

# **Safety Gadget for Child Safety Monitoring and Notification**

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## **Project Development –Delivery of Sprint 2**

**Creating Node –Red service and connect with IBM cloud and Web UI**

<b>TITLE</b>	IOT based child safety gadget for child safety monitoring and notification
<b>DOMAIN NAME</b>	INTERNET OF THINGS
<b>TEAM ID</b>	PNT2022TMID30948

## Creating Node-Red service:

The screenshot shows the Node-RED web interface in a browser. The URL is `node-red-knnqv-2022-11-07.au-syd.mybluemix.net/red/#flow/78f02f688dd8e1d2`. The interface includes a left sidebar with a search bar and a 'function' palette. The main workspace displays 'Flow 1' with the following components and connections:

- IBM IoT** node (connected) connects to a **function** node.
- The **function** node connects to **Child name** and **gauge** nodes.
- A **temp** node connects to a **gauge** node and a **Temperature** node.
- A **temp\_status** node connects to a **temp\_status** node.
- A **latitude** node connects to **Latitude** and **Latitude** nodes.
- A **your\_child\_zone** node connects to a **Child Zone** node.
- A **longitude** node connects to **Longitude** and **Longitude** nodes.
- A **worldmap** node (connected 0) is also present.

The right sidebar shows the **debug** console with the following log entries:

```
11/10/2022, 10:00:45 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { temp: 50, lat:  
    12.131629972663186, lon:  
    78.19606388397351, name: "Child" }  
  
11/10/2022, 10:00:45 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { your_child_zone: "Outside the  
    geofence" }  
  
11/10/2022, 10:00:45 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { temp_status: "High temperature" }  
  
11/10/2022, 10:00:46 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { temp: 50, lat:  
    12.129898691365163, lon:  
    78.1971804860123, name: "Child" }  
  
11/10/2022, 10:00:46 PM node: 65909d20f5fd4648
```

The screenshot shows the Node-RED web interface in a browser. The URL is `node-red-knnqv-2022-11-07.au-syd.mybluemix.net/red/#flow/78f02f688dd8e1d2`. The interface includes a left sidebar with a search bar and a 'function' palette. The main workspace displays 'Flow 1' with the following components and connections:

- latitude** node connects to **Latitude** and **Latitude** nodes.
- your\_child\_zone** node connects to a **Child Zone** node.
- longitude** node connects to **Longitude** and **Longitude** nodes.
- worldmap** node (connected 0) is also present.
- A **[get] /sensor** node connects to a **function** node, which then connects to an **http** node.

The right sidebar shows the **debug** console with the following log entries:

```
11/10/2022, 10:01:08 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { temp: 44, lat:  
    12.132579338848833, lon:  
    78.19807517188046, name: "Child" }  
  
11/10/2022, 10:01:09 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { your_child_zone: "Outside the  
    geofence" }  
  
11/10/2022, 10:01:09 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { temp_status: "High temperature" }  
  
11/10/2022, 10:01:09 PM node: 65909d20f5fd4648  
iot-2/type/ABCD/id/13/ev/IoTSensorgpsdata/fmt/json :  
msg.payload : Object  
  > { temp: 32, lat:  
    12.133200423029475, lon:  
    78.19856789114048, name: "Child" }  
  
11/10/2022, 10:01:10 PM node: 65909d20f5fd4648
```

# Connecting with IBM Cloud:

## Using IBM IOT node through API key

The screenshot shows the IBM Cloud Apps console with a success message: "The API key has been added." Below this, there are two sections: "Generated Details" and "API Key Information".

Generated Details		API Key Information	
API Key	a-zwx6lb-z7sryerler	Description	-
Authentication Token	dO&H(qcUv)icaFOYcb	Role	Standard Application
		Expires	Never

Make a note of the generated authentication token. Lost authentication tokens cannot be recovered. If you lose the token, you must reregister the API to generate a new token.

1 Simulation running

The screenshot shows the IBM Cloud Apps console with a table of API keys. The first key is selected, and its details are shown in a modal window.

Key	Description	Role	Expires
a-zwx6lb-97epyzrfc	-	Standard Application	-

API Key Information

Key	a-zwx6lb-97epyzrfc	Last Edited By	613519106013@smartinternz.com
Description	-	Expires	Never
Date Added	Nov 7, 2022 5:54 PM		
Last Update	Nov 7, 2022 5:54 PM		

1 Simulation running

# Transferring values from Python Code:

Child Safety device.py - C:/Users/kutta/Desktop/IBM-Dr/Child Safety device.py (3.7.4)

File Edit Format Run Options Window Help

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

#Provide your IBM Watson Device Credentials
organization = "illzal"
deviceType = "latlonem"
deviceId = "613510"
authMethod = "token"
authToken = "1092837465"
#api key {a-illzal-mbdxqo6z0s}
#api token {zSYzISuAWF_x7GkT}

try:
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod}
    deviceCli = ibmiotf.device.Client(deviceOptions)
    #.....
except Exception as e:
    print("Caught exception connecting device: %s" % str(e))
    sys.exit()

# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type
print("power on ")
print("checking connection to waston iot...")
time.sleep(2)
deviceCli.connect()
print("dear user ... welcome to IBM-IOT ")
print("i can provide your children live location and temperature ")
print()
name=str(input("enter your child name:"))
while True:

    temperature=random.randint(20,50)#random temperature for your child
    latitude=random.uniform(10.781377,10.78643)#random latitude for your child
    longitude=random.uniform(79.129113,79.134014)#random longitude for your child

    data = { 'temp' : temperature, 'lat': latitude, 'lon':longitude, 'name':name }
    #print data
    def myOnPublishCallback():
```

Python 3.7.4 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/kutta/Desktop/IBM-Dr/Child Safety device.py =====
power on
checking connection to waston iot...
2022-11-10 22:14:21,799 ibmiotf.device.Client INFO Connected success
lly: d:illzal:latlonem:613510
dear user ... welcome to IBM-IOT
i can provide your children live location and temperature

enter your child name:child
Published Temperature = 39 C latitude = 10.782749628132827 & longitude = 79.867253162 & to IBM Watson
Published Temperature = 39 C latitude = 10.782669248109656 & longitude = 79.1255540076 & to IBM Watson
Published Temperature = 43 C latitude = 10.781765104656792 & longitude = 79.077864707 & to IBM Watson
Published Temperature = 30 C latitude = 10.786083936690018 & longitude = 79.2366715787 & to IBM Watson
Published Temperature = 31 C latitude = 10.784810558975826 & longitude = 79.0117359415 & to IBM Watson
Published Temperature = 45 C latitude = 10.785949922923024 & longitude = 79.5563867668 & to IBM Watson
Published Temperature = 24 C latitude = 10.784168891438233 & longitude = 79.9528906442 & to IBM Watson
Published Temperature = 23 C latitude = 10.786248060883958 & longitude = 79.4368596464 & to IBM Watson
Published Temperature = 27 C latitude = 10.783808327214418 & longitude = 79.951933729 & to IBM Watson
Published Temperature = 43 C latitude = 10.786340416981865 & longitude = 79.7748803969 & to IBM Watson
Published Temperature = 49 C latitude = 10.786208956579015 & longitude = 79.2192551409 & to IBM Watson
Published Temperature = 45 C latitude = 10.783690544907325 & longitude = 79.504415061 & to IBM Watson
```

Ln: 1

Ln: 4 Col: 0

Type here to search

10:14 PM  
11/10/2022



# Node-Red:

The screenshot shows the Node-RED web interface in a browser. The main workspace displays a flow named 'Flow 1'. The flow starts with an 'IBM IoT' node (connected) which branches into several parallel paths. Each path consists of a function node followed by a specific data node: 'Child name', 'temp', 'temp\_status', 'latitude', 'your\_child\_zone', and 'longitude'. These data nodes are then connected to corresponding 'gauge' nodes. A 'worldmap' node is also present at the bottom. The right sidebar shows a 'debug' console with a log of messages, including temperature, location, and geofence data. The browser's address bar shows the URL: `node-red-knnqv-2022-11-07.au-syd.mybluemix.net/red/#flow/78f02f688dd8e1d2`.

# Node-Red Dashboard:

The screenshot shows the Node-RED Dashboard web interface. The top navigation bar includes a 'Home' link. The main content area displays a 'home' dashboard with the following data:

Child name	Child
Temperature	106
temp_status	Low temperature

Below the data is a 'gauge' visualization showing a red semi-circle with the value '106' in the center, ranging from 0 to 100 units.

The browser's address bar shows the URL: `node-red-knnqv-2022-11-07.au-syd.mybluemix.net/ui/#/0?socketid=lmRYUqZvj0dB1mzAAGr`.

