

Project Development Phase
Sprint 1

Team ID	PNT2022TMID38970
Project Name	Signs with Smart Connectivity for better road safety

SPRINT TARGETS:

Sprint	Functional Requirement(Epic)	User Story Number	User Story/Task	Story Points	Priority	Team Members
Sprint-1	Dynamic Speed Limit	USN-1	As a traveler , It is Essential form toknow the speed limit	10	High	Sowndharya, Akshaya, Ramani, Umamaheswari
Sprint-1	Priority Vehicle	USN-2	Simulating the circuits and experimenting	2	High	Sowndharya, Akshaya, Ramani, umamaheswari
Sprint-1	Weather Speed Limit	USN-3	Asa user,Ishouldbe aware ofweather influence onspeed limit for safer ride.		Medium	Sowndharya, Akshaya, Ramani, umamaheswari

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

WOKWI

SAVE

SHARE

Docs

sketch.ino

diagram.json

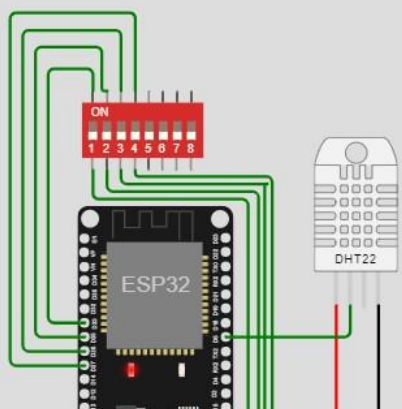
libraries.txt

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

Go to Settings to activate Windows.

IoT Device – IoT Platform

Watson IoT Platform

shakinsha@student.tce.edu
ID: 4qbk92

BrowseActionDevice TypesInterfaces

Add Device +

12345ConnectedrasperrypiDevice

IdentityDevice InformationRecent EventsStateLogs

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

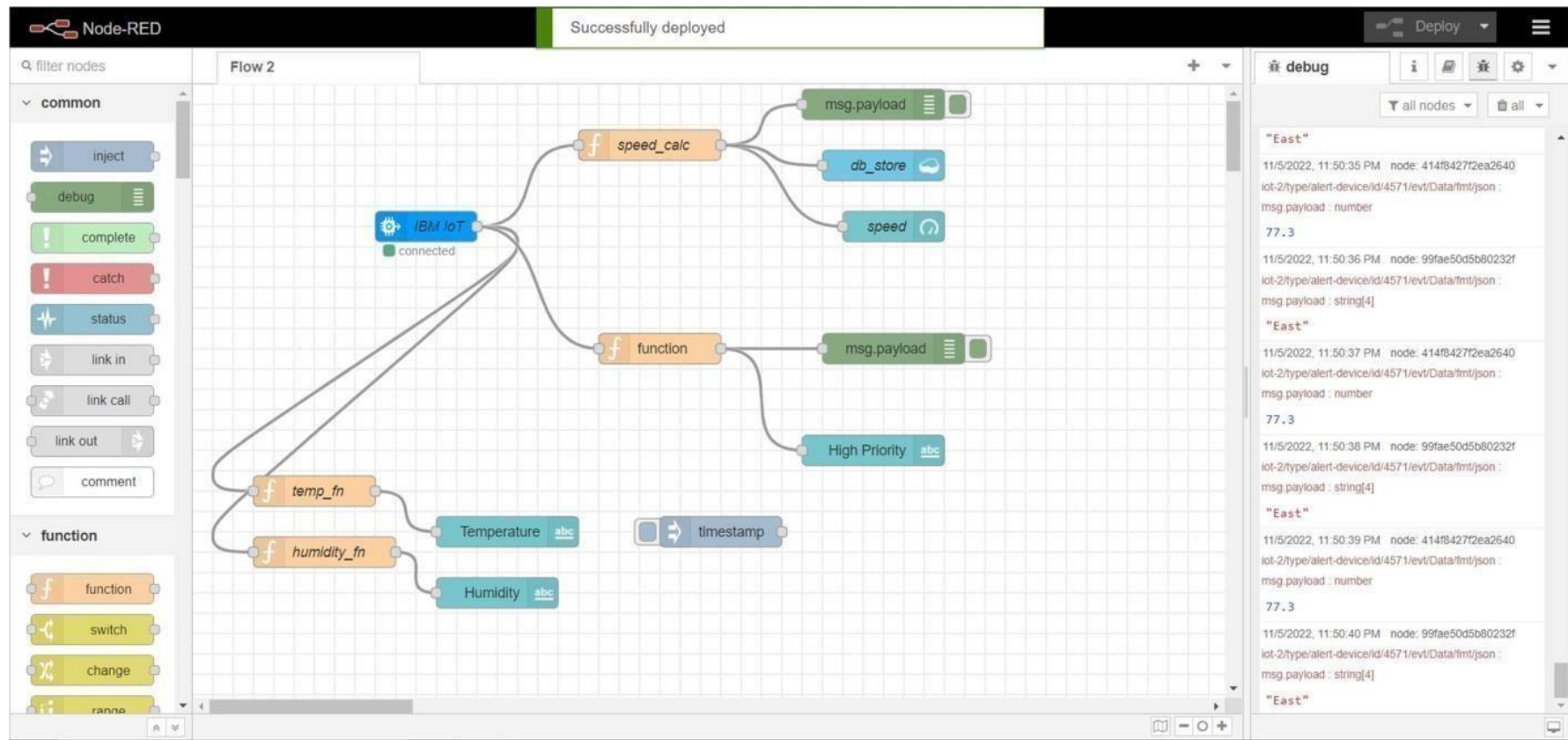
>□34567

Disconnected

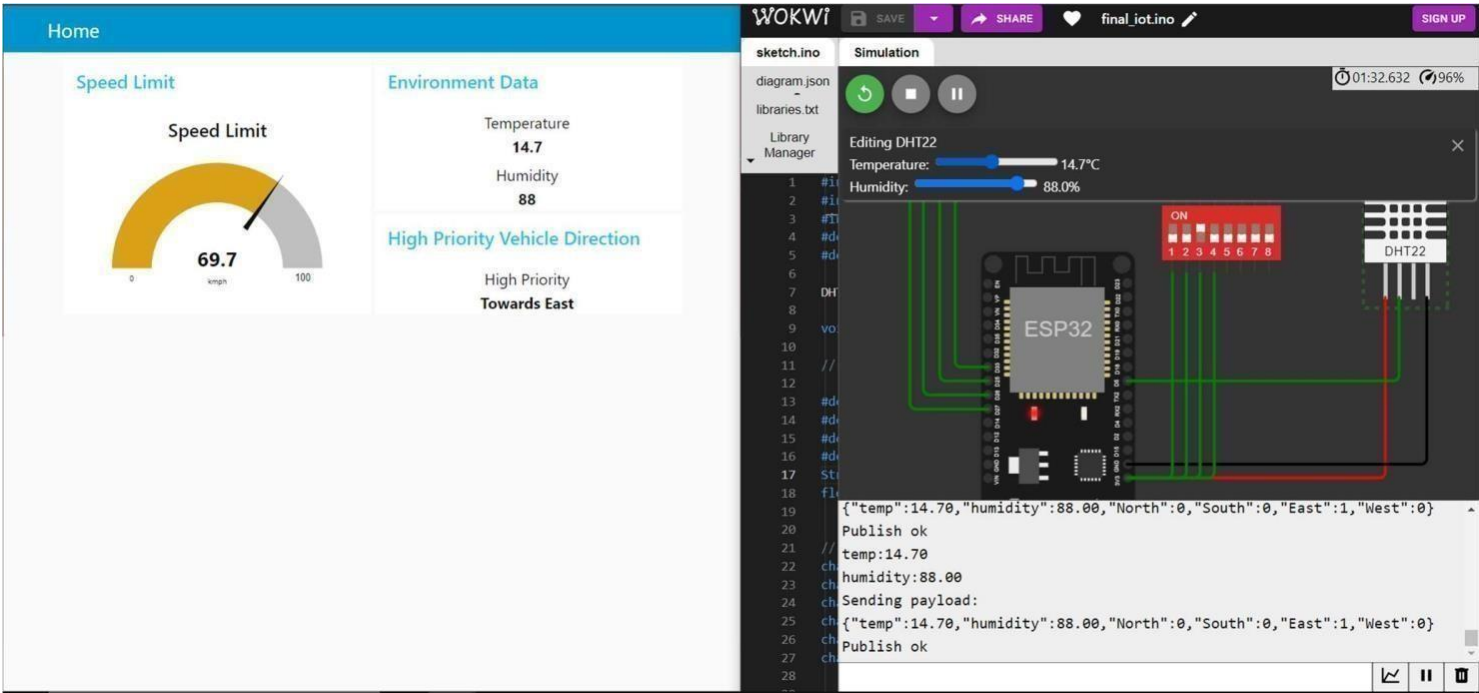
rasperrypi

Device

Node Red




Node Red Web UI



Home

Speed Limit



70.5
kmph

Environment Data

Temperature
15.5

Humidity
91.5

High Priority Vehicle Direction

High Priority
Towards South

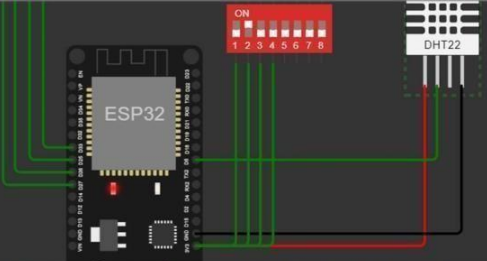
WOKWI

SAVE SHARE final IoTino SIGN IN

sketch.ino Simulation 02:23.068 91%

diagram.json libraries.txt Library Manager

Editing DHT22
Temperature: 15.5°C
Humidity: 91.5%



```
1 #include <DHT.h>
2 #include <WiFi.h>
3 #include <WebServer.h>
4 #define DHTPIN 4
5 #define DHTTYPE DHT22
6
7 DHT dht(DHTPIN, DHTTYPE);
8
9 void setup() {
10   // Initialize serial communication for the DHT sensor
11   Serial.begin(115200);
12
13   // Initialize the DHT sensor
14   dht.begin();
15
16   // Initialize the web server
17   WebServer server(80);
18   server.on("/", handleRoot);
19   server.begin();
20   Serial.println("Server started");
21
22   // Get temperature and humidity
23   float temp = dht.temperature();
24   float humidity = dht.humidity();
25   Serial.print("temp:");
26   Serial.print(temp);
27   Serial.print("humidity:");
28   Serial.print(humidity);
29   Serial.println();
30
31   // Send data to the web server
32   String payload = "{\"temp\":" + String(temp) + \",\"humidity\":" + String(humidity) + \",\"North\":0,\"South\":1,\"East\":0,\"West\":0}";
33   server.send(200, "application/json", payload);
34   Serial.println("Sending payload:");
35   Serial.println(payload);
36   Serial.println("Publish ok");
37 }
```

Cloudant Database

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data_iot

⋮

All Documents

+

Query

Permissions

Changes

Design Documents

+

Log Out

Document ID

Options

JSON

🔔

Table

Metadata

JSON

Create Document

	_id	payload
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d8de45a	35
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d904e58	60
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d90c3f9	45.5
<input type="checkbox"/>	060cc88d44faf11288e9cdfd7d92a313	60
<input type="checkbox"/>	2314e7571ab5925365e082f191bb2c9c	52.5
<input type="checkbox"/>	26939bb99e5c84bed4f6a20342a22ab2	35
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<input type="checkbox"/>	3ffa1240575d0cd0d7f848833802e389	55
<input type="checkbox"/>	48a3afbcf5f840466e09ed279d3c3451	53
<input type="checkbox"/>	48a3afbcf5f840466e09ed279d3c5b7c	53
<input type="checkbox"/>	48a3afbcf5f840466e09ed279d3c9545	53
<input type="checkbox"/>	52730057f2d5fde2d21dfaaaabc10dc8	55

Showing 2 of 3 columns. ☐ Show all columns.

Showing document 1 - 20. Documents per page: 20

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