

Project Development PhaseSprint III

Date	14 November 2022
Team ID	PNT2022TMID35153
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-3	Login	USN-5	As an administrator , I should have an account of the website	7	Low	Swapna Rama Devi Sneka Sathiya
Sprint-3	Dashboard	USN-6SSS	As an admin , I should be able to monitor and add sign nodes	13	Medium	Swapna Rama Devi Sneka Sathiya

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

The screenshot displays the Wokwi web-based IDE interface. On the left, the 'sketch.ino' file is open, showing an Arduino sketch that includes libraries for WiFi, MQTT, and DHT11. The code defines an ESP32 board with a DHT22 sensor connected to pin 5. It sets up an MQTT client to connect to the IBM Watson IoT Platform using a specific organization, device type, and ID. The sketch includes a callback function to handle incoming data and a loop that publishes sensor data (temperature and humidity) to a predefined topic.

On the right, the 'Simulation' window shows a 3D model of the ESP32 board with the DHT22 sensor. Below the model, a console window displays the following output:

```
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
.....
```

The bottom of the interface shows a Windows taskbar with various application icons and a system tray indicating the time as 08:23 on 13-11-2022.

IoT Device – IoT Platform

The screenshot displays the IBM Watson IoT Platform dashboard. The browser's address bar shows the URL `wsp484.internetofthings.ibmcloud.com/dashboard/devices/browse`. The dashboard header includes the IBM Watson IoT Platform logo, a user profile for `swapnakumarswapnakumar2002@gmail.com` with ID `wsp484`, and navigation tabs for `Browse`, `Action`, `Device Types`, and `Interfaces`. A blue `Add Device` button is located in the top right corner.

The main content area features a table with the following data:

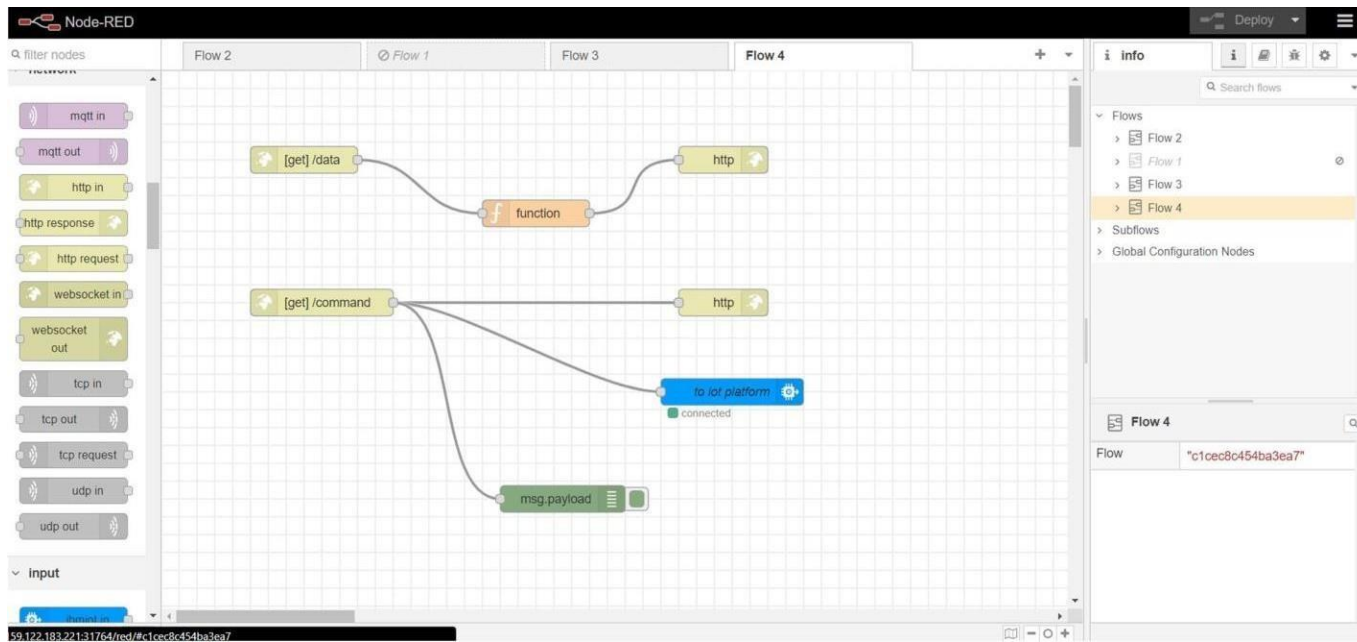
Event	Value	Format	Last Received
event_1	{"value":10}	json	a few seconds ago
event_1	{"value":42}	json	a minute ago
event_1	{"value":81}	json	2 minutes ago
event_1	{"value":84}	json	3 minutes ago

Below the table, a device entry is shown:

>	<input type="checkbox"/>	PNT2022TMID35153-1	Disconnected	smartconnectivity	Device	14 Nov 2022 06:28
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At the bottom of the dashboard, a status bar indicates `1 Simulation running`. The Windows taskbar at the very bottom shows the search bar, application icons, and system tray information including `77°F Mostly cloudy` and the date `14-11-2022`.

Node Red – Connect with MIT AppInventor



Edit function node

Delete

Cancel

Done

Properties

Name

Name

Setup

On Start

On Message

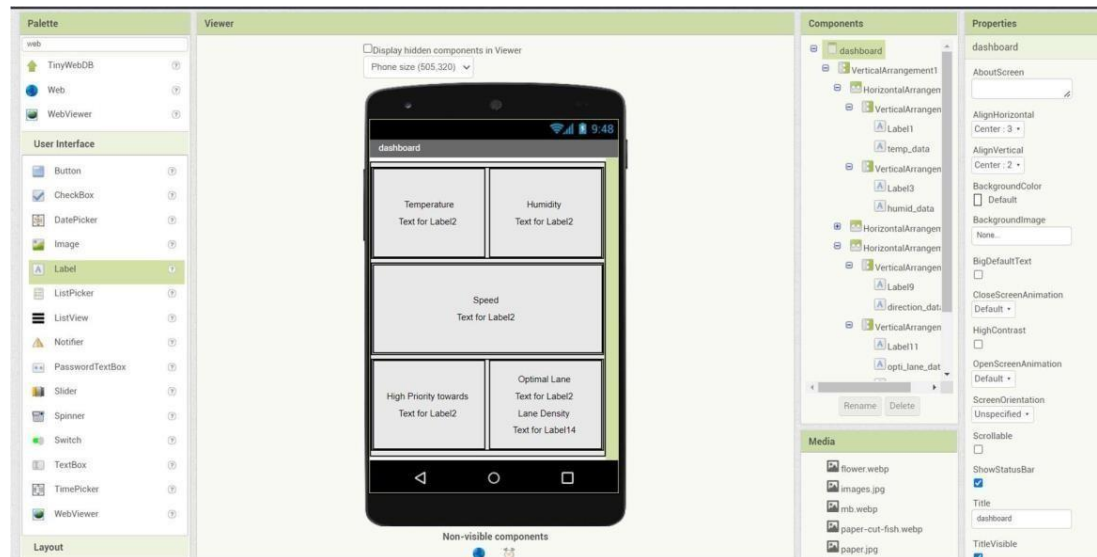
On Stop

```
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;
```

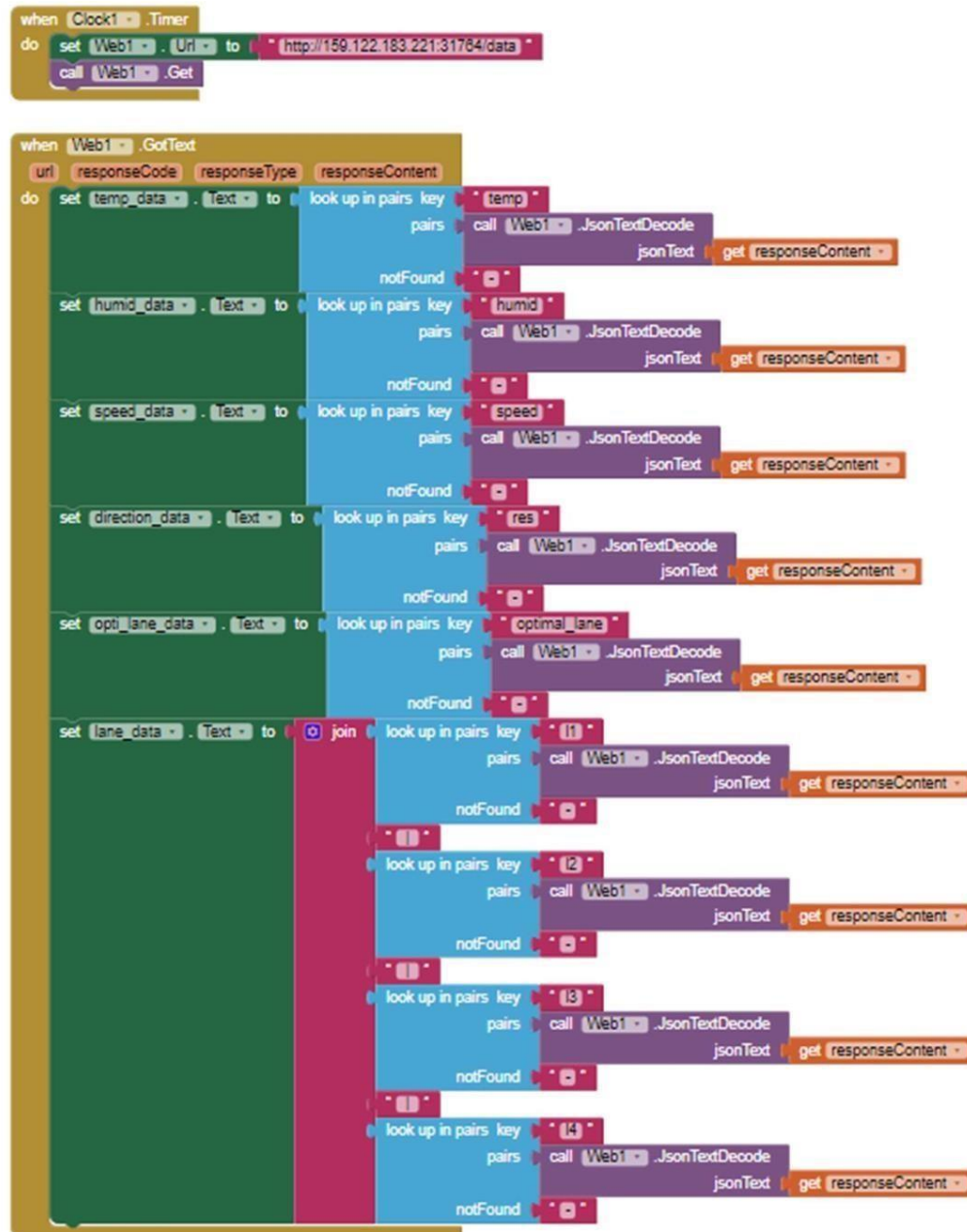
Output from Node red:

```
← → ↻ 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:

