Project Development Phase

Delivery of Sprint-4

Date	15 November 2022
Team ID	PNT2022TMID34114
Project Name	Smart Waste Management for Metropolitan Cities
Story Points	12

PYTHON SCRIPT:

```
import requests
import json
import ibmiotf.application
import ibmiotf.device
import time
import random
import sys
# watson device details
organization = "j5bxb7"
devicType = "IOT123edevicetype"
deviceId = "IOTece4"
authMethod= "token"
authToken= "e2)-17xkqIFMvm3@lI"
#generate random values for randomo variables (temperature&humidity)
def myCommandCallback(cmd):
   global a
   print("command recieved:%s" %cmd.data['command'])
   control=cmd.data['command']
   print(control)
try:
      deviceOptions={"org": organization, "type": devicType,"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 "temp" with value integer value into the cloud as a type of event for every 10 seconds
deviceCli.connect()
while True:
    distance= random.randint(10,70)
    loadcell= random.randint(5,15)
    data= {'dist':distance,'load':loadcell}

    if loadcell < 13 and loadcell > 15:
        load = "90 %"

    elif loadcell < 8 and loadcell > 12:
        load = "60 %"

    elif loadcell < 4 and loadcell > 7:
        load = "40 %"
    else:
        load = "0 %"

    if distance < 15:
        dist = 'Risk warning:' 'Dumpster poundage getting high, Time to collect :) 90 %'



    elif distance < 40 and distance >16:
        dist = 'Risk warning:' 'dumpster is above 60%'

    elif distance < 60 and distance > 41:
        dist = 'Risk warning:' '40 %'
    else:
```

```
        dist = 'Risk warning:' '17 %'




    if load == "90 %" or distance == "90 %":
        warn = 'alert :' ' Dumpster poundage getting high, Time to collect :)'


    elif load == "60 %" or distance == "60 %":


        warn = 'alert :' 'dumpster is above 60%'
    else :
        warn = 'alert :' 'No need to collect right now '
    def myOnPublishCallback(lat=10.678991,long=78.177731):
        print("Gandigramam, Karur")
        print("published distance = %s " %distance,"loadcell:%s " %loadcell,"lon = %s "
%long,"lat = %s" %lat)
        print(load)
        print(dist)
        print(warn)


    time.sleep(10)




    success=deviceCli.publishEvent ("IoTSensor","json",warn,qos=0,on_publish=
myOnPublishCallback)


    success=deviceCli.publishEvent ("IoTSensor","json",data,qos=0,on_publish=
myOnPublishCallback)



    if not success:
```

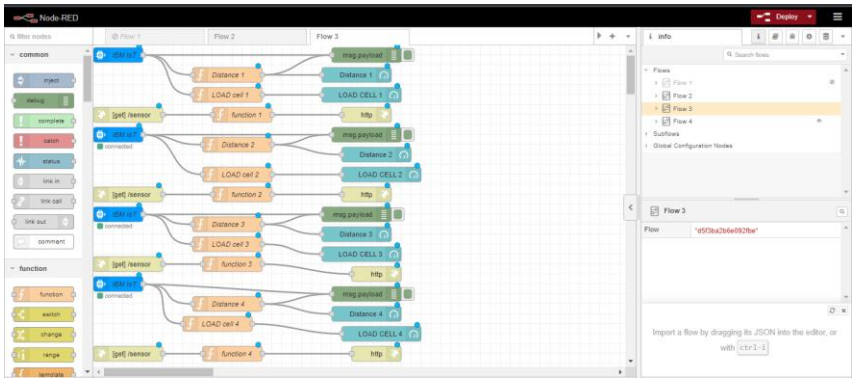
```
    print("not connected to ibmiot")
time.sleep(30)
```

```
    deviceCli.commandCallback=myCommandCallback
#disconnect the device
deviceCli.disconnect
```

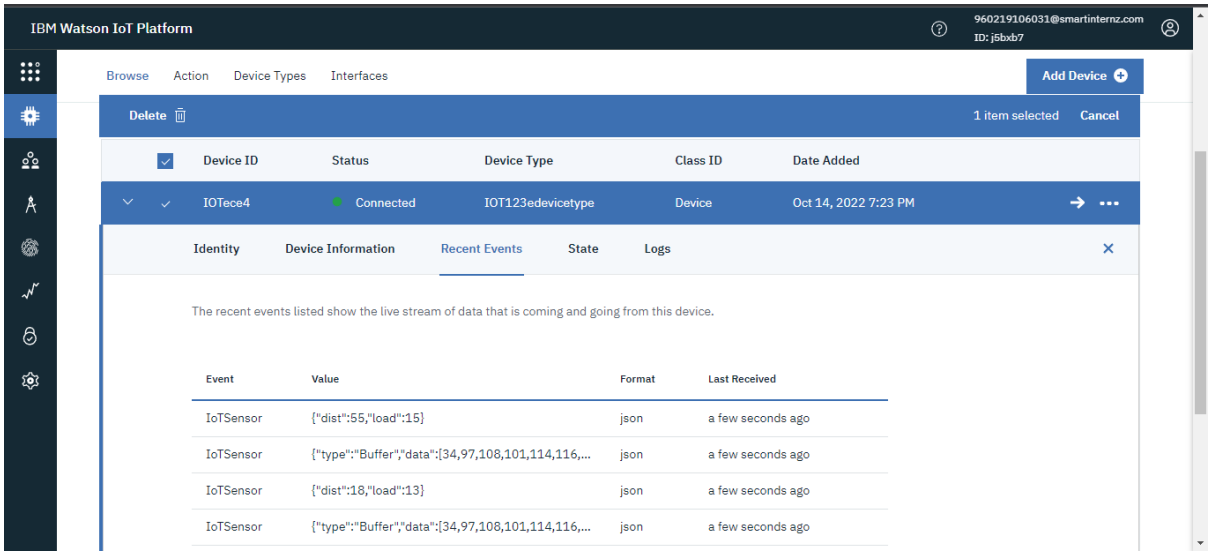
OUTPUT:

1.PYTHON SIMULATION:

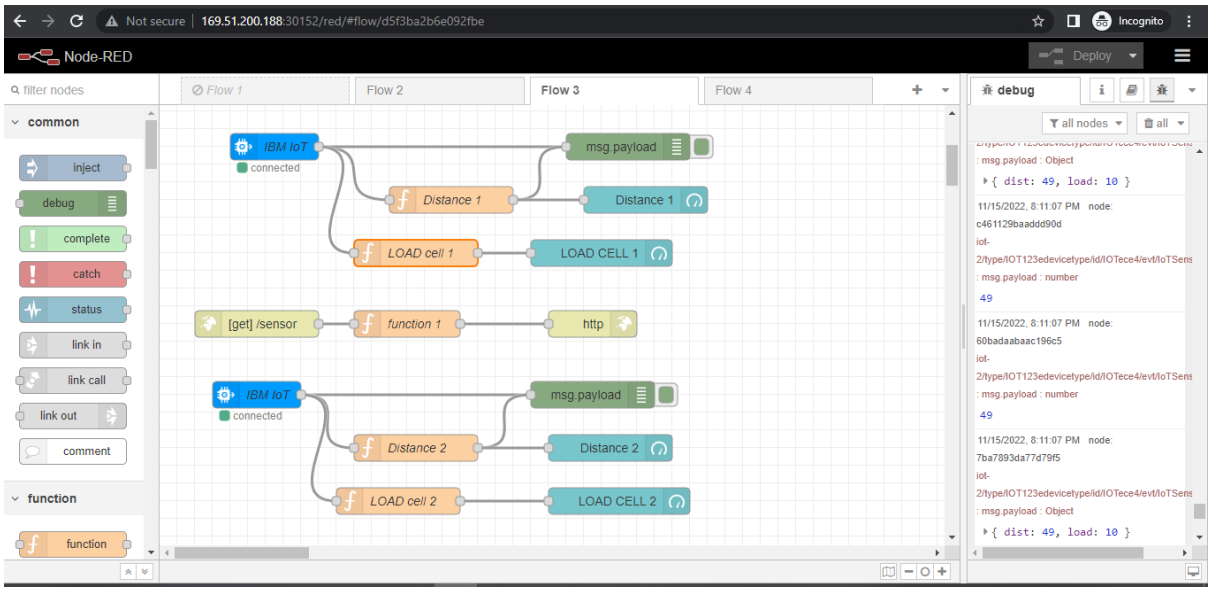
2.Node-RED Connection setup for data transmission from IBM Watson IOT platform to Node-RED dashboard:



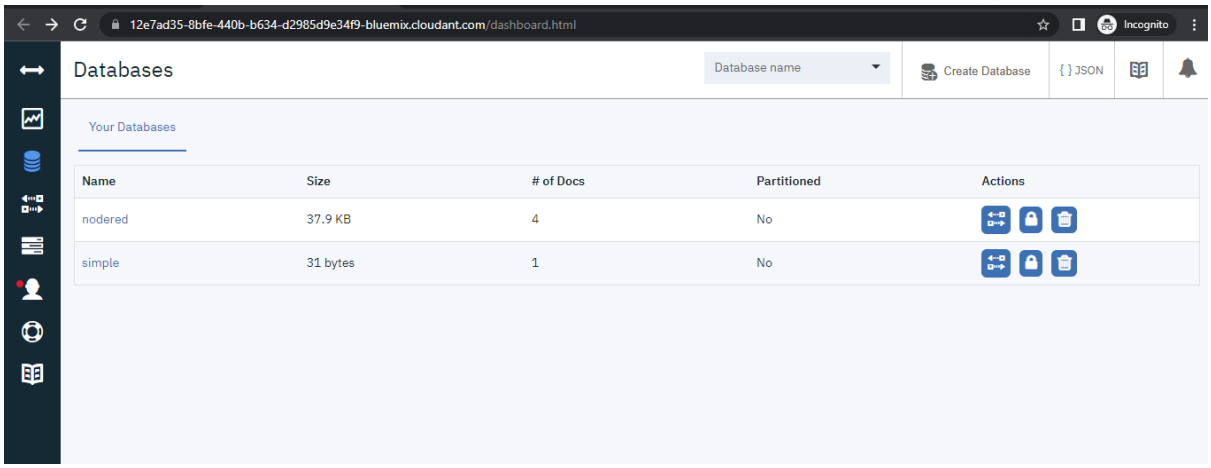
3.Data transfer to IBM Watson IOT platform:

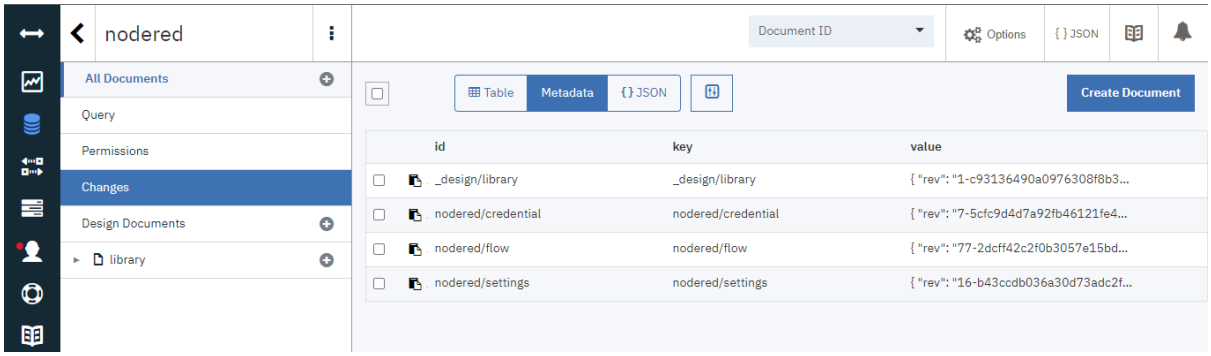


4.Data transfer from IBM Watson IOT platform and python script to Node-RED:

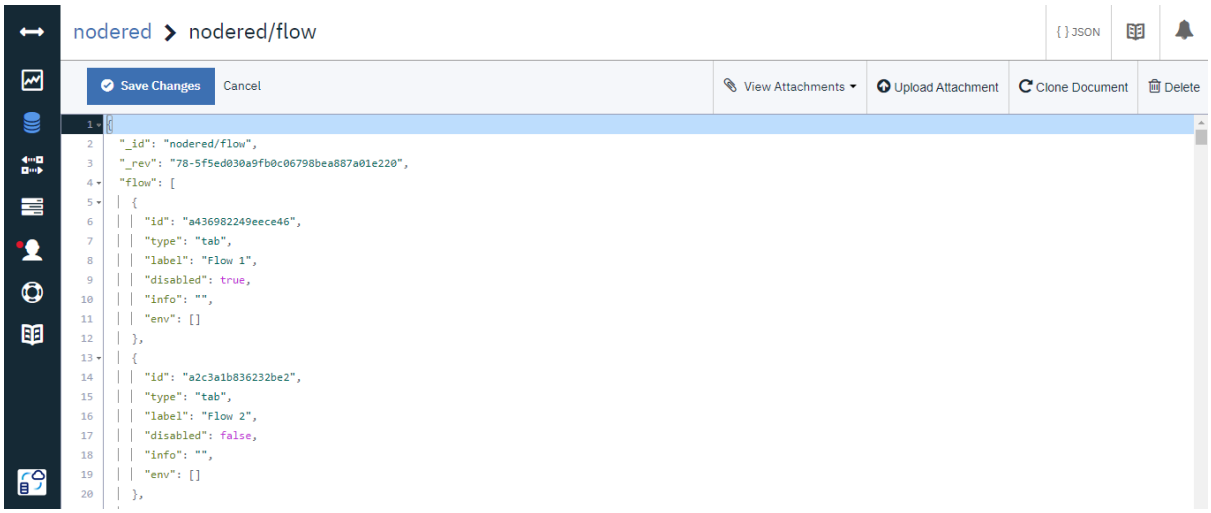


5.Storing database in IBM Cloudant DB:

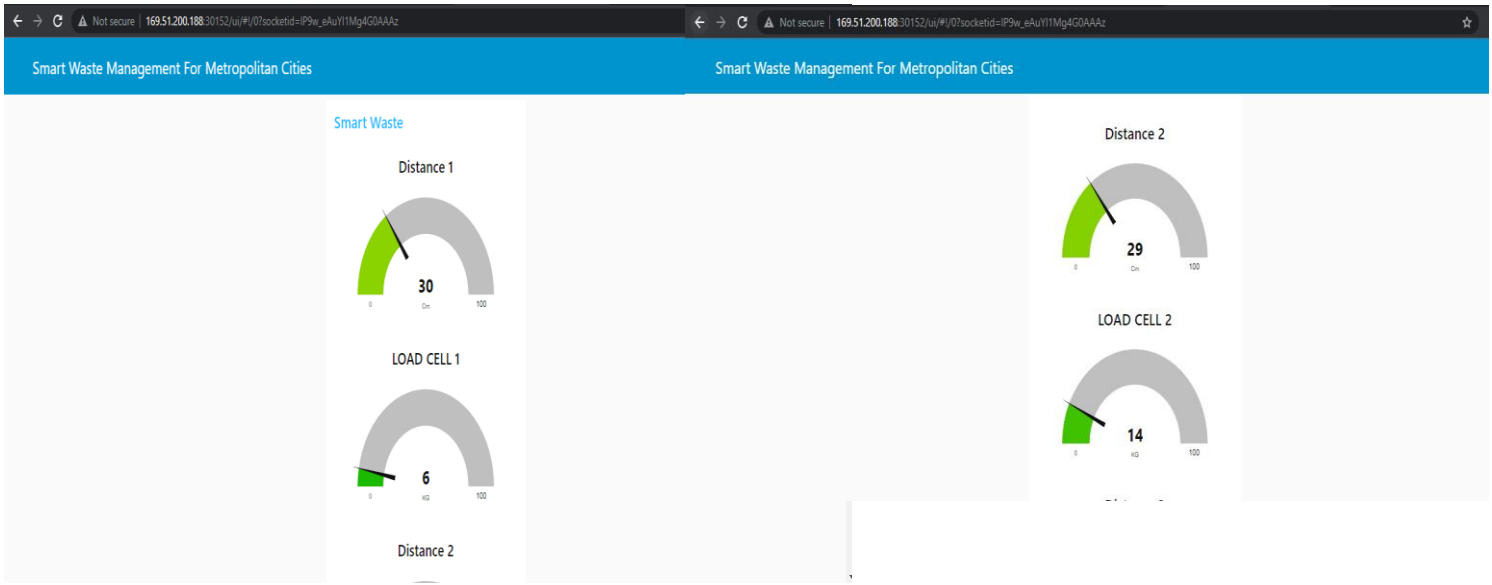




6.Data Stored in JSON format:



7.Web UI:



Not secure | 169.51.200.188:30152/ui/#!/0?socketid=IP9w_eAuY11Mg4G0AAAz

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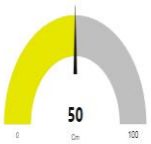
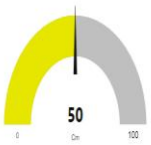
Distance 3



Distance 4



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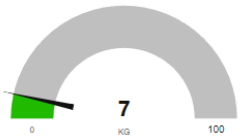
LOAD CELL 3



LOAD CELL 4