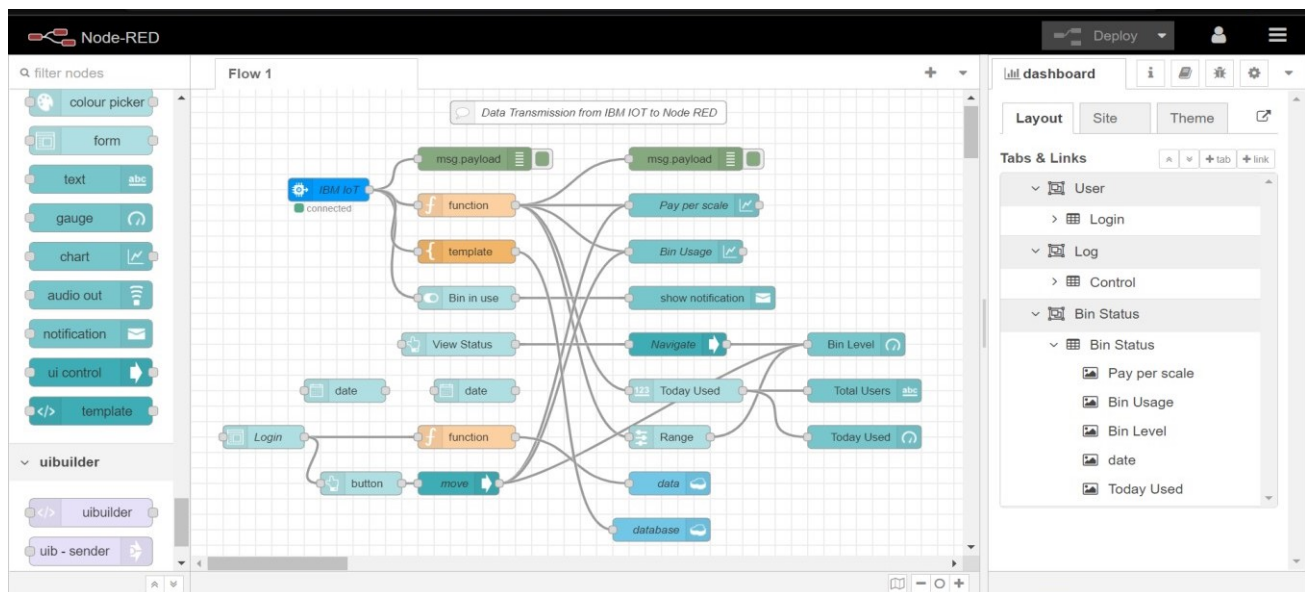
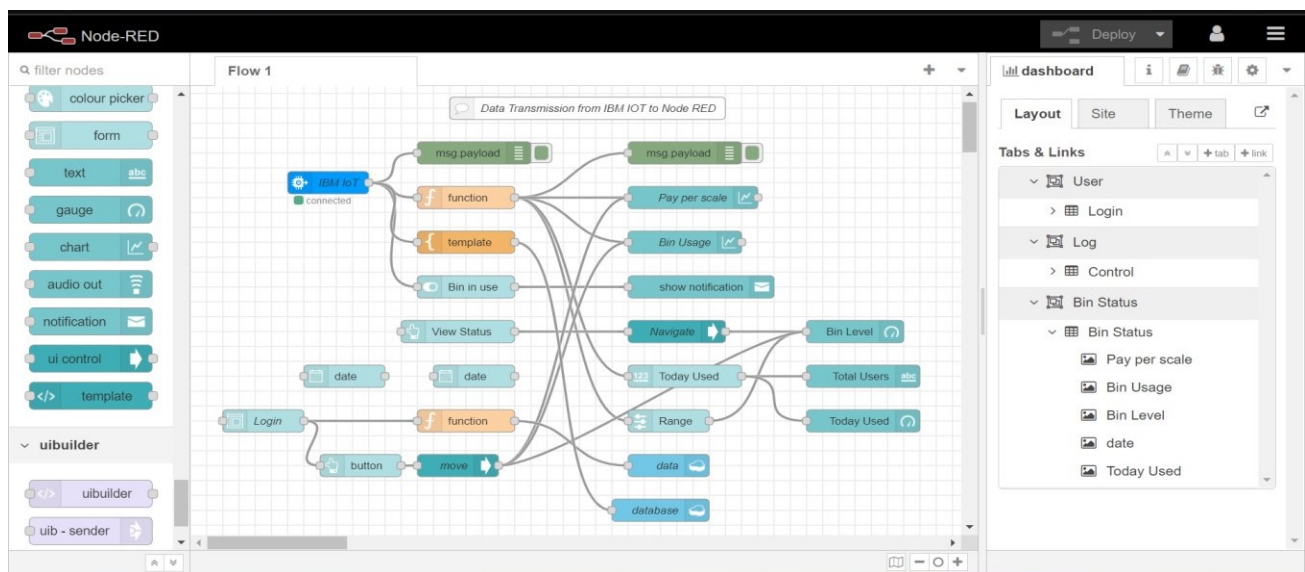


Delivery of Sprint-3

NodeRed Connection to IBM Cloudant

Date	15 November 2022
Team ID	PNT2022TMID04766
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.

3. Data transfer to Watson IoT platform.

The screenshot shows the Wokwi IDE interface. On the left, the code editor displays an Arduino sketch for an ESP32. The code includes logic for sending distance data and detecting motion. On the right, the simulation window shows a 3D model of the ESP32 board with various sensors connected. A 'PIR Motion Sensor' window is open, allowing simulation of motion. Below the simulation, a console window displays the output of the code, including distance values and motion detection alerts.

```
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");
```

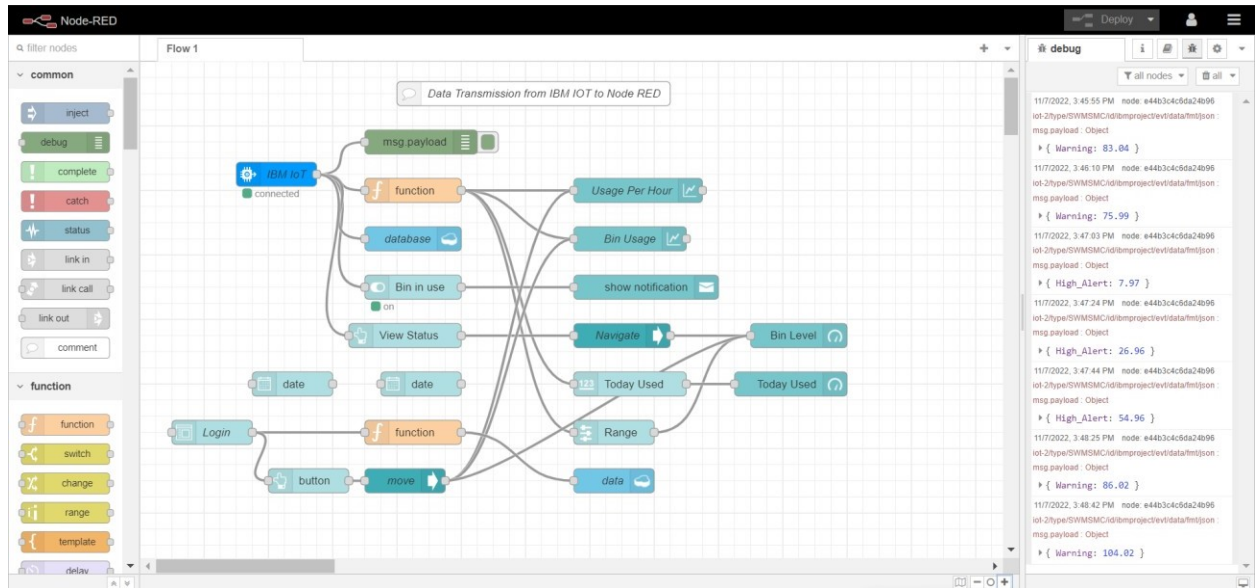
Simulation window output:

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

The screenshot shows the IBM Watson IoT Platform dashboard. The 'Browse' tab is selected, displaying a table of recent events. The table has four columns: Event, Value, Format, and Last Received. The events are listed in descending order of time, showing a sequence of 'Warning' messages with increasing values.

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 Nodered.



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	
noderedwjdy20221105	37.4 KB	4	No	
sample	59.4 KB	351	No	
sensor_data	15.7 KB	90	No	

sensor_data
Document ID
Options { } JSON

All Documents

Query

Permissions

Changes

Design Documents

☐
Table
Metadata
{ } JSON

	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-f96eb0460bc1cfab0..." }
<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"/>	298ed6fhd9b3b815f5ac7c061e...	298ed6fhd9b3b815f5ac7c061e...	{ "rev": "1-4e72d0f6e5307a1b9..." }

Showing document 1 - 20. Documents per page: 20

6.DataisstoredinJSONformat

sensor_data > 0198213c192cb2c244cc2433f1802b91

Save Changes Cancel

Upload Attachment Clone Document Delete

```
1 {
2   "_id": "0198213c192cb2c244cc2433f1802b91",
3   "_rev": "1-cde2dd17c519394dfeb774730c495f8b",
4   "topic": "iot-2/type/SWMSMC/id/ibmproject/evt/data/fmt/json",
5   "payload": {
6     "Warning!!!": "244.97left"
7   },
8   "deviceId": "ibmproject",
9   "deviceType": "SWMSMC",
10  "eventType": "data",
11  "format": "json"
12 }
```

