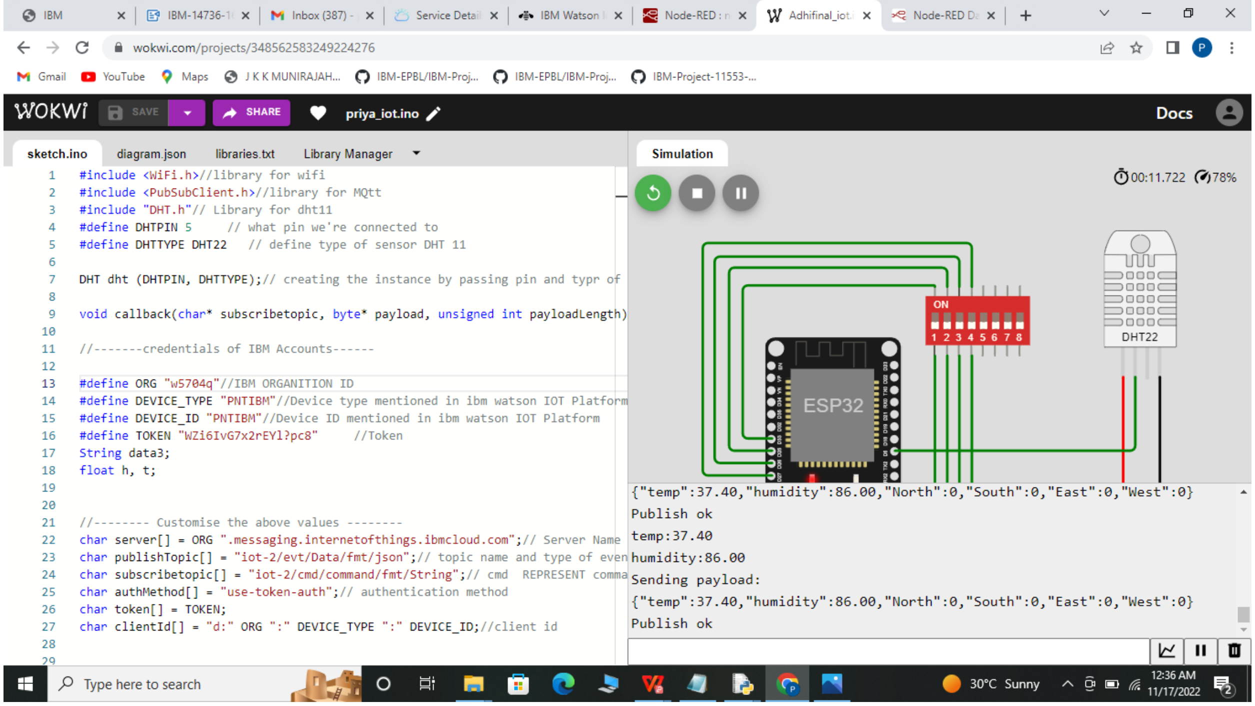
PROJECT DEVELOPMENT PHASE

SPRINT 3

NAME ID	PNT2022TMID44448
PROJECT NAME	Signs With smart connectivity for better road safety

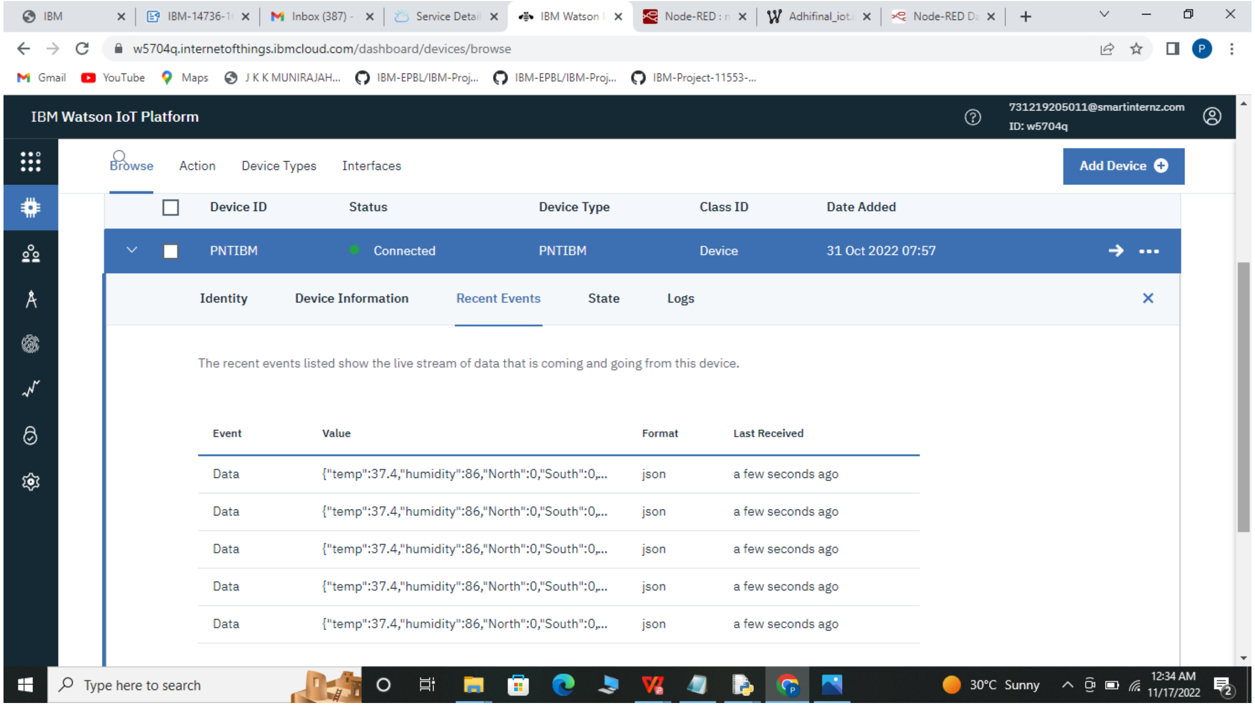
WOKWI SIMULATION : https://wokwi.com/projects/348562583249224276



```
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQtt
#include "DHT.h"// Library for dht11
#define DHTPIN 5     // what pin we're connected to
#define DHTTYPE DHT22   // define type of sensor DHT 11

DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and typr of

void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)

//-------credentials of IBM Accounts------

#define ORG "w5704q"//IBM ORGANITION ID
#define DEVICE_TYPE "PNTIBM"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "PNTIBM"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "WZi6IvG7x2rEYl?pc8"     //Token
String data3;
float h, t;


//-------- Customise the above values --------
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server Name
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of even
char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd  REPRESENT comma
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
```

```
{"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
```

IoT Device – IoT Platform :



w5704q.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

731219205011@smartinternz.com
ID: w5704q

Browse Action Device Types Interfaces

Add Device

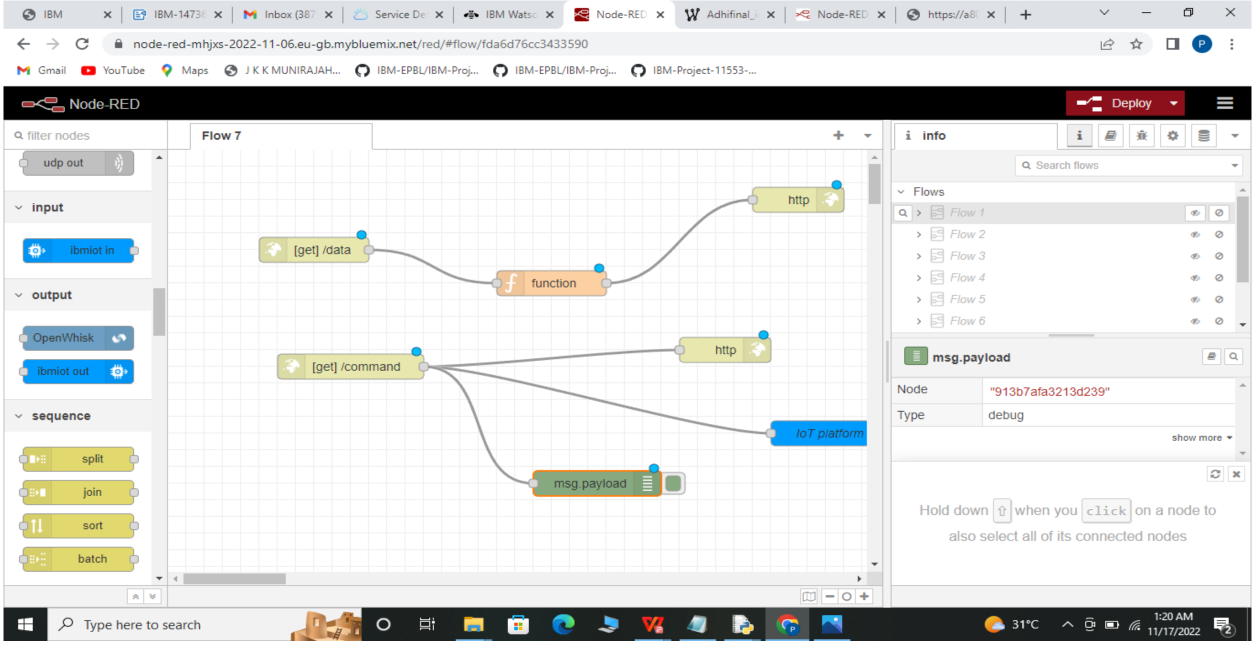
Device ID	Status	Device Type	Class ID	Date Added
PNTIBM	Connected	PNTIBM	Device	31 Oct 2022 07:57

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":37.4,"humidity":86,"North":0,"South":0,...	json	a few seconds ago
Data	{"temp":37.4,"humidity":86,"North":0,"South":0,...	json	a few seconds ago
Data	{"temp":37.4,"humidity":86,"North":0,"South":0,...	json	a few seconds ago
Data	{"temp":37.4,"humidity":86,"North":0,"South":0,...	json	a few seconds ago
Data	{"temp":37.4,"humidity":86,"North":0,"South":0,...	json	a few seconds ago

Node Red – Connect with MIT App Inventor :



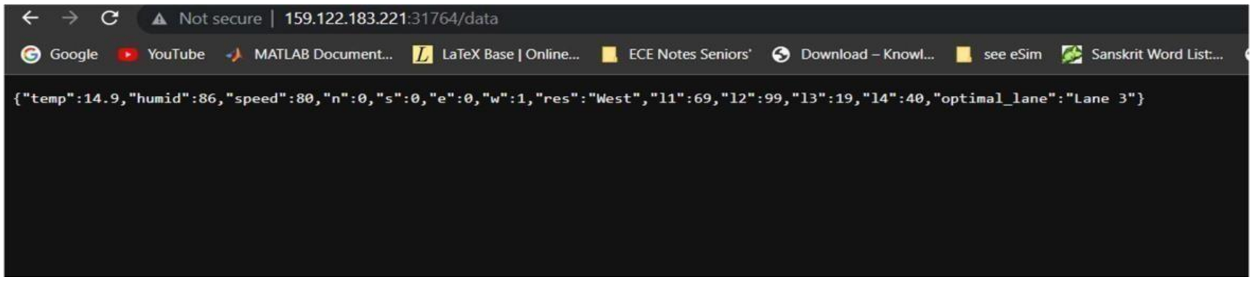
node-red-mhjxs-2022-11-06.eu-gb.mybluemix.net/red/#flow/fda6d76cc3433590

msg.payload

Node	"913b7afa3213d239"
Type	debug

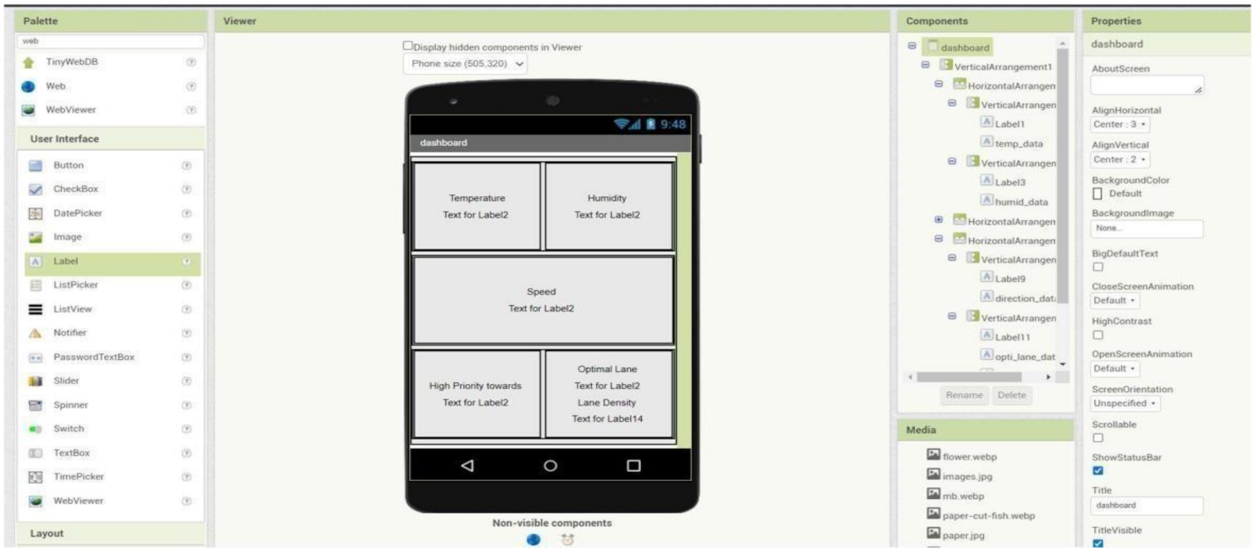
Hold down ⇧ when you click on a node to also select all of its connected nodes

Output from Node red:

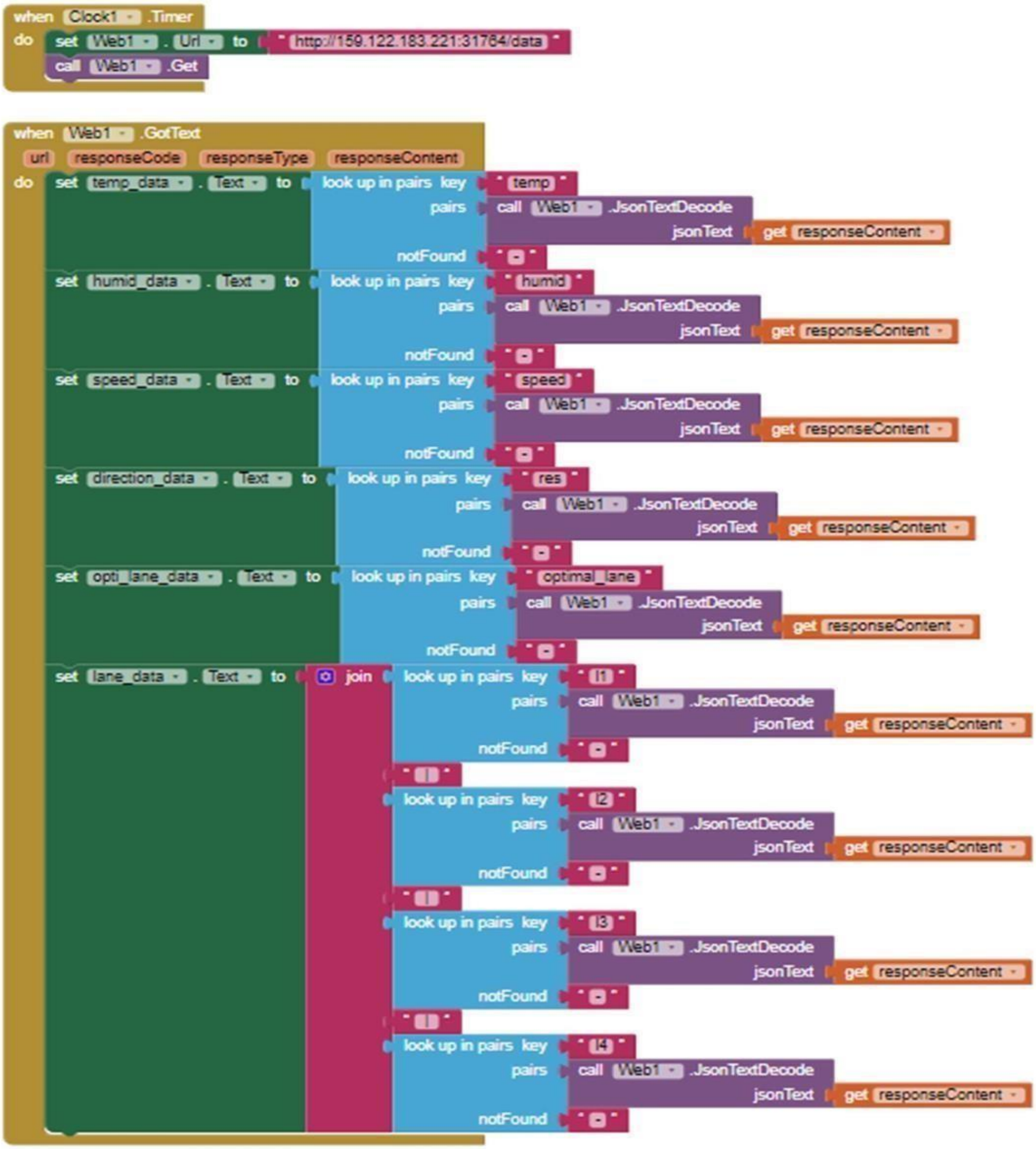


```
{"temp":14.9,"humid":86,"speed":80,"n":0,"s":0,"e":0,"w":1,"res":"West","l1":69,"l2":99,"l3":19,"l4":40,"optimal_lane":"Lane 3"}
```

MIT App Inventor UI design:



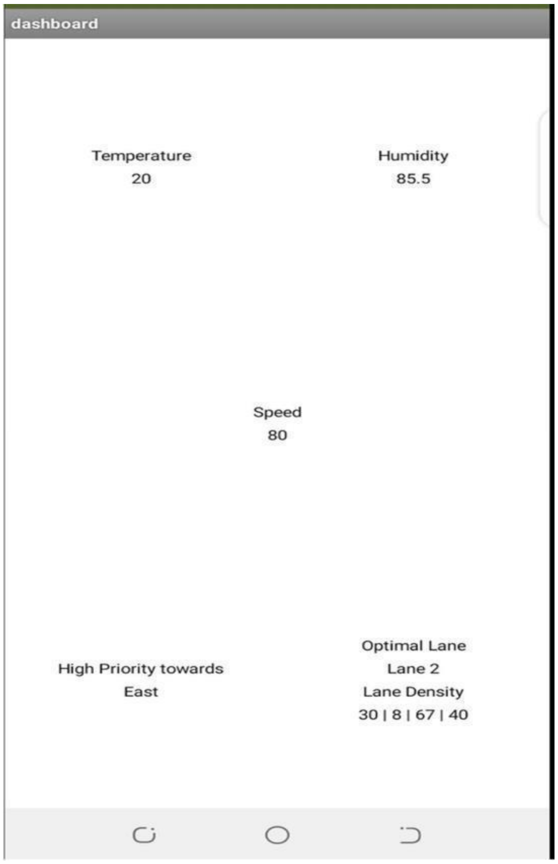
MIT App Inventor Backend design:



```
when Clock1 .Timer
do  set Web1 . Url to " http://159.122.183.221:31764/data "
    call Web1 .Get

when Web1 .GotText
  url  responseCode  responseType  responseContent
do  set temp_data . Text to  look up in pairs  key " temp "
                                              pairs  call Web1 .JsonTextDecode
                                                                     jsonText  get responseContent
                                           notFound " - "
    set humid_data . Text to  look up in pairs  key " humid "
                                               pairs  call Web1 .JsonTextDecode
                                                                      jsonText  get responseContent
                                            notFound " - "
    set speed_data . Text to  look up in pairs  key " speed "
                                               pairs  call Web1 .JsonTextDecode
                                                                      jsonText  get responseContent
                                            notFound " - "
    set direction_data . Text to  look up in pairs  key " res "
                                                   pairs  call Web1 .JsonTextDecode
                                                                          jsonText  get responseContent
                                                notFound " - "
    set opti_lane_data . Text to  look up in pairs  key " optimal_lane "
                                                   pairs  call Web1 .JsonTextDecode
                                                                          jsonText  get responseContent
                                                notFound " - "
    set lane_data . Text to  join  look up in pairs  key " l1 "
                                                    pairs  call Web1 .JsonTextDecode
                                                                           jsonText  get responseContent
                                                 notFound " - "
                                   " | "
                                   look up in pairs  key " l2 "
                                                    pairs  call Web1 .JsonTextDecode
                                                                           jsonText  get responseContent
                                                 notFound " - "
                                   " | "
                                   look up in pairs  key " l3 "
                                                    pairs  call Web1 .JsonTextDecode
                                                                           jsonText  get responseContent
                                                 notFound " - "
                                   " | "
                                   look up in pairs  key " l4 "
                                                    pairs  call Web1 .JsonTextDecode
                                                                           jsonText  get responseContent
                                                 notFound " - "
```

Sprint 3 delivery:

(OUTPUT) Display from MIT App :



dashboard

Temperature
20

Humidity
85.5

Speed
80

High Priority towards
East

Optimal Lane
Lane 2
Lane Density
30 | 8 | 67 | 40