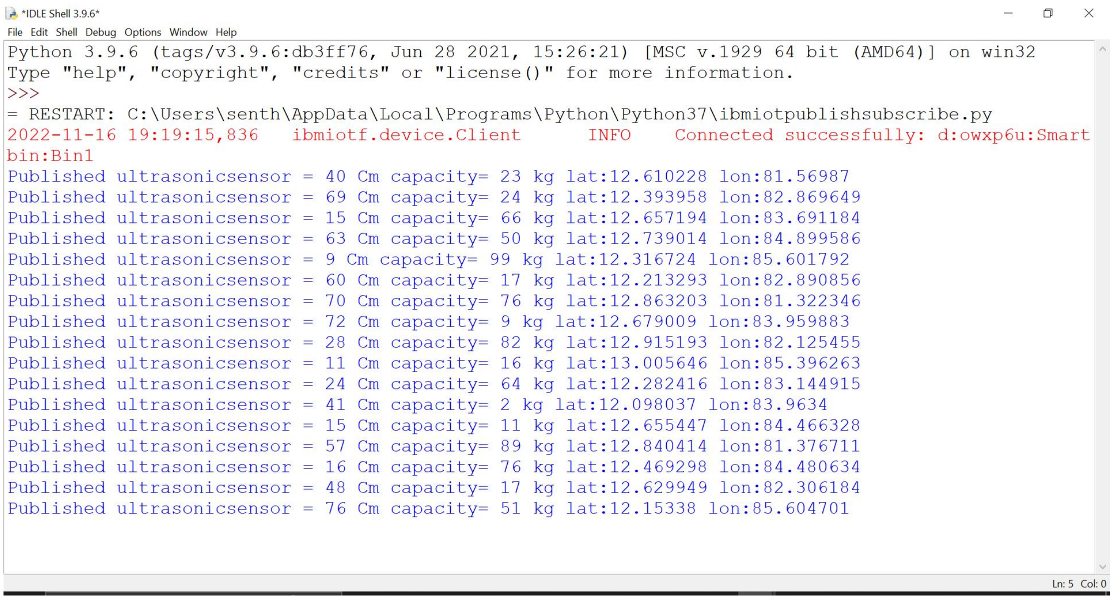
SPRINT - 4
TEAM ID:PNT2022TMID08158

TRANSMITTING THE DATABASE FROM THE CLOUDANT TO THE NODE RED WEB APP UI

CODE:

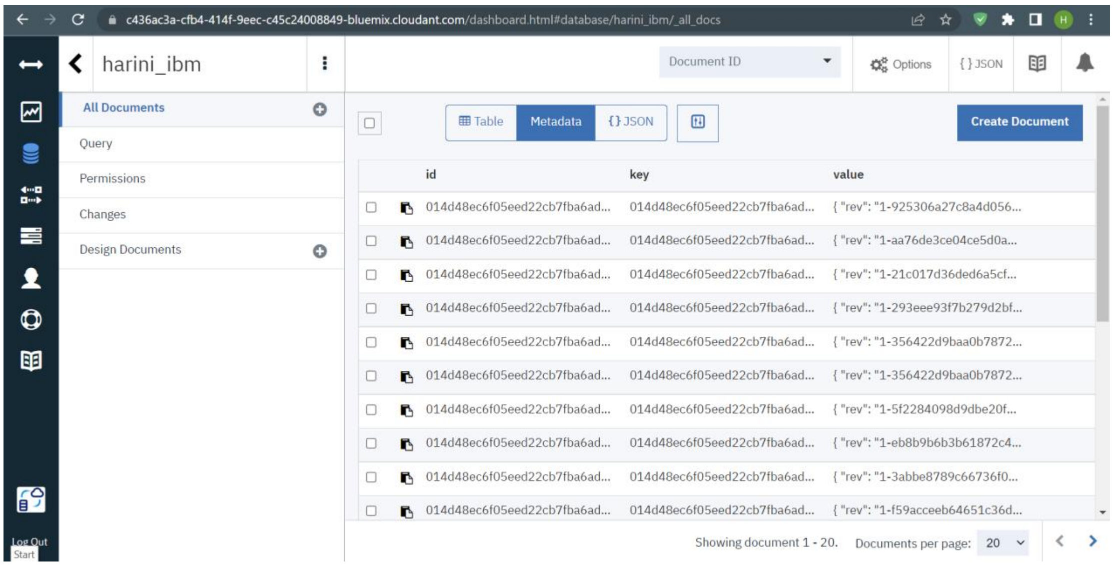
```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "owxp6u"
deviceType = "Smartbin"
deviceId = "Bin1"
authMethod = "token"
authToken= "12345678910"
# Initialize GPIO
def myCommandCallback(cmd):
   print("Command received: %s" % cmd.data['command'])
   status=cmd.data['command']
   if status=="lighton":
      print ("led is 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 of type
"greeting" 10 times
deviceCli.connect()

while True:
      #Get Sensor Data from DHT11
      time.sleep(5)
      ultrasensor=random.randint(0,80)
      capacity=random.randint(0,100)
      lat=round(random.uniform(12.03,13.05),6)
      lon=round(random.uniform(80.80,85.90),6)
      data = { 'ultrasonicsensor' : ultrasensor, 'capacity': capacity,'lat':lat,'lom':lon}
      #print data
      def myOnPublishCallback():
         print ("Published ultrasonicsensor = %s Cm" % ultrasensor, "capacity= %s kg" %
capacity,"lat:%s"%lat,"lon:%s"%lon)

      success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
      if not success:
            print("Not connected to IoTF")
        time.sleep(1)

        deviceCli.commandCallback = myCommandCallback

# Disconnect the device and application from the cloud
deviceCli.disconnect()
```

PYTHON OUTPUT:



```
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\senth\AppData\Local\Programs\Python\Python37\ibmiotpublishsubscribe.py
2022-11-16 19:19:15,836   ibmiotf.device.Client      INFO    Connected successfully: d:owxp6u:Smart
bin:Bin1
Published ultrasonicsensor = 40 Cm capacity= 23 kg lat:12.610228 lon:81.56987
Published ultrasonicsensor = 69 Cm capacity= 24 kg lat:12.393958 lon:82.869649
Published ultrasonicsensor = 15 Cm capacity= 66 kg lat:12.657194 lon:83.691184
Published ultrasonicsensor = 63 Cm capacity= 50 kg lat:12.739014 lon:84.899586
Published ultrasonicsensor = 9 Cm capacity= 99 kg lat:12.316724 lon:85.601792
Published ultrasonicsensor = 60 Cm capacity= 17 kg lat:12.213293 lon:82.890856
Published ultrasonicsensor = 70 Cm capacity= 76 kg lat:12.863203 lon:81.322346
Published ultrasonicsensor = 72 Cm capacity= 9 kg lat:12.679009 lon:83.959883
Published ultrasonicsensor = 28 Cm capacity= 82 kg lat:12.915193 lon:82.125455
Published ultrasonicsensor = 11 Cm capacity= 16 kg lat:13.005646 lon:85.396263
Published ultrasonicsensor = 24 Cm capacity= 64 kg lat:12.282416 lon:83.144915
Published ultrasonicsensor = 41 Cm capacity= 2 kg lat:12.098037 lon:83.9634
Published ultrasonicsensor = 15 Cm capacity= 11 kg lat:12.655447 lon:84.466328
Published ultrasonicsensor = 57 Cm capacity= 89 kg lat:12.840414 lon:81.376711
Published ultrasonicsensor = 16 Cm capacity= 76 kg lat:12.469298 lon:84.480634
Published ultrasonicsensor = 48 Cm capacity= 17 kg lat:12.629949 lon:82.306184
Published ultrasonicsensor = 76 Cm capacity= 51 kg lat:12.15338 lon:85.604701
```

CLOUDANT METADATA:



c436ac3a-cfb4-414f-9eec-c45c24008849-bluemix.cloudant.com/dashboard.html#database/harini_ibm/_all_docs

id	key	value
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-925306a27c8a4d056...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-aa76de3ce04ce5d0a...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-21c017d36ded6a5cf...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-293eee93f7b279d2bf...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-356422d9baa0b7872...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-356422d9baa0b7872...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-5f2284098d9dbe20f...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-eb8b9b6b3b61872c4...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-3abbe8789c66736f0...
014d48ec6f05eed22cb7fba6ad...	014d48ec6f05eed22cb7fba6ad...	{ "rev": "1-f59acceeb64651c36d...

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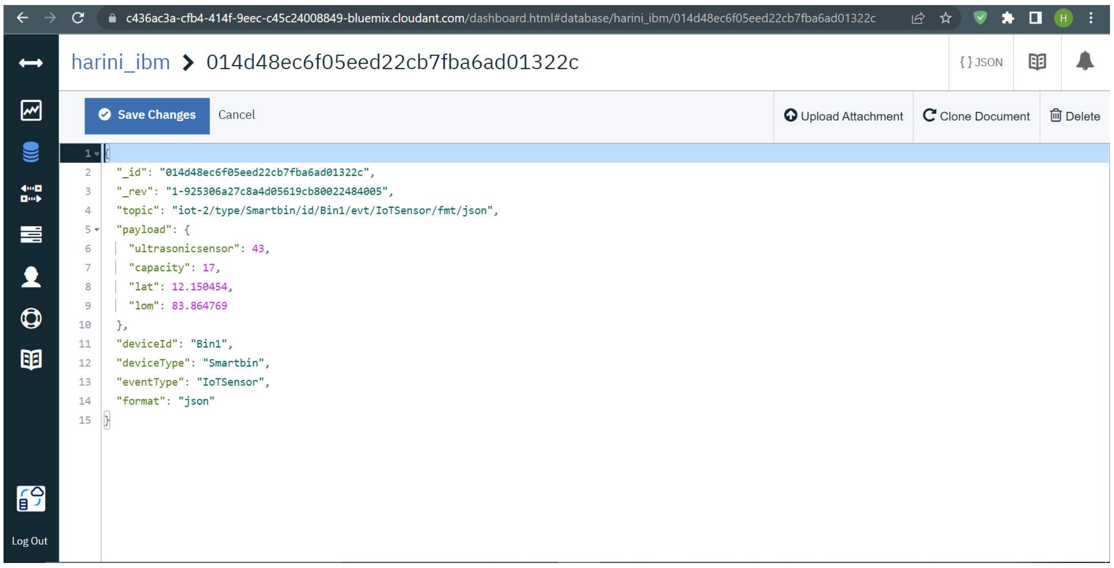
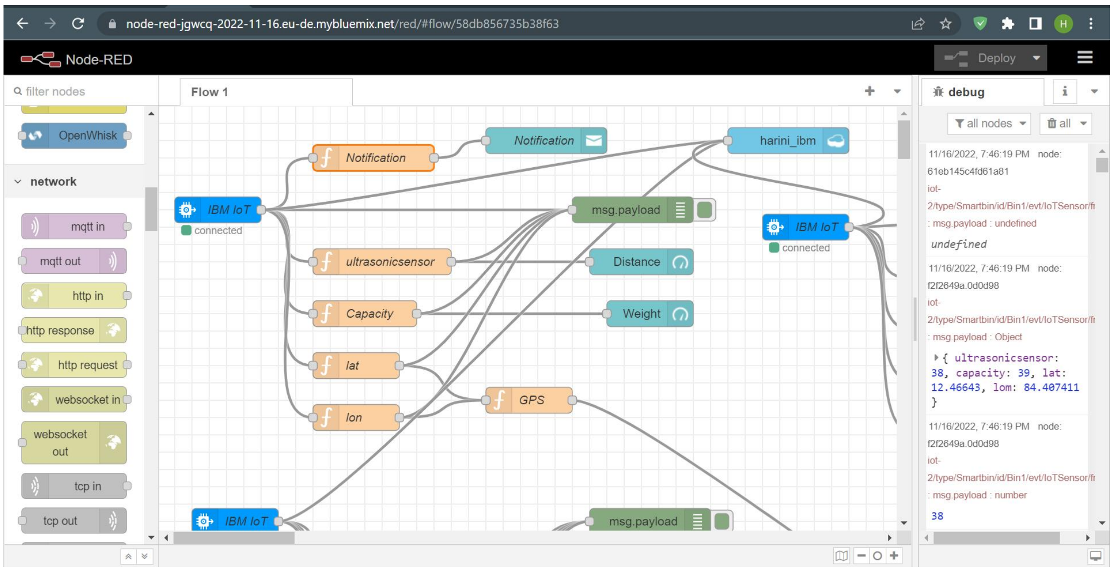
CLOUDANT METADATA INFO:


c436ac3a-cfb4-414f-9eec-c45c24008849-bluemix.cloudant.com/dashboard.html#database/harini_ibm/014d48ec6f05eed22cb7fba6ad01322c
harini_ibm > 014d48ec6f05eed22cb7fba6ad01322c
{ } JSON
Save Changes
Cancel
Upload Attachment
Clone Document
Delete
Log Out

```
{
  "_id": "014d48ec6f05eed22cb7fba6ad01322c",
  "_rev": "1-925306a27c8a4d05619cb80022484005",
  "topic": "iot-2/type/Smartbin/id/Bin1/evt/IoTSensor/fmt/json",
  "payload": {
    "ultrasonicsensor": 43,
    "capacity": 17,
    "lat": 12.150454,
    "lom": 83.864769
  },
  "deviceId": "Bin1",
  "deviceType": "Smartbin",
  "eventType": "IoTSensor",
  "format": "json"
}
```

CLOUDANT DIAGRAM:

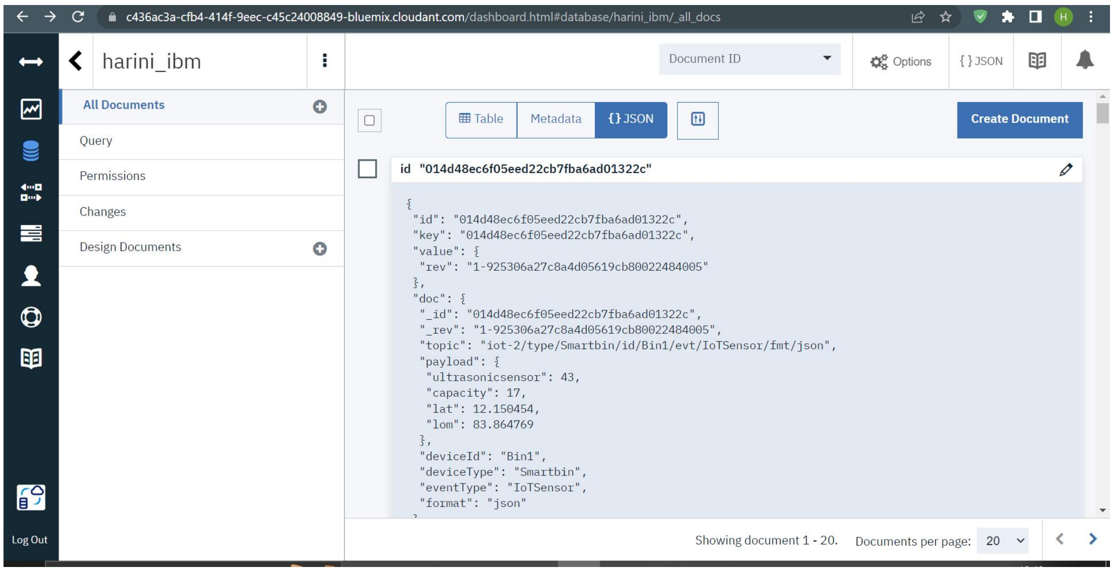


```
11/16/2022, 7:46:19 PM   node:
61eb145c4fd61a81
iot-
2/type/Smartbin/id/Bin1/evt/IoTSensor/fı
: msg.payload : undefined
undefined

11/16/2022, 7:46:19 PM   node:
f2f2649a.0d0d98
iot-
2/type/Smartbin/id/Bin1/evt/IoTSensor/fı
: msg.payload : Object
▸{ ultrasonicsensor:
38, capacity: 39, lat:
12.46643, lom: 84.407411
}

11/16/2022, 7:46:19 PM   node:
f2f2649a.0d0d98
iot-
2/type/Smartbin/id/Bin1/evt/IoTSensor/fı
: msg.payload : number
38
```

JSON CODE:



id "014d48ec6f05eed22cb7fba6ad01322c"

```
{
 "id": "014d48ec6f05eed22cb7fba6ad01322c",
 "key": "014d48ec6f05eed22cb7fba6ad01322c",
 "value": {
  "rev": "1-925306a27c8a4d05619cb80022484005"
 },
 "doc": {
  "_id": "014d48ec6f05eed22cb7fba6ad01322c",
  "_rev": "1-925306a27c8a4d05619cb80022484005",
  "topic": "iot-2/type/Smartbin/id/Bin1/evt/IoTSensor/fmt/json",
  "payload": {
   "ultrasonicsensor": 43,
   "capacity": 17,
   "lat": 12.150454,
   "lom": 83.864769
  },
  "deviceId": "Bin1",
  "deviceType": "Smartbin",
  "eventType": "IoTSensor",
  "format": "json"
```

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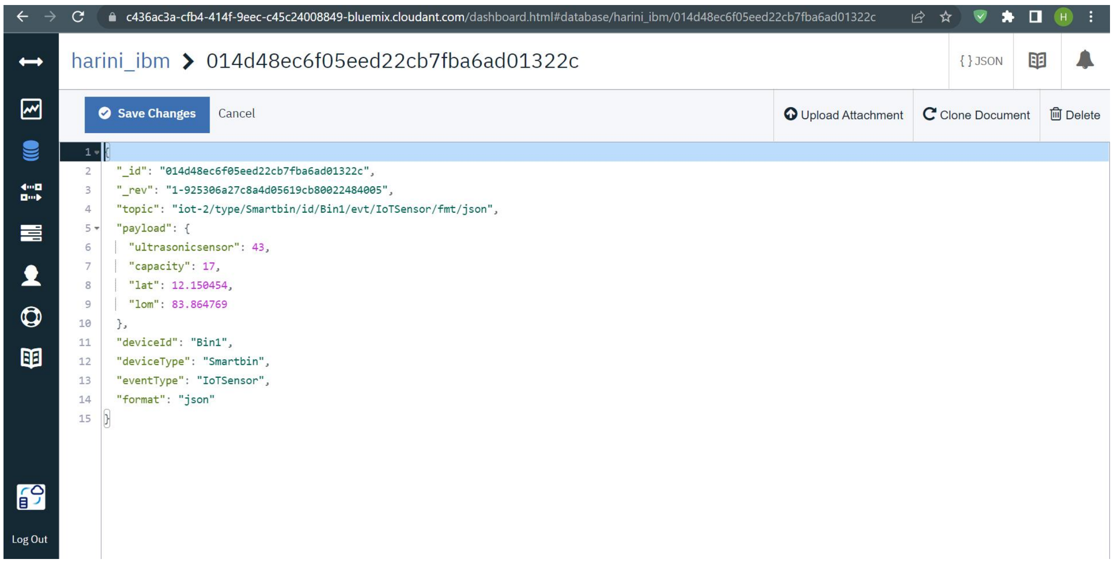
CLOUDANT DOCUMENT:



c436ac3a-cfb4-414f-9eec-c45c24008849-bluemix.cloudant.com/dashboard.html#database/harini_ibm/014d48ec6f05eed22cb7fba6ad01322c
harini_ibm > 014d48ec6f05eed22cb7fba6ad01322c
{ } JSON
Save Changes
Cancel
Upload Attachment
Clone Document
Delete
Log Out

```
{
  "_id": "014d48ec6f05eed22cb7fba6ad01322c",
  "_rev": "1-925306a27c8a4d05619cb80022484005",
  "topic": "iot-2/type/Smartbin/id/Bin1/evt/IoTSensor/fmt/json",
  "payload": {
    "ultrasonicsensor": 43,
    "capacity": 17,
    "lat": 12.150454,
    "lom": 83.864769
  },
  "deviceId": "Bin1",
  "deviceType": "Smartbin",
  "eventType": "IoTSensor",
  "format": "json"
}
```

RESULT:

The node red web app ui was used to successfully create the cloudant database.The cloudant was able to correctly store the data.