

**Topic:**

**Smart Solution for Railways**

**Team ID:**

**PNT2022TMID51678**

**SPRINT – 3**

**PROCEDURE:**

- Step 1:** Develop node red web application to track the train location.
- Step 2:** Install the required node node-red-contrib-webworldmap.
- Step 3:** Connect the node flow.
- Step 4:** Run the python code.
- Step 5:** Click the shortcut CTRL+SHIFT+M to jump to the default map (worldmap).
- Step 4:** View the map.

**NODE RED FLOW:**

node-red-oybfp-2022-11-04.eu-gb.mybluemix.net/red/#flow/62e376b5dbac0fa0

Node-RED

Node-RED must be restarted to enable upgraded modules

Deploy

filter nodes

Flow 1 Flow 2 Flow 3

common

- inject
- debug
- complete
- catch
- status
- link in
- link call
- link out
- comment

function

- function
- switch
- change

Flow 1

IBM IoT worldmap msg.payload

debug

all nodes all

```
graph LR; IoT[IBM IoT] --> worldmap[worldmap]; worldmap --> payload[msg.payload];
```

### **PYTHON CODE FOR GPS:**

```
import
wiotp.sdk.device
import time import
random
myconfig = {

    "identity": {

        "orgID": "dks661"

        "typeID": "Sundar"

        "deviceID": "45"

    },

    "auth": {

        "token": "sundar@2001"

    }

}

def
myCommandCallback(cmd):

    print ("Message has been received from IoT platform: %s
    %cmd.data['command'])

    m = cmd.data['command']

client = wiotp.sdk.DeviceClient(config = myConfig, logHandlers = None)
client.connect()
def pub
(data):

    client.publishEvent (eventId = "status", msgFormat = "json", data = myData,
    qos = 0, onPublish = None)
```

```
client.connect()  
while  
True:  
  
    myData = {'name': 'Train1', 'lat': 13.08363, 'lon': 80.27080}
```

```
time.sleep(2)
```

```
myData = {'name': 'Train2', 'lat': 12.40797, 'lon': 79.81410}
```

```
pub(myData)
```

```
time.sleep(2)
```

```
myData = {'name': 'Train1', 'lat': 11.83331, 'lon': 79.37465}
```

```
pub(myData)
```

```
time.sleep(6)
```

```
myData = {'name': 'Train1', 'lat': 11.59664, 'lon': 78.69899}
```

```
pub(myData)
```

```
time.sleep(6)
```

```
myData = {'name': 'Train1', 'lat': 11.63431, 'lon': 78.11122}
```

```
pub(myData)
```

```
time.sleep(6)
```

```
myData = {'name': 'Train1', 'lat': 11.32207, 'lon': 77.61684}
```

```
pub(myData)
```

```
time.sleep(6)
```

```
myData = {'name': 'Train1', 'lat': 11.03107, 'lon': 76.96864}
```

```
pub(myData)
```

```
time.sleep(6)
```

```
client.commandCallback = myCommandCallback
```

```
client.disconnect()
```

**NODE RED FLOW:**

```

IDLE Shell 3.9.6
File Edit Shell Debug Options Window Help
08}
Published data Successfully: %s {'name': 'Train2', 'lat': 12.40797, 'lon': 79.8141}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.83331, 'lon': 79.37465}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.59664, 'lon': 78.69899}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.63431, 'lon': 78.11122}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.32207, 'lon': 77.61684}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.03107, 'lon': 76.96864}
Published data Successfully: %s {'name': 'Train1', 'lat': 13.08363, 'lon': 80.2708}
Published data Successfully: %s {'name': 'Train2', 'lat': 12.40797, 'lon': 79.8141}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.83331, 'lon': 79.37465}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.59664, 'lon': 78.69899}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.63431, 'lon': 78.11122}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.32207, 'lon': 77.61684}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.03107, 'lon': 76.96864}
Published data Successfully: %s {'name': 'Train1', 'lat': 13.08363, 'lon': 80.2708}
Published data Successfully: %s {'name': 'Train2', 'lat': 12.40797, 'lon': 79.8141}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.83331, 'lon': 79.37465}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.59664, 'lon': 78.69899}

```

## NODE RED OUTPUT:

node-red-oybfp-2022-11-04.eu-gb.mybluemix.net/red/#flow/62e376b5dbac0fa0

Node-RED must be restarted to enable upgraded modules

Deploy

filter nodes

Flow 1 Flow 2 Flow 3

debug

all nodes

common

- inject
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function

- function
- switch
- change

Flow 1

IBM IoT worldmap msg.payload

11/12/2022, 8:26:30 AM node: 8efde32a28c7f61e  
iot-2/type/Sudha/id/45/ev/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/ev/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/ev/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/ev/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/ev/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/ev/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/ev/status/fmt/json : msg.payload : Object  
> { name: "Train1", lat: 11.03107, lon: 76.96864 }

# TRAIN TRACKING:

Node-RED

Node-RED must be restarted to enable upgraded modules

Deploy

filter nodes

Flow 1

Flow 2

Flow 3

debug

common

inject

debug

complete

catch

status

link in

link call

link out

comment

function

switch

change

IBM IoT

connected

worldmap

connected 0

msg.payload

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: 11.40797, 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: 78.59899 }

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: 77.51684 }

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: 76.36864 }