,\"South\":1,\"East\":0,\"West\":0}"
16 #define JSON_PAYLOAD "{\"temp\":15.50,\"humidity\":91.50,\"North\":0,\"South\":1,\"East\":0,\"West\":0}"
17 #define JSON_PUBLISH "{\"temp\":15.50,\"humidity\":91.50,\"North\":0,\"South\":1,\"East\":0,\"West\":0}"
18 #define JSON_OK "{\"temp\":15.50,\"humidity\":91.50,\"North\":0,\"South\":1,\"East\":0,\"West\":0}"
19
20 void loop() {
21   //
22   ch
23   humidity:91.50
24   Sending payload:
25   ch
26   Publish ok
27   ch
28 }
```

Cloudant Database

data_iot

Document ID

Options

{ } JSON

All Documents

Query

Permissions

Changes

Design Documents

Table

Metadata

{ } JSON

Create Document

_id	payload
060cc88d44faf11288e9cdfd7d8de45a	35
060cc88d44faf11288e9cdfd7d904e58	60
060cc88d44faf11288e9cdfd7d90c3f9	45.5
060cc88d44faf11288e9cdfd7d92a313	60
2314e7571ab5925365e082f191bb2c9c	52.5
26939bb99e5c84bed4f6a20342a22ab2	35
26939bb99e5c84bed4f6a20342a7ccd5	44
3ffa1240575d0cd0d7f848833802e389	55
48a3afbcf5f840466e09ed279d3c3451	53
48a3afbcf5f840466e09ed279d3c5b7c	53
48a3afbcf5f840466e09ed279d3c9545	53
52730057f2d5fde2d21dfaaaabc10dc8	55

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