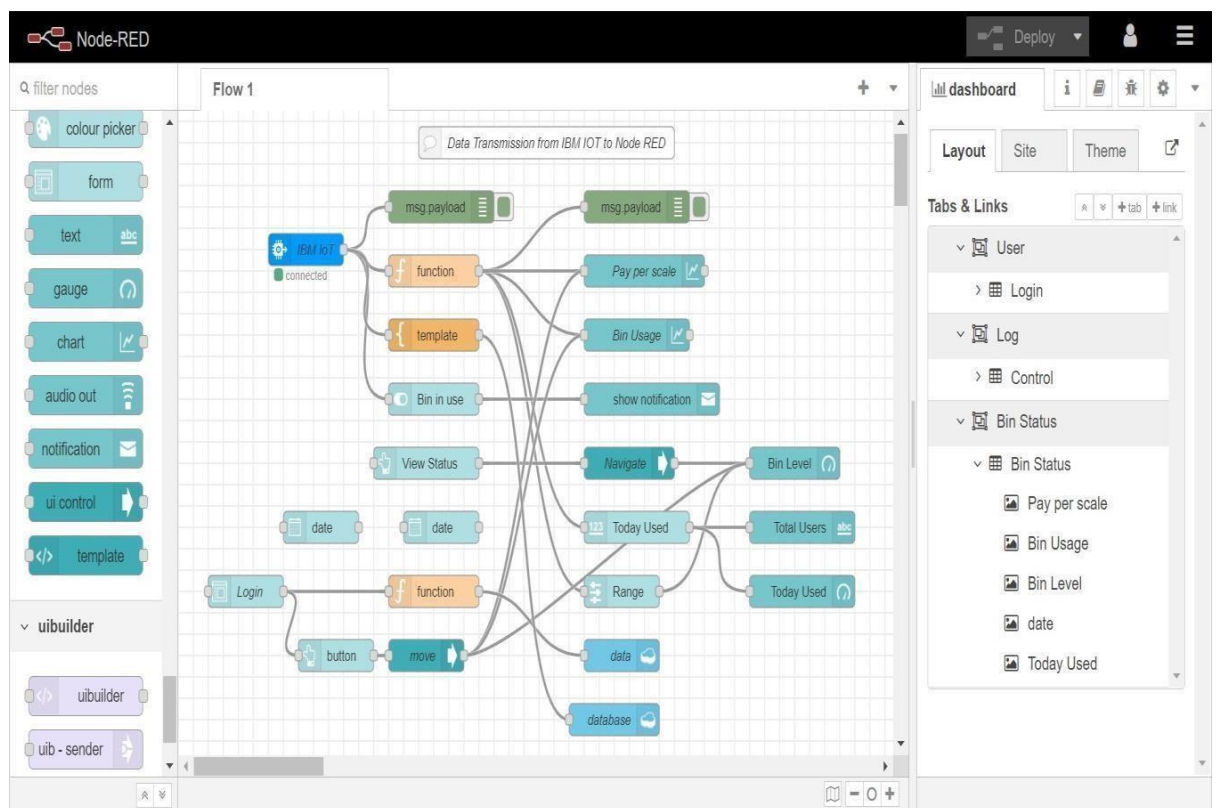
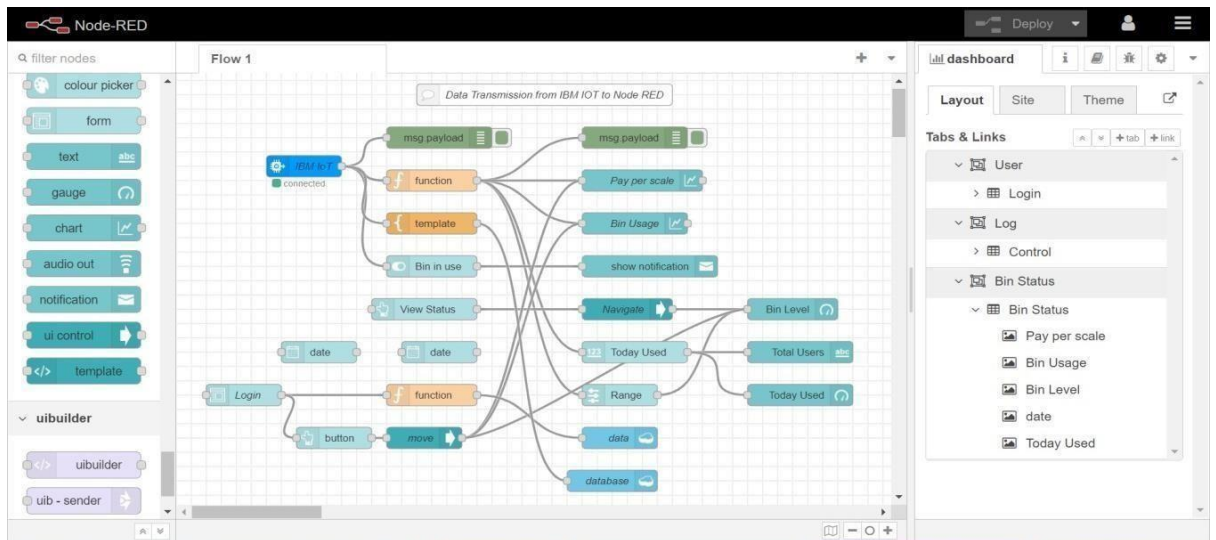


Name	Kamali.S
Team ID	PNT2022TMID25311
Date	17/11/2022
Project Name	Smart Waste Management System for metropolitan cities

Delivery of Sprint – 4

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





2. Simulate Wokwi connection to transmit data from wokwi account to IBM Watson IOT platform and then to Node Red dashboard.

esp32-blink.ino

diagram.json

libraries.txt

Library Manager

```

177
178
179
180
181
182 if(cm <= 25)
183 {
184 digitalWrite(21,HIGH);
185 String payload = "{\"High_Alert\":\"";
186 payload += cm;
187 payload += " }";
188 Serial.print("\n");
189 Serial.print("Sending payload: ");
190 Serial.println(payload);
191
192 if (client.publish(publishTopic, (char*) payload.c_str()))
193 {
194 Serial.println("Publish OK");
195 }
196 }
197 if(cm <= 50)
198 {
199 digitalWrite(22,HIGH);
200 String payload = "{\"Warning\":\"";
201 payload += cm;
202 payload += " }";
203 Serial.print("\n");

```

Simulation

00:35.846 99%

PIR Motion Sensor

Simulate motion

Sending distance: 26.94

Publish OK

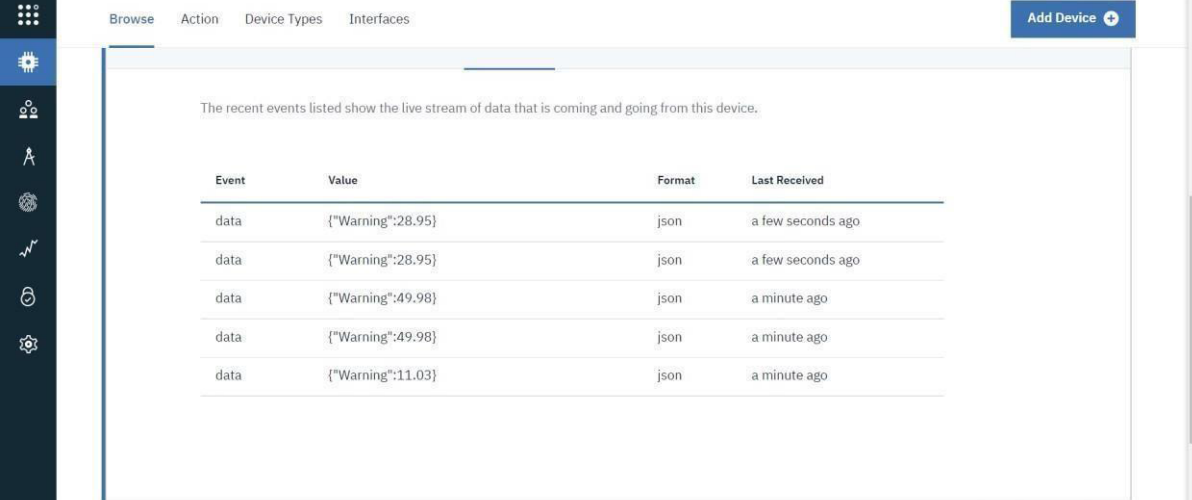
Motion Detected

Lid Opened

High Alert!!!,Trash bin is about to be full

Lid Closed

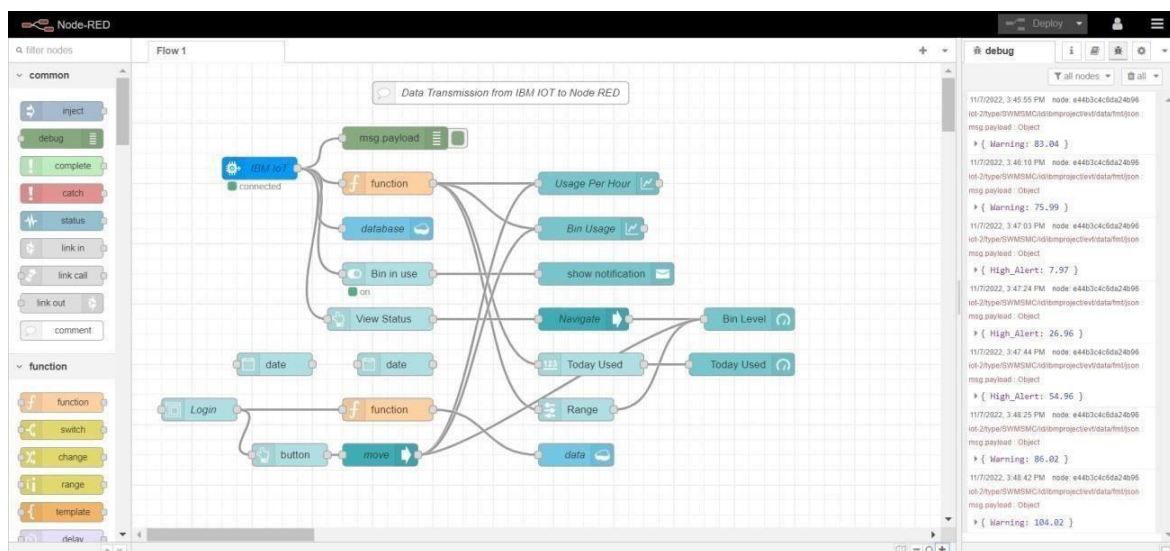
3. Data transfer to Watson IOT platform.



The screenshot shows the IBM Watson IoT Platform interface. At the top, there are tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. On the right, there is a blue 'Add Device' button. The main content area displays a message: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this message is a table with the following data:

Event	Value	Format	Last Received
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":11.03}	json	a minute ago

4. Data transfer from IBM Watson IOT platform and wokwi to Node red.



5 . Storing database in IBM cloudant DB.

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	🔍 🔒 🗑️

Showing 1–4 of 4 databases. Databases per page 20 « 1 »

Log Out

sensor_data

Document ID ▼ Options { } JSON 📖 🔔

All Documents +

Query

Permissions

Changes

Design Documents +

Table Metadata { } JSON 🗑️ Create Document

id	key	value
<input type="checkbox"/> 🔍 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-cde2dd17c519394df...
<input type="checkbox"/> 🔍 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-d26c5b40891e13c6c...
<input type="checkbox"/> 🔍 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-cde2dd17c519394df...
<input type="checkbox"/> 🔍 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-f96eb0460bc16cfab0...
<input type="checkbox"/> 🔍 1a921f21cbe229b86f599acb45...	1a921f21cbe229b86f599acb45...	{ "rev": "1-7226f08794cd47b7c...
<input type="checkbox"/> 🔍 1a921f21cbe229b86f599acb45...	1a921f21cbe229b86f599acb45...	{ "rev": "1-1bbdd9a985bd56cf9...
<input type="checkbox"/> 🔍 20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-7226f08794cd47b7c...
<input type="checkbox"/> 🔍 20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-3ad288ecad57f039e...
<input type="checkbox"/> 🔍 20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-1bbdd9a985bd56cf9...
<input type="checkbox"/> 🔍 298ed6fhd9h3b815f5ac7c061e...	298ed6fhd9h3b815f5ac7c061e...	{ "rev": "1-4e7240f6e5307a1h9...

Showing document 1 - 20. Documents per page 20 « »

Log Out

6. Data is stored in JSON format

The screenshot shows a web interface for editing a JSON document. The document is titled "sensor_data" and has a unique ID "0198213c192cb2c244cc2433f1802b91". The JSON content is as follows:

```
{
  "_id": "0198213c192cb2c244cc2433f1802b91",
  "_rev": "1-cde2dd17c519394dfeb774738c495f8b",
  "topic": "iot-2/type/SWMSMC/id/ibmproject/evt/data/fmt/json",
  "payload": {
    "Warning!!": "244.97left"
  },
  "deviceId": "ibmproject",
  "deviceType": "SWMSMC",
  "eventType": "data",
  "format": "json"
}
```

The interface includes a sidebar with various icons and a "Log Out" button. The top bar has a "Save Changes" button and a "Cancel" button. The right side of the top bar has buttons for "Upload Attachment", "Clone Document", and "Delete".

7. Web UI

The screenshot shows a web UI control panel. The panel has a sidebar with "Log" and "Bin Status" links. The main area is titled "Control" and contains the following controls:

- "Bin in use" with a red bin icon.
- "Range" with a slider.
- "Today Used" with a dropdown menu showing "0".
- "date" with a calendar icon and the date "06/11/2022".
- A "VIEW STATUS" button with a bar chart icon.

Control

Bin in use



Range



Today Used



0



date



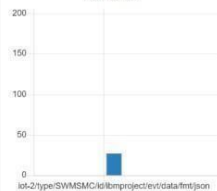
06/11/2022



VIEW STATUS

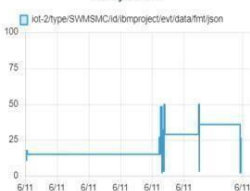
Bin Status

Bin Level



date 06/11/2022

Today Used



Bin Level



Today Used

