

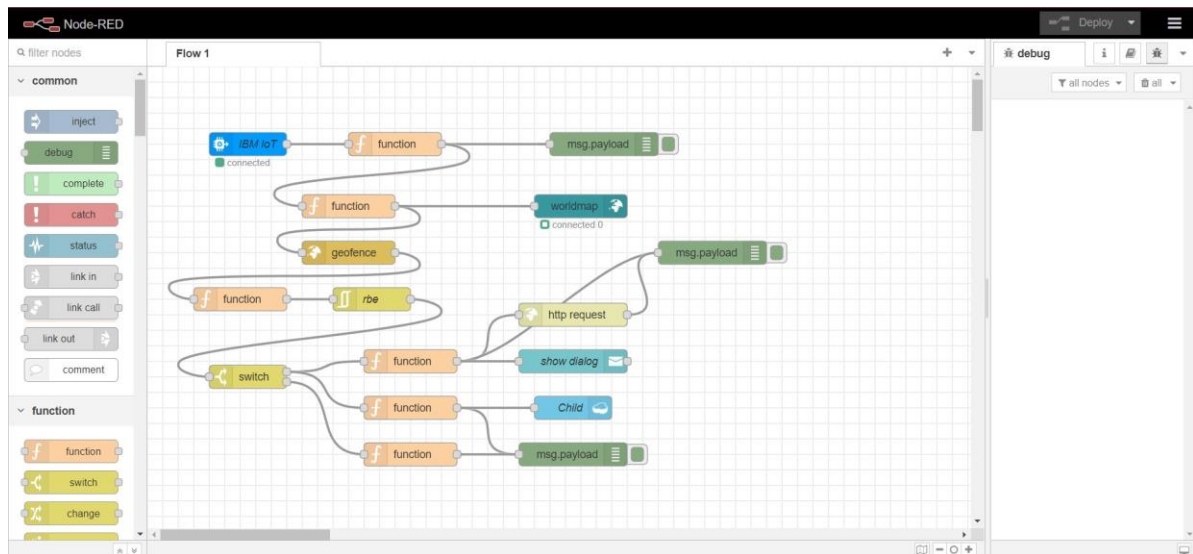
Sprint-3

IOT Based Safety Gadget for Child Safety Monitoring & Notification

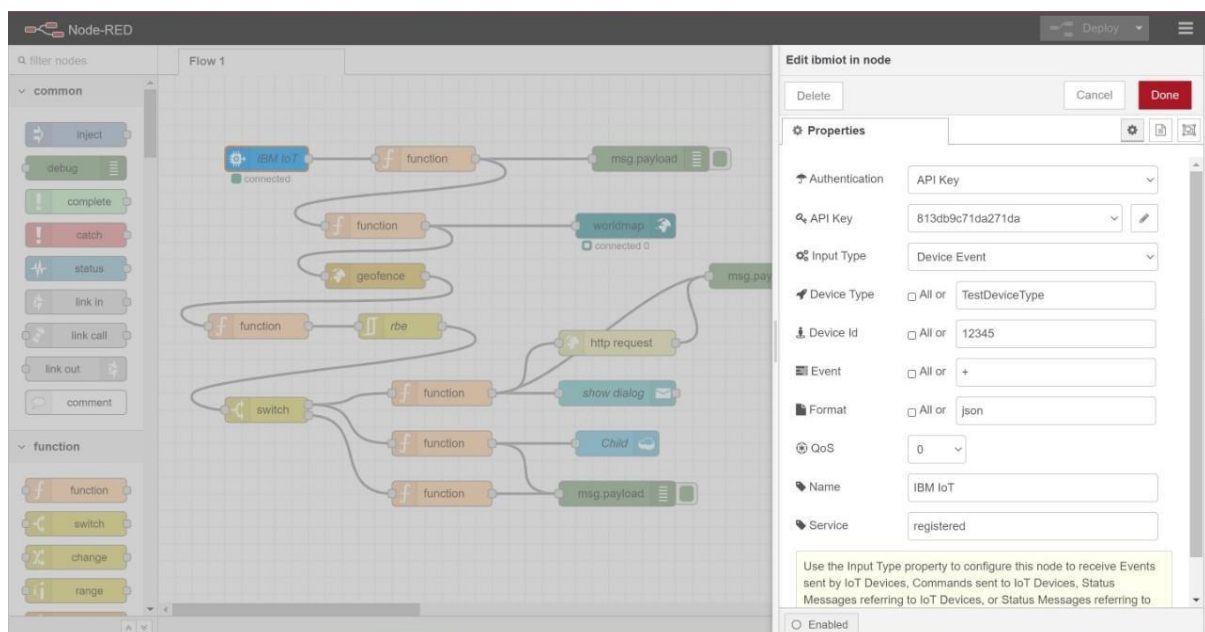
TEAM ID: PNT2022TMID06213

Creating Node-Red service and connecting with IBM cloud

Creating Node-Red service:



Codes in each Node:



Node-RED interface showing a flow named "Child Tracker" in Flow 1. The flow starts with an "IBM IoT" node (connected), followed by a "function" node, then another "function" node, then a "geofence" node, and finally a third "function" node. The "Edit function node" panel is open, showing the following JavaScript code:

```
1 var name = msg.payload.name
2 var lat = msg.payload.lat
3 var lon = msg.payload.lon
4 global.set('latitude',lat)
5 global.set('longitude',lon)
6 global.set('name',name)
7 return msg;
```

The "Properties" panel shows the node name as "Name". The "On Message" tab is selected. The "dashboard" panel on the right shows a "Child Tracker" tab with a "Map" sub-tab.

URL: <https://node-red-opzsk-2022-11-04.eu-gb.mybluemix.net/red/#editor-tab-properties>

WhatsApp Image... .jpeg

Show all

Node-RED interface showing the same "Child Tracker" flow in Flow 1. The flow is extended with a "msg.payload" node, a "worldmap" node (connected), an "rbe" node, and a "switch" node. The "Edit debug node" panel is open, showing the following configuration:

- Output: msg.payload
- To: ☒ debug window
- ☐ system console
- ☐ node status (32 characters)
- Name: Name

The "Properties" panel shows the node name as "Name". The "On Message" tab is selected. The "dashboard" panel on the right shows a "Child Tracker" tab with a "Map" sub-tab.

URL: <https://node-red-opzsk-2022-11-04.eu-gb.mybluemix.net/red/#editor-tab-properties>

Node-RED interface showing the same "Child Tracker" flow in Flow 1. The flow is extended with a "function" node, a "geofence" node, and a "function" node. The "Edit function node" panel is open, showing the following JavaScript code:

```
1- msg.payload = {
2   "name": global.get('name'),
3   "lat": global.get('latitude'),
4   "lon": global.get('longitude')
5- }
6 return msg;
```

The "Properties" panel shows the node name as "Name". The "On Message" tab is selected. The "dashboard" panel on the right shows a "Child Tracker" tab with a "Map" sub-tab.

URL: <https://node-red-opzsk-2022-11-04.eu-gb.mybluemix.net/red/#editor-tab-properties>

Node-RED interface showing a flow named "Flow 1" and the "Edit worldmap node" configuration panel.

Flow 1: The flow starts with an **IBM IoT** node (connected), followed by a **function** node, then a **worldmap** node (connected). Below this, there is a **geofence** node, followed by a **function** node and an **rbe** node. A **switch** node branches the flow into three parallel **function** nodes. The top **function** node connects to an **http request** node, which then connects to a **show dialog** node. The middle **function** node connects to a **Child** node. The bottom **function** node connects to a **msg.payload** node.

Edit worldmap node Properties:

- Group:** [Child Tracker] Map
- Size:** auto
- Start:** Latitude: 17.4226372, Longitude: 78.5456505, Zoom: 16
- Map list:** 7 selected
- Base map:** ESRI Satellite
- Overlays:** 5 selected
- Cluster when zoom level is less than:** 0 (0, off - 19)
- Max age:** Remove markers after 600 seconds
- User menu:** Show
- Layer menu:** Hide
- Lock map:** False
- Lock zoom:** False
- Auto-pan:** Disable
- Right click:** Disable
- Enabled:** ☐

Node-RED interface showing a flow named "Flow 1" and the "Edit geofence node" configuration panel.

Flow 1: The flow starts with an **IBM IoT** node (connected), followed by a **function** node, then a **worldmap** node (connected). Below this, there is a **geofence** node, followed by a **function** node and an **rbe** node. A **switch** node branches the flow into three parallel **function** nodes. The top **function** node connects to an **http request** node, which then connects to a **show dialog** node. The middle **function** node connects to a **Child** node. The bottom **function** node connects to a **msg.payload** node.

Edit geofence node Properties:

- Map:** A map view showing a geofence area (purple circle) over a city map.
- Floor:** ground
- Ceiling:** Infinity
- Action:** add "inarea" property
- Enable output of zones to WorldMap node:** ☐
- Enabled:** ☐

Node-RED interface showing a flow named "Child Tracker" and the "Edit function node" configuration panel.

Flow 1: The flow starts with an **IBM IoT** node (connected), followed by a **function** node, then a **geofence** node, and finally a **function** node.

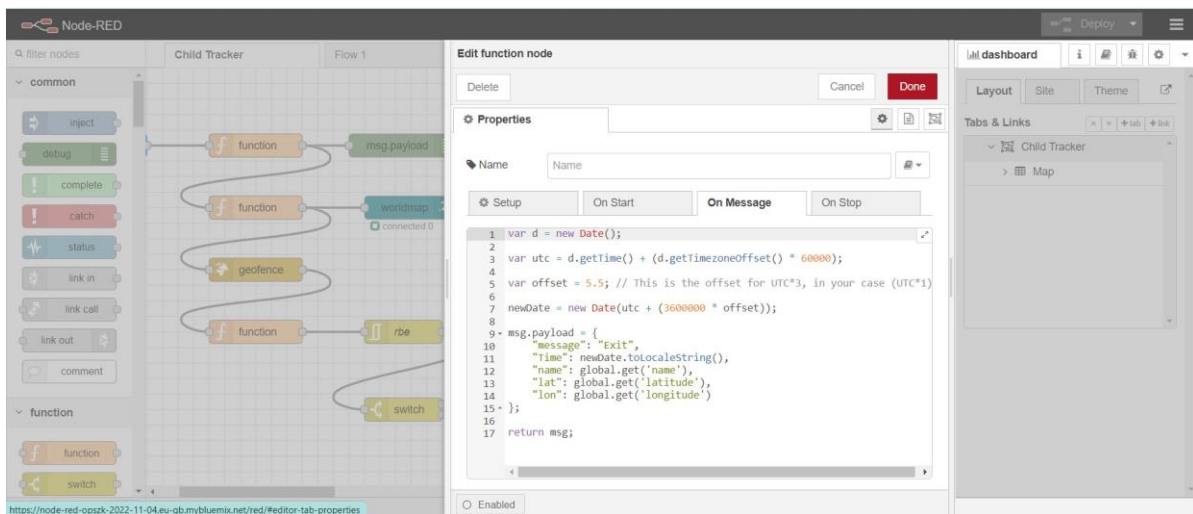
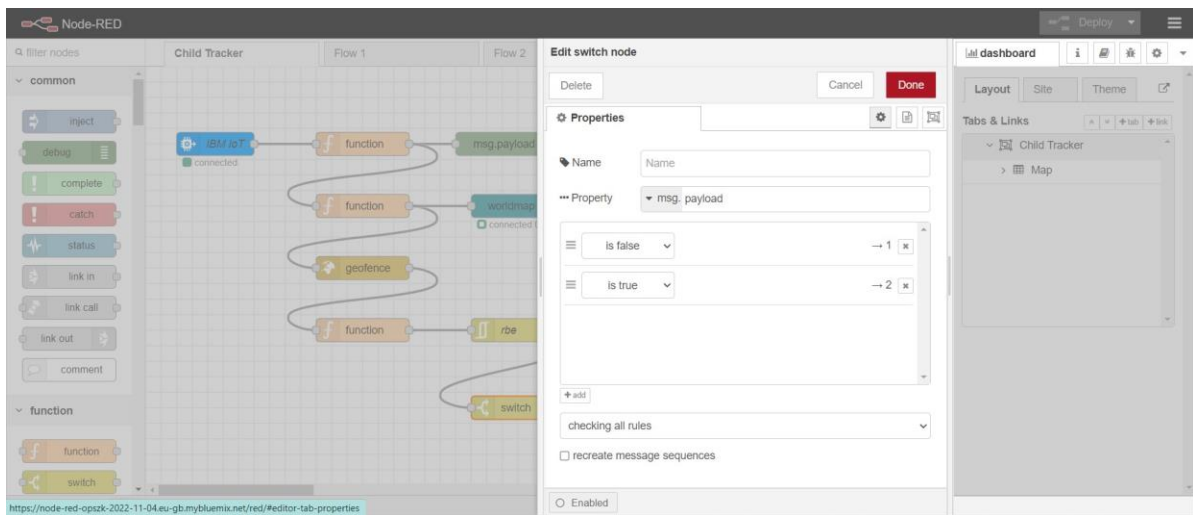
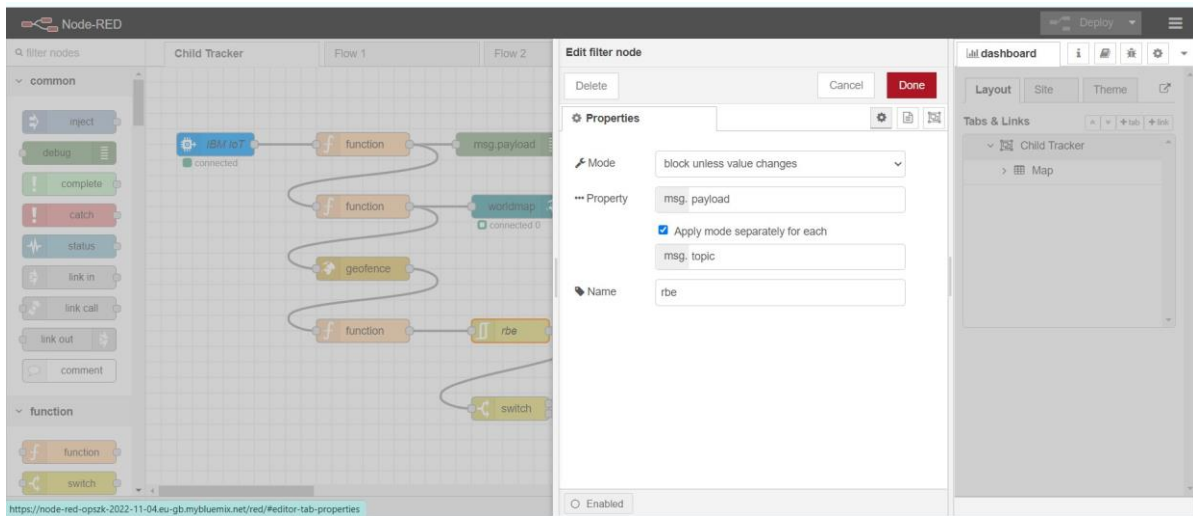
Edit function node Properties:

- Name:** Name
- Setup:** ☐ **On Start:** ☐ **On Message:** ☒ **On Stop:** ☐
- Code:**

```
1 msg.payload=msg.location.inarea
2 return msg;
```
- Enabled:** ☐

Dashboard: The dashboard shows a layout with a site and theme. The "Child Tracker" tab is active, displaying a map.

<https://node-red-opzrk-2022-11-04-eu-gb.mybluemix.net/red/editor-tab-properties>



Node-RED interface showing the 'Edit function node' dialog. The flow is titled 'Child Tracker' and 'Flow 1'. The function node code is as follows:

```
1 var d = new Date();
2 var utc = d.getTime() + (d.getTimezoneOffset() * 60000);
3
4 var offset = 5.5; // This is the offset for UTC+3, in your case (UTC+1)
5
6 newDate = new Date(utc + (3600000* offset));
7
8
9 msg.payload={
10   "message": "Entry",
11   "time": newDate.toLocaleString(),
12   "name": global.get('name'),
13   "lat": global.get('latitude'),
14   "lon": global.get('longitude')
15 };
16
17 return msg;
```

The right sidebar shows the 'dashboard' with tabs for 'Layout', 'Site', and 'Theme'. The 'Child Tracker' tab is active, showing a 'Map' view.

Node-RED interface showing the 'Edit http request node' dialog. The flow is titled 'Flow 1'. The http request node configuration is as follows:

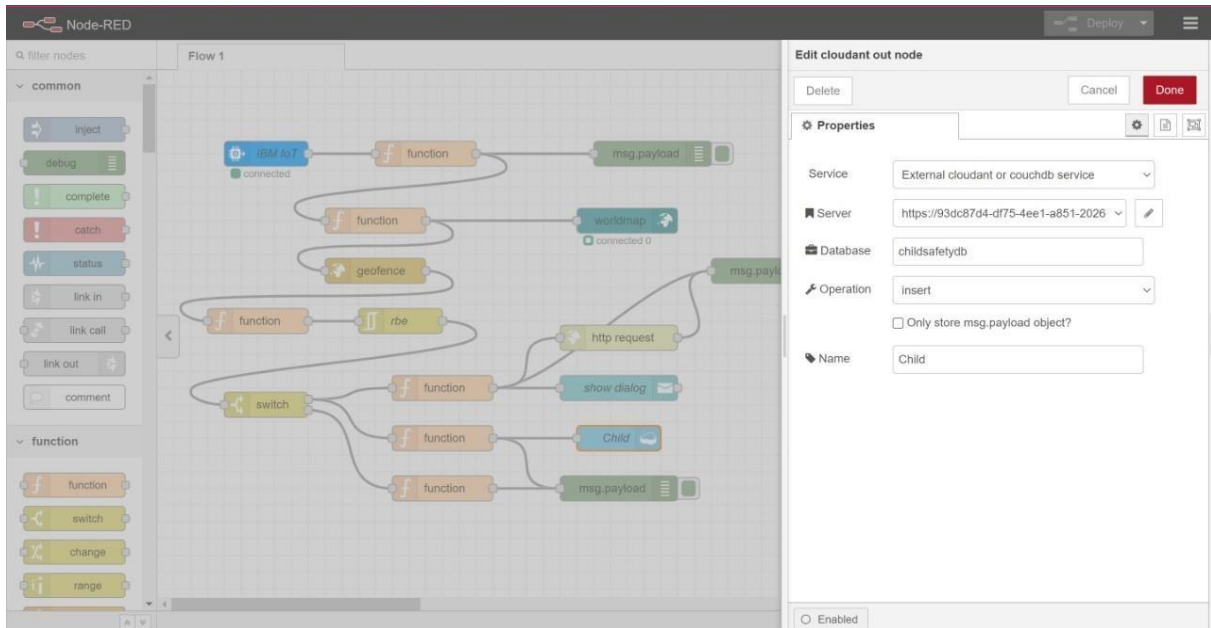
- Method: GET
- URL: <https://www.fast2sms.com/dev/bulkV2?authorization=>
- Payload: Ignore
- Enable secure (SSL/TLS) connection: ☐
- Use authentication: ☐
- Enable connection keep-alive: ☐
- Use proxy: ☐
- Only send non-2xx responses to Catch node: ☐
- Return: a UTF-8 string
- Name: Name

The right sidebar shows the 'dashboard' with tabs for 'Layout', 'Site', and 'Theme'. The 'Child Tracker' tab is active, showing a 'Map' view.

Node-RED interface showing the 'Edit notification node' dialog. The flow is titled 'Child Tracker' and 'Flow 1'. The notification node configuration is as follows:

- Layout: OK / Cancel Dialog
- Send to all browser sessions: ☒
- Default action label: OK
- Secondary action label: (optional label for Cancel button)
- Accept raw HTML/JavaScript input in msg.payload to format popup: ☐
- Class: [msg.className]
- Topic: [msg.topic]
- Name: Show Dialoge

The right sidebar shows the 'dashboard' with tabs for 'Layout', 'Site', and 'Theme'. The 'Child Tracker' tab is active, showing a 'Map' view.



Connecting with IBM Cloud: Using IBM IOT node through the API key

IBM Watson IoT Platform

Browse API Keys

This table shows a summary of the API keys that have been added for the organization. It can be filtered, organized, and search on using different criteria. To get started, you can add API keys by clicking Generate API Key, or by using the API. For more information about adding API keys, see [API key connection](#).

Key	Description	Role	Expires
a-4o1qxb-d5wguvebrf	-	Standard Application	-
a-4o1qxb-ecmygwzdc	API Key for the device simulator	Standard Application	-

1 Simulation running

Apps using your microphone: Google Chrome

IBM Watson IoT Platform

Browse API Keys

This table shows a summary of the API keys that have been added for the organization. It can be filtered, organized, and search on using different criteria. To get started, you can add API keys by clicking Generate API Key, or by using the API. For more information about adding API keys, see [API key connection](#).

Key	Description	Role	Expires
a-4o1qxb-d5wguvebrf	-	Standard Application	-

API Key Information

Key	a-4o1qxb-d5wguvebrf	Last Edited By	310819106007@smartinternz.com
Description	-	Expires	Never
Date Added	Nov 10, 2022 2:20 PM		
Last Update	Nov 10, 2022 2:20 PM		

1 Simulation running

Transferring values from Python Code:

```
child.py - C:\Users\Anu\AppData\Local\Programs\Python\Python37\chld.py (37.0)
File Edit Format Run Options Window Help
import json
import wiotsdk.device

import time
myConfig = {

    "identity":{
        "orgId": "401qxb",
        "typeId": "TestDeviceType",
        "deviceId": "12345"
    },
    "auth": {
        "token": "pnhKvZn-zMRvshayi"
    }
}

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

while True:
    name = "Smartbridge"
    #in area location

    #latitude = 17.4225176
    #longitude = 78.5456842

    #out area location

    latitude= 17.4219272
    longitude= 78.5488793
    myData={"name": name, 'lat':latitude, 'lon': longitude}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
    print("Data published to IBM IoT platform: ",myData)
    time.sleep(5)

client.disconnect()
```

Node-Red:

