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Academic Year 2022 (ODD SEM)

**IoT Based Safety Gadget For Child Safety
Monitoring & Notification**

Team ID : PNT2022TMID15120

Team Members

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Anuprabha M V
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AREA OF THE PROJECT

INTERNET OF THINGS(IOT)

OBJECTIVES

- ❖ Enables tracking of the child's location and capturing of data remotely such as where the child located, distance, etc.
- ❖ To show the child's actual data with reference values.
- ❖ Enables sending of notification if the child is out of location or when the device realizes abnormal conditions/situations.
- ❖ Develop a prototype of IoT wearable smart band connected to parent's mobile apps so that they can monitor the actual condition of children at anytime and anyplace.

LITERATURE SURVEY

Author	Title	Proposed Methods	Journal, Year
David Hanes, Gonzalo, Patrick Grosetete, Robert, Barton, Jerome.	“IoT Fundamental and Networking Technologies, Protocols”	During an emergency, mobile apps alert the control room of nearby police stations or caretakers of children. The literature shows that location tracking devices are available in the market but it does not provide a complete solution to the problem. The solution to this problem is to design an IoT device, which senses the child’s location and environment and during an emergency, it should send the alert to the parents automatically.	Cisco,2017
Aditi Gupta, Vibhor Harit.	Child Safety & Tracking Management System by using GPS.	This paper proposed a model for child safety through smartphones that provide the option to track the location of their children as well as in case of emergency children are able to send a quick message and its current location via Short Message Services. Merits: The advantages of smart phones they offer rich features like Google maps, GPS, SMS etc. Demerits: This system is unable to sense the human behaviour of children.	IEEE,2016
K. N. H. Srinivas, T. D. S. Sarveswara Rao, E. Kusuma Kumari.	Smart IoT Device for Child Safety and Tracking.	The system is developed using Link-It ONE board programmed in embedded C and interfaced with temperature, heartbeat, touch sensors and also GPS, GSM & digital camera modules. The novelty of the work is that the system automatically alerts the parent/caretaker by sending SMS when immediate attention is required for the child during an emergency.	IEEE,2019

METHODOLOGY

- ✓ It focuses on the key aspect that a missing child can be assisted by the people around the child and can play a remarkable role in the child's safety until reunited with the parents.
- ✓ If any deviant readings are disclosed by the sensor, then an SMS and phone calls are set off to the parent's mobile. Also, it overhauls the parental app through the cloud.
- ✓ The technique is equipped with GSM and GPS modules for sending and receiving calls, and SMS between the safety gadget and the parental phones.

- ✓ The system also consists of a Wi-Fi/cellular data module used to implement IoT and send all the monitored parameters to the cloud for android app monitoring on the parental phones.
- ✓ The panic alert system is used during panic situations alerts are sent to the parental phone, seeking help also the alert parameters are updated to the cloud. Most of the wearables available today are focused on providing the location, and activity of the child to the parents.

METHODOLOGY

HARDWARE REQUIREMENTS:

IoT device

GSM

Mobile(Notification)

GPS

SOFTWARE REQUIREMENTS:

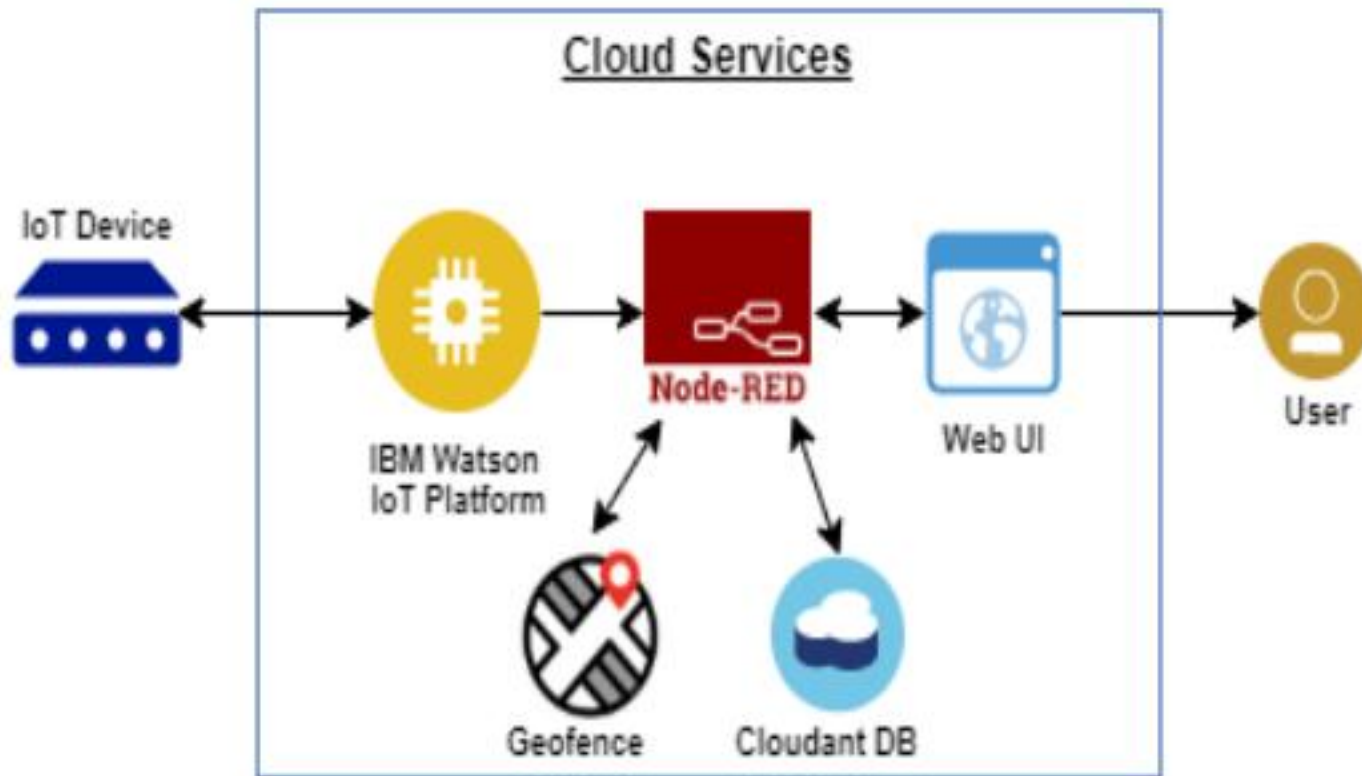
IBM Cloud

IBM IoT Platform

IBM Node red

IBM Cloudant DB

PROPOSED BLOCK DIAGRAM/ TECHNICAL ARCHITECTURE



SIMULATION AND RESULTS

IBM WATSON IOT PLATFORM

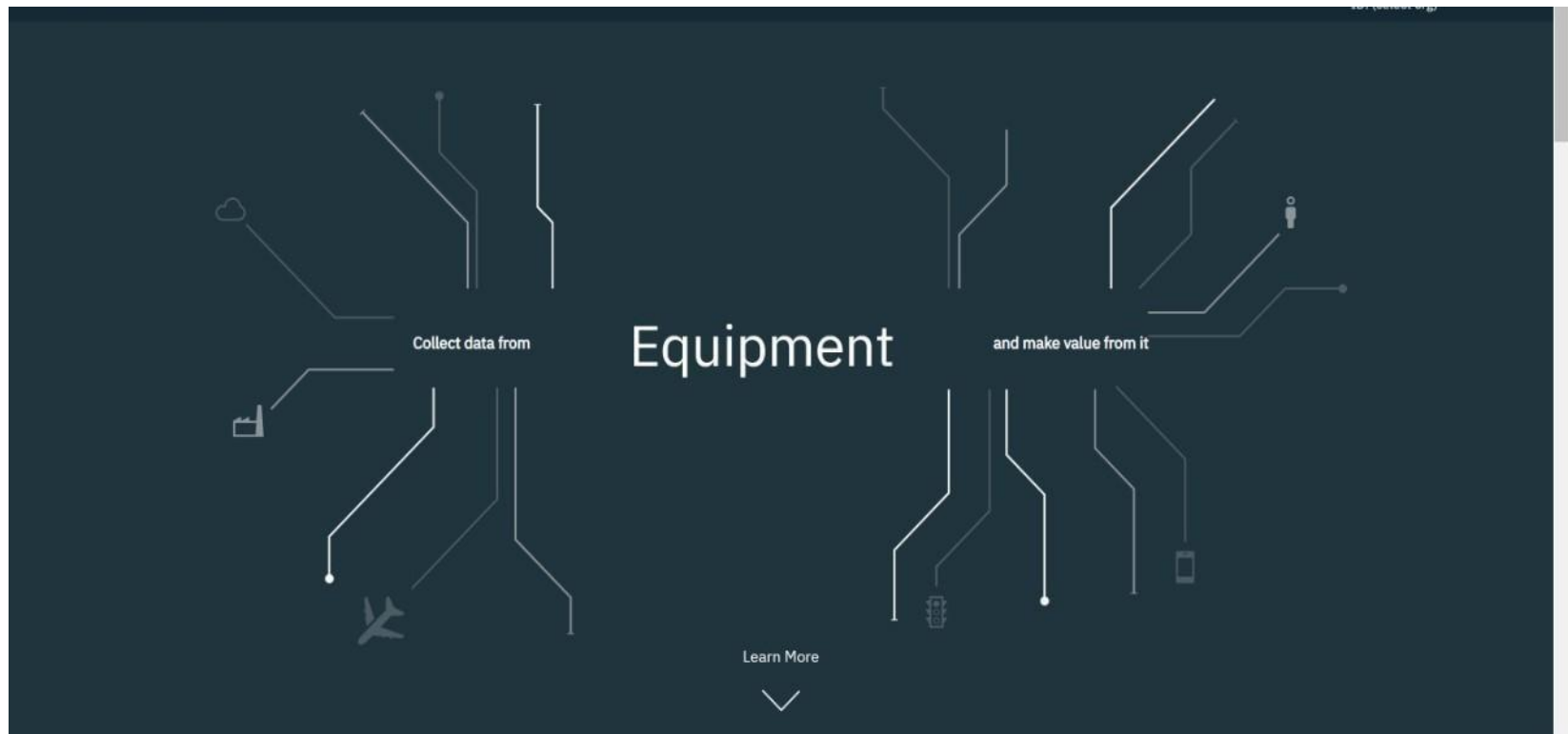


Fig.1,Creating IBM Cloud Service and creating the device

Creating Python Code:

```
import json
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity":{"orgId": "4o1qxb",
    "typeId": "TestDeviceType",
    "deviceId": "12345"},
    "auth": {"token":"pnhXvzN-
sWMKv&hxyi"} }
client =
wiotp.sdk.device.DeviceClient
(config=myConfig,
logHandlers=None)
client.connect()
```

```
while True:
    name= "Smartbridge"
    #in area location
    latitude= 17.4225176
    longitude= 78.5458842
    #out area location
    #latitude= 17.4219272
    #longitude= 78.5488783
    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
    platfrom: ", myData)
    time.sleep(5)
    client.disconnect()
```


Browse Action Device Types Interfaces Add Device +

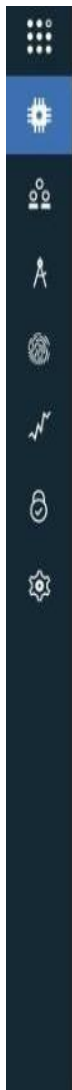
Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Connected	TestDeviceType	Device	Oct 29, 2022 12:42 PM	

Identity **Device Information** **Recent Events** **State** **Logs** X

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
status	{"name":"Smartbridge","lat":17.4225176,"lon":7...	json	a few seconds ago
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
status	{"name":"Smartbridge","lat":17.4225176,"lon":7...	json	a few seconds ago

1 Simulation running



Browse Action Device Types Interfaces

Add Device +

Identity

Device Information

Recent Events

State

Logs

X

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
status	{"name":"Smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
status	{"name":"Smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago

Items per page 50 | 1-1 of 1 item

1 of 1 page < 1 >

1 Simulation running

NODE-RED SERVICE

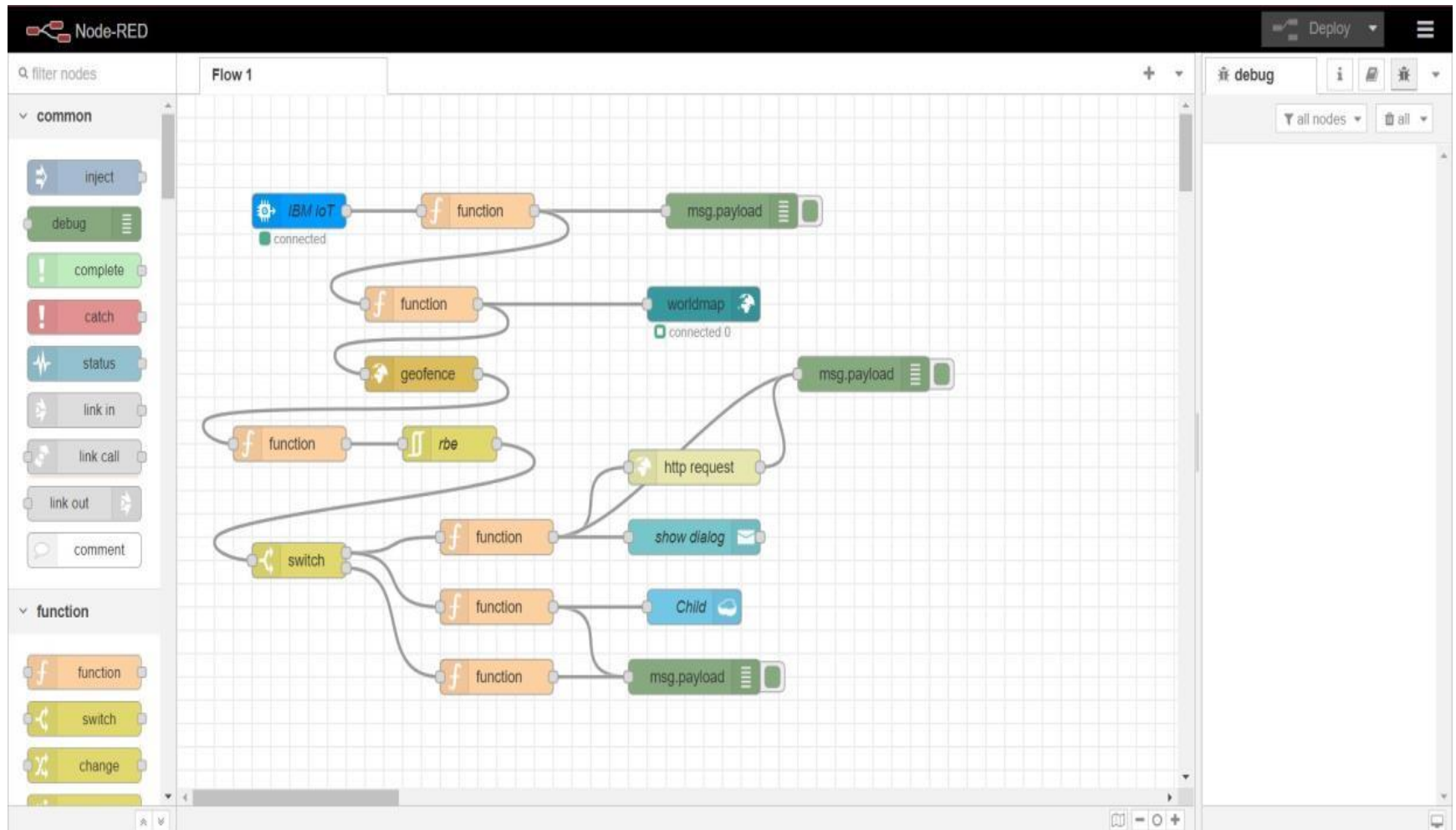


Fig.4,Create Node red service

The image shows the Node-RED web interface. On the left, the 'common' and 'function' node palettes are visible. The main workspace displays 'Flow 1' with a complex flow diagram. The flow starts with an 'IBM IoT' node (status: connected), which connects to a 'function' node. This 'function' node connects to a 'msg.payload' node. The flow then branches into two parallel paths. The top path consists of a 'function' node connected to a 'worldmap' node (status: connected 0). The bottom path consists of a 'geofence' node connected to a 'rbe' node. Both paths converge into an 'http request' node. The 'http request' node connects to a 'show dialog' node. The flow then branches again into two parallel paths. The top path consists of a 'function' node connected to a 'Child' node. The bottom path consists of a 'function' node connected to a 'msg.payload' node. Both paths converge into a 'switch' node. The 'switch' node connects back to the 'IBM IoT' node, completing the loop.

On the right, the 'Edit ibmiot in node' configuration panel is open. It contains the following properties:

- Authentication:** API Key
- API Key:** 813db9c71da271da
- Input Type:** Device Event
- Device Type:** ☐ All or TestDeviceType
- Device Id:** ☐ All or 12345
- Event:** ☐ All or +
- Format:** ☐ All or json
- QoS:** 0
- Name:** IBM IoT
- Service:** registered

At the bottom of the panel, there is a note: "Use the Input Type property to configure this node to receive Events sent by IoT Devices, Commands sent to IoT Devices, Status Messages referring to IoT Devices, or Status Messages referring to". Below the note is an 'Enabled' radio button.

Fig.5,Code in each nodes

Node-RED interface showing a flow titled "Child Tracker" and the "Edit function node" dialog.

Flow Diagram:

- Input: **inject** node.
- Node: **debug** node.
- Node: **complete** node.
- Node: **catch** node.
- Node: **status** node.
- Node: **link in** node.
- Node: **link call** node.
- Node: **link out** node.
- Node: **comment** node.
- Node: **function** node (selected for editing).
- Node: **geofence** node.
- Node: **function** node.

Edit function node dialog:

- Properties:** Name (empty).
- Setup:** On Start, On Message, On Stop.
- 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;
```
- Enabled:** ☐ Enabled

Dashboard:

- Layout: Site, Theme.
- Child Tracker: Map.

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

Flow 1 (Child Tracker):

- Input: **IBM IoT** (connected)
- Function 1: **function** (output: **msg.payload**)
- Function 2: **function** (output: **worldmap** (connected 0))
- Function 3: **geofence**
- Function 4: **function** (output: **rbe**)
- Output: **switch**

Edit debug node configuration:

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

Dashboard:

- Layout: Site Theme
- Tabs & Links: Child Tracker (Map)

The screenshot displays the Node-RED web interface. On the left, the 'common' and 'function' node palettes are visible. The main workspace shows a flow titled 'Child Tracker' with the following nodes: an 'IBM IoT' node (status: connected), followed by a 'function' node, then another 'function' node, a 'geofence' node, and finally a third 'function' node. The 'Edit function node' dialog is open, showing a JavaScript function that constructs a message payload using global variables for name, latitude, and longitude. The right sidebar shows a dashboard with a 'Child Tracker' tab and a 'Map' view.

```

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

```

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

Node-RED

Flow 1

common

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

function

- function
- switch
- change
- range

IBM IoT

connected

function

function

geofence

function

rbe

http request

show dialog

Child

msg.payload

worldmap

connected 0

msg.pa

msg.payload

Edit worldmap node

Delete Cancel Done

Properties

Group [Child Tracker] Map

Size auto

Start Latitude Longitude Zoom

17.4226372 78.5456505 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 titled "Child Tracker" and the "Edit function node" dialog.

Flow Diagram:

- Input: **inject** node.
- Node: **debug** node (labeled "connected").
- Node: **complete** node.
- Node: **catch** node.
- Node: **status** node.
- Node: **link in** node.
- Node: **link call** node.
- Node: **link out** node.
- Node: **comment** node.
- Node: **function** node (selected for editing).
- Node: **geofence** node.
- Node: **function** node.
- Node: **switch** node.

Edit function node dialog:

- Properties:** Name:
- Setup** | **On Start** | **On Message** | **On Stop**
- Code:**

```
1 msg.payload=msg.location.inarea
2 return msg;
```
- Enabled** (radio button)

Dashboard:

- dashboard** (selected)
- Layout** | **Site** | **Theme**
- Tabs & Links:**
 - Child Tracker
 - Map

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

Node-RED interface showing a flow editor and the 'Edit filter node' dialog.

Flow Editor:

- Search: filter nodes
- Child Tracker
- Flow 1
- Flow 2
- Common nodes: inject, debug, complete, catch, status, link in, link call, link out, comment
- Function nodes: function, switch

Flow Diagram:

```
graph LR; IoT[IBM IoT] --> F1[function]; F1 --> Payload[msg.payload]; Payload --> F2[function]; F2 --> Worldmap[wordmap]; Worldmap --> Geofence[geofence]; Geofence --> F3[function]; F3 --> RBE[rbe]; RBE --> Switch[switch];
```

Edit filter node dialog:

- Buttons: Delete, Cancel, Done
- Properties:
 - Mode: block unless value changes
 - Property: msg.payload
 - ☒ Apply mode separately for each
 - Property: msg.topic
 - Name: rbe
- Enabled: ☐ Enabled

Dashboard:

- Layout, Site, Theme
- Child Tracker
 - Map

<https://node-red-opszk-2022-11-04.eu-gb.bluemix.net/red/#editor-tab-properties>

Node-RED

filter nodes Child Tracker Flow 1 Flow 2

common

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

function

- function
- switch

IBM IoT

connected

function

msg.payload

function

worldmap

connected

geofence

function

rbe

switch

Edit switch node

Delete Cancel Done

Properties

Name

Property

msg. payload

is false

→ 1

is true

→ 2

+ add

checking all rules

☐ recreate message sequences

☐ Enabled

dashboard

Layout Site Theme

Tabs & Links

- Child Tracker
 - Map

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

Node-RED

filter nodes Child Tracker Flow 1

common

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

function

- function
- switch

function

msg payload

worldmap

connected 0

geofence

rbe

switch

Edit function node

Delete Cancel Done

Properties

Name

Setup On Start On Message On Stop

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

Enabled

dashboard

Layout Site Theme

Tabs & Links

- Child Tracker
- Map

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

Node-RED interface showing a flow titled "Child Tracker" and the "Edit function node" dialog.

Flow Diagram:

- Inject node connects to a function node.
- Function node outputs to `msg.payload`.
- `msg.payload` connects to another function node.
- Function node outputs to `worldmap`.
- `worldmap` connects to a geofence node.
- Geofence node outputs to a function node.
- Function node outputs to `rbe`.
- `rbe` connects to a switch node.

Edit function node dialog:

Properties:

- Name:

On Message:

```
1 var d = new Date();
2
3 var utc = d.getTime() + (d.getTimezoneOffset() * 60000);
4
5 var offset = 5.5; // This is the offset for UTC*3, in your case (UTC*1)
6
7 newDate = new Date(utc + (3600000* offset));
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;
```

Dashboard:

- Layout: Site: Theme:
- Tabs & Links:
 - Child Tracker
 - Map

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

Node-RED

filter nodes:

common

inject

debug

complete

catch

status

link in

link call

link out

comment

function

switch

change

range

Flow 1

IBM IoT

connected

function

msg.payload

function

worldmap

connected

geofence

function

rbe

http request

show dialog

Child

switch

function

function

function

msg.payload

Edit http request node

Delete

Cancel

Done

Properties

Method

GET

URL

https://www.fast2sms.com/dev/bulkV2?authorizati

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

Enabled

27

Node-RED

Child Tracker

Flow 1

Flow 2

filter nodes

common

inject

debug

complete

catch

status

link in

link call

link out

comment

function

switch

function

function

msg.payload

worldmap

connected 0

geofence

rbe

switch

function

function

function

function

Edit notification node

Delete

Cancel

Done

Properties

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

Note: checking Accept raw HTML/JavaScript can allow injection of

Enabled

dashboard

Layout

Site

Theme

Tabs & Links

Child Tracker

Map

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

Node-RED

filter nodes

Flow 1

common

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

function

- function
- switch
- change
- range

IBM IoT

connected

function

msg.payload

function

worldmap

connected 0

geofence

function

rbe

http request

msg.payload

switch

function

show dialog

function

Child

function

msg.payload

Edit cloudant out node

Delete Cancel Done

Properties

Service External cloudant or couchdb service

Server https://93dc87d4-df75-4ee1-a851-2026

Database childssafetydb

Operation insert

☐ Only store msg.payload object?

Name Child

Enabled

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

Browse

IBM Cloud Apps

+ Generate API Key

Browse API Keys

Type the app description to search for

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](#).

<input type="checkbox"/>	Key ↕	Description ↕	Role ↕	Expires ↕		
2 results						
<input type="checkbox"/>	a-4o1qxb-d5wguvebrf	-	Standard Application	-		
<input type="checkbox"/>	a-4o1qxb-ecmygwzdce	API Key for the device simulator	Standard Application	-		

1 Simulation running

Apps using your microphone:
Google Chrome

Browse IBM Cloud Apps

+

Generate API Key

Browse API Keys

Type the app description to search for

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

2 results

a-4o1qxb-d5wguvebrf

-

Standard Application

-

API Key Information

Access Control/Permissions

X

Key

a-4o1qxb-d5wguvebrf

Last Edited By

310819106007@smartinternz.com

Description

-

Expires

Never

Date Added

Nov 10, 2022 2:20 PM

Last Update

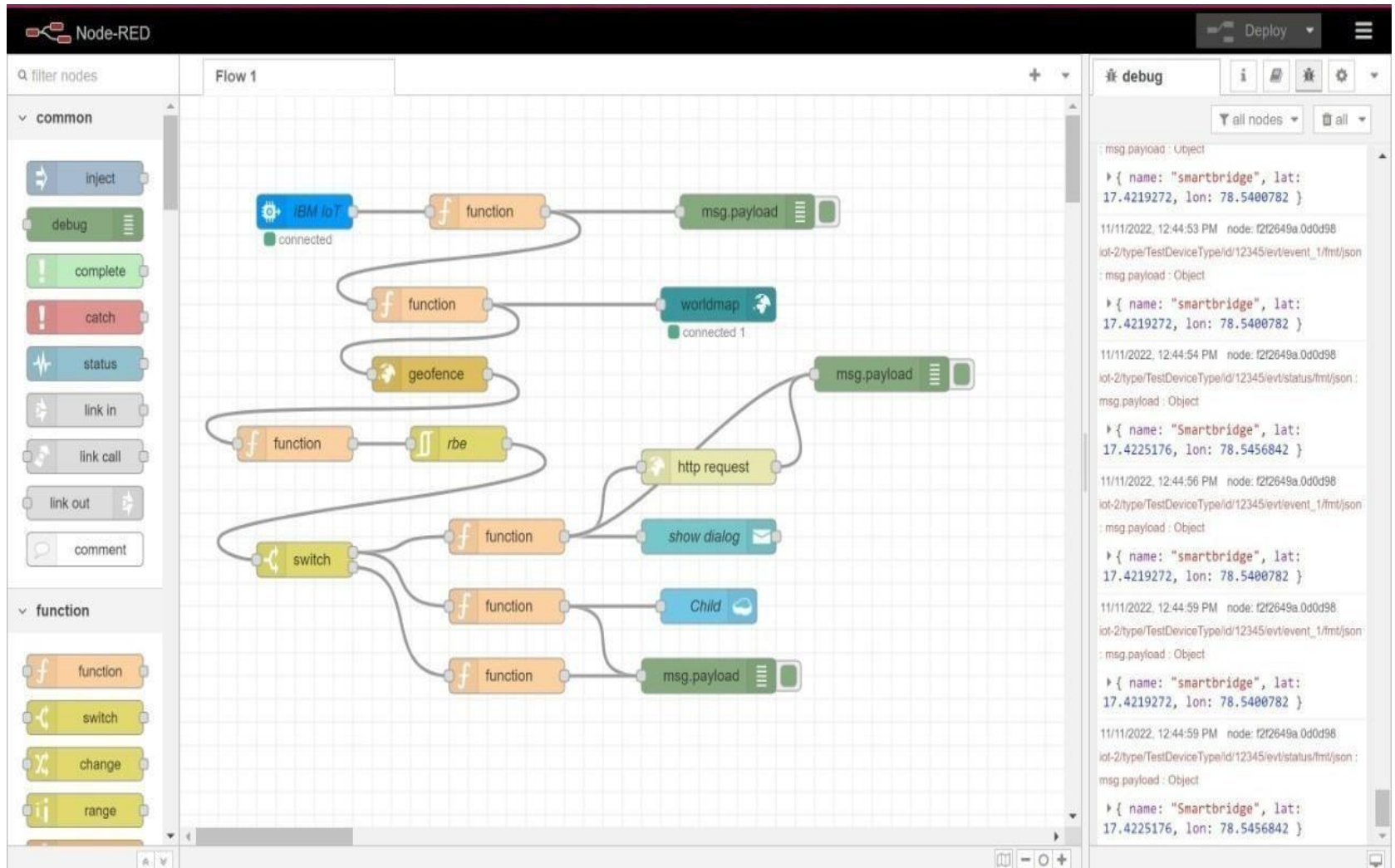
Nov 10, 2022 2:20 PM

1 Simulation running

Transferring values from Python Code:

[illegible]

Node-Red:



Creating Cloudant DB and integrating Node-Red with the Web UI

↔

📈

🗄️

🔗

📄

👤

🏠

📖

☁️

Log Out

Databases

Database name ▼

Create Database

{ } JSON

📖

🔔

Your Databases

Name	Size	# of Docs	Partitioned	Actions
childsafety	14 bytes	1	No	<div>🔗 🔒 🗑️</div>
childsafetydb	15 bytes	1	No	<div>🔗 🔒 🗑️</div>

Showing 1–2 of 2 databases.

Databases per page 20 ▼

« 1 »

child safety db

All Documents +
Query
Permissions
Changes
Design Documents +

Document ID

Options

{ } JSON

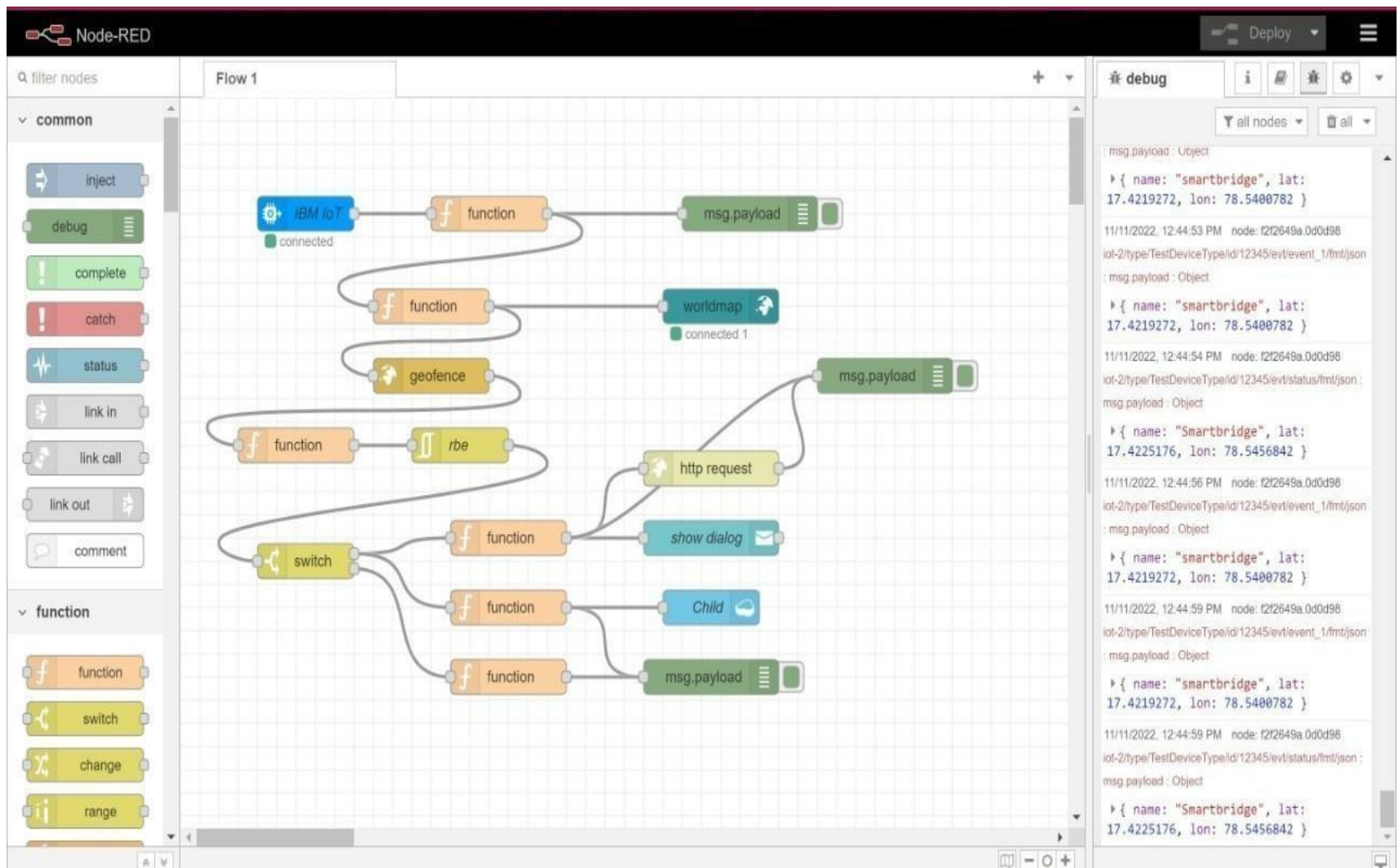
Table Metadata { } JSON

Create Document

	id	key	value
<input type="checkbox"/>	e375b703e3d589d1a5e0108d5c7fd2...	e375b703e3d589d1a5e0108d5c7fd2...	{ "rev": "2-3f59b999d6fe5a17091eba..." }

Showing document 1 - 1. Documents per page: 20 < >

Node-Red Service with Cloudant Database:



Node-RED

filter nodes

Flow 1

common

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

function

- function
- switch
- change
- range

Flow 1 diagram:

```
graph LR; IBM[IBM IoT7] --> F1[function]; F1 --> MP1[msg.payload]; F1 --> F2[function]; F2 --> WM[worldmap]; WM --> GE[geofence]; GE --> F3[function]; F3 --> RBE[rbe]; RBE --> F4[function]; F4 --> HR[http request]; HR --> MP2[msg.payload]; HR --> SD[show dialog]; HR --> CH[Child]; HR --> MP3[msg.payload]; HR --> SW[switch]; SW --> F5[function]; SW --> F6[function]; SW --> F7[function]; F5 --> MP4[msg.payload]; F6 --> CH; F7 --> MP5[msg.payload];
```

Edit cloudant out node

Delete Cancel Done

Properties

Service: External cloudant or couchdb service

Server: <https://93dc87d4-df75-4ee1-a851-2026>

Database: childsafetfdb

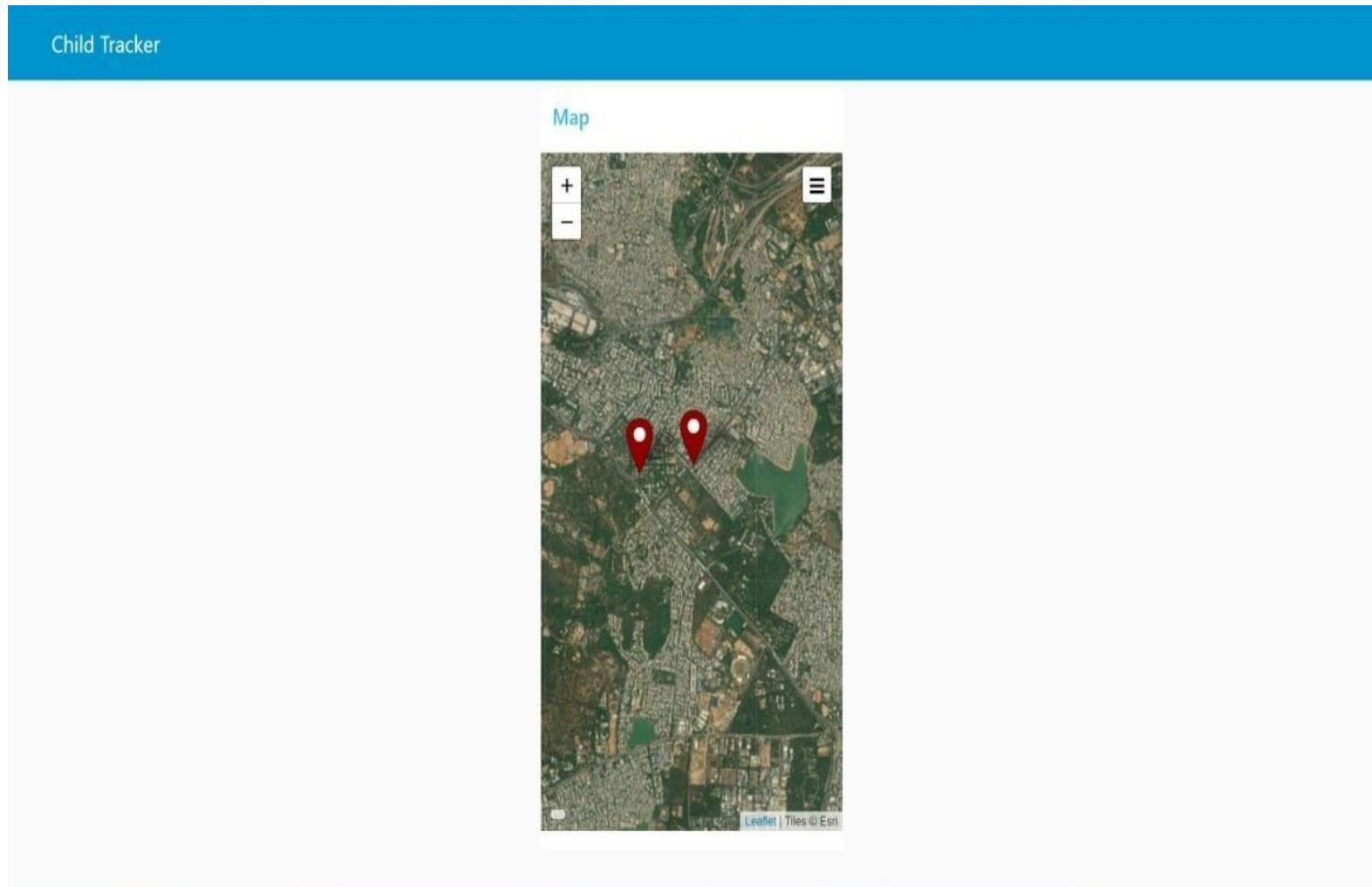
Operation: Insert

☐ Only store msg.payload object?

Name: Child

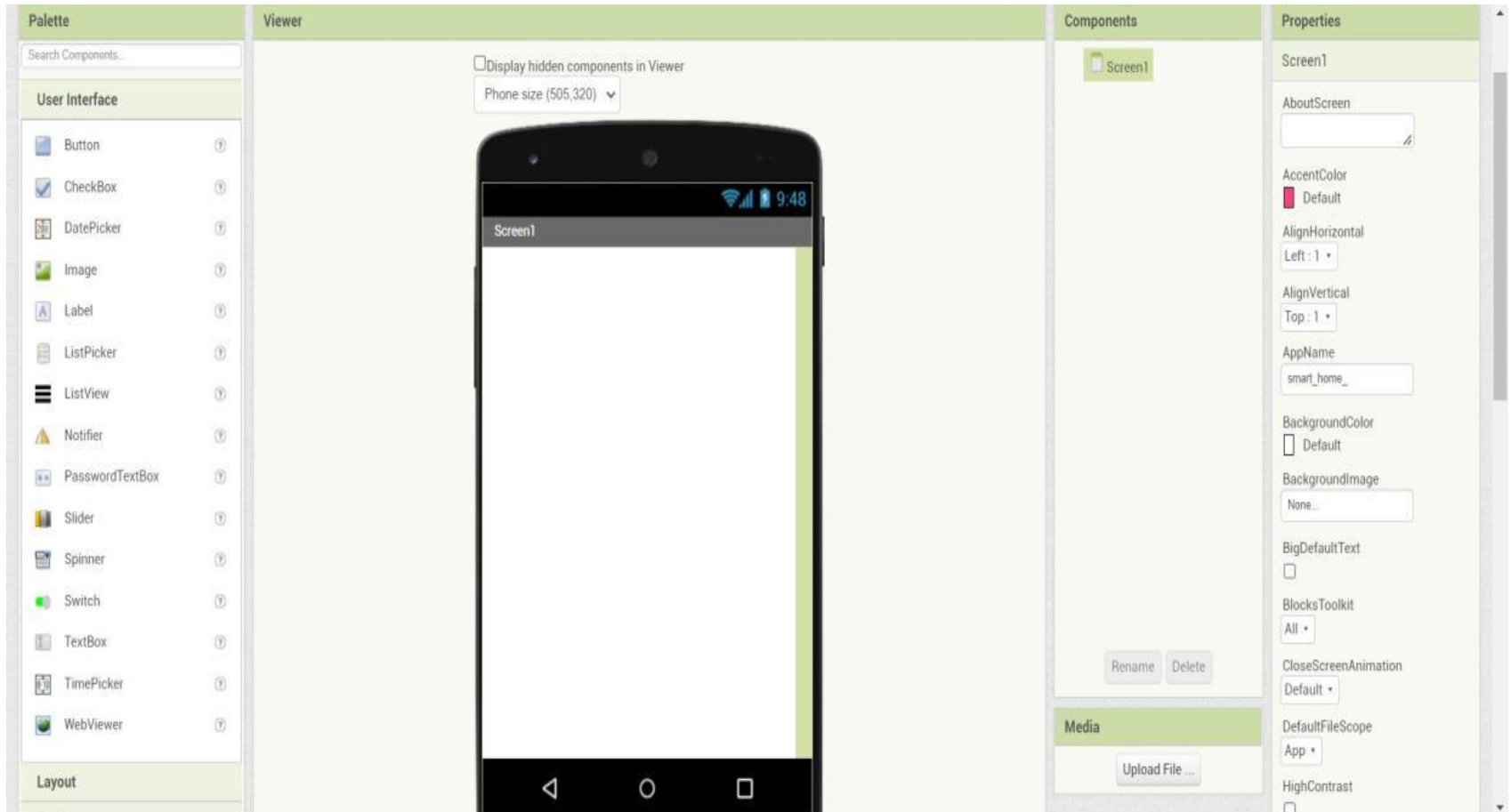
Enabled

Node-Red Dashboard(Web ui):



Creating the MIT app and Showing the child's location

Create App in MIT App inventor:



Block Configuration:

The screenshot displays the 'ChildTracker' application interface. At the top, a green header bar contains the app name 'ChildTracker' and navigation buttons: 'Screen1', 'Add Screen ...', 'Remove Screen', and 'Publish to Gallery'. On the right side of the header are 'Designer' and 'Blocks' tabs.

The left sidebar is divided into two sections: 'Blocks' and 'Media'. The 'Blocks' section lists components for 'Screen1', including 'VerticalArrangement1' (containing 'TextBox1', 'Label1', 'Button1', 'Label2', 'Label3', 'Label4', and 'Button2') and 'Map1' (containing 'Circle1', 'Marker1', 'Marker2', 'LocationSensor1', 'FirebaseDB1', and 'Navigation1'). Below this list are 'Rename' and 'Delete' buttons. The 'Media' section at the bottom has an 'Upload File' button.

The main 'Viewer' area shows a visual programming workspace. It begins with an 'Initialize global flag to 0' block. This is followed by a 'when FirebaseDB1 .DataChanged' event listener. Inside the listener's 'do' block, there is an 'if' statement. The 'if' statement has three conditions: 'get value' equals 'lat', 'get value' equals 'long', and 'get value' equals 'address'. Each condition has a corresponding 'then' block: 'set Label3 . Text' to 'get value' for 'lat', 'set Label3 . Text' to 'get value' for 'long', and 'set Label2 . Text' to 'get value' for 'address'. A yellow tooltip is visible over the 'long' condition block, stating: 'If the first value is true, then do the first block of statements. Otherwise, if the second value is true, do the second block of statements.'

At the bottom left of the workspace, there are two warning icons (a yellow triangle and a red X) with a 'Show Warnings' button below them. On the right side of the workspace, there is a backpack icon and a vertical toolbar with a target icon, plus/minus buttons, and a trash can icon.

At the bottom of the interface, there is a link for 'Privacy Policy and Terms of Use'.

ChildTracker

Screen1Add Screen ...Remove ScreenPublish to Gallery

DesignerBlocks

Blocks

Screen1

VerticalArrangement1

TextBox1

Label1

Button1

Label2

Label3

Label4

Button2

Map1

Circle1

Marker1

Marker2

LocationSensor1

FirebaseDB1

Navigation1

Any component

Rename

Delete

Media

Upload File ...

Viewer

when Button2.Click

do

set Label3.Text to "17.4219272"

set Label4.Text to "78.5488783"

call Map1.PanTo

latitudeLocationSensor1.Latitude

longitudeLocationSensor1.Longitude

zoom15

when Navigation1.GotDirections

directionspointsdistanceduration

do

set Navigation1.StartLocation to Marker1

set Navigation1.EndLocation to Marker2

call Navigation1.RequestDirections

00

Show Warnings

Backpack

Eye

+

-

Trash

Privacy Policy and Terms of Use

ChildTracker

Screen1Add Screen...Remove ScreenPublish to Gallery

DesignerBlocks

Blocks

Screen1

VerticalArrangement1

TextBox1

Label1

Button1

Label2

Label3

Label4

Button2

Map1

Circle1

Marker1

Marker2

LocationSensor1

FirebaseDB1

Navigation1

Any component

Rename

Delete

Media

Upload File...

Viewer

when Button1 .Click

do

if

get global flag = 0

then

set global flag to 1

set Button1 .BackgroundColor to

set Button1 .Text to Turn ON Location

else

set global flag to 0

set Button1 .BackgroundColor to

set Button1 .Text to Turn OFF Location

0

0

Show Warnings

+

-

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ChildTracker Screen1 Add Screen ... Remove Screen Publish to Gallery Designer Blocks

Blocks

- Screen1
 - VerticalArrangement1
 - TextBox1
 - Label1
 - Button1
 - Label2
 - Label3
 - Label4
 - Button2
 - Map1
 - Circle1
 - Marker1
 - Marker2
 - LocationSensor1
 - FirebaseDB1
 - Navigation1
- Any component

Rename Delete

Media

Upload File ...

Viewer

when LocationSensor1 . LocationChanged

latitude longitude altitude speed

do set Label1 . Text to "Updated"

if get global flag = 0

then

call FirebaseDB1 . StoreValue

tag "lat"

valueToStore get latitude

call FirebaseDB1 . StoreValue

tag "long"

valueToStore get longitude

call FirebaseDB1 . StoreValue

tag "address"

valueToStore LocationSensor1 . CurrentAddress

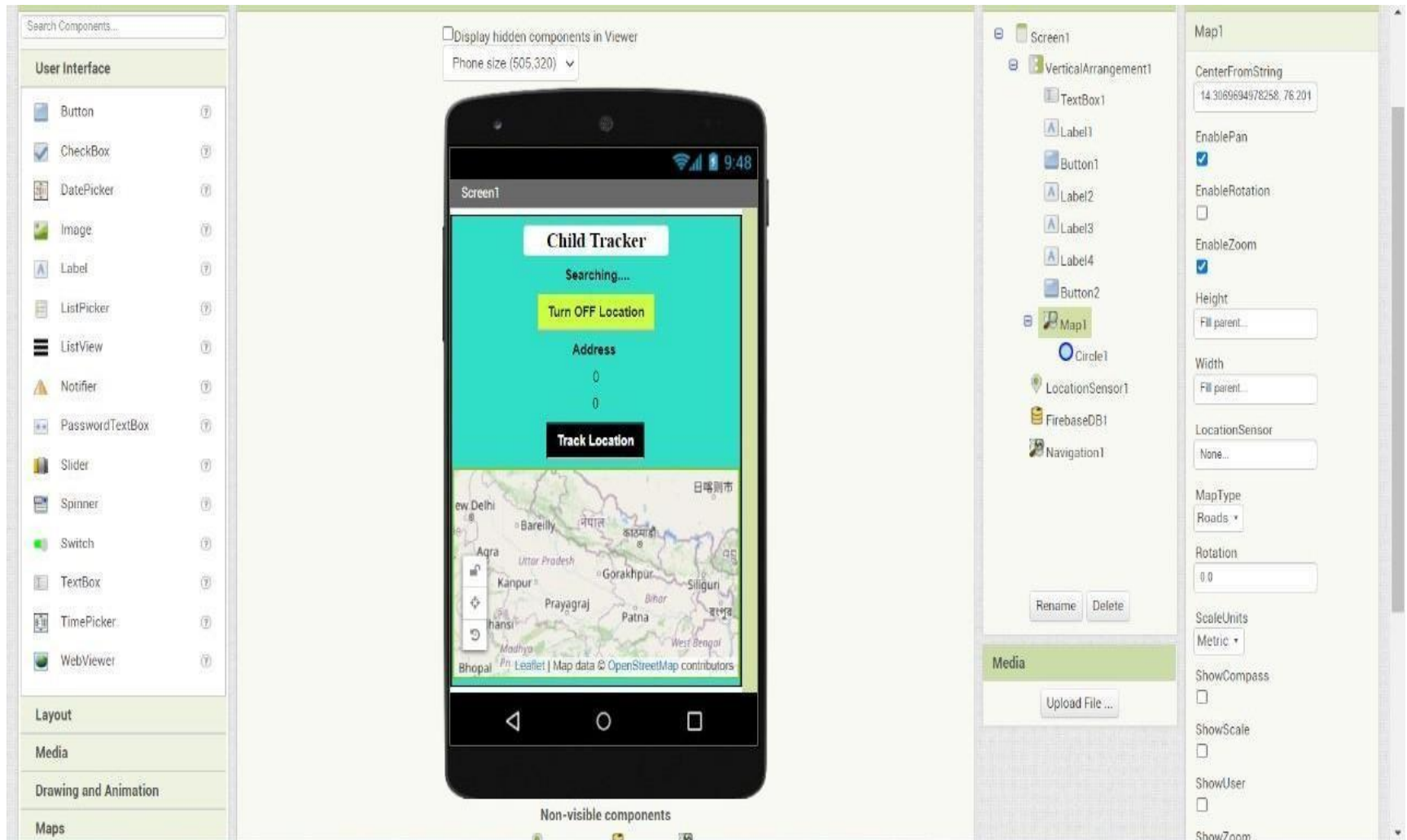
set latitude to "17.4219272"

set longitude to "78.5488783"

Show Warnings

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Output(App inventor):



Location Status:



CONCLUSION

This paper to ensure the safety of children and increase their confidence. Many experimenters are operating in this area and have formulated different technologies to aid children. The key represented in this paper takes the advantage of smartphones which proposes affluent elements like Google maps, SMS, etc. The child safety and protection device is proficient in acting as a smart IoT device. It equips parents with real-time location, the surrounding temperature, and along with an alarm buzzer for their child's circumstances and the capability to locate their child. This paper depicts the fundamental design concept and functionality along with the anticipated consequences.

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