

Project Development

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|---------------------|---|
| Date | 7 Nov 2022 |
| Team ID | PNT2022TMID21372 |
| Project Name | Iot Based Safety For Child Safety Monitoring & Notification |
| Sprint No | Sprint 3 |

Creating Node-Red Service and connecting with IBM cloud Creating

Node-Red Service :

Nodes Used in the project:

1. IBM IOT
2. Function
3. Msg.payload
4. Switch
5. Filter
6. Geofence
7. Show dialog
8. Tracker-Cloudant db
9. http request

WhatsApp x Meet - x IBM x IBM Watson x Node-RED x Cloudant D x Service Det x Application x Node-RED x Untitled

node-red-mctsg-2022-11-17.eu-gb.mybluemix.net/red/#flow/b1c0a64b12333935

Node-RED

filter nodes

- text
- gauge
- chart
- audio out
- notification
- ui control
- template
- worldmap

location

- worldmap
- worldmap in
- tracks
- convex - hull
- geofence

Flow 1

The flow diagram in Node-RED is as follows:

- IBM IoT** (connected) node connects to a **function** node.
- The first **function** node connects to a **msg payload** node.
- The **msg payload** node connects to a second **function** node.
- The second **function** node connects to a **worldmap** (connected 1) node.
- The **worldmap** node connects to a **geofence** node.
- The **geofence** node connects to a third **function** node.
- The third **function** node connects to a **filter** node.
- The **filter** node connects to a **switch** node.
- The **switch** node has three outputs, each leading to a **function** node.
- The first **function** node after the switch connects to an **http request** node.
- The **http request** node connects to a **msg payload** node.
- The second **function** node after the switch connects to a **show dialog** node.
- The third **function** node after the switch connects to a **tracker** node.
- The **tracker** node connects to a **msg payload** node.
- The **msg payload** node after the tracker connects to a final **msg payload** node.

lotdevice.py

Codes in Each Node :

IBM Iot:

The screenshot shows the Node-RED web interface in a browser. The main workspace displays a flow with an 'IBM IoT' node connected to a 'function' node. The 'Edit ibmiot in node' dialog is open, showing the following properties:

- Authentication:** API Key
- API Key:** IBMIOT APIKEY
- Input Type:** Device Event
- Device Type:** All or +
- Device Id:** All or device id e.g. ab12cd231a21
- Event:** All or +
- Format:** All or json
- QoS:** 0
- Name:** IBM IoT
- Service:** registered

The 'Info' panel on the right shows the node's details:

- Node:** "cefbaa4f5d4ebd2d"
- Type:** ibmiot in

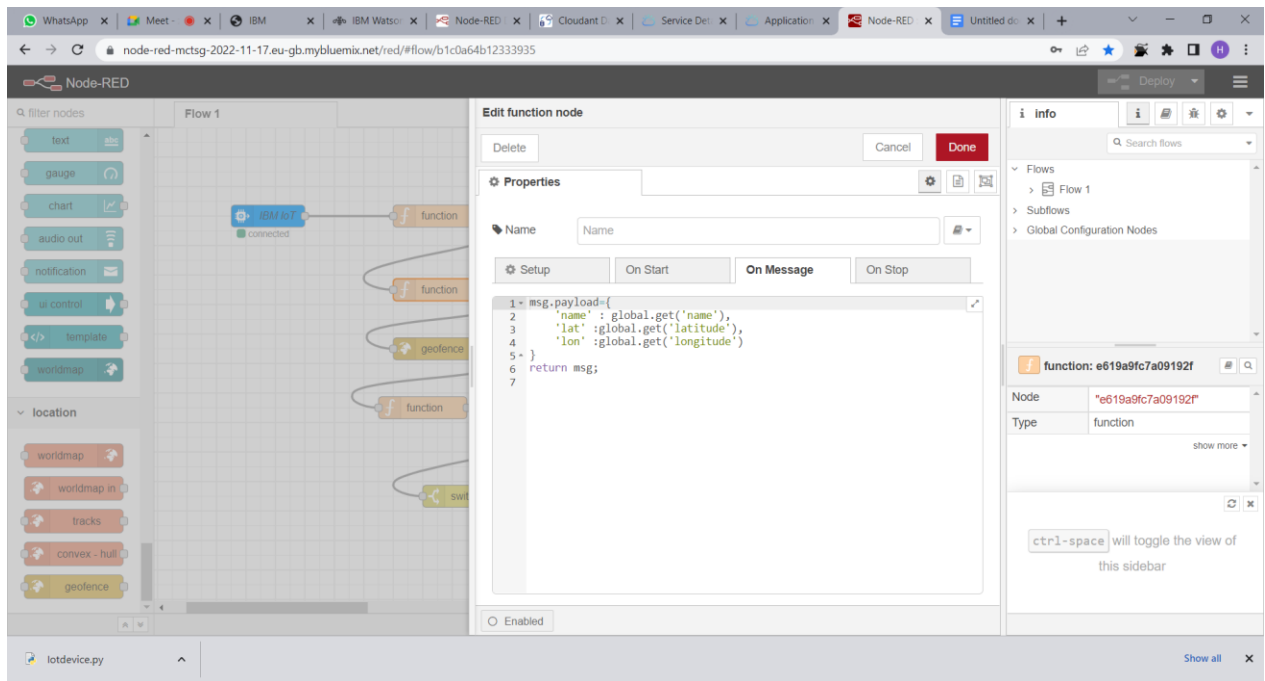
Function node:

The screenshot shows the Node-RED web interface with the 'Edit function node' dialog open. The dialog displays the following code in the 'On Message' tab:

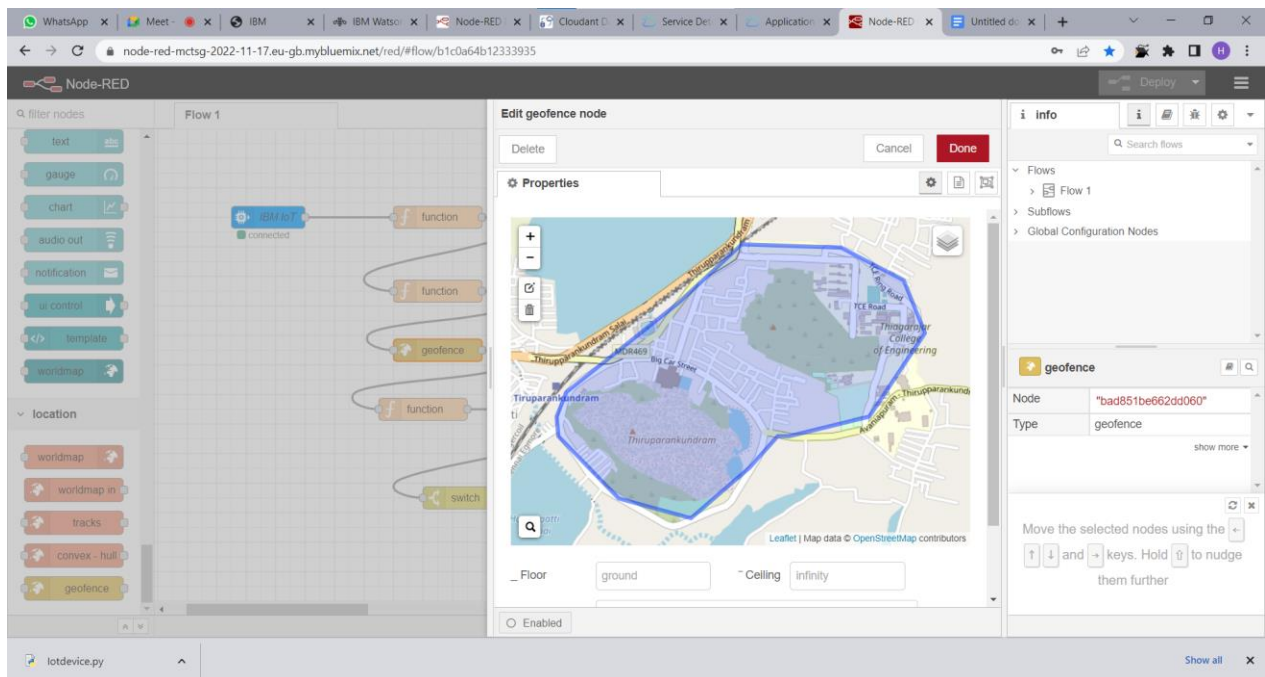
```
1 var name = msg.payload.name
2 var lat = msg.payload.lat
3 var lon=msg.payload.lon
4 global.set('latitude',lat)
5 global.set('longitude',lon)
6 global.set('name',name)
7 return msg;
```

The 'Info' panel on the right shows the node's details:

- Node:** "df0cab35375ae1b"
- Type:** function



Geofence node:



Worldmap node:

The screenshot shows the Node-RED web interface. On the left, the 'location' category is expanded, showing various nodes including 'worldmap'. In the center workspace, a flow is visible starting with an 'IBM IoT' node connected to a 'function' node, which then connects to a 'worldmap' node. The 'Edit worldmap node' dialog is open on the right. It contains the following settings:

- Group:** [ChildTracker] Map
- Size:** auto
- Start:** Latitude: 9.8795, Longitude: 78.0810, Zoom: 1 - 18
- Map list:** 7 selected
- Base map:** OpenStreetMap Greyscale
- Overlays:** 5 selected
- Cluster when:** zoom level is less than 0 (0, off - 19)
- Max age:** Remove markers after 600 seconds
- User menu:** Hide
- Layer menu:** Hide
- Lock map:** False
- Lock zoom:** False
- Enabled:** ☐

The 'info' sidebar on the far right shows the node details for the selected 'worldmap' node, including its ID and type.

Function node:

The screenshot shows the Node-RED web interface. In the center workspace, a flow is visible starting with an 'IBM IoT' node connected to a 'function' node. The 'Edit function node' dialog is open on the right. It contains the following settings:

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

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

The 'info' sidebar on the far right shows the node details for the selected 'function' node, including its ID and type.

Filter node:

The screenshot shows the Node-RED web interface. On the left, the 'filter nodes' palette is visible. The main workspace displays a flow starting with an 'IBM IoT' node, followed by several 'function' nodes, a 'geofence' node, and finally a 'filter' node. The 'Edit filter node' panel is open, showing the following configuration:

- Mode:** block unless value changes
- Property:** msg.payload
- Apply mode separately for each:** checked
- msg.topic:** (empty)
- Name:** Name

The 'Info' panel on the right shows the selected node details:

- Node:** "8439298570069df"
- Type:** rbe

At the bottom, there is a status bar with 'lotdevice.py' and a 'Show all' button.

Switch node:

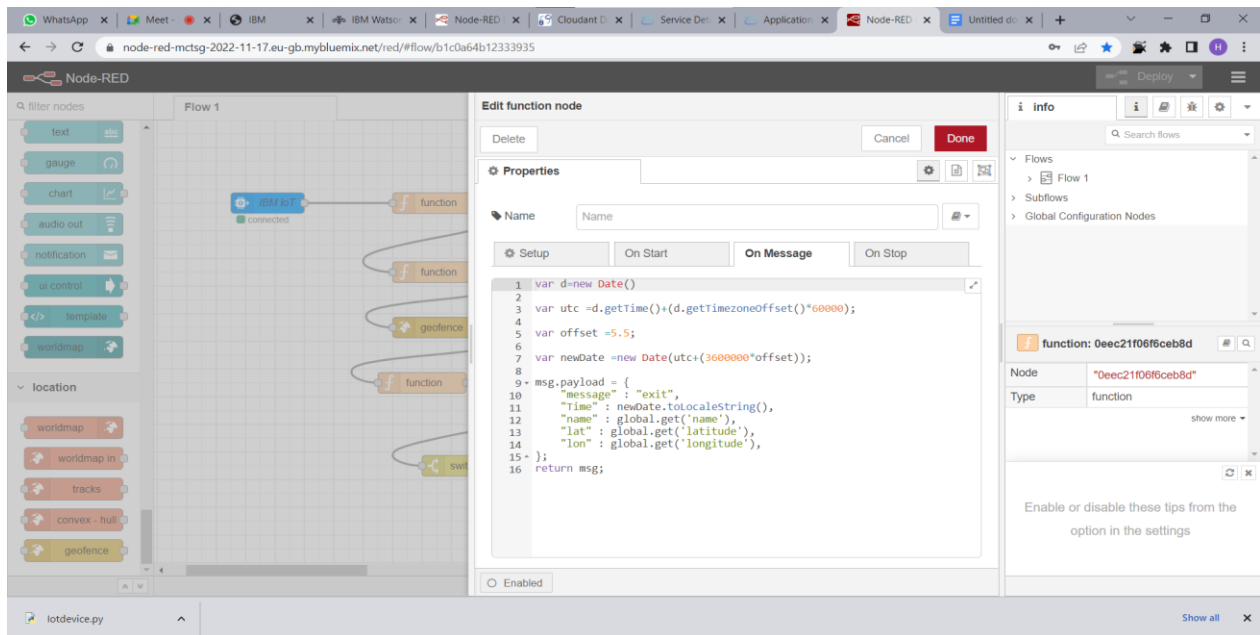
The screenshot shows the Node-RED web interface. On the left, the 'filter nodes' palette is visible. The main workspace displays a flow starting with an 'IBM IoT' node, followed by several 'function' nodes, a 'geofence' node, and finally a 'switch' node. The 'Edit switch node' panel is open, showing the following configuration:

- Name:** Name
- Property:** msg.payload
- Rules:**
 - is false → 1
 - is true → 2
- checking all rules:** (checked)
- recreate message sequences:** (unchecked)

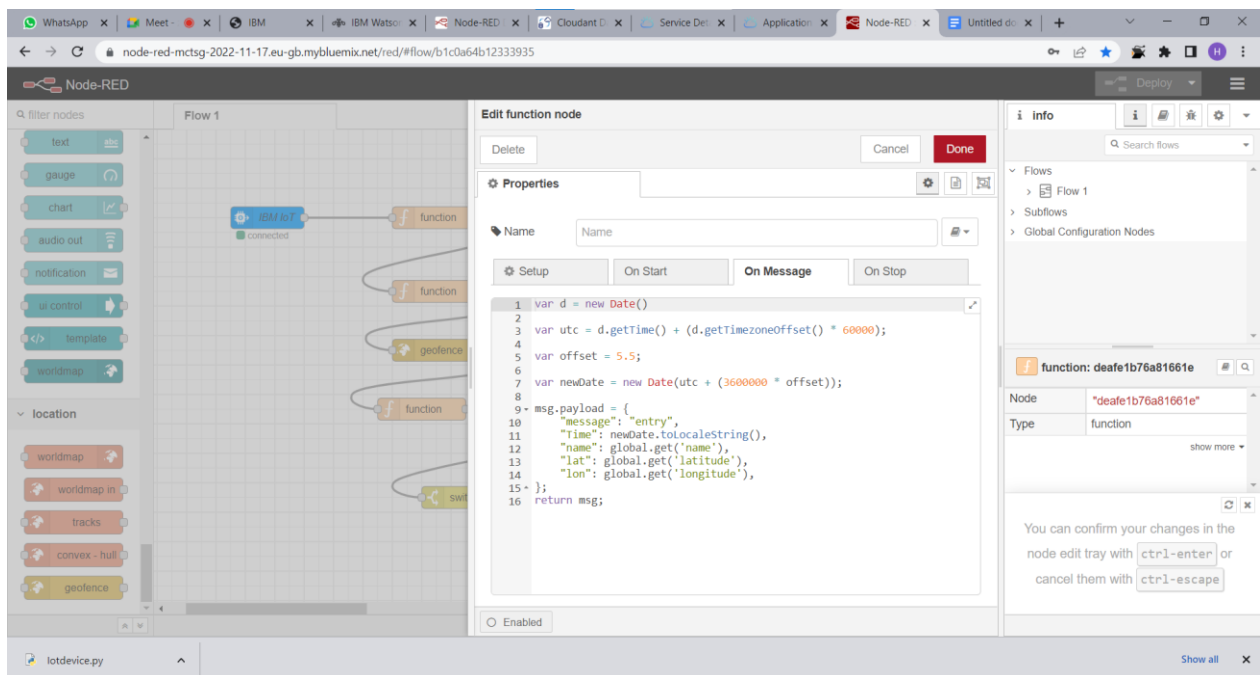
The 'Info' panel on the right shows the selected node details:

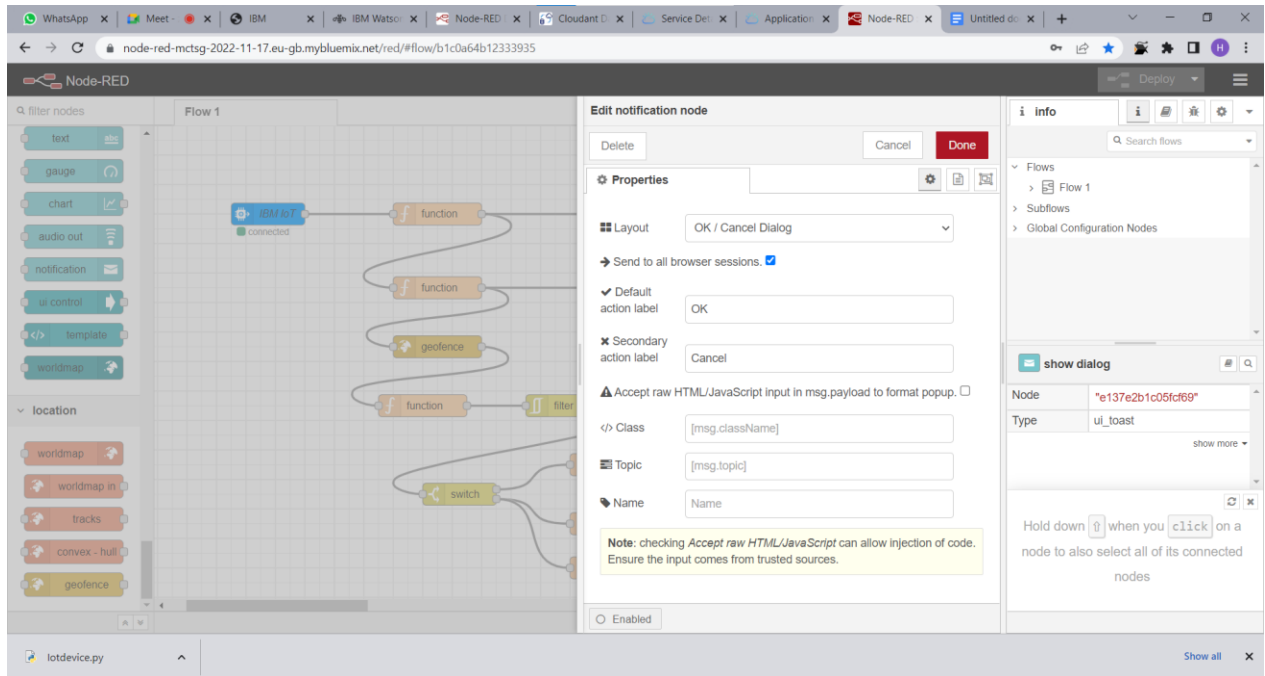
- Node:** "e20523194ac68b8e"
- Type:** switch

At the bottom, there is a status bar with 'lotdevice.py' and a 'Show all' button.

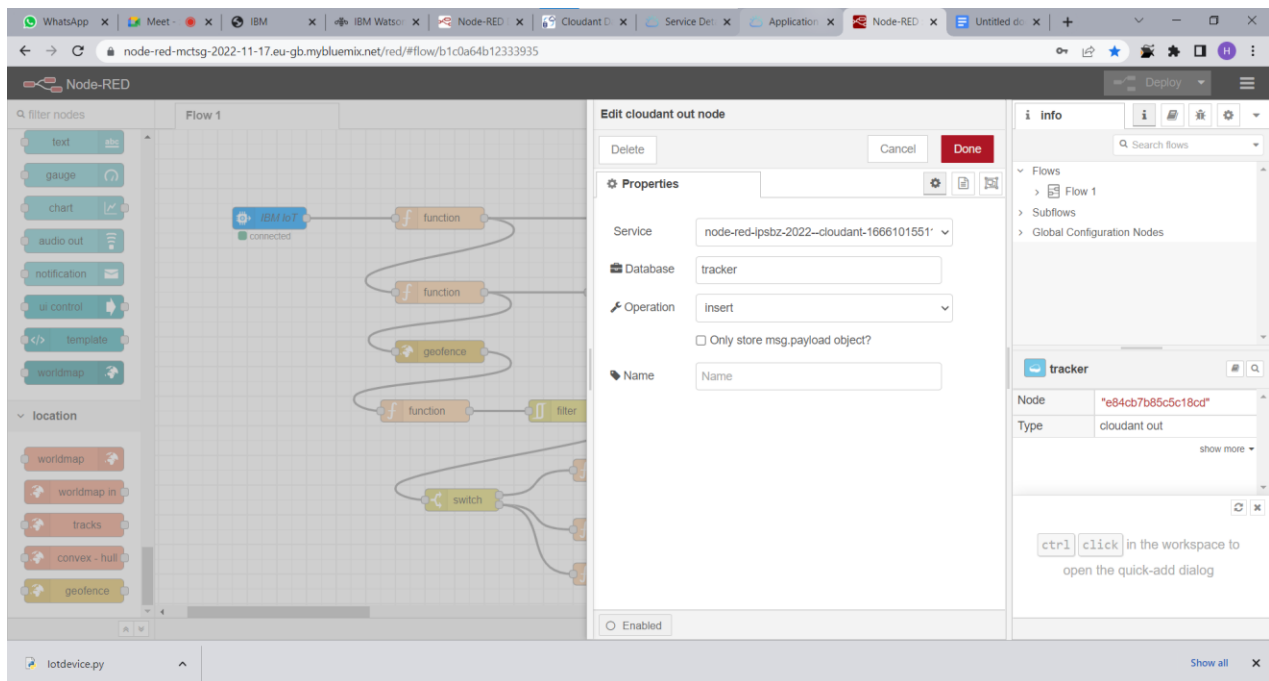


Function node:





Cloudant out node:



Debug node:

The screenshot displays the Node-RED web interface in a browser. The main workspace shows a flow named 'Flow 1' with the following nodes: a blue 'IBM IoT' node, followed by a 'function' node, then another 'function' node, a 'geolence' node, another 'function' node, a 'filter' node, and finally a 'switch' node. The left sidebar contains a 'filter nodes' search bar and a list of nodes categorized by 'location' (worldmap, worldmap in, tracks, convex - hull, geolence). The right sidebar features an 'info' panel with a search bar and a list of flows. The 'Edit debug node' dialog is open, showing the following properties:

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

The bottom of the interface shows a status bar with 'lotdevice.py' and a 'Show all' button.