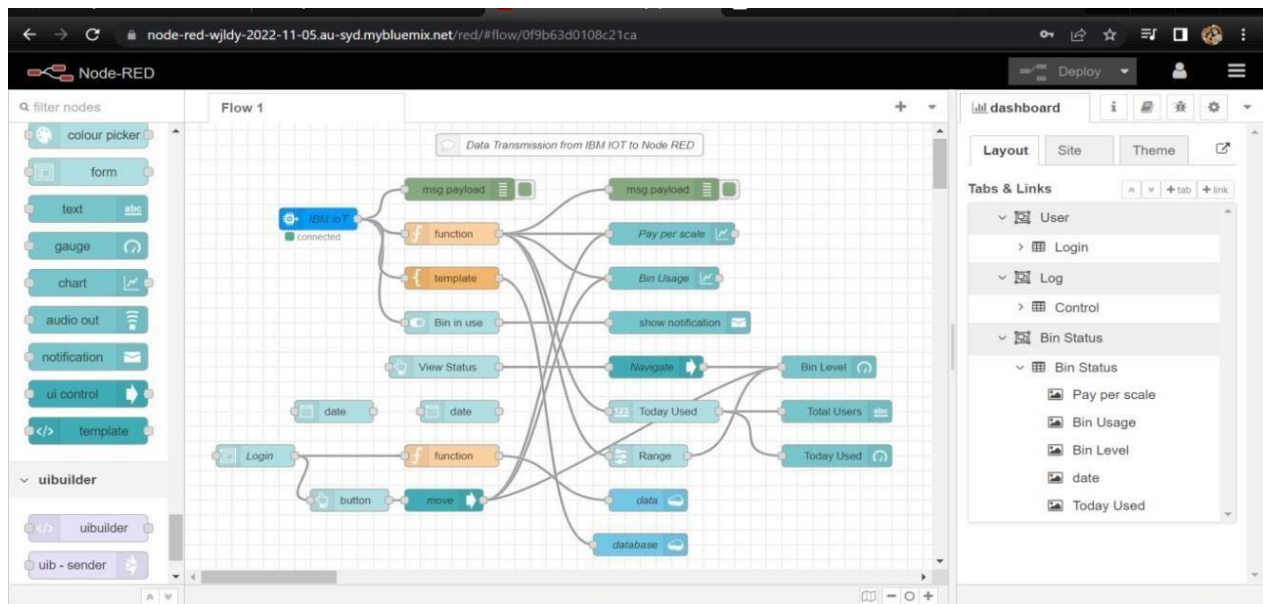
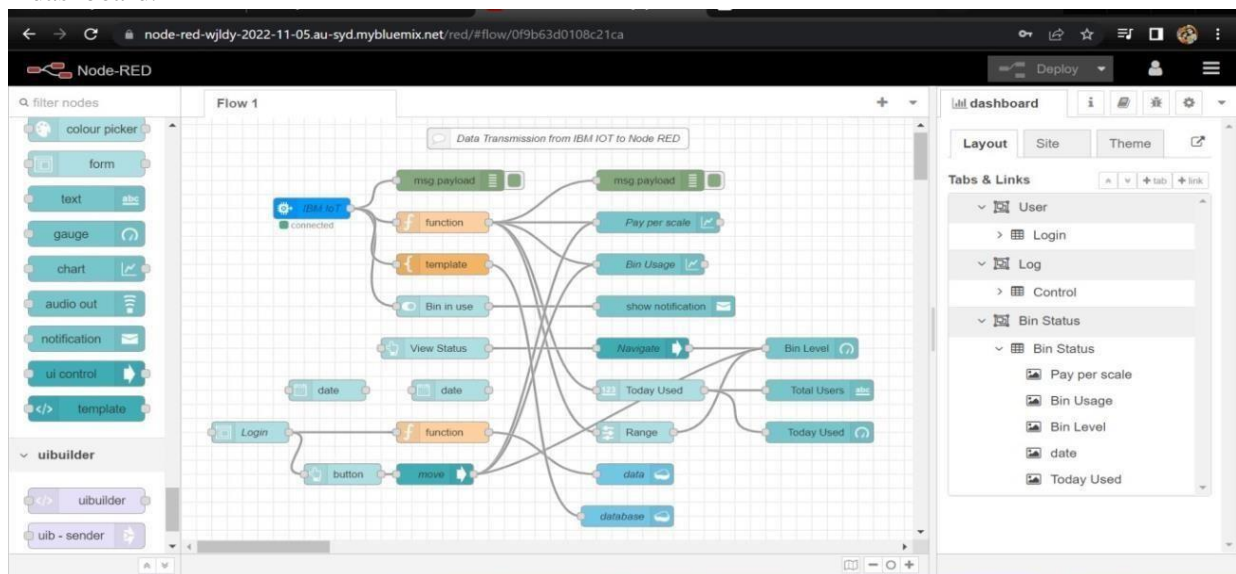


## Web UI Design and Deploy

Date	08 November 2022
Team ID	PNT2022TMID39755
Project Name	Smart Waste Management System 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.

The screenshot shows the Wokwi web interface. 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())) // 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");
```

On the right, the 'Simulation' window shows a circuit diagram of an ESP32 with a PIR Motion Sensor. Below the diagram, the console output displays the following messages:

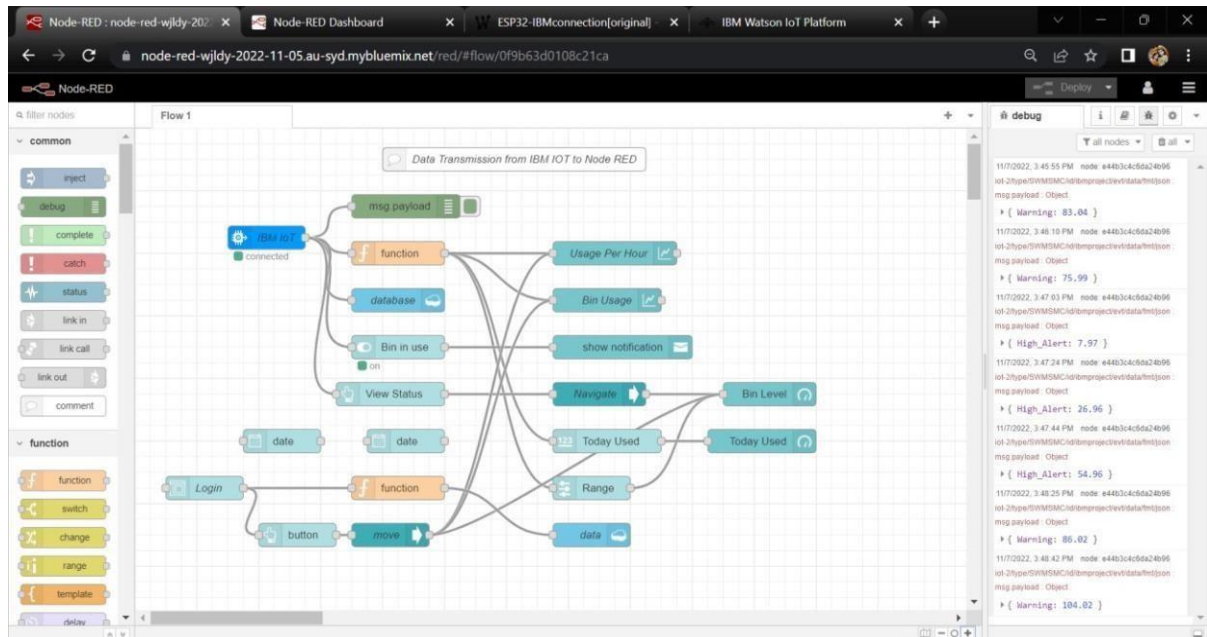
```
Sending distance: 26.94
Publish OK
Motion Detected
Lid Opened
High Alert!!!,Trash bin is about to be full
Lid Closed
```

3.Data transfer to Watson IOT platform.

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area displays a table of recent events. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. The data is as follows:













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 dashboard. The page title is "Databases". Below the title, there is a "Your Databases" section. A table lists the databases with columns: Name, Size, # of Docs, Partitioned, and Actions. The table contains four rows of data. The "Actions" column for each row contains three icons: a document icon, a lock icon, and a trash icon. At the bottom of the page, there is a footer that says "Showing 1-4 of 4 databases. Databases per page 20".

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	  

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..."}
298ed6fbd9b3b815f5ac7c061e...	298ed6fbd9b3b815f5ac7c061e...	{"rev": "1-4e7240f6e5307a1b9..."}

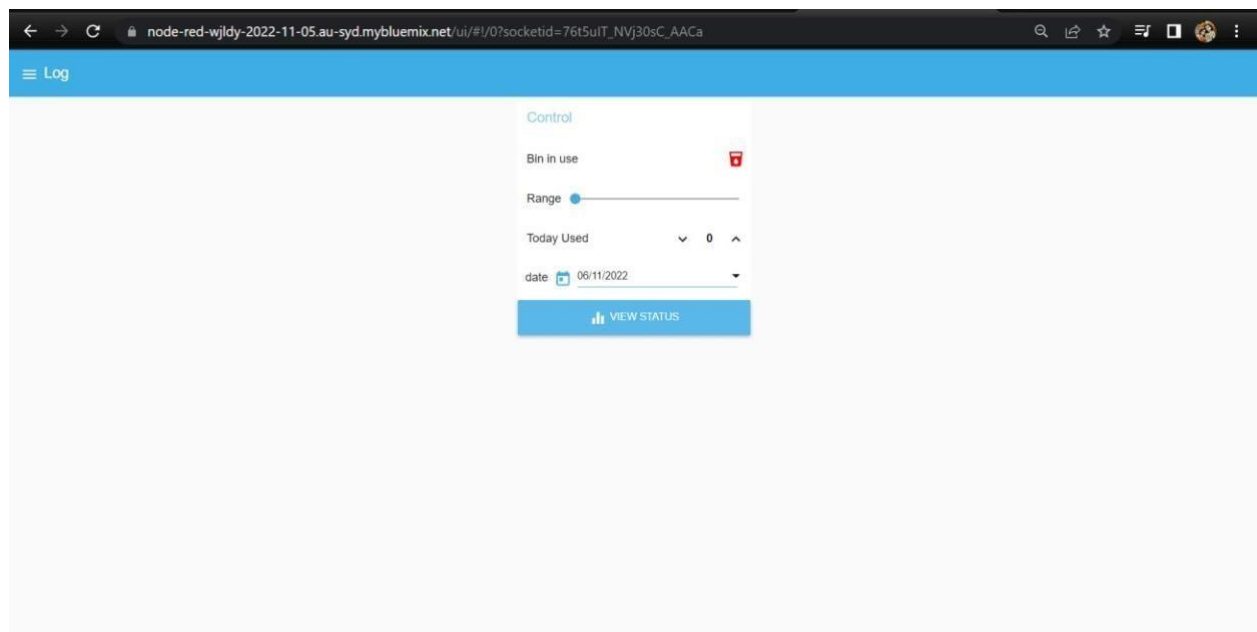
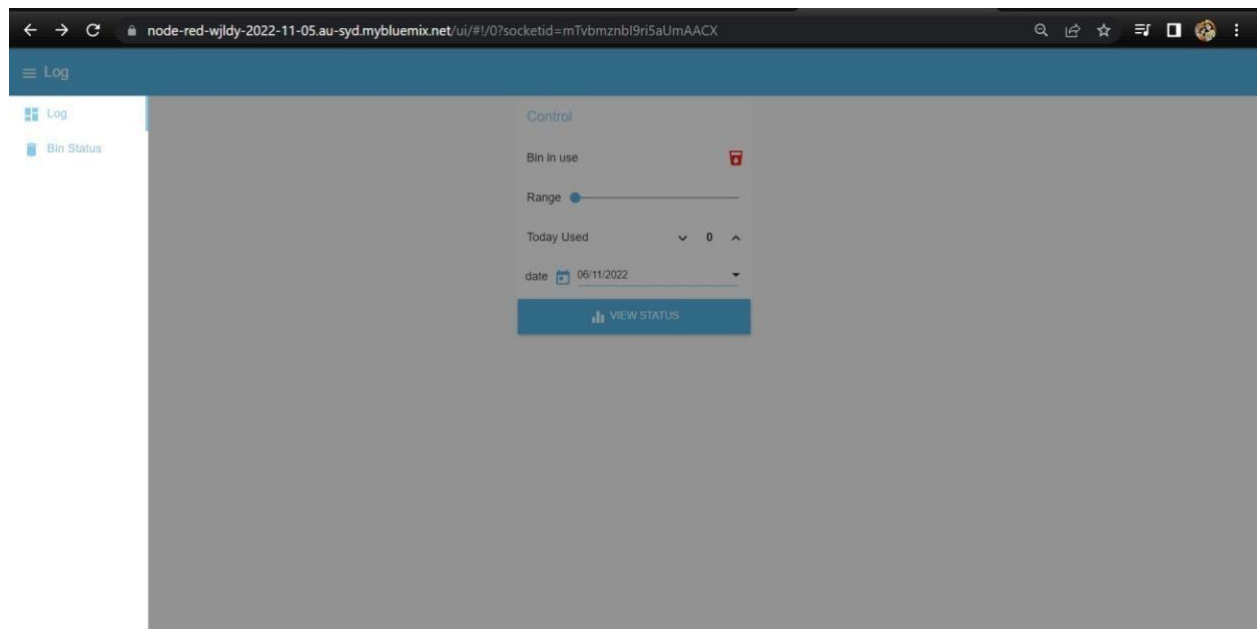
6.Data is stored in JSON format

```

1 {
2   "_id": "0198213c192cb2c244cc2433f1802b91",
3   "_rev": "1-cde2dd17c519394df774738c495f8b",
4   "topic": "iot-2/type/SWMSMC/id/ibmproject/evt/data/fmt/json",
5   "payload": {
6     "Warning!!": "244.971eleft"
7   },
8   "deviceId": "ibmproject",
9   "deviceType": "SWMSMC",
10  "eventType": "data",
11  "format": "json"
12 }

```

## 7. Web UI



Bin Status

