

TEST CASE:

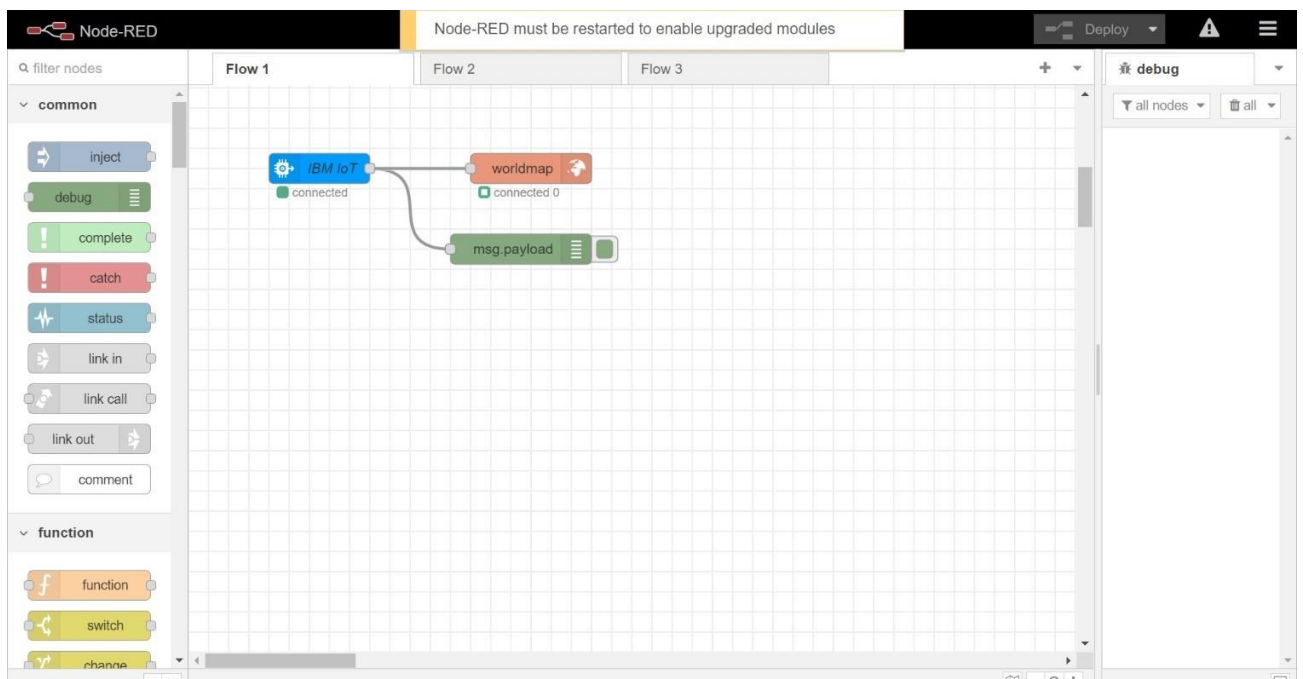
Python Output:

```

IDLE Shell 3.9.6
File Edit Shell Debug Options Window Help
U8}
Published data Successfully: %s {'name': 'Train2', 'lat': 12.40797, 'lon': 79.81
41}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.83331, 'lon': 79.37
465}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.59664, 'lon': 78.69
899}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.63431, 'lon': 78.11
122}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.32207, 'lon': 77.61
684}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.03107, 'lon': 76.96
864}
Published data Successfully: %s {'name': 'Train1', 'lat': 13.08363, 'lon': 80.27
08}
Published data Successfully: %s {'name': 'Train2', 'lat': 12.40797, 'lon': 79.81
41}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.83331, 'lon': 79.37
465}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.59664, 'lon': 78.69
899}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.63431, 'lon': 78.11
122}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.32207, 'lon': 77.61
684}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.03107, 'lon': 76.96
864}
Published data Successfully: %s {'name': 'Train1', 'lat': 13.08363, 'lon': 80.27
08}
Published data Successfully: %s {'name': 'Train2', 'lat': 12.40797, 'lon': 79.81
41}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.83331, 'lon': 79.37
465}
Published data Successfully: %s {'name': 'Train1', 'lat': 11.59664, 'lon': 78.69

```

Node Red Flow:



NODE RED OUTPUT:

The screenshot shows the Node-RED web interface. The top bar indicates 'Node-RED must be restarted to enable upgraded modules'. The left sidebar contains a 'filter nodes' search bar and two categories of nodes: 'common' (inject, debug, complete, catch, status, link in, link call, link out, comment) and 'function' (function, switch, change). The main workspace displays a flow named 'Flow 1' with three nodes: 'IBM IoT' (blue), 'worldmap' (orange), and 'msg.payload' (green). The 'IBM IoT' node is connected to 'worldmap', which is connected to 'msg.payload'. The right sidebar shows the 'debug' console with a list of messages. Each message is a JSON object with 'name' and 'lat' properties, representing train locations.

```
11/12/2022, 8:26:30 AM node: 8efde32a28c7f6'e  
iot-2/type/SudhaId/45/ev/status/fmt/json : msg.payload : Object  
{ name: "Train1", lat: 13.08363, lon: 80.2708 }  
11/12/2022, 8:26:32 AM node: 8efde32a28c7f6'e  
iot-2/type/SudhaId/45/ev/status/fmt/json : msg.payload : Object  
{ name: "Train2", lat: 12.40797, lon: 79.8141 }  
11/12/2022, 8:26:34 AM node: 8efde32a28c7f6'e  
iot-2/type/SudhaId/45/ev/status/fmt/json : msg.payload : Object  
{ name: "Train1", lat: 11.83331, lon: 79.37465 }  
11/12/2022, 8:26:40 AM node: 8efde32a28c7f6'e  
iot-2/type/SudhaId/45/ev/status/fmt/json : msg.payload : Object  
{ name: "Train1", lat: 11.59664, lon: 78.59899 }  
11/12/2022, 8:26:46 AM node: 8efde32a28c7f6'e  
iot-2/type/SudhaId/45/ev/status/fmt/json : msg.payload : Object  
{ name: "Train1", lat: 11.63431, lon: 78.11122 }  
11/12/2022, 8:26:52 AM node: 8efde32a28c7f6'e  
iot-2/type/SudhaId/45/ev/status/fmt/json : msg.payload : Object  
{ name: "Train1", lat: 11.32207, lon: 77.51684 }  
11/12/2022, 8:26:58 AM node: 8efde32a28c7f6'e  
iot-2/type/SudhaId/45/ev/status/fmt/json : msg.payload : Object  
{ name: "Train1", lat: 11.03107, lon: 76.96864 }
```

TRAIN TRACKING :

