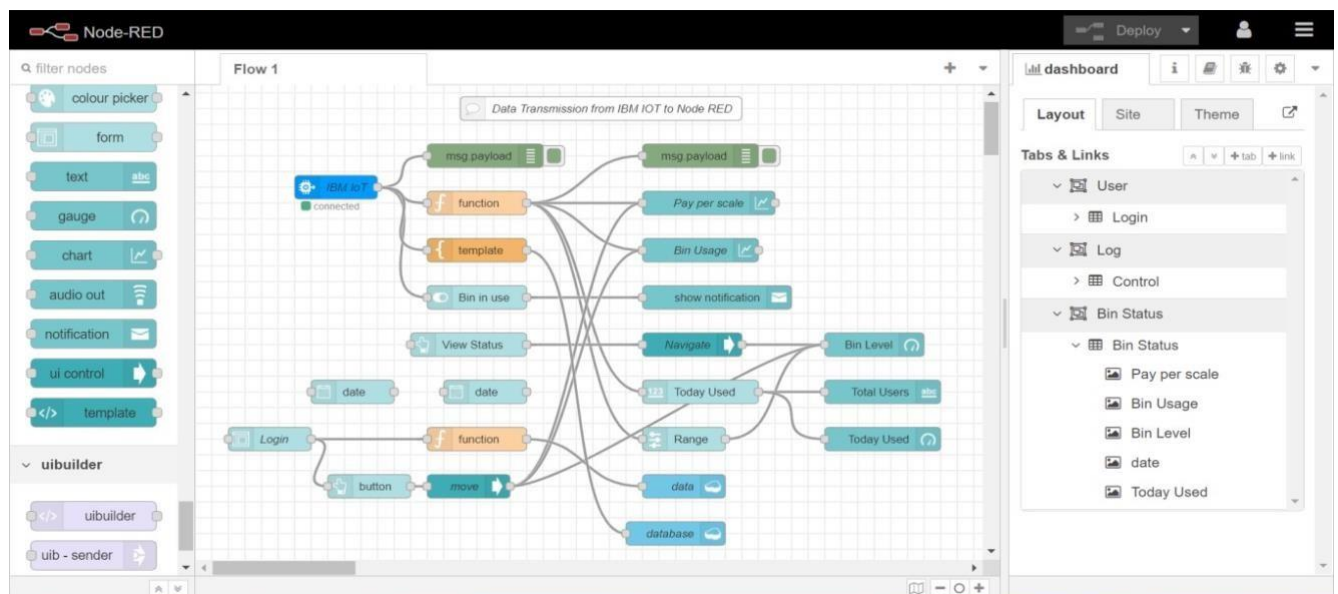
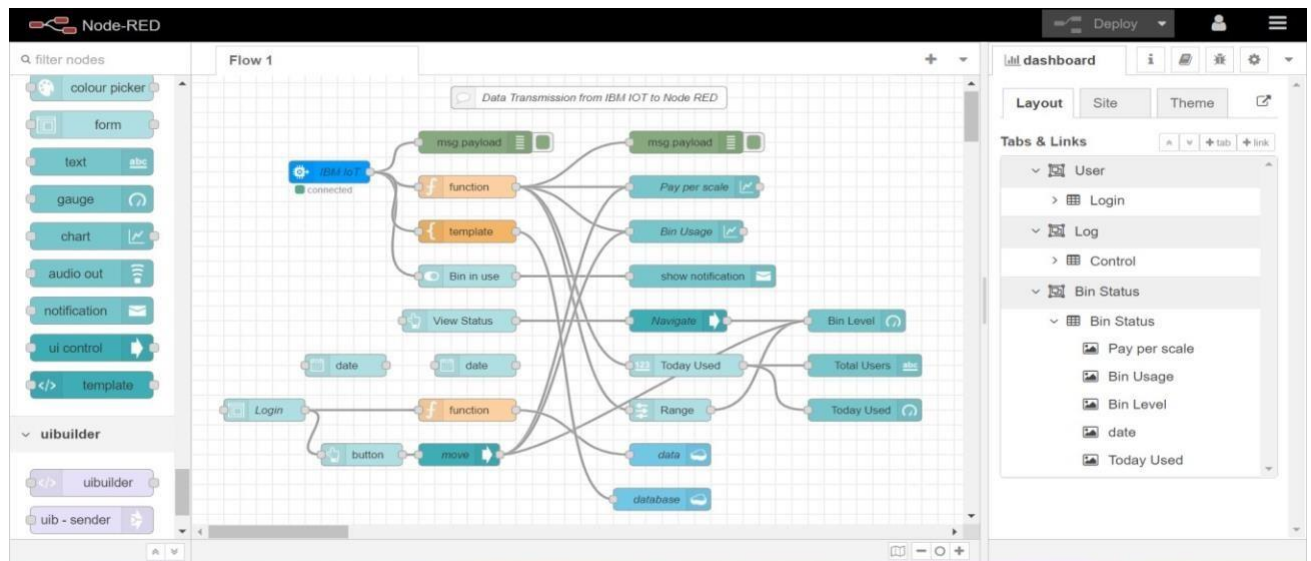


Node Red Connection to IBM Cloudant

Date	13 November 2022
Team ID	PNT2022TMID12348
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 displays the Wokwi IDE interface. On the left, a code editor shows a C++ program for an ESP32. The code includes logic for sending distance data to a topic and triggering a high alert when a distance threshold is reached. On the right, a 'Simulation' window shows a virtual circuit with an ESP32, a PIR Motion Sensor, and an LCD display. A 'PIR Motion Sensor' dialog box is open, allowing the user to 'Simulate motion'. Below the simulation, a console window shows the output of the program, including 'Sending distance: 26.94', 'Publish OK', 'Motion Detected', 'Lid Opened', 'High Alert!!!, Trash bin is about to be full', and 'Lid Closed'.

```
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");
```

Simulation
00:35.846 99%
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 'Recent events' section displays a table of data received from a device. The table has four columns: Event, Value, Format, and Last Received. The events are listed in descending order of time received.

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.

sensor_data
Document ID
Options
{ } JSON

All Documents

Query

Permissions

Changes

Design Documents

☐ Table
☒ Metadata
☐ { } JSON
☐

[Create Document](#)

	id	key	value
<input type="checkbox"/>	0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-cde2dd17c519394df..." }
<input type="checkbox"/>	0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-d26c5ba0891e13c6c..." }
<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"/>	298ed6fd9d3b815f5ac7c061e...	298ed6fd9d3b815f5ac7c061e...	{ "rev": "1-de72af0f6e5307a1b9..." }

Showing document 1 - 20. Documents per page: 20

6.Data is stored in JSON format

sensor_data > 0198213c192cb2c244cc2433f1802b91

{ } JSON

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 }
```

