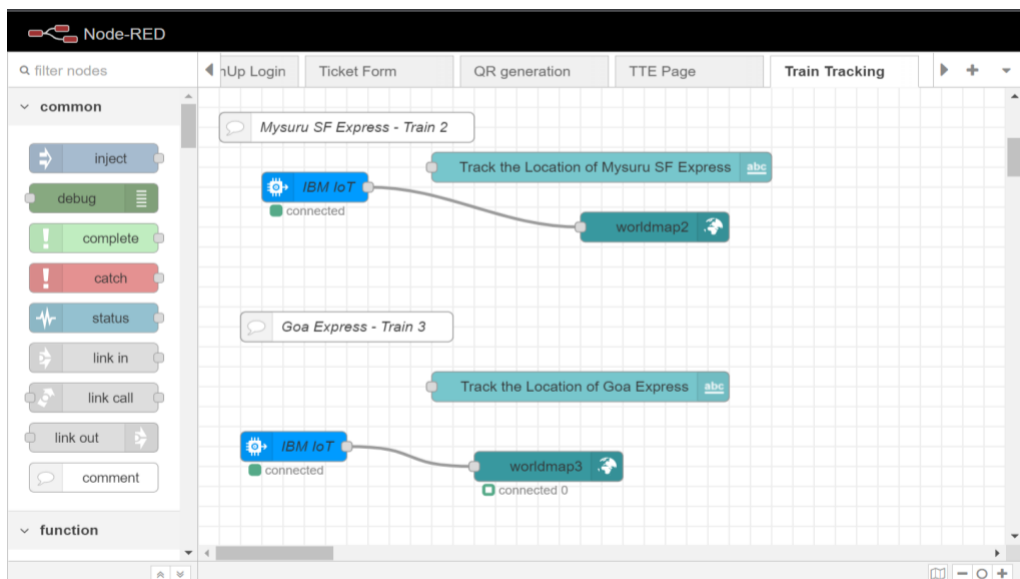
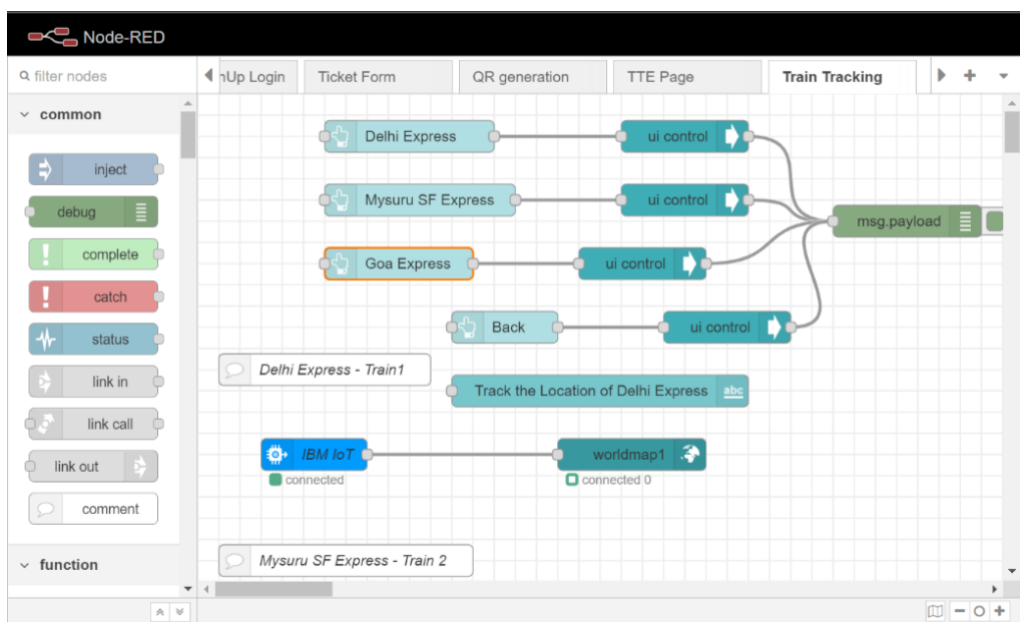


## Sprint-4

### GPS Tracking

Sprint Start Date	14 November 2022
Sprint End Date	19 November 2022
Team ID	PNT2022TMID00231
Project name	Project – Smart Solutions for Railways

#### Node RED flows:



## IBM Watson IoT Device:

IBM Watson IoT Platform

312319106006@smartinternz.com  
ID: ytluse

Browse Action Device Types Interfaces Add Device +

12345 Disconnected 2702 Device Oct 7, 2022 7:21 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	{"name":"Delhi Express","lat":15.927082,"lon":8...	json	a few seconds ago
status	{"name":"Delhi Express","lat":15.821409,"lon":8...	json	a few seconds ago
status	{"name":"Delhi Express","lat":15.747405,"lon":8...	json	a few seconds ago
status	{"name":"Delhi Express","lat":15.567568,"lon":8...	json	a few seconds ago

2 Simulations running

IBM Watson IoT Platform

312319106006@smartinternz.com  
ID: ytluse

Browse Action Device Types Interfaces Add Device +

678910 Disconnected 2702 Device Nov 6, 2022 5:04 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	{"name":"Goa Express","lat":15.314922,"lon":74...	json	a few seconds ago
status	{"name":"Goa Express","lat":15.352006,"lon":74...	json	a few seconds ago
status	{"name":"Goa Express","lat":15.44998,"lon":74...	json	a few seconds ago
status	{"name":"Goa Express","lat":15.119216,"lon":75...	json	a few seconds ago
status	{"name":"Goa Express","lat":14.922914,"lon":75...	json	a few seconds ago

2 Simulations running

IBM Watson IoT Platform

312319106006@smartinternz.com  
ID: ytluse

Browse Action Device Types Interfaces Add Device +

678910 Disconnected 2702 Device Nov 6, 2022 5:04 PM

mysore Disconnected train2 Device Nov 6, 2022 6:44 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	{"name":"Mysuru SF Express","lat":12.987323,"lon":77...	json	a few seconds ago
status	{"name":"Mysuru SF Express","lat":12.90702,"lon":77...	json	a few seconds ago
status	{"name":"Mysuru SF Express","lat":12.735622,"lon":77...	json	a few seconds ago
status	{"name":"Mysuru SF Express","lat":12.655...	json	a few seconds ago

2 Simulations running

## **Python Code:**

The python programs are used to send data to the Watson IoT device to provide tracking of the trains on a World Map.

### **Python code for “Delhi Express” train:**

```
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity":{
        "orgId":"ytluse",
        "typeId":"2702",
        "deviceId":"12345"
    },
    "auth":{
        "token":"O+n)Eh+INX0y3?rG!8"
    }
}
def myCommandCallback(cmd):
    print("Message received fromIBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

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

def pub(data):
    client.publishEvent(eventId = "status", msgFormat="json", data=myData, qos=0,
onPublish=None)
    print("Published data Successfully: %s",myData)

while True:
    myData = {'name':'Delhi Express','lat':13.344279,'lon':80.214367}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Delhi Express','lat':13.515254,'lon':80.093518}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Delhi Express','lat':13.728799,'lon':80.005627}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Delhi Express','lat':13.910160,'lon':79.906750}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Delhi Express','lat':14.102035,'lon':79.851819}
```

```

pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':14.261807,'lon':79.862805}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':14.623537,'lon':79.950695}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':15.111987,'lon':79.994641}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':15.313413,'lon':80.005627}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':15.567568,'lon':80.104504}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':15.747405,'lon':80.269299}
}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':15.821409,'lon':80.302258}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':15.927082,'lon':80.445080}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':16.022141,'lon':80.554943}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':17.033801,'lon':80.295512}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':18.383088,'lon':18.383088}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':19.074762,'lon':79.487698}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':20.179065,'lon':79.001439}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':21.306421,'lon':78.789356}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':22.518024,'lon':77.829404}

```

```

pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':23.264139,'lon':77.429333}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':24.509723,'lon':78.330212}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':25.668840,'lon':78.451062}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':26.177704,'lon':78.170910}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':27.505914,'lon':77.676526}
pub(myData)
time.sleep(3)
myData = {'name':'Delhi Express','lat':28.302041,'lon':77.308484}
pub(myData)
time.sleep(3)
client.commandCallback = myCommandCallback
client.disconnect()

```

**Python code for “Mysuru SF Express” train:**

```

import wiotp.sdk.device
import time
import random
myConfig = {
    "identity":{
        "orgId":"ytluse",
        "typeId":"train2",
        "deviceId":"mysore"
    },
    "auth":{
        "token":"-BCOX+hMk?*@xc@AV9"
    }
}
def myCommandCallback(cmd):
    print("Message received fromIBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

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

```

```

def pub(data):
    client.publishEvent(eventId = "status", msgFormat="json", data=myData, qos=0,
onPublish=None)
    print("Published data Successfully: %s",myData)

while True:
    myData = {'name':'Mysuru SF Express','lat':11.024938,'lon':76.982315}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':11.220325,'lon':77.570083}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':11.564960,'lon':77.993057}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':11.780142,'lon':78.037002}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.134824,'lon':78.130386}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.226105,'lon':78.091934}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.344187,'lon':78.037002}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.489034,'lon':78.009536}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.655239,'lon':77.866714}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.735622,'lon':77.756851}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.907020,'lon':77.696426}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.987323,'lon':77.646988}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Mysuru SF Express','lat':12.955205,'lon':77.509659}
    pub(myData)
    time.sleep(3)

```

```

myData = {'name':'Mysuru SF Express','lat':12.665958,'lon':77.136123}
}
pub(myData)
time.sleep(3)
myData = {'name':'Mysuru SF Express','lat':12.548022,'lon':76.921890}
pub(myData)
time.sleep(3)
myData = {'name':'Mysuru SF Express','lat':12.336809,'lon':76.644485}
pub(myData)
time.sleep(3)
client.commandCallback = myCommandCallback
client.disconnect()

```

### **Python code for “Goa Express” train:**

```

import wiotp.sdk.device
import time
import random
myConfig = {
    "identity" :{
        "orgId":"ytluse",
        "typeId":"2702",
        "deviceId":"678910"
    },
    "auth":{
        "token":"4skuC*xkhDH&la(CUR"
    }
}
def myCommandCallback(cmd):
    print("Message received fromIBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

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

def pub(data):
    client.publishEvent(eventId = "status", msgFormat="json", data=myData, qos=0,
onPublish=None)
    print("Published data Successfully: %s",myData)

while True:
    myData = {'name':'Goa Express','lat':11.688572, 'lon':78.098877}
    pub(myData)
    time.sleep(3)
    myData = {'name':'Goa Express','lat':11.711433, 'lon':78.076905}

```

```
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':11.978226, 'lon':78.116730}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':12.085676, 'lon': 78.119477}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':12.402400, 'lon':78.023347}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':12.884795, 'lon':77.707490}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':13.018630,'lon':77.614106}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':13.334194, 'lon':77.086762}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':13.299448, 'lon':76.858796}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':13.344884,'lon': 76.205109}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':13.619985, 'lon':75.966157}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':13.974739, 'lon':76.119965}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':14.423398, 'lon':75.949677}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':14.922914, 'lon':75.389374}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':15.119216, 'lon':75.389374}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':15.449980, 'lon':74.406230}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':15.352006,'lon':74.307353}
pub(myData)
```

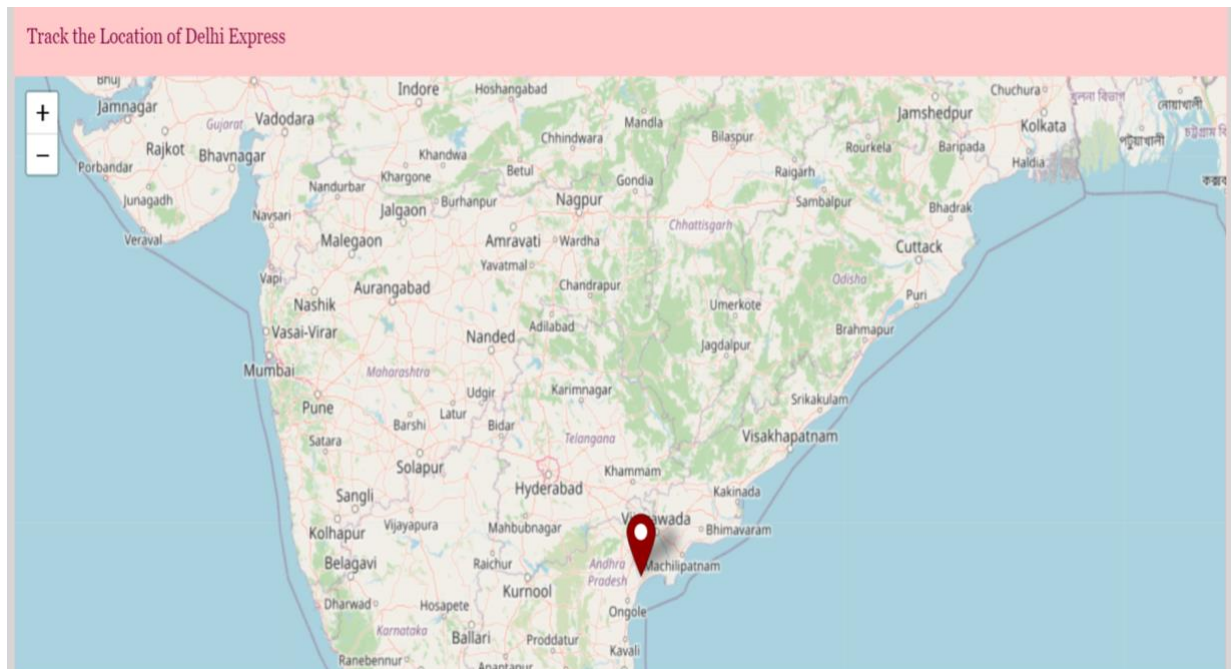


```

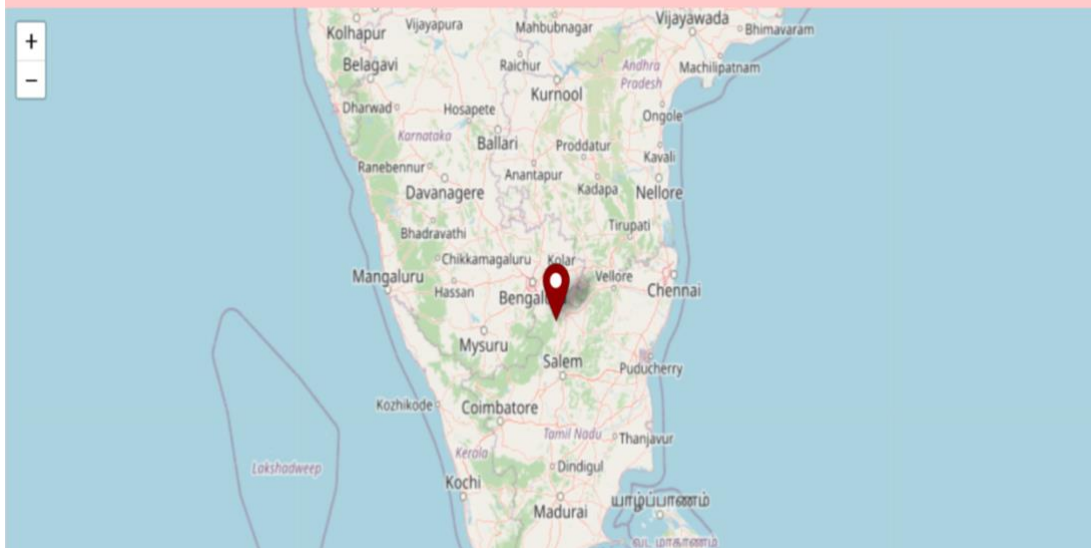
time.sleep(3)
myData = {'name':'Goa Express','lat':15.314922, 'lon':74.218089}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':15.283131, 'lon':74.146678}
pub(myData)
time.sleep(3)
myData = {'name':'Goa Express','lat':15.276839, 'lon':74.129855}
pub(myData)
time.sleep(3)
time.sleep(3)
myData = {'name':'Goa Express','lat':15.282800, 'lon':74.125392}
pub(myData)
time.sleep(3)
time.sleep(3)
myData = {'name':'Goa Express','lat':15.296378,'lon':74.135692}
pub(myData)
time.sleep(3)
client.commandCallback = myCommandCallback
client.disconnect()

```

## Train Tracking in World Map:



Track the Location of Goa Express



Track the Location of Mysuru SF Express

