

SPRINT 4

Date	13 november 2022
Team ID	PNT2022TMID00922
Project Name	Project – Signs with Smart Connectivity for Better Road Safety

```

File Edit Format Run Options Window Help
project.py - C:\Users\Madhu Sundaran Nair\OneDrive\Desktop\project.py (3.7.9)

import wiotp.sdk.device
import time
import random
import ibmiotf.application
import ibmiotf.device
import requests, json

myConfig = { #Configuration
    "identity": {
        "orgid": "ibapiat",
        "typeid": "dign_board",
        "deviceid": "Board_1"
    },
    #API Key
    "auth": {
        "token": "1234567890"
    }
}

#Receiving callbacks from IBM IOT platform
def myCommandCallback(cmd):
    print("Message received from IBM IOT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

#OpenWeatherMap Credentials
BASE_URL = "https://api.openweathermap.org/data/2.5/weather?"
CITY = "Chennai"
URL = BASE_URL + "q=" + CITY + "&units=metric"&"appid=" + "01df65417ab3968e3fc2a38c4ee27bb"

while True:
    response = requests.get(URL)
    if response.status_code == 200:
        data = response.json()
        main = data['main']
        temperature = main['temp']
        humidity = main['humidity']
        pressure = main['pressure']
        report = data['visibility']

    #message part
    temperature=random.randint(0,100)
    msg=random.randint(0,5)
    if msg==1:
        message="SLOW DOWN, SCHOOL IS NEAR"
    elif msg==2:
        message="NEED HELP, POLICE STATION AHEAD"
    elif msg==3:
        message="EMERGENCY, HOSPITAL NEARBY"
    else:
        message="DINE IN, RESTAURENT AVAILABLE"

```

The image shows a Windows desktop environment. On the left, a Notepad++ window displays a Python script named 'project.py'. The script imports libraries like 'requests', 'random', and 'time', and defines a configuration for a weather-based alarm system. It includes a function to receive callbacks from an IBM IoT platform and a main loop that checks weather data and triggers an alarm based on specific conditions like temperature, humidity, and pressure. On the right, a 'Python 3.7.9 Shell' terminal window shows the output of running the script. The output indicates a successful connection to the IBM IoT platform and a series of status updates from the weather map, including temperature, humidity, and pressure readings, along with corresponding alarm messages like 'SLOW DOWN, SCHOOL IS NEAR' and 'NEED HELP, POLICE STATION AHEAD'. The terminal window also shows the script's execution path and the current line number (Ln 1 Col 4).

IBM Watson IoT Platform

msadhithyan05@gmail.com
ID: 3dppnk

Browse Action Device Types Interfaces

Add Device

Delete 1 item selected Cancel

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
Board_1	Connected	Sign_Board	Device	Nov 14, 2022 12:19 PM	

Identity Device Information Recent Events State Logs

Device ID: Board_1
Device Type: Sign_Board
Date Added: Nov 14, 2022 12:19 PM
Added By: msadhithyan05@gmail.com
Connection Status: Connected
Connection Time: Nov 14, 2022 7:07 PM
Client Address: 49.37.208.7 SecureToken

weather_today Disconnected weather_device Device Nov 4, 2022 8:58 AM

Items per page 50 | 1-2 of 2 items

1 Simulation running

IBM Watson IoT Platform

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ID: 3dppnk

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Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
Board_1	Connected	Sign_Board	Device	Nov 14, 2022 12:19 PM	

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
status	{"Temperature":18;"Message":"DINE IN, RESTA..."}	json	a few seconds ago
status	{"Temperature":65;"Message":"SLOW DOWN, SC..."}	json	a few seconds ago
status	{"Temperature":70;"Message":"NEED HELP, POLI..."}	json	a few seconds ago
status	{"Temperature":8;"Message":"SLOW DOWN, SCH..."}	json	a few seconds ago

weather_today Disconnected weather_device Device Nov 4, 2022 8:58 AM

Items per page 50 | 1-2 of 2 items

1 Simulation running

IBM Watson IoT Platform dashboard showing a device (Board_1) and an event payload. The event payload is displayed in a modal window.

Event Payload

Event Name: status
Time Received: Nov 14, 2022 7:08 PM

```
1 {  
2   "Temperature": 9,  
3   "Message": "EMERGENCY, HOSPITAL NEARBY",  
4   "Sign": "Left Diversion",  
5   "Speed": "Slow",  
6   "Visibility": "Fog Ahead, Drive Slow"  
7 }
```

1 Simulation running

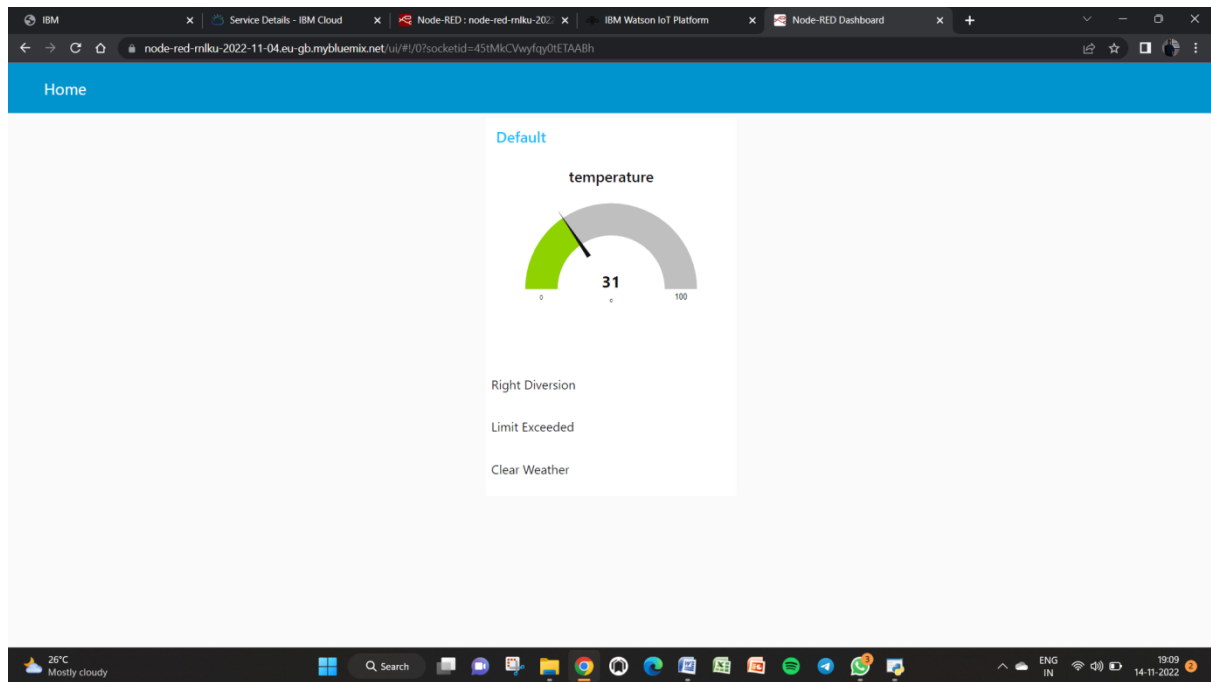
Node-RED flow editor showing a flow for processing IoT data. The flow includes nodes for temperature, message, sign, speed, and visibility, connected to a msg.payload node.

Flow 1

The flow starts with an IBM IoT node connected to a msg.payload node. The msg.payload node is connected to five function nodes: temperature, MESSAGE, sign, Speed, and Visibility. Each function node is connected to a corresponding output node: temperature, Message, Sign, Speed, and Visibility.

debug

11/14/2022, 7:09:11 PM node: 3b1d3a16ac1b7df
iot-2/type/Sign_BoardId/Board_1/event/status/fmt/json :
msg.payload: Object
{
 "Temperature": 54, "Message": "DINE
IN, RESTAURENT AVAILABLE", "Sign":
"Right Diversion", "Speed": "Slow",
"Visibility": "Clear Weather" }
11/14/2022, 7:09:13 PM node: 3b1d3a16ac1b7df
iot-2/type/Sign_BoardId/Board_1/event/status/fmt/json :
msg.payload: Object
{
 "Temperature": 11, "Message": "DINE
IN, RESTAURENT AVAILABLE", "Sign":
"Right Diversion", "Speed": "Moderate",
"Visibility": "Fog Ahead, Drive Slow" }
11/14/2022, 7:09:16 PM node: 3b1d3a16ac1b7df
iot-2/type/Sign_BoardId/Board_1/event/status/fmt/json :
msg.payload: Object
{
 "Temperature": 83, "Message": "DINE
IN, RESTAURENT AVAILABLE", "Sign":
"Left Diversion", "Speed": "Limit
Exceeded", "Visibility": "Clear
Weather" }
11/14/2022, 7:09:18 PM node: 3b1d3a16ac1b7df
iot-2/type/Sign_BoardId/Board_1/event/status/fmt/json :
msg.payload: Object
{
 "Temperature": 87, "Message": "DINE
IN, RESTAURENT AVAILABLE", "Sign":
"Right Diversion", "Speed": "Limit
Exceeded", "Visibility": "Clear
Weather" }



Node red : <https://node-red-rnku-2022-11-04.eu-gb.mybluemix.net/ui/#!/0?socketid=45tMkCVwyfqy0tETAABh>