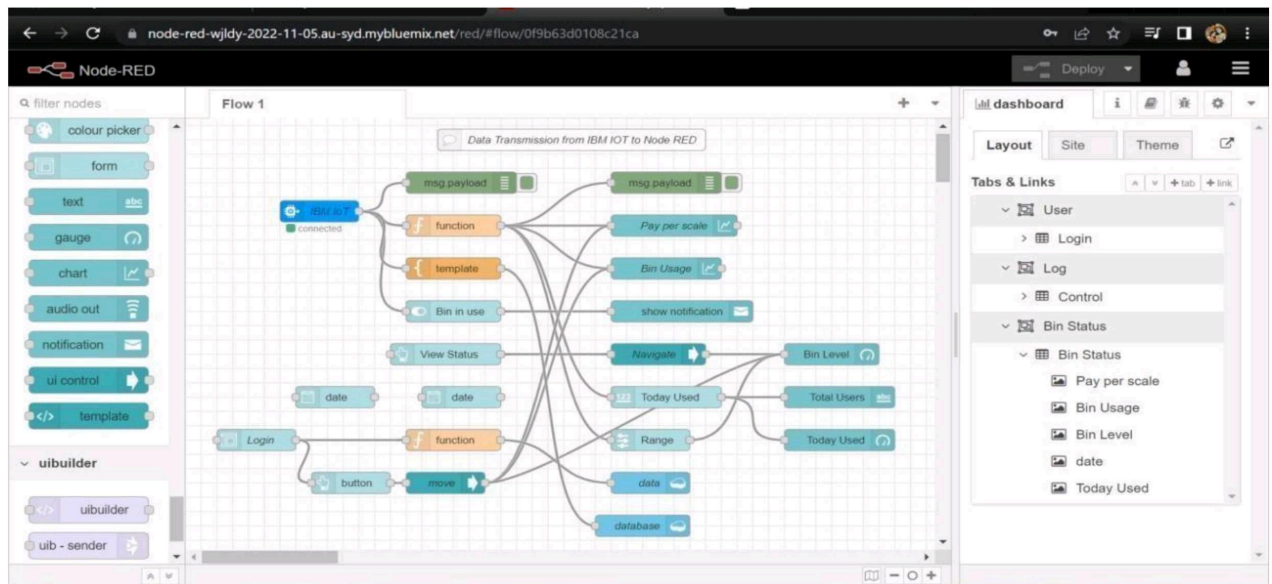


Delivery of Sprint – 3
Node Red Connection to
IBM Cloudant

Date	11 November 2022
Team ID	PNT2022TMID05221
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 web interface for an ESP32-IBMconnection project. The left pane displays the Arduino code, which includes logic for sending distance data to the Watson IoT platform and triggering alerts based on distance thresholds. The right pane shows a simulated circuit with a PIR motion sensor, a buzzer, and an LCD display. The console on the right shows the output of the simulation, including the distance being sent and the status of the motion sensor and lid.

```

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

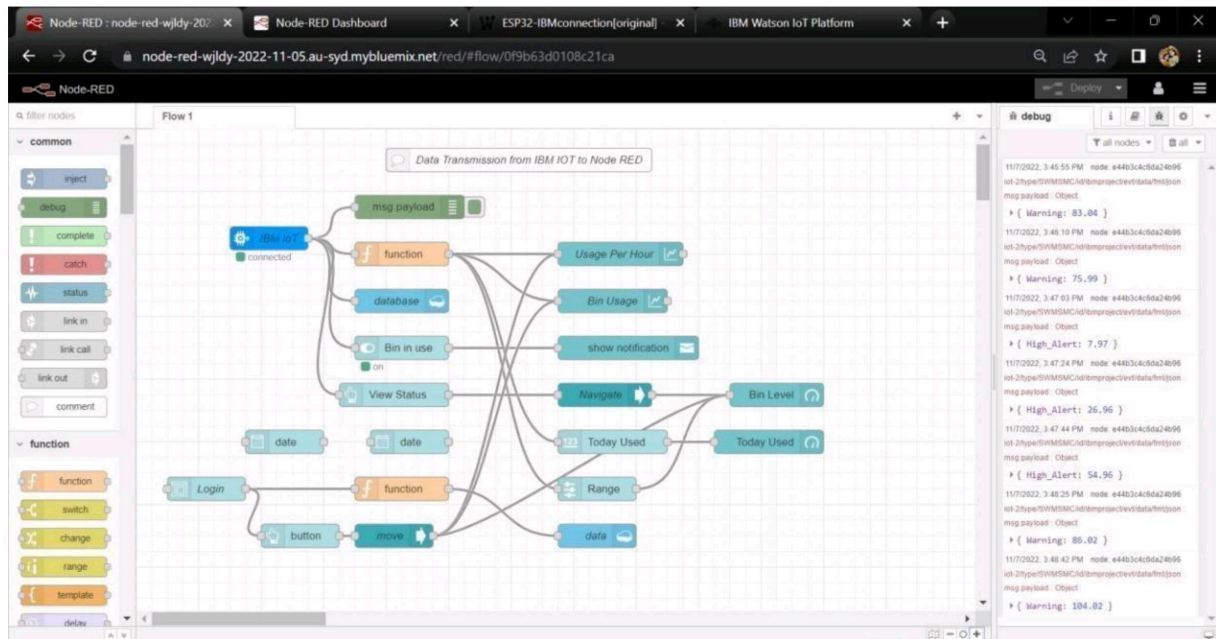
Lid Closed

3.Data transfer to Watson IOT platform.

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes links to Browse, Action, Device Types, and Interfaces. The main content area displays a table of recent events, showing the event type, value, format, and last received time.

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.

ee6aeb4a-3006-499e-940e-af19edf953bf-bluemix.cloudant.com/dashboard.html#/all_dbs

Databases

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

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": "1-1bdd9a985bd56cf9..."
20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "_rev": "1-7226f08794cd47b7c..."
20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "_rev": "1-3ad288cad57f039e..."
20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "_rev": "1-1bdd9a985bd56cf9..."
298ed6fbd9h3h815f5ac7c061e...	298ed6fbd9h3h815f5ac7c061e...	{ "_rev": "1-4e72d0f6e5307a1h9..."

6.Data is stored in JSON format

```

1 {
2   "_id": "0198213c192cb2c244cc2433f1802b91",
3   "_rev": "1-cde2dd17c519394df774730c495f8b",
4   "topic": "iot-2/type/SMMSMC/id/ibmproject/evt/data/fmt/json",
5   "payload": {
6     "Warning!!": "244.971eft"
7   },
8   "deviceId": "ibmproject",
9   "deviceType": "SMMSMC",
10  "eventType": "data",
11  "format": "json"
12 }

```

