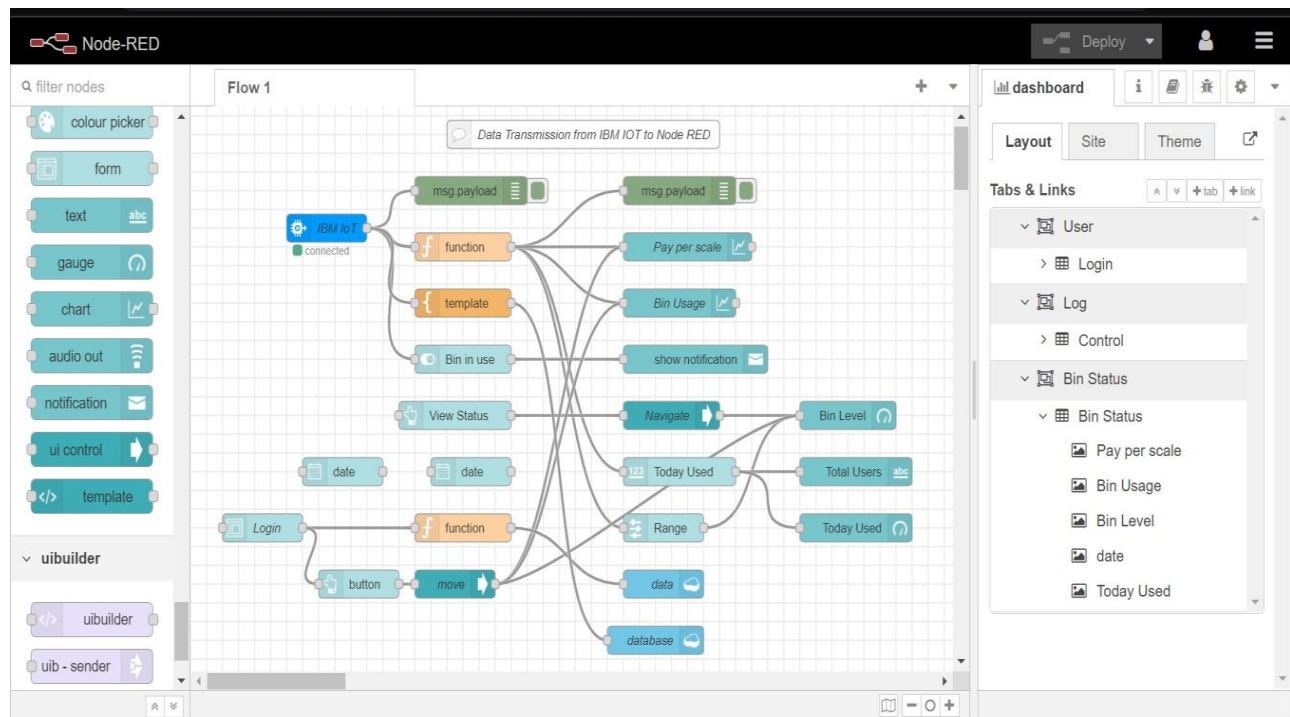


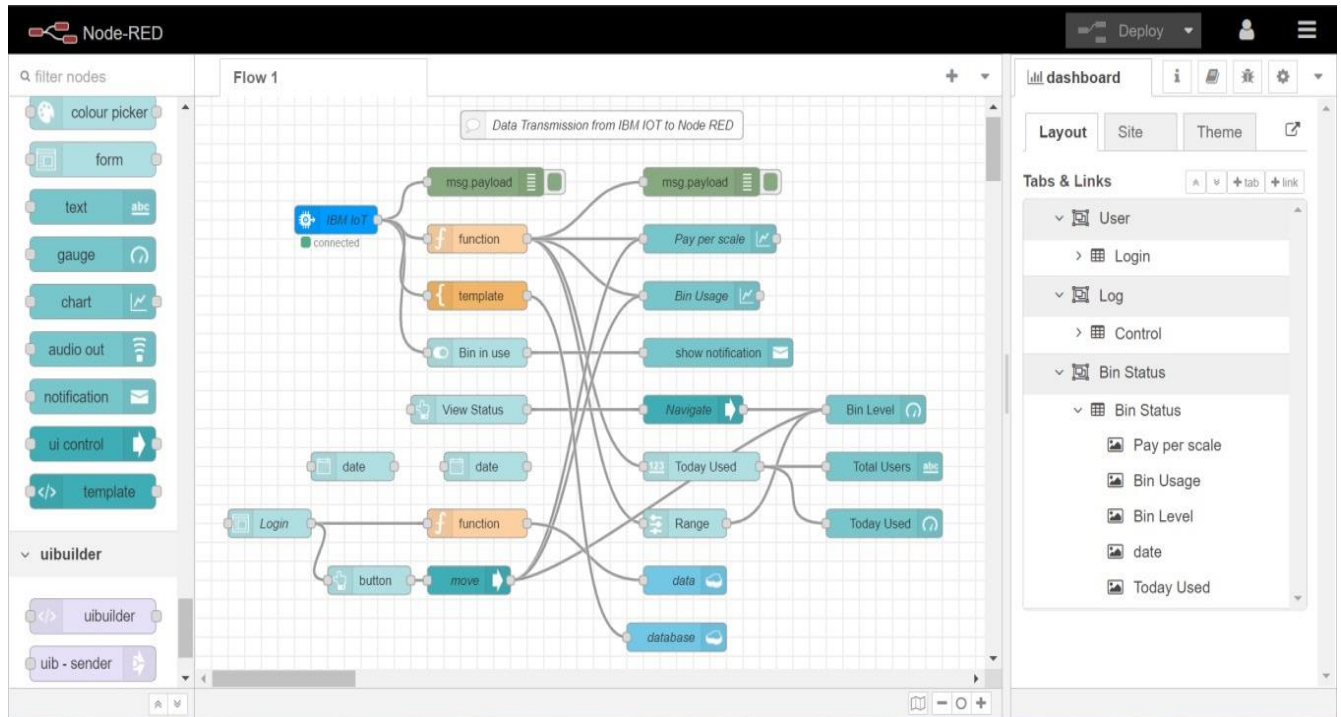
Delivery of Sprint – 4

Web UI Design and Deploy

Date	5 November 2022
Team ID	PNT2022TMID04566
Project Name	Smart Waste Management for Metropolitan Cities - IOT

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.

The screenshot shows the Wokwi simulation environment. On the left, the "esp32-blink.ino" code editor displays the following code:

```

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");

```

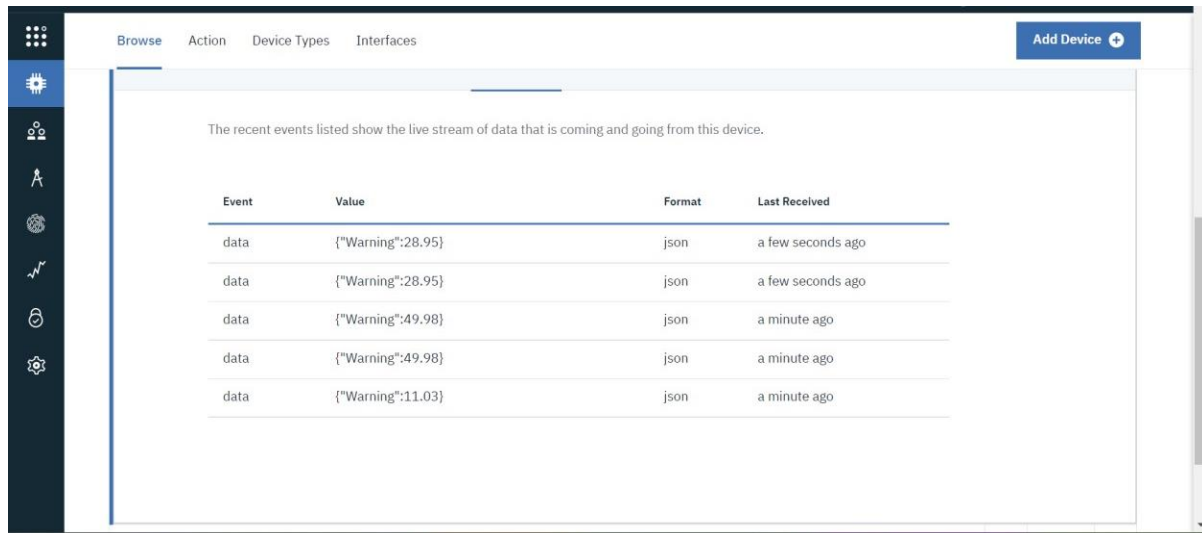
On the right, the "Simulation" window shows a PIR Motion Sensor connected to an ESP32. The sensor is labeled "PIR Motion Sensor" and has a "Simulate motion" button. Below the sensor, the simulation output shows the following messages:

```

Sending distance: 26.94
Publish OK
Motion Detected
Lid Opened
High Alert!!!,Trash bin is about to be full
Lid Closed

```

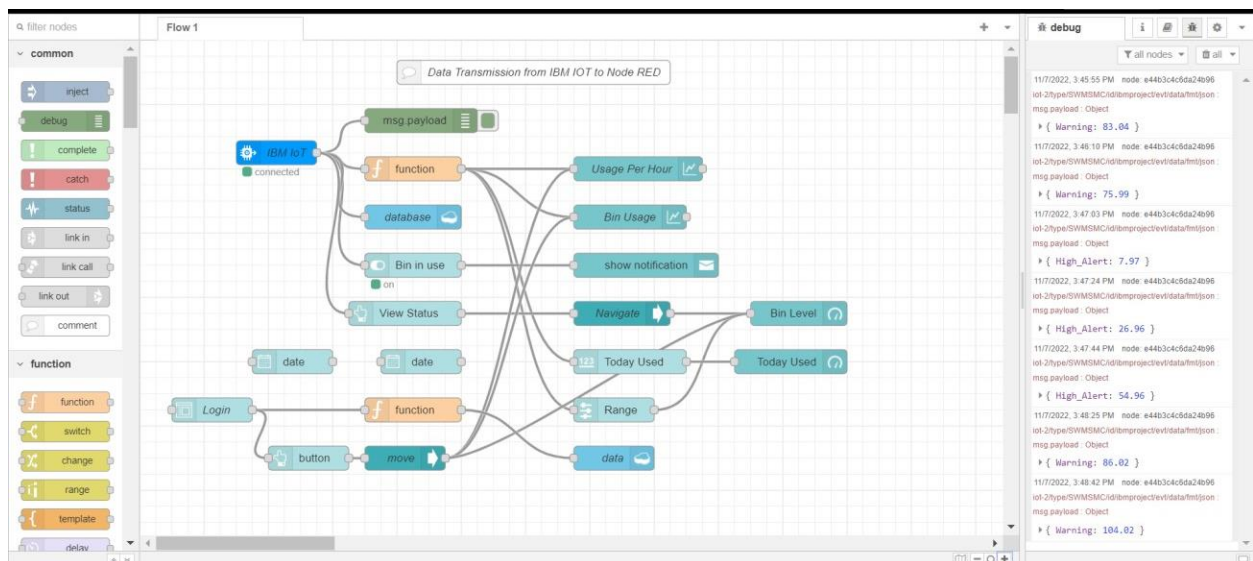
3. Data transfer to Watson IOT platform.



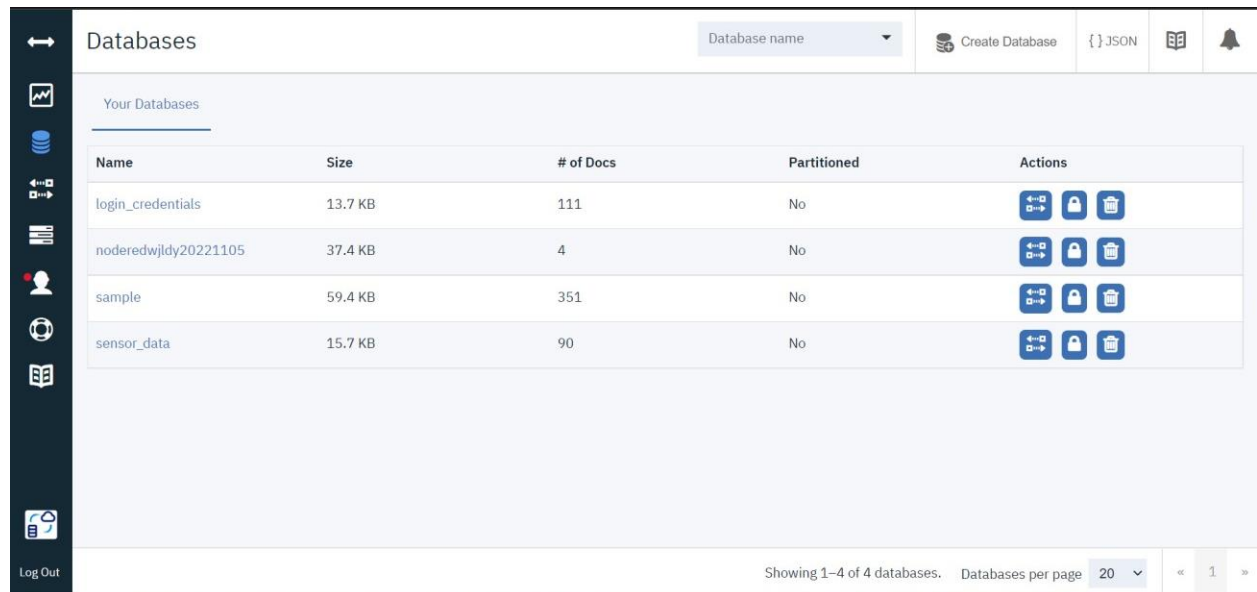
The screenshot shows the IBM Watson IoT Platform interface. At the top, there are tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. A blue 'Add Device' button is in the top right. Below the tabs, a message states: 'The recent events listed show the live stream of data that is coming and 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

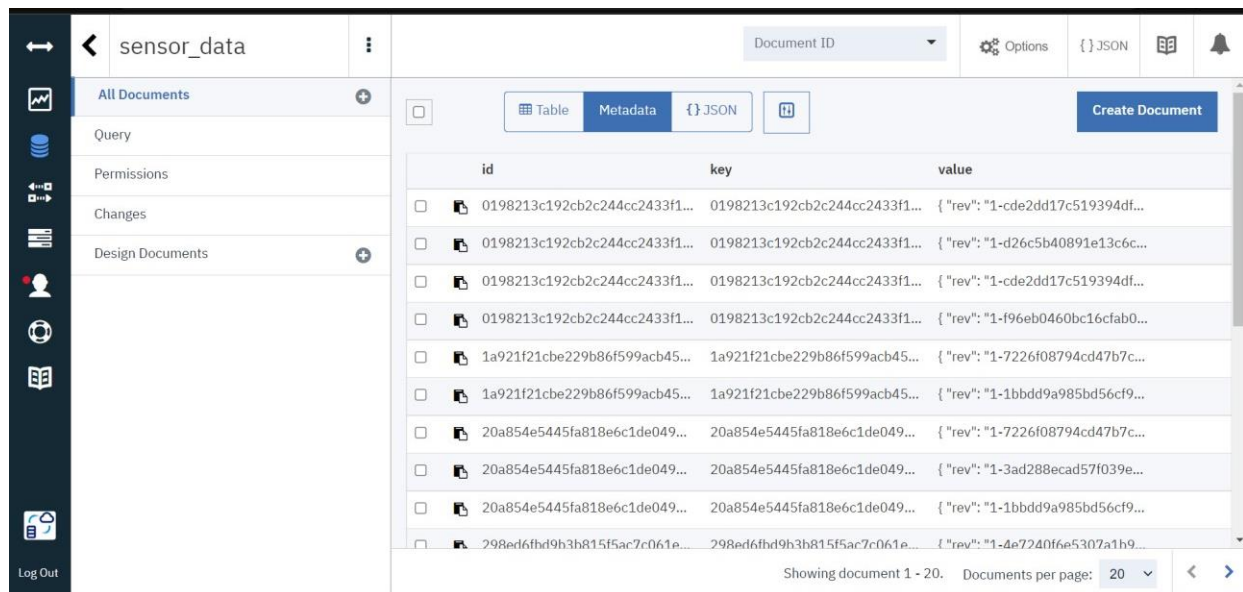


5 . Storing database in IBM cloudant DB.













The screenshot shows the IBM Cloudant Databases interface. At the top, there's a header with a 'Database name' dropdown, a 'Create Database' button, and icons for JSON, a book, and a bell. Below the header, the section is titled 'Your Databases'. A table lists four databases: 'login_credentials', 'noderedwjd20221105', 'sample', and 'sensor_data'. Each row shows the database name, size, number of documents, and whether it's partitioned. To the right of each row are three icons: a document with arrows, a lock, and a trash can. At the bottom right, it says 'Showing 1-4 of 4 databases. Databases per page: 20' with a dropdown arrow and navigation arrows.

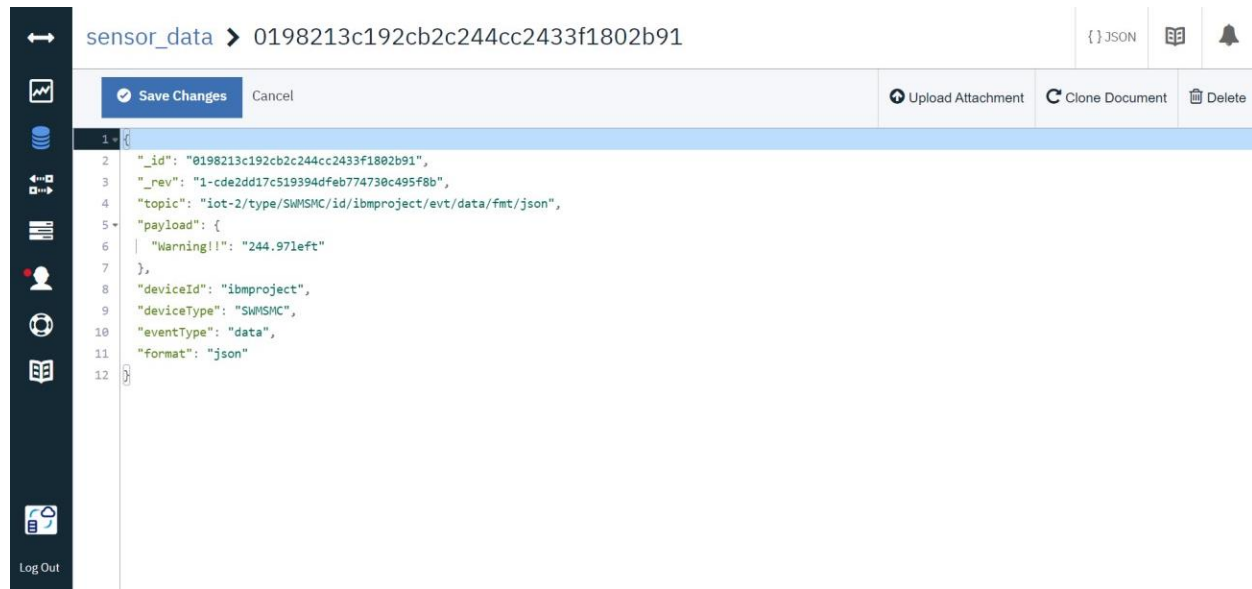
Name	Size	# of Docs	Partitioned	Actions
login_credentials	13.7 KB	111	No	  
noderedwjd20221105	37.4 KB	4	No	  
sample	59.4 KB	351	No	  
sensor_data	15.7 KB	90	No	  



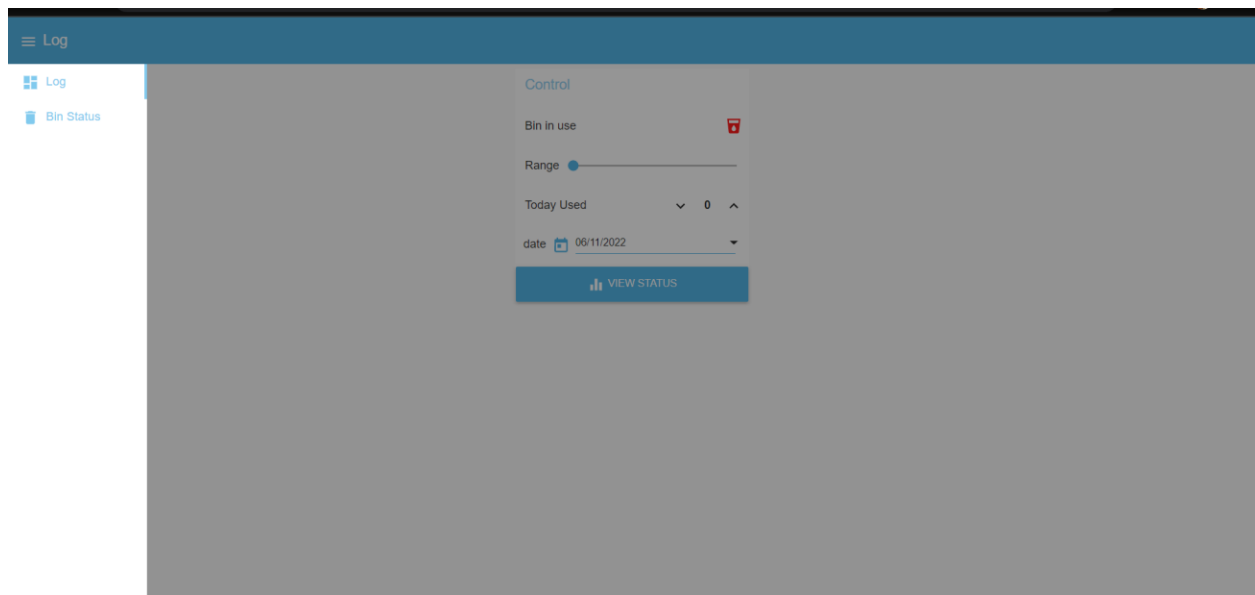
The screenshot shows the IBM Cloudant interface for the 'sensor_data' database. The left sidebar has a 'sensor_data' header and a menu with 'All Documents', 'Query', 'Permissions', 'Changes', and 'Design Documents'. The main area has a 'Document ID' dropdown, 'Options' button, and icons for JSON, a book, and a bell. Below this is a 'Create Document' button. A table displays document details with columns 'id', 'key', and 'value'. Each row has a checkbox and a document icon. At the bottom right, it says 'Showing document 1 - 20. Documents per page: 20' with a dropdown arrow and navigation arrows.

	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": "1-4e72d0f6e5307a1h9..." }

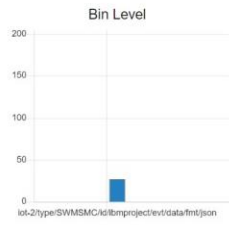
6. Data is stored in JSON format



7. Web UI



Bin Status



date 06/11/2022

