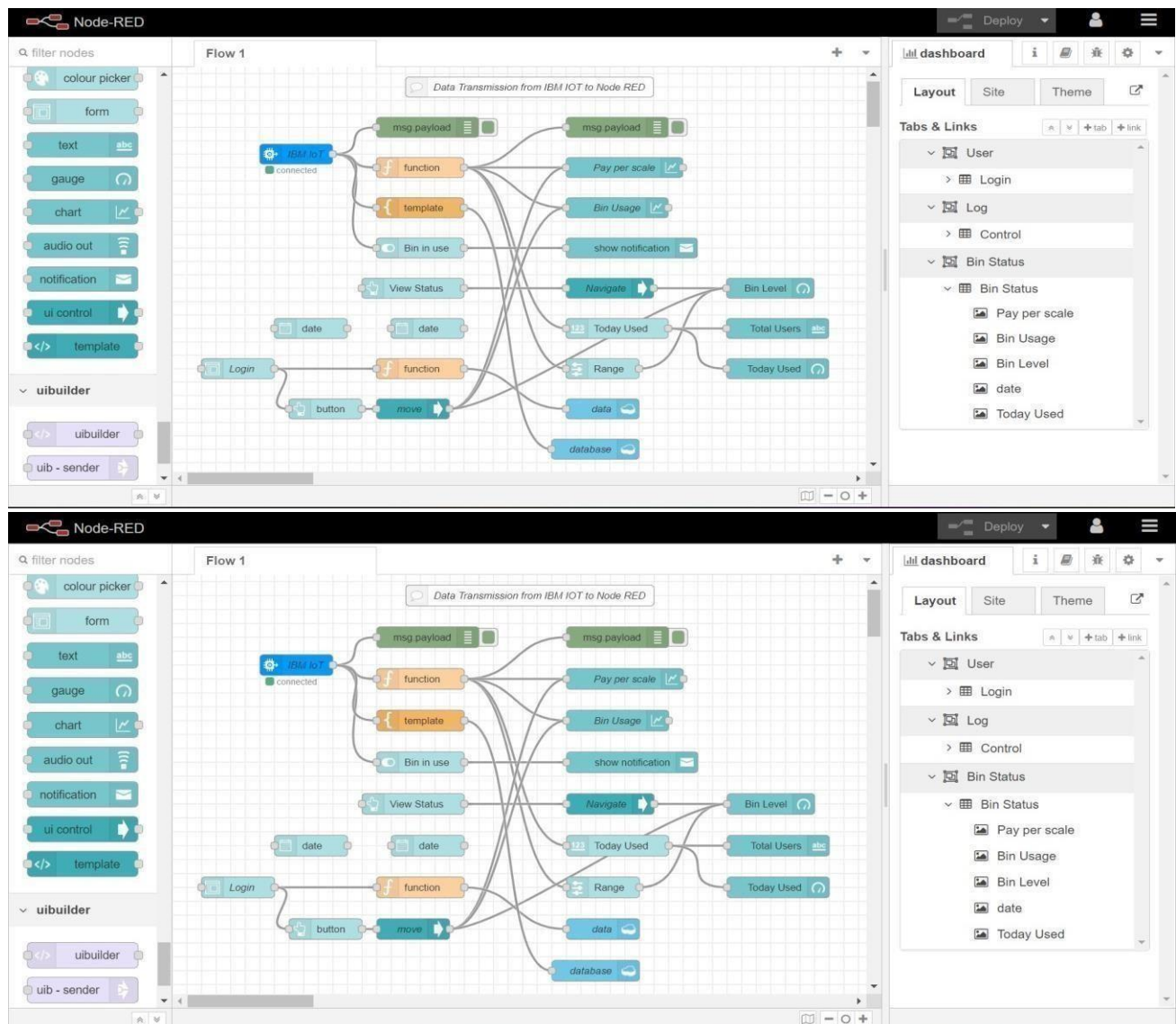


Delivery of Sprint – 3

Node Red Connection to IBM Cloudant

Date	10 November 2022
Team ID	PNT2022TMID11587
Project Name	Smart Waste Management for Metropolitan Cities

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.

```
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())) // if
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

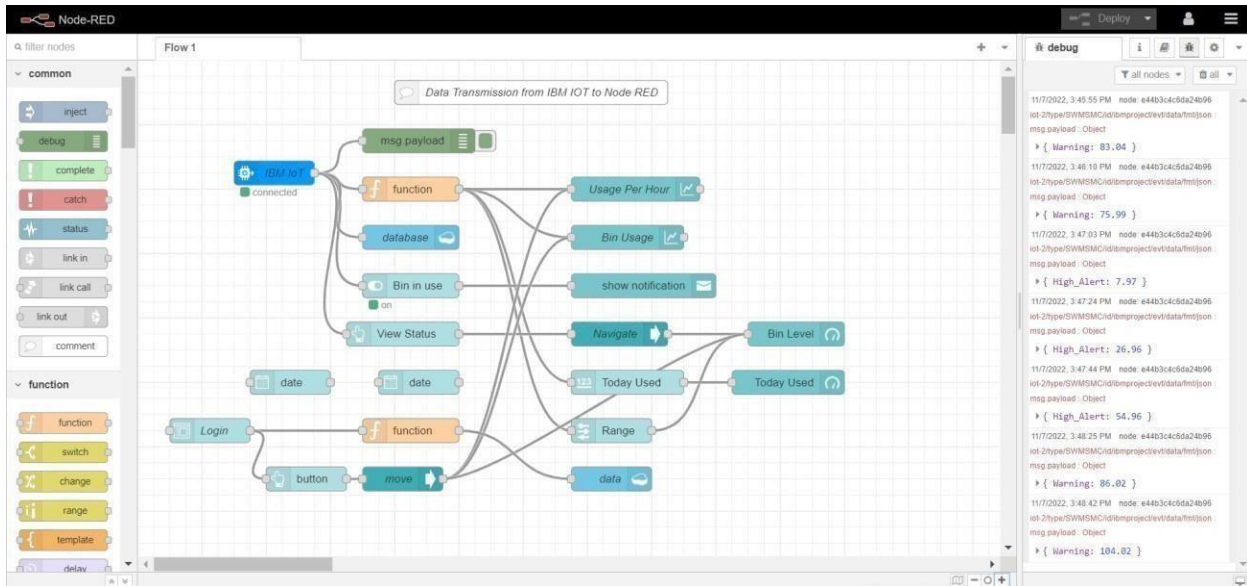
PIR Motion Sensor

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.

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, 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	<div></div> <div></div> <div></div>
noderedwjldy20221105	37.4 KB	4	No	<div></div> <div></div> <div></div>
sample	59.4 KB	351	No	<div></div> <div></div> <div></div>
sensor_data	15.7 KB	90	No	<div></div> <div></div> <div></div>

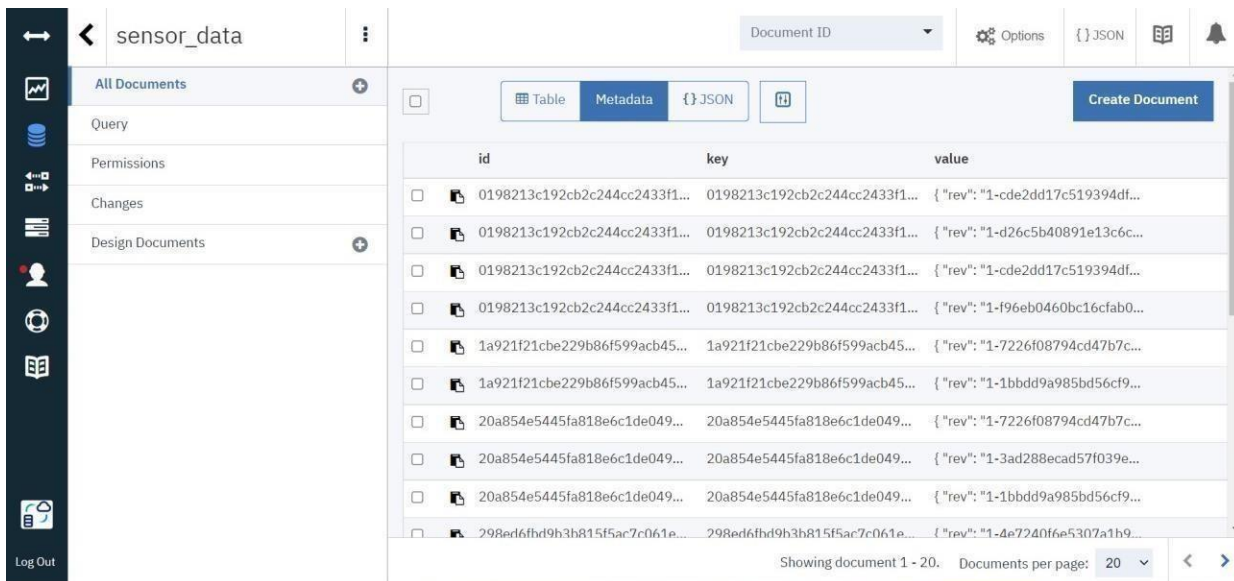
Showing 1-4 of 4 databases.

Databases per page

20

1

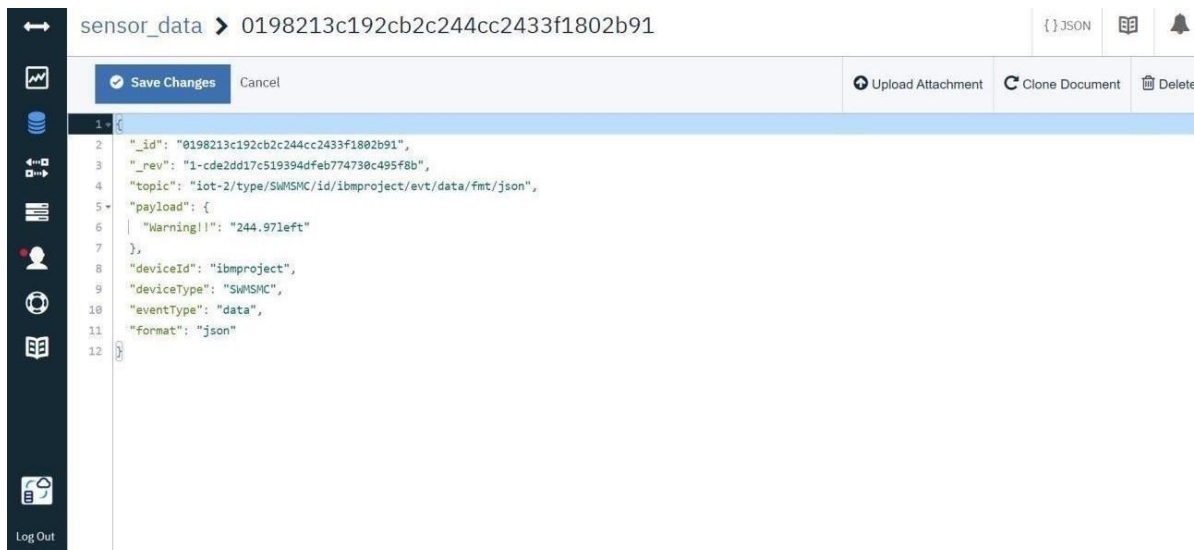
5. Storing database in IBM cloudant DB.



The screenshot shows the IBM Cloudant web interface for a database named 'sensor_data'. The left sidebar contains navigation icons for documents, query, permissions, changes, and design documents. The main area displays a table of documents with columns 'id', 'key', and 'value'. The 'value' column shows JSON snippets, including a 'rev' field and a 'payload' field. A 'Create Document' button is visible in the top right. The bottom status bar indicates 'Showing document 1 - 20. Documents per page: 20'.

id	key	value
0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-cde2dd17c519394df..." }
0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-d26c5b40891e13c6c..." }
0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-cde2dd17c519394df..." }
0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-f96eb0460bc16cfab0..." }
1a921f21cbe229b86f599acb45...	1a921f21cbe229b86f599acb45...	{ "rev": "1-7226f08794cd47b7c..." }
1a921f21cbe229b86f599acb45...	1a921f21cbe229b86f599acb45...	{ "rev": "1-1bbdd9a985bd56cf9..." }
20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-7226f08794cd47b7c..." }
20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-3ad288ecad57f039e..." }
20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-1bbdd9a985bd56cf9..." }
298ed6fbd9h3b815f5ac7c061e...	298ed6fbd9h3b815f5ac7c061e...	{ "rev": "1-4e7240f6e5307a1b9..." }

6. Data is stored in JSON for



The screenshot shows the IBM Cloudant web interface for a specific document in the 'sensor_data' database. The document ID is '0198213c192cb2c244cc2433f1802b91'. The document content is displayed in JSON format. The interface includes a 'Save Changes' button and a 'Cancel' button. The JSON content is as follows:

```
1 {
2   "_id": "0198213c192cb2c244cc2433f1802b91",
3   "_rev": "1-cde2dd17c519394df774739c495f8b",
4   "topic": "iot-2/type/SWMSMC/id/ibmproject/evt/data/fmt/json",
5   "payload": {
6     "Warning!!": "244.971e1ft"
7   },
8   "deviceId": "ibmproject",
9   "deviceType": "SWMSMC",
10  "eventType": "data",
11  "format": "json"
12 }
```