

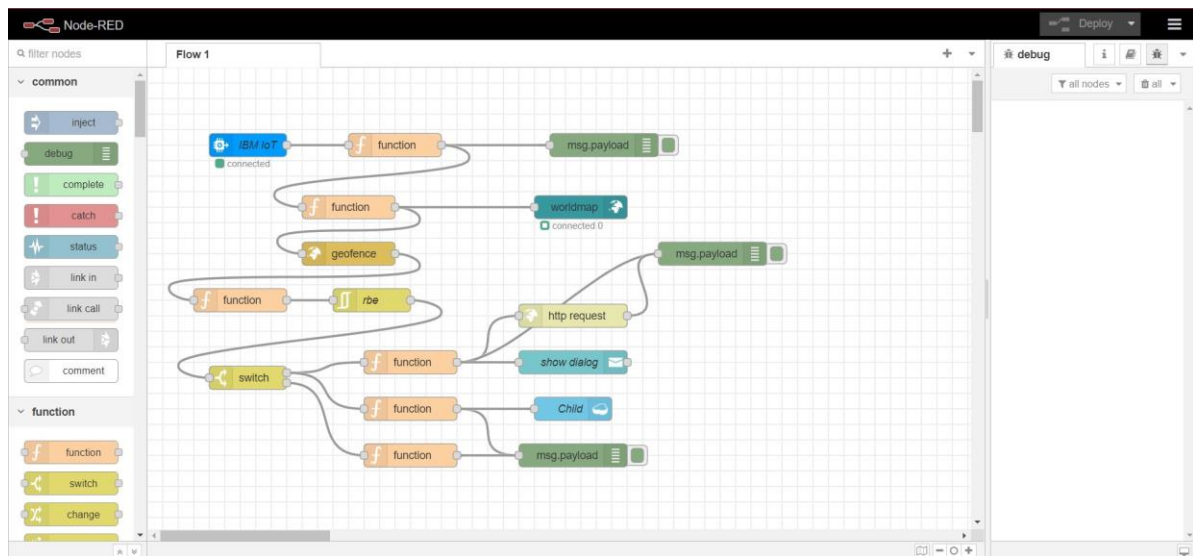
Project Development – Delivery plan sprint-2

IoT Based Safety Gadget for Child Safety Monitoring & Notification

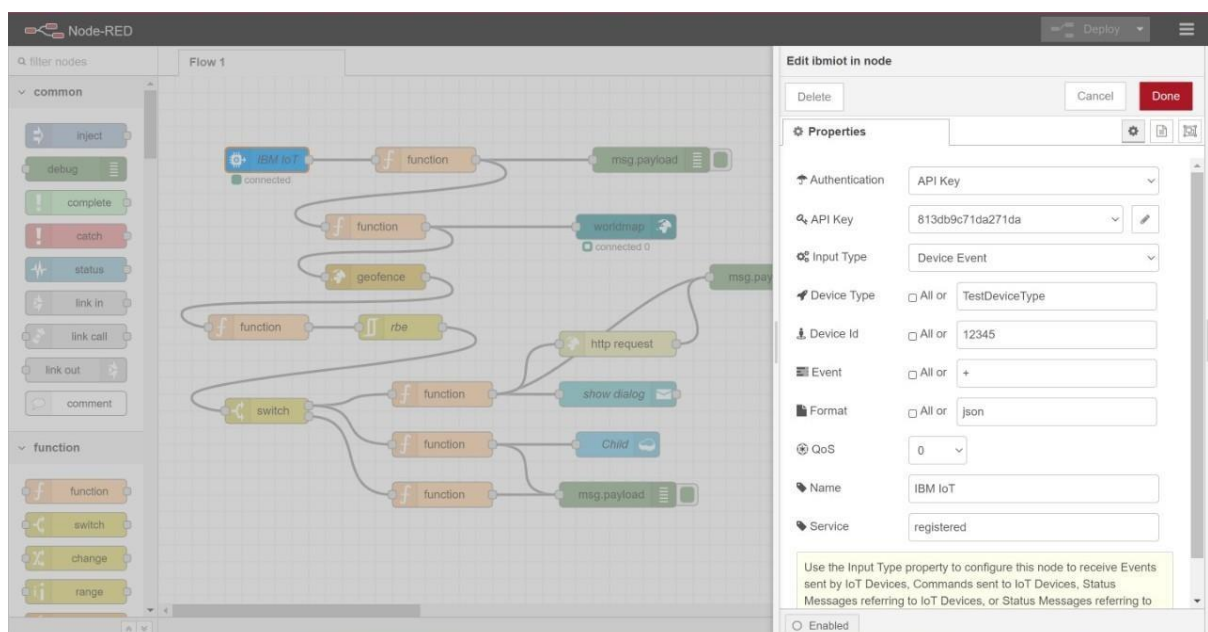
TEAM ID:PNT2022TMID20150

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 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-opszk-2022-11-04.eu-gb.mybluemix.net/red/#editor-tab-properties>

WhatsApp Image... .jpeg

Show all

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 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-opszk-2022-11-04.eu-gb.mybluemix.net/red/#editor-tab-properties>

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 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-opszk-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. The output of the function node goes to a **worldmap** node (connected). The **worldmap** node's output goes to a **msg.payload** node. The **worldmap** node also has a **geofence** node connected to it. The **geofence** node's output goes to a **function** node, which then goes to a **switch** node. The **switch** node has three outputs: one to a **function** node, one to a **show dialog** node, and one to a **Child** node. The **function** node's output goes to a **msg.payload** node. The **show dialog** node's output goes to a **http request** node, which then goes to a **msg.payload** node. The **Child** node's output goes 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. The output of the function node goes to a **worldmap** node (connected). The **worldmap** node's output goes to a **msg.payload** node. The **worldmap** node also has a **geofence** node connected to it. The **geofence** node's output goes to a **function** node, which then goes to a **switch** node. The **switch** node has three outputs: one to a **function** node, one to a **show dialog** node, and one to a **Child** node. The **function** node's output goes to a **msg.payload** node. The **show dialog** node's output goes to a **http request** node, which then goes to a **msg.payload** node. The **Child** node's output goes to a **msg.payload** node.

Edit geofence node Properties:

- Map: A map showing a geofence area around a location in Chennai, India.
- 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. The output of the function node goes to a **worldmap** node (connected). The **worldmap** node's output goes to a **msg.payload** node. The **worldmap** node also has a **geofence** node connected to it. The **geofence** node's output goes to a **function** node, which then goes to a **switch** node. The **switch** node has three outputs: one to a **function** node, one to a **show dialog** node, and one to a **Child** node. The **function** node's output goes to a **msg.payload** node. The **show dialog** node's output goes to a **http request** node, which then goes to a **msg.payload** node. The **Child** node's output goes to a **msg.payload** node.

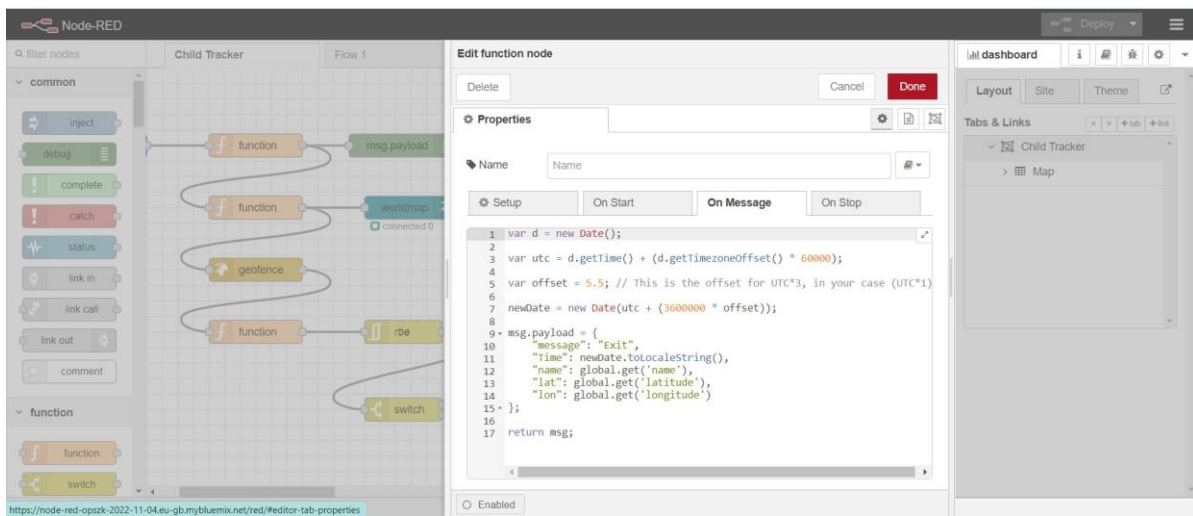
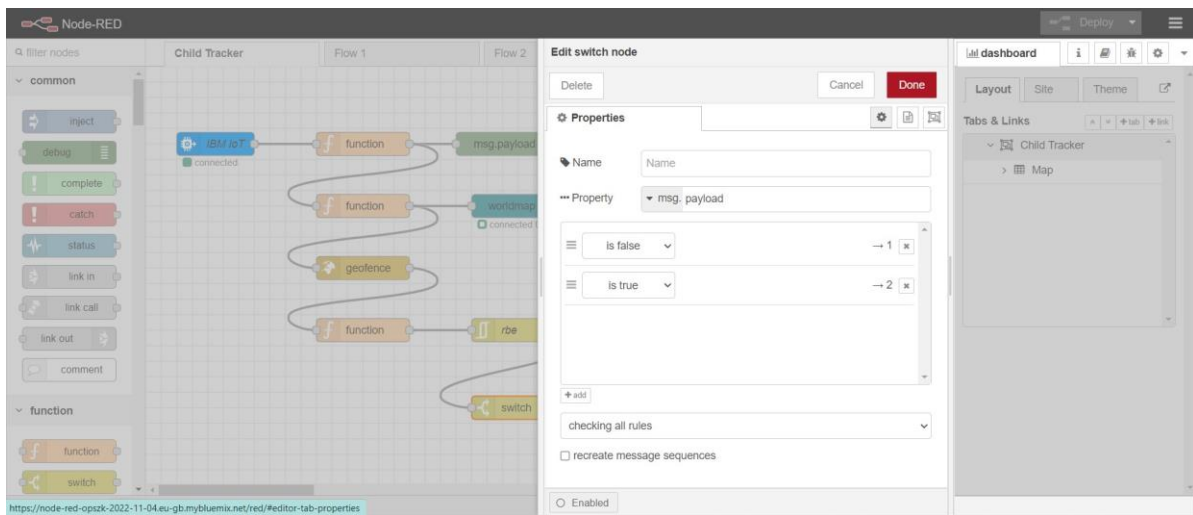
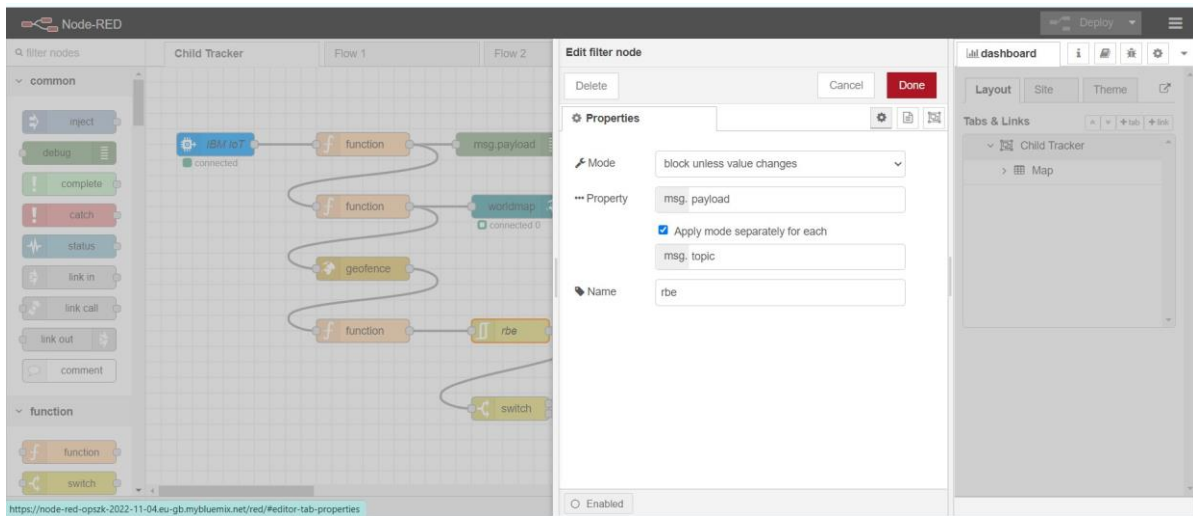
Edit function node Properties:

- 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 "Child Tracker" tab with a "Map" view.

<https://node-red-opzsk-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' tab with 'Child Tracker' and 'Map' links.

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

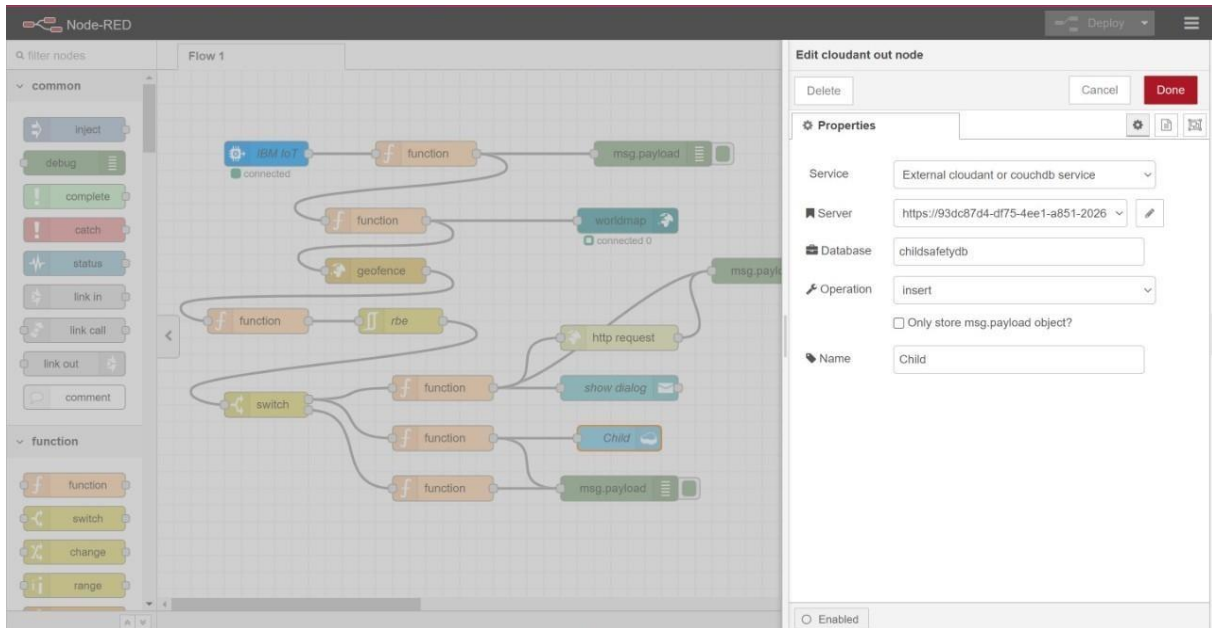
- Method: GET
- URL: <https://www.fast2sms.com/dev/bulkV2?authorization=>
- Payload: Ignore
- Enable secure (SSL/TLS) connection: ☐
- Use authentication: ☐
- Enable connection keep-alive: ☐
- Use proxy: ☐
- Only send non-2xx responses to Catch node: ☐
- Return: a UTF-8 string
- Name: Name

The right sidebar shows the 'dashboard' tab with 'Child Tracker' and 'Map' links.

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' tab with 'Child Tracker' and 'Map' links.



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

The image shows the 'Browse API Keys' page in the IBM Watson IoT Platform. The page has a search bar and a table with the following columns: Key, Description, Role, Expires, and a set of icons. The table contains 2 results:

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

At the bottom of the page, there is a status bar showing '1 Simulation running' and 'Apps using your microphone: Google Chrome'.

The image shows the 'Browse API Keys' page in the IBM Watson IoT Platform, with the details of the selected API key 'a-4o1qxb-d5wguvebrf' displayed. The details are organized into two tabs: 'API Key Information' and 'Access Control/Permissions'. The 'API Key Information' tab is active, showing the following information:

Field	Value	Field	Value
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		

At the bottom of the page, there is a status bar showing '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:

