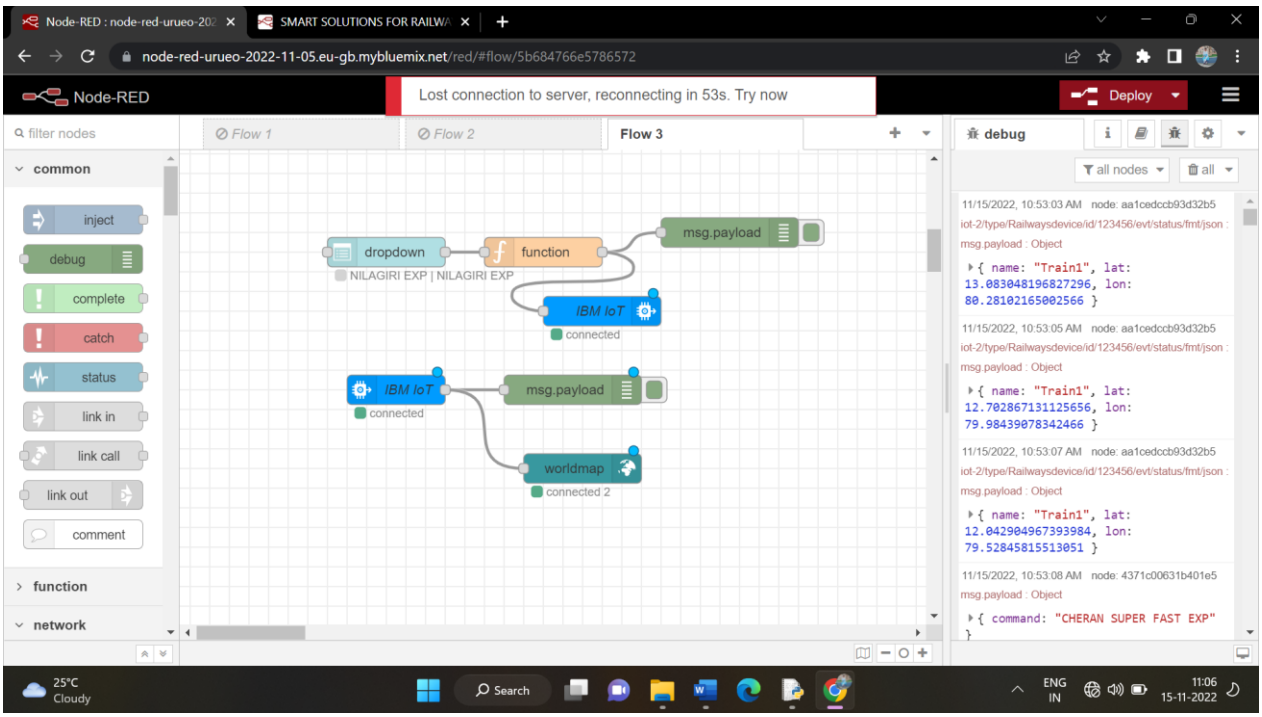
PROJECT DEVELOPMENT PHASE - SPRINT 3

Date	12 November 2022
Team ID	PNT2022TMID42243
Project Name	Smart Solutions for railways

SPRINT 3– Train Tracking

At the time of the journey, the user could able to track their train location by selecting the particular train. Once the train is selected ,the live location of the train can easily be tracked by the user.

NODE-RED FLOW FOR TRAIN TRACKING:

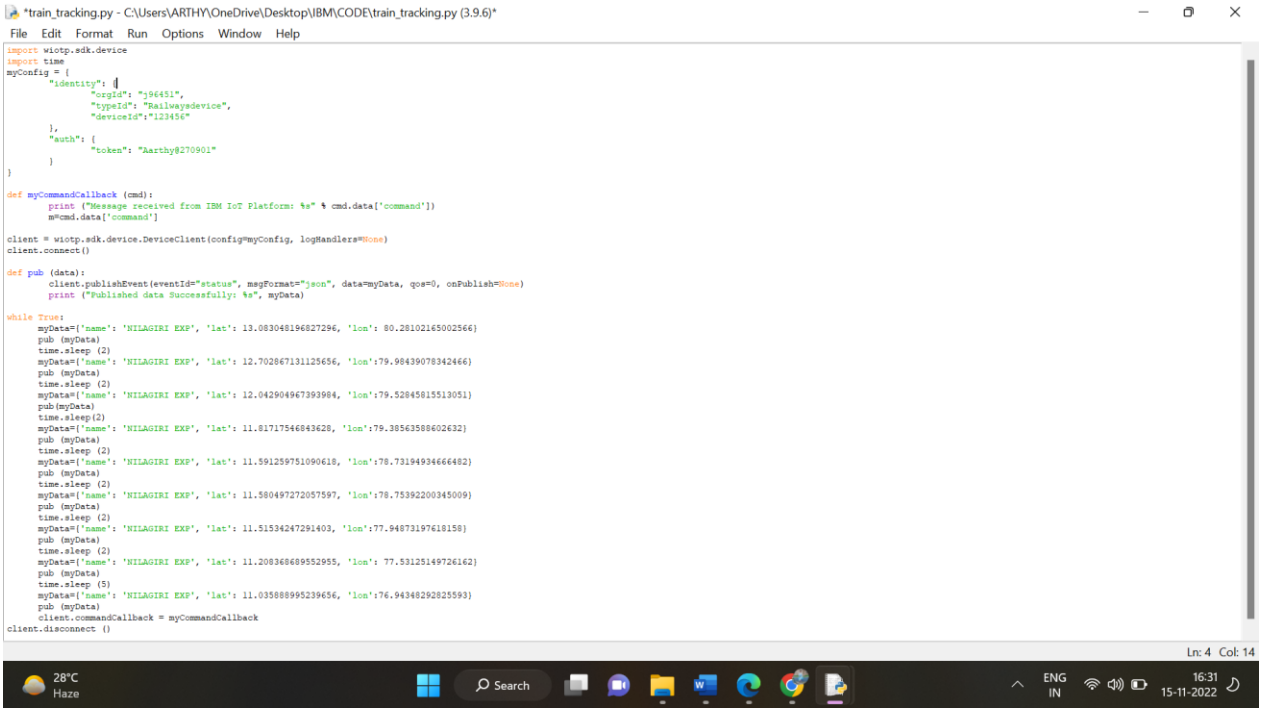


CODE:

```
import wiotp.sdk.device
import time
import random
myConfig = {
"identity": {
"orgId": "j96451",
"typeId": "Railwaysdevice",
"deviceId":"123456"
},
"auth": {
"token": "Aarthy@270901"
}
}

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()

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': 'NILAGIRI EXP', 'lat': 13.083048196827296, 'lon':
80.28102165002566}
    pub (myData)
    time.sleep (2)
    myData={'name': 'NILAGIRI EXP', 'lat': 12.702867131125656,
'lon':79.98439078342466}
```

```
    pub (myData)
    time.sleep (2)
    myData={'name': 'NILAGIRI EXP', 'lat': 12.042904967393984,
'lon':79.52845815513051}
    pub(myData)
    time.sleep(2)
    myData={'name': 'NILAGIRI EXP', 'lat': 11.81717546843628,
'lon':79.38563588602632}
    pub (myData)
    time.sleep (2)
    myData={'name': 'NILAGIRI EXP', 'lat': 11.591259751090618,
'lon':78.73194934666482}
    pub (myData)
    time.sleep (2)
    myData={'name': 'NILAGIRI EXP', 'lat': 11.580497272057597,
'lon':78.75392200345009}
    pub (myData)
    time.sleep (2)
    myData={'name': 'NILAGIRI EXP', 'lat': 11.51534247291403,
'lon':77.94873197618158}
    pub (myData)
    time.sleep (2)
    myData={'name': 'NILAGIRI EXP', 'lat': 11.208368689552955, 'lon':
77.53125149726162}
    pub (myData)
    time.sleep (5)
    myData={'name': 'NILAGIRI EXP', 'lat': 11.035888995239656,
'lon':76.94348292825593}
    pub (myData)
    client.commandCallback = myCommandCallback
client.disconnect ()
```

PYTHON CODE FOR TRACKING LIVE LOCATION:



```
*train_tracking.py - C:\Users\ARTHY\OneDrive\Desktop\IBM\CODE\train_tracking.py (3.9.6)*
File  Edit  Format  Run  Options  Window  Help
import wiotp.sdk.device
import time
myConfig = {
        "identity": {
                "orgId": "j96451",
                "typeId": "Railwaysdevice",
                "deviceId":"123456"
        },
        "auth": {
                "token": "Aarthy@270901"
        }
}

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()

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': 'NILAGIRI EXP', 'lat': 13.083048196827296, 'lon': 80.28102165002566}
      pub (myData)
      time.sleep (2)
      myData={'name': 'NILAGIRI EXP', 'lat': 12.702867131125656, 'lon':79.98439078342466}
      pub (myData)
      time.sleep (2)
      myData={'name': 'NILAGIRI EXP', 'lat': 12.042904967393984, 'lon':79.52845815513051}
      pub(myData)
      time.sleep(2)
      myData={'name': 'NILAGIRI EXP', 'lat': 11.81717546843628, 'lon':79.38563588602632}
      pub (myData)
      time.sleep (2)
      myData={'name': 'NILAGIRI EXP', 'lat': 11.591259751090618, 'lon':78.73194934666482}
      pub (myData)
      time.sleep (2)
      myData={'name': 'NILAGIRI EXP', 'lat': 11.580497272057597, 'lon':78.75392200345009}
      pub (myData)
      time.sleep (2)
      myData={'name': 'NILAGIRI EXP', 'lat': 11.51534247291403, 'lon':77.94873197618158}
      pub (myData)
      time.sleep (2)
      myData={'name': 'NILAGIRI EXP', 'lat': 11.208368689552955, 'lon': 77.53125149726162}
      pub (myData)
      time.sleep (5)
      myData={'name': 'NILAGIRI EXP', 'lat': 11.035888995239656, 'lon':76.94348292825593}
      pub (myData)
      client.commandCallback = myCommandCallback
client.disconnect ()
```

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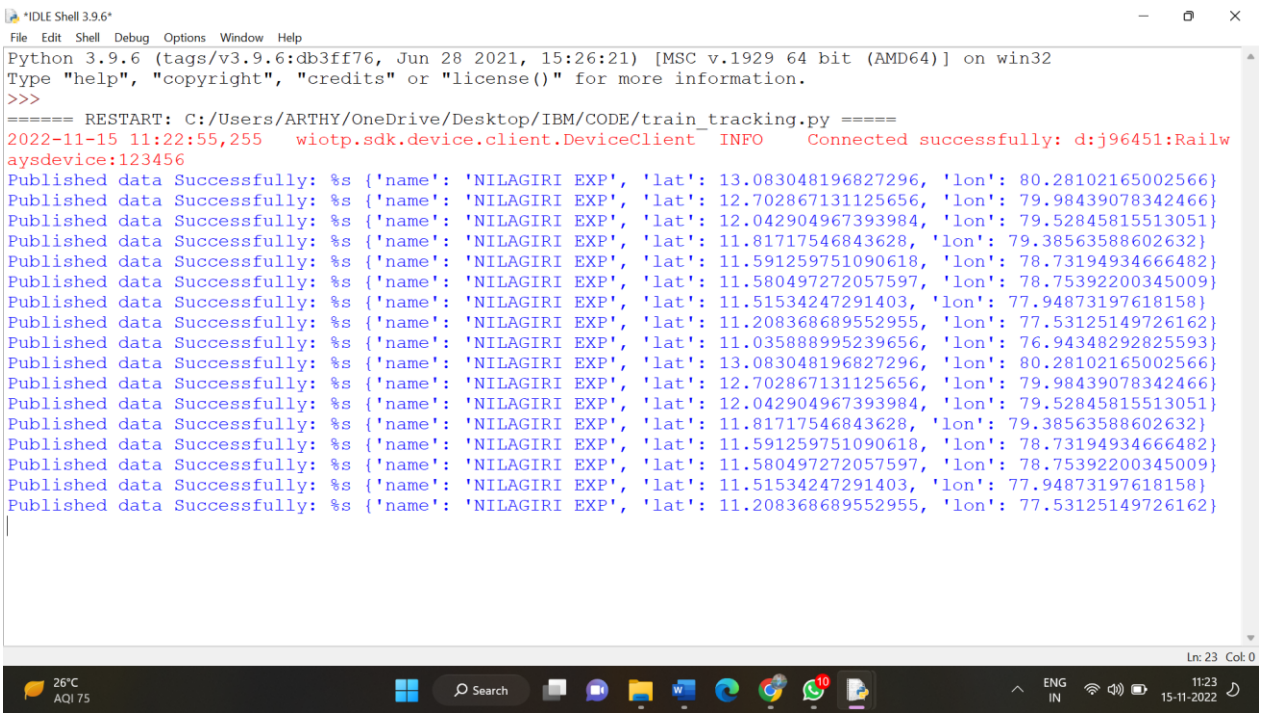
OUTPUT:



```
*IDLE Shell 3.9.6*
File  Edit  Shell  Debug  Options  Window  Help
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
====== RESTART: C:/Users/ARTHY/OneDrive/Desktop/IBM/CODE/train_tracking.py =====
2022-11-15 11:22:55,255   wiotp.sdk.device.client.DeviceClient   INFO    Connected successfully: d:j96451:Railw
aysdevice:123456
Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 13.083048196827296, 'lon': 80.28102165002566}
Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 12.702867131125656, 'lon': 79.98439078342466}
Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 12.042904967393984, 'lon': 79.52845815513051}
Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 11.81717546843628, 'lon': 79.38563588602632}
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Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 11.208368689552955, 'lon': 77.53125149726162}
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Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 11.81717546843628, 'lon': 79.38563588602632}
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Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 11.51534247291403, 'lon': 77.94873197618158}
Published data Successfully: %s {'name': 'NILAGIRI EXP', 'lat': 11.208368689552955, 'lon': 77.53125149726162}
```

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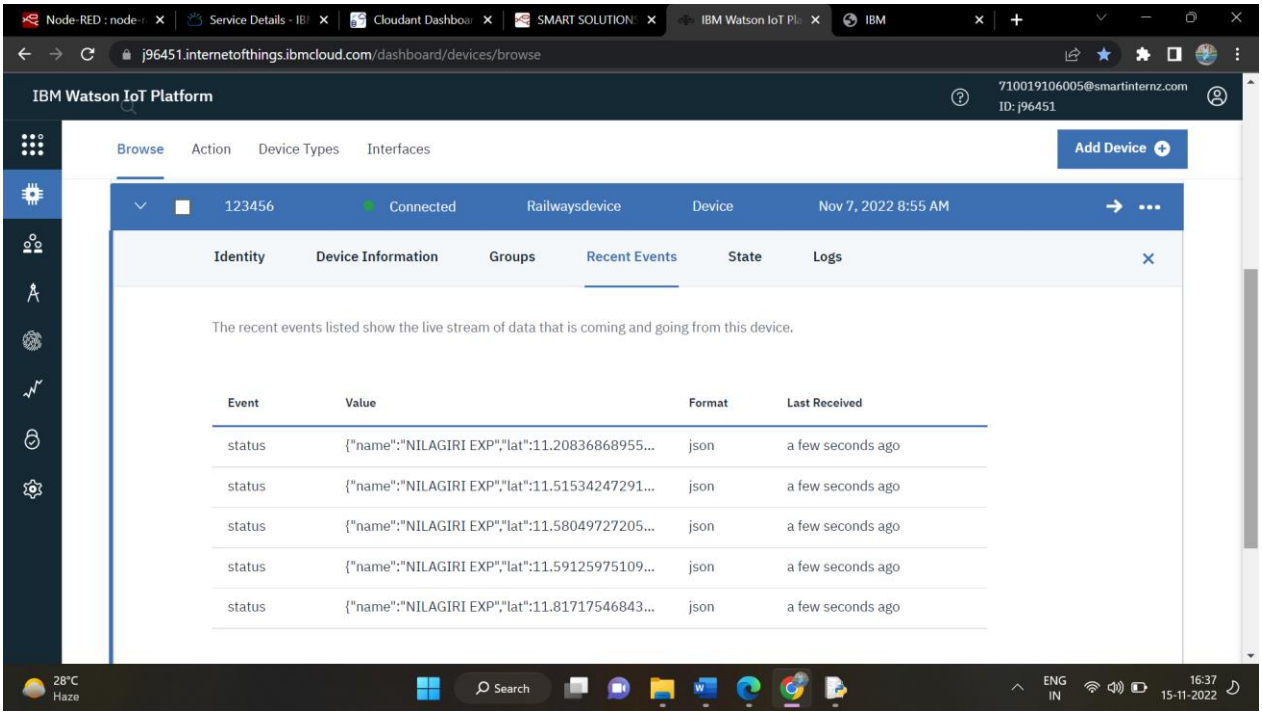
WATSON IBM CLOUD:



USER INTERFACE FOR TRAIN TRACKING: