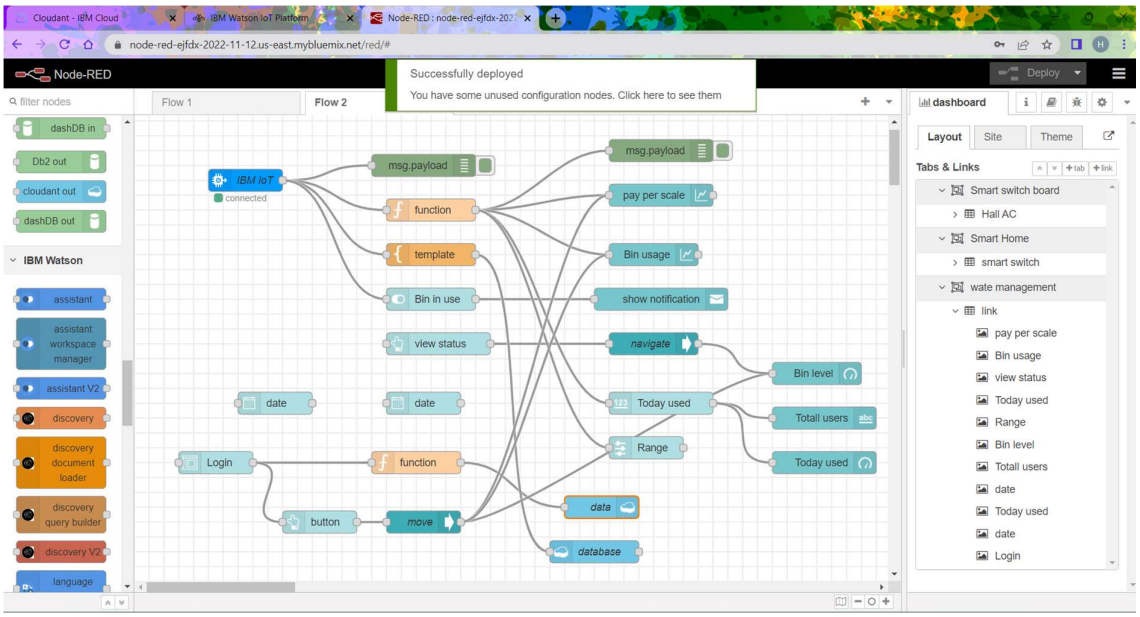
DELIVERY OF SPRINT 3

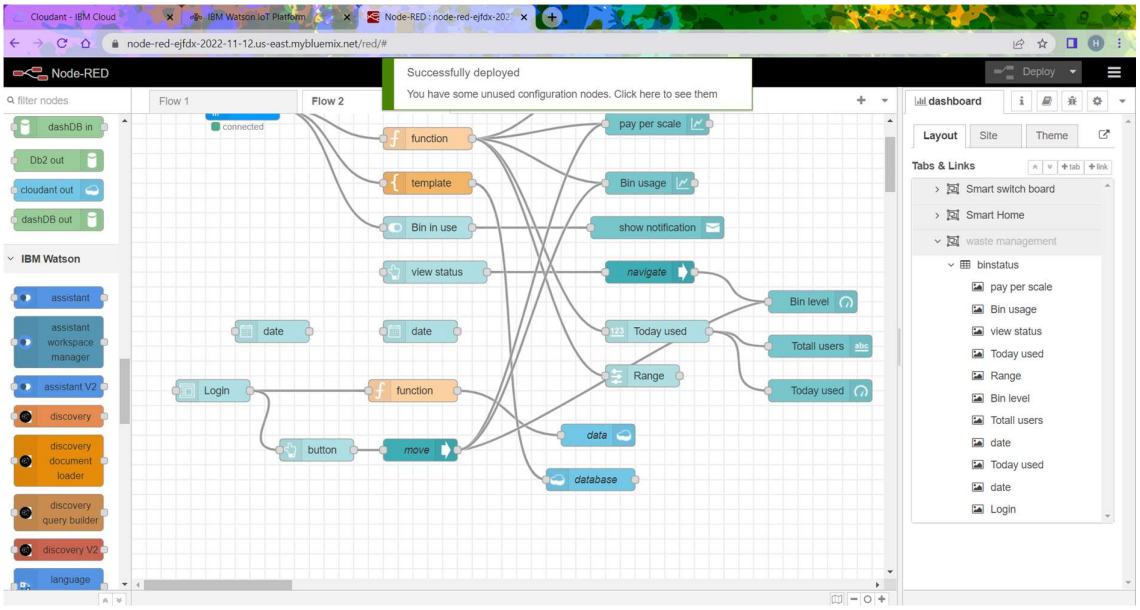
SMART WASTE MANAGEMENT SYSTEM

TEAM ID: PNT2022TMID21674

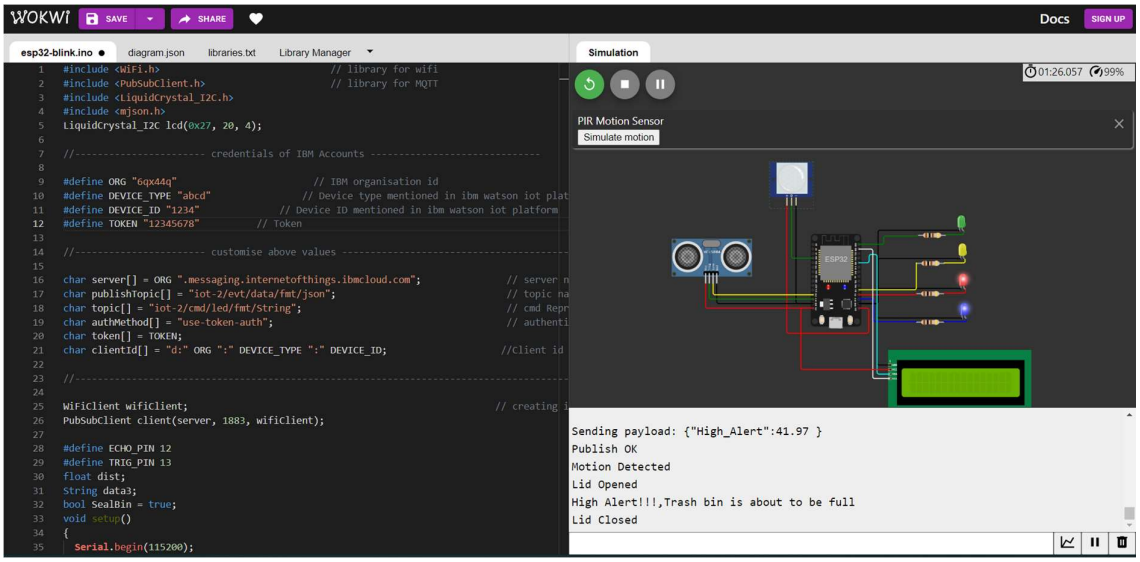
1. Node Red Connection and setup
2. Wokwi simulation connection to iot Watson platform
3. Data transfer to iot platform
4. Data transfer from Node Red and IBM Watson platform
5. Storing Data bases in IBM cloud

1

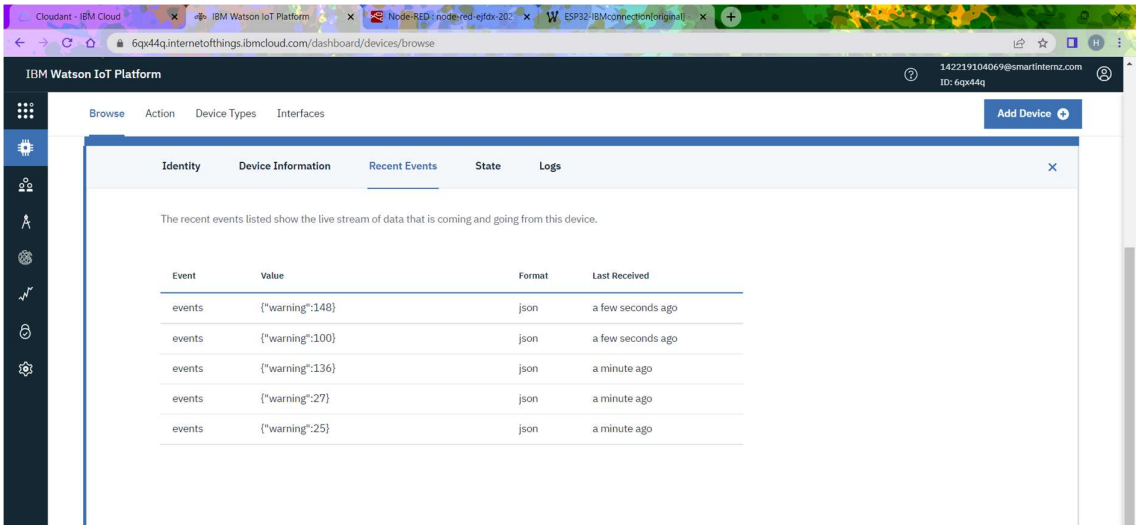



Node-RED
Successfully deployed
You have some unused configuration nodes. Click here to see them
Deploy
Flow 1
Flow 2
dashDB in
Db2 out
cloudant out
dashDB out
IBM Watson
assistant
assistant workspace manager
assistant V2
discovery
discovery document loader
discovery query builder
discovery V2
language
connected
function
template
Bin in use
view status
date
date
Login
function
button
move
pay per scale
Bin usage
show notification
navigate
Today used
Range
data
database
Bin level
Totall users
Today used
dashboard
Layout
Site
Theme
Tabs & Links
Smart switch board
Smart Home
waste management
binstatus
pay per scale
Bin usage
view status
Today used
Range
Bin level
Totall users
date
Today used
date
Login

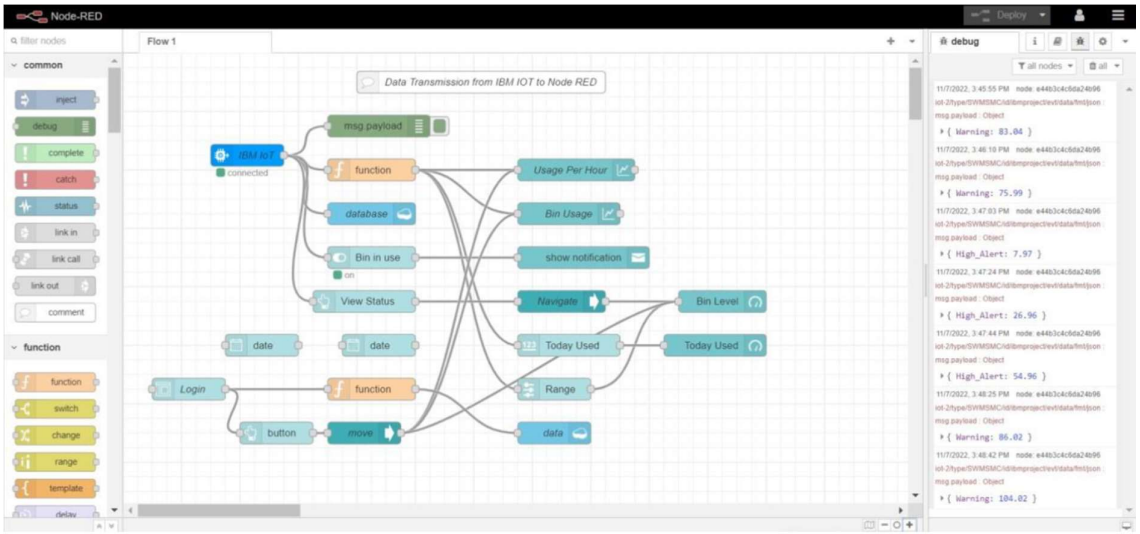
2


WOKWI
SAVE
SHARE
Docs
SIGN UP
esp32-blink.ino
diagram.json
libraries.txt
Library Manager
Simulation
01:26.057
99%
PIR Motion Sensor
Simulate motion
#include <WiFi.h> // library for wifi
#include <PubSubClient.h> // library for MQTT
#include <LiquidCrystal_I2C.h>
#include <mjson.h>
LiquidCrystal_I2C lcd(0x27, 20, 4);
//---------- credentials of IBM Accounts ----------
#define ORG "6qx44q" // IBM organisation id
#define DEVICE_TYPE "abcd" // Device type mentioned in ibm watson iot plat
#define DEVICE_ID "1234" // Device ID mentioned in ibm watson iot platform
#define TOKEN "12345678" // Token
//---------- customise above values ----------
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/data/fmt/json";
char topic[] = "iot-2/cmd/led/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
WiFiClient wifiClient;
PubSubClient client(server, 1883, wifiClient);
#define ECHO_PIN 12
#define TRIG_PIN 13
float dist;
String data3;
bool SealBin = true;
void setup()
{
Serial.begin(115200);
Sending payload: {"High_Alert":41.97 }
Publish OK
Motion Detected
Lid Opened
High Alert!!!,Trash bin is about to be full
Lid Closed

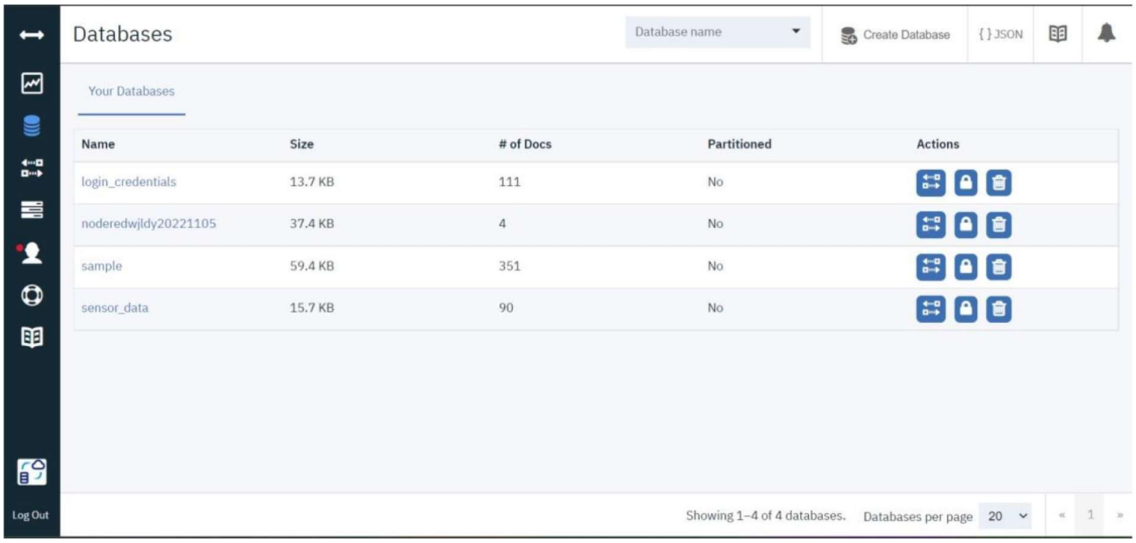
3

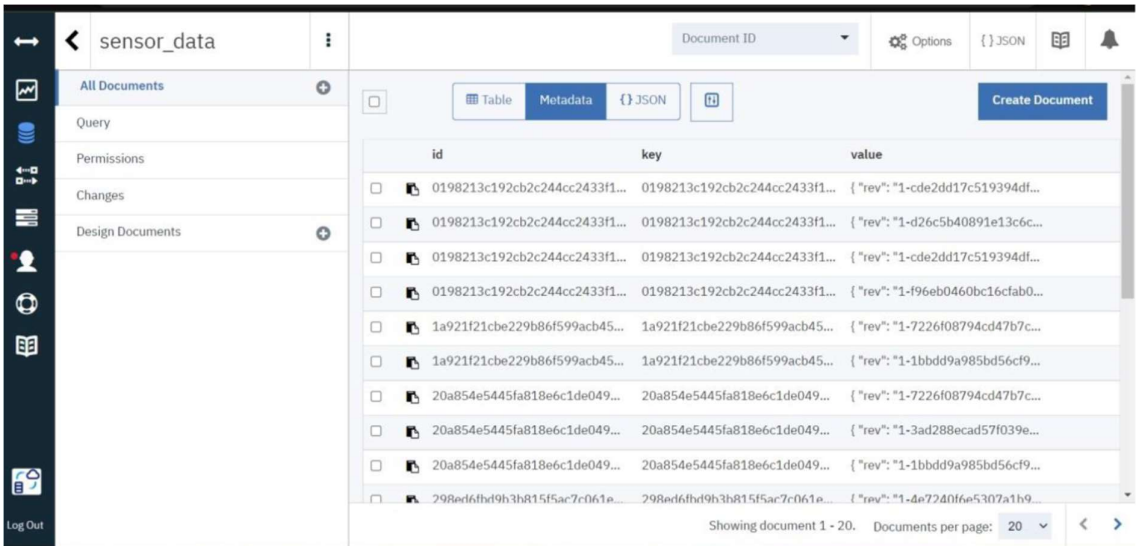

Cloudant - IBM Cloud
IBM Watson IoT Platform
Node-RED : node-red-ejfdx-202
ESP32-IBMconnection[original]
6qx44q.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
142219104069@smartinternz.com
ID: 6qx44q
Browse
Action
Device Types
Interfaces
Add Device
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
events
{"warning":148}
json
a few seconds ago
events
{"warning":100}
json
a few seconds ago
events
{"warning":136}
json
a minute ago
events
{"warning":27}
json
a minute ago
events
{"warning":25}
json
a minute ago

4


Node-RED
Deploy
Flow 1
debug
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
switch
change
range
template
Data Transmission from IBM IOT to Node RED
IBM IoT
connected
msg.payload
function
database
Bin in use
on
View Status
date
date
Login
function
button
move
Usage Per Hour
Bin Usage
show notification
Navigate
Today Used
Range
data
Bin Level
Today Used
{ Warning: 83.04 }
{ Warning: 75.99 }
{ High_Alert: 7.97 }
{ High_Alert: 26.96 }
{ High_Alert: 54.96 }
{ Warning: 86.02 }
{ Warning: 104.02 }

5


Databases
Database name
Create Database
{ } JSON
Your Databases
Name
Size
# of Docs
Partitioned
Actions
login_credentials
13.7 KB
111
No
noderedwjldy20221105
37.4 KB
4
No
sample
59.4 KB
351
No
sensor_data
15.7 KB
90
No
Log Out
Showing 1–4 of 4 databases.
Databases per page
20
1


sensor_data
Document ID
Options
{ } JSON
All Documents
Query
Permissions
Changes
Design Documents
Table
Metadata
{ } JSON
Create Document
id
key
value
Log Out
Showing document 1 - 20.
Documents per page:
20