

SPRINT – 4

Assignment Date	15 NOVEMBER 2022
Team ID	PNT2022TMID42272
Project Tittle	Smart Waste Management system for metropolitan cities

Transmitting the database from the Cloudant to the Node red web application UI.

Code:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
import sys
#Provide your IBM Watson Device Credentials
organization = "a7mbs7"
deviceType = "Smartgarbagebins"
deviceId = "Bin1"
authMethod = "token"
authToken = "Sakthi@2001"
# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status == "lighton":
        print("led in on")
```

```

else :
    print ("led is off")

try:
    deviceOptions = {"org": organization, "type": deviceType, "id":
deviceId, "auth-method":authMethod, "auth-token": authToken}
    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 oftype "greeting" 10 times
deviceCli.connect()

while True:
    #Get Sensor Data from DHT11
    time.sleep(5)
    ult_son=random.randint(0,80)
    weight=random.randint(0,100)
    lat = round(random.uniform(12.03, 13.50), 6)
    lon = round(random.uniform(80.80, 85.90), 6)
    data = {'Ultrasonic' : ult_son, 'Weight' : weight , 'lat' : lat,'lon':lon}
    #print data
    def myOnPublishCallback():
        print ("Published Ultrasonic :%s Cm" %ult_son, "Weight:%s kg "
%weight, "lat: %s" %lat,"lon: %s" %lon)
        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
        if not success:5
            print("Not connected to IoTTF")

```

```
time.sleep(1)
```

```
deviceCli.commandCallback = myCommandCallback
```

```
# Disconnect the device and application from the cloud
```

```
deviceCli.disconnect()
```

Python Output:

```
File Edit Shell Debug Options Window Help
Published Ultrasonic :19 Cm Weight:194 kg lat: 13.042904 lon: 81.75998
Published Ultrasonic :128 Cm Weight:96 kg lat: 13.152704 lon: 81.585303
Published Ultrasonic :48 Cm Weight:117 kg lat: 12.3003 lon: 82.557953
Published Ultrasonic :150 Cm Weight:94 kg lat: 12.723803 lon: 85.883139
Published Ultrasonic :128 Cm Weight:113 kg lat: 12.262693 lon: 81.709158
Published Ultrasonic :134 Cm Weight:131 kg lat: 12.912404 lon: 84.481679
Published Ultrasonic :48 Cm Weight:21 kg lat: 13.083945 lon: 81.008956
Published Ultrasonic :10 Cm Weight:69 kg lat: 12.910533 lon: 82.560219
Published Ultrasonic :38 Cm Weight:57 kg lat: 13.281238 lon: 81.501323
Published Ultrasonic :79 Cm Weight:94 kg lat: 12.713813 lon: 83.590587
Published Ultrasonic :84 Cm Weight:28 kg lat: 13.016945 lon: 85.233295
Published Ultrasonic :5 Cm Weight:15 kg lat: 12.902573 lon: 84.252492
Published Ultrasonic :22 Cm Weight:27 kg lat: 12.88435 lon: 80.935229
Published Ultrasonic :13 Cm Weight:93 kg lat: 12.464758 lon: 82.385753
Published Ultrasonic :22 Cm Weight:61 kg lat: 12.465391 lon: 81.9176
Published Ultrasonic :18 Cm Weight:8 kg lat: 13.31219 lon: 84.673749
Published Ultrasonic :14 Cm Weight:41 kg lat: 12.897688 lon: 83.85843
Published Ultrasonic :73 Cm Weight:21 kg lat: 12.765916 lon: 81.121809
Published Ultrasonic :76 Cm Weight:89 kg lat: 12.495634 lon: 85.797305
Published Ultrasonic :67 Cm Weight:30 kg lat: 12.466667 lon: 85.585165
Published Ultrasonic :54 Cm Weight:33 kg lat: 12.295882 lon: 82.987133
Published Ultrasonic :21 Cm Weight:61 kg lat: 12.349312 lon: 81.816453
Published Ultrasonic :15 Cm Weight:65 kg lat: 13.42828 lon: 85.101653
Published Ultrasonic :17 Cm Weight:76 kg lat: 13.350439 lon: 84.924882
Published Ultrasonic :45 Cm Weight:99 kg lat: 12.122203 lon: 82.085998
Published Ultrasonic :80 Cm Weight:47 kg lat: 12.320411 lon: 85.912242
Published Ultrasonic :59 Cm Weight:85 kg lat: 13.025076 lon: 82.442493
Published Ultrasonic :31 Cm Weight:58 kg lat: 12.573036 lon: 82.033028
Published Ultrasonic :61 Cm Weight:92 kg lat: 12.175432 lon: 85.686471
Published Ultrasonic :83 Cm Weight:20 kg lat: 13.421729 lon: 83.691535
Published Ultrasonic :74 Cm Weight:45 kg lat: 13.469798 lon: 84.773026
Published Ultrasonic :74 Cm Weight:43 kg lat: 12.357722 lon: 83.80687
Published Ultrasonic :69 Cm Weight:15 kg lat: 12.100642 lon: 84.964771
Published Ultrasonic :65 Cm Weight:29 kg lat: 12.585533 lon: 85.863565
Published Ultrasonic :19 Cm Weight:100 kg lat: 13.469128 lon: 83.152936
Published Ultrasonic :68 Cm Weight:70 kg lat: 13.16198 lon: 82.081189
Published Ultrasonic :60 Cm Weight:18 kg lat: 12.471403 lon: 80.985271
Published Ultrasonic :18 Cm Weight:65 kg lat: 12.623412 lon: 81.955765
Published Ultrasonic :78 Cm Weight:60 kg lat: 12.266646 lon: 83.276115
Published Ultrasonic :44 Cm Weight:36 kg lat: 12.599836 lon: 85.200905
Published Ultrasonic :52 Cm Weight:47 kg lat: 12.715786 lon: 82.161738
Published Ultrasonic :68 Cm Weight:75 kg lat: 12.45661 lon: 81.426264
Published Ultrasonic :69 Cm Weight:29 kg lat: 12.644952 lon: 84.372957
Published Ultrasonic :68 Cm Weight:31 kg lat: 13.134231 lon: 82.323981
```

Cloudant Metadata:

Service Details - IBM Cloud | Cloudant Dashboard - database | Node-RED - node-red-shiny-26 | IBM Watson IoT Platform

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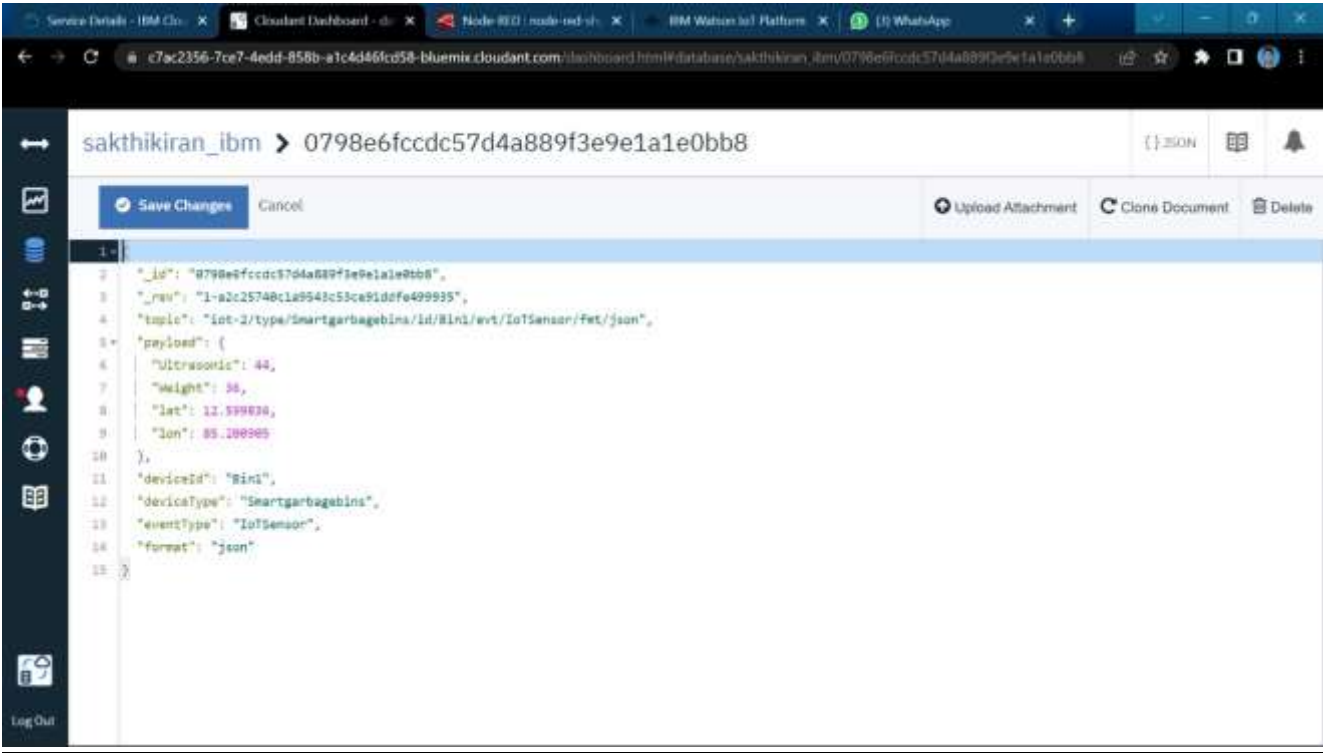
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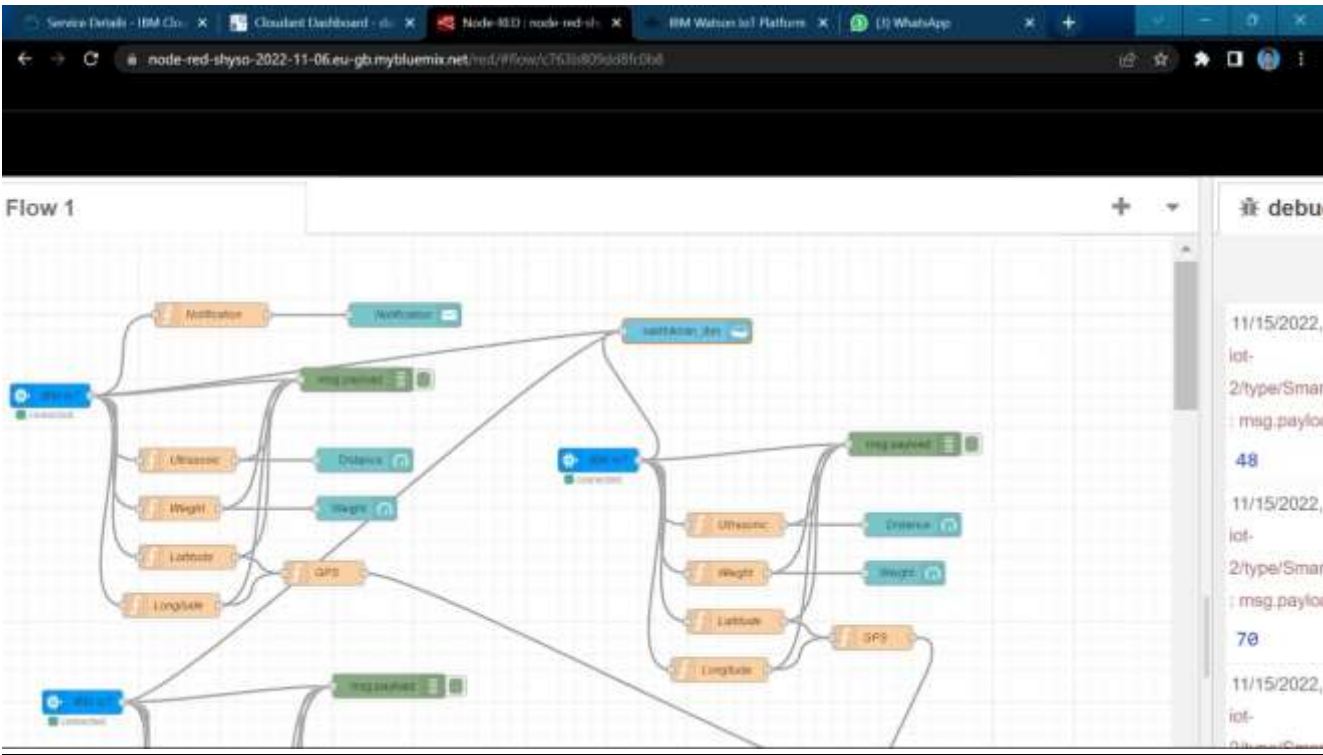
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Showing document 1 - 6. Documents per page: 20

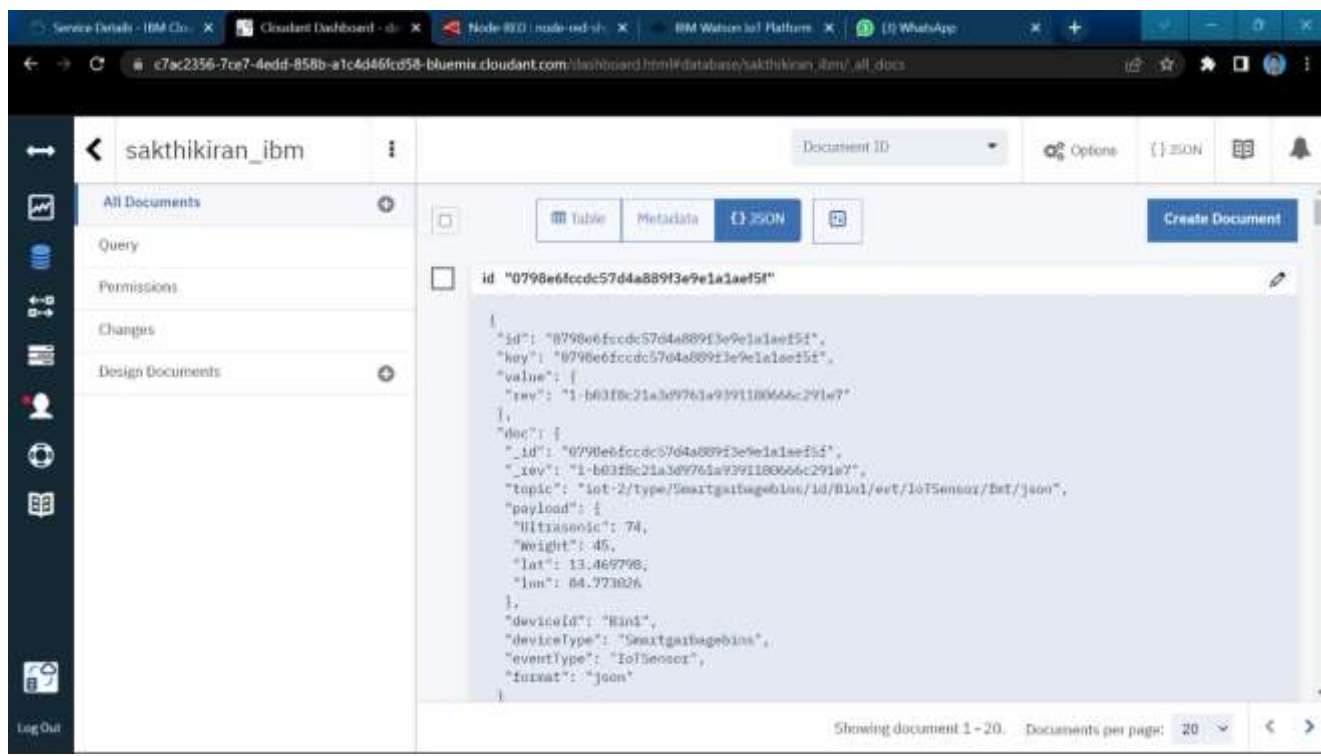
Cloudant Metadata info:



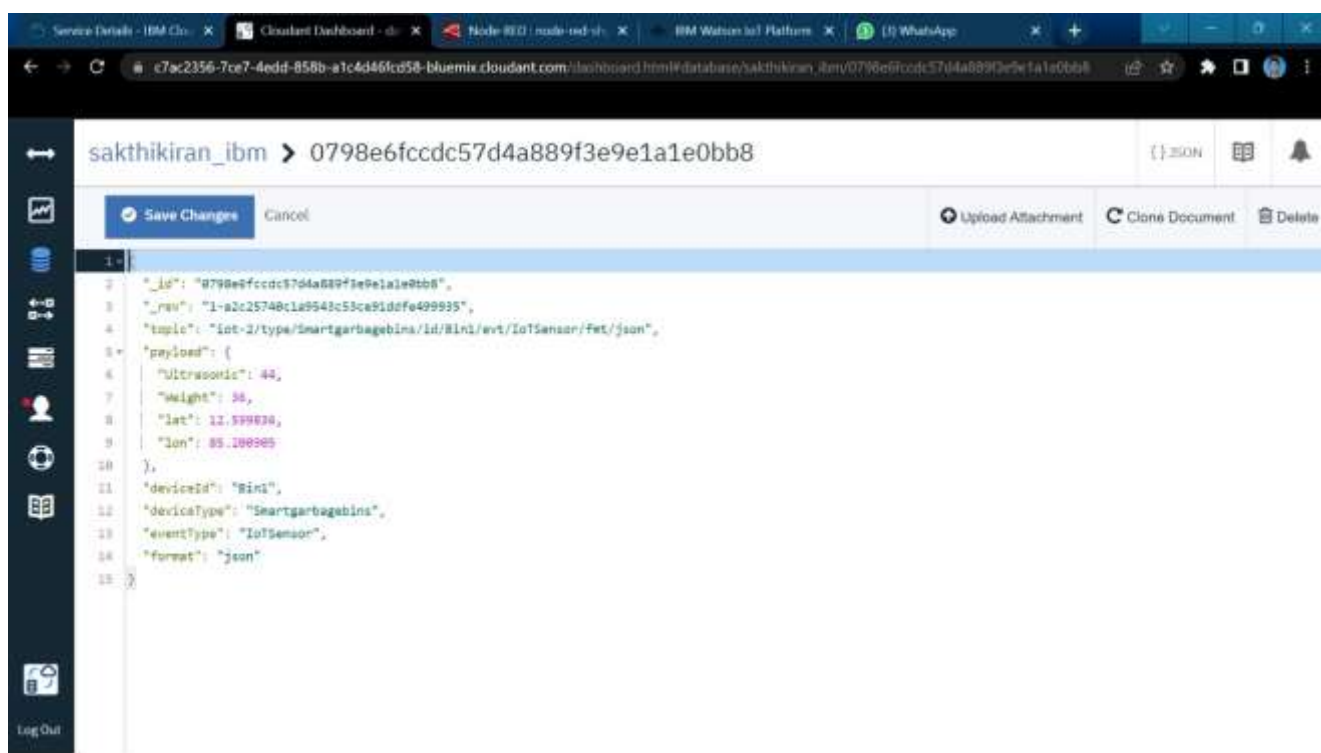
Cloudant diagram:



JSON code:



Cloudant document:



Result:

The cloudant database was successfully created with the node red web application UI. The Data was successfully stored in the cloudant.