SPRINT-4

Date	15 NOVEMBER 2022
Team ID	PNT2022TMID37886
Project Name	Project – SMART SOLUTIONS FOR RAILWAYS

PROCEDURE:

Step1: Develop a node red application for GPS

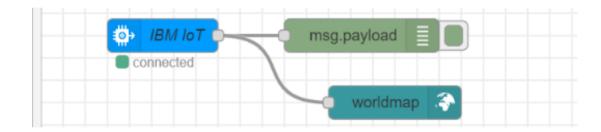
Step2: Develop a python code for GPS

Step3: Run the program

Step4: Train location will be displayed

Step5:Create a node red for wakeup call and E-catering serice

NODE RED FLOW:

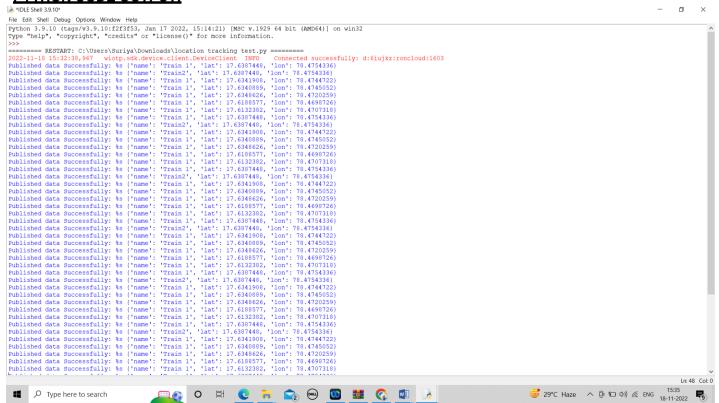


PYTHON CODE FOR GPS:

```
import wiotp.sdk.device
import time
import random
myConfig = {
  "identity": {
     "orgId": "6iujkz",
     "typeId": "roncloud",
     "deviceId":"1603"
  "auth": {
     "token": "ron@1603"
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':'Train 1','lat':17.6387448,'lon':78.4754336}
  pub(myData)
  time.sleep(3)
  myData={'name':'Train2','lat':17.6387448,'lon':78.4754336}
  pub(myData)
  time.sleep(3)
  myData={'name':'Train 1','lat':17.6341908,'lon':78.4744722}
  pub(myData)
  time.sleep(3)
  myData={'name':'Train 1','lat':17.6340889,'lon':78.4745052}
  pub(myData)
  time.sleep(3)
  myData={'name':'Train 1','lat':17.6348626,'lon':78.4720259}
  pub(myData)
  time.sleep(3)
  myData={'name':'Train 1','lat':17.6188577,'lon':78.4698726}
  pub(myData)
  time.sleep(3)
  myData={'name':'Train 1','lat':17.6132382,'lon':78.4707318}
  pub(myData)
  time.sleep(3)
  client.commandCallback=myCommandCallback
client.disconnect()
```

PYTHON CODE OUTPUT:



NODE RED OUTPUT:

```
ble upgraded modules
                                                                i 🔊 🔅 💠 🛢 📶
   # debug
                                                                        ▼ all nodes ▼ 🛍 all ▼
  11/12/2022, 8:26:30 AM node: 8efde32a28c7f61e
  iot-2/type/Sudha/id/45/evt/status/fmt/json : msg.payload : Object
  > { name: "Train1", lat: 13.08363, lon: 80.2708 }
  11/12/2022, 8:26:32 AM node: 8efde32a28c7f61e
  iot-2/type/Sudha/id/45/evt/status/fmt/json : msg.payload : Object
  > { name: "Train2", lat: 12.40797, lon: 79.8141 }
  11/12/2022, 8:26:34 AM node: 8efde32a28c7f61e
  iot-2/type/Sudha/id/45/evt/status/fmt/json : msg.payload : Object
   > { name: "Train1", lat: 11.83331, lon: 79.37465 }
  11/12/2022, 8:26:40 AM node: 8efde32a28c7f61e
  iot-2/type/Sudha/id/45/evt/status/fmt/json : msg.payload : Object
   ▶ { name: "Train1", lat: 11.59664, lon: 78.69899 }
  11/12/2022, 8:26:46 AM node: 8efde32a28c7f61e
  iot-2/type/Sudha/id/45/evt/status/fmt/json : msg.payload : Object
   > { name: "Train1", lat: 11.63431, lon: 78.11122 }
  11/12/2022, 8:26:52 AM node: 8efde32a28c7f61e
  iot-2/type/Sudha/id/45/evt/status/fmt/json : msg.payload : Object
   ▶ { name: "Train1", lat: 11.32207, lon: 77.61684 }
  11/12/2022, 8:26:58 AM node: 8efde32a28c7f61e
  iot-2/type/Sudha/id/45/evt/status/fmt/json msg.payload Object
   > { name: "Train1", lat: 11.03107, lon: 76.96864 }
```

TRAIN TRACKING:

