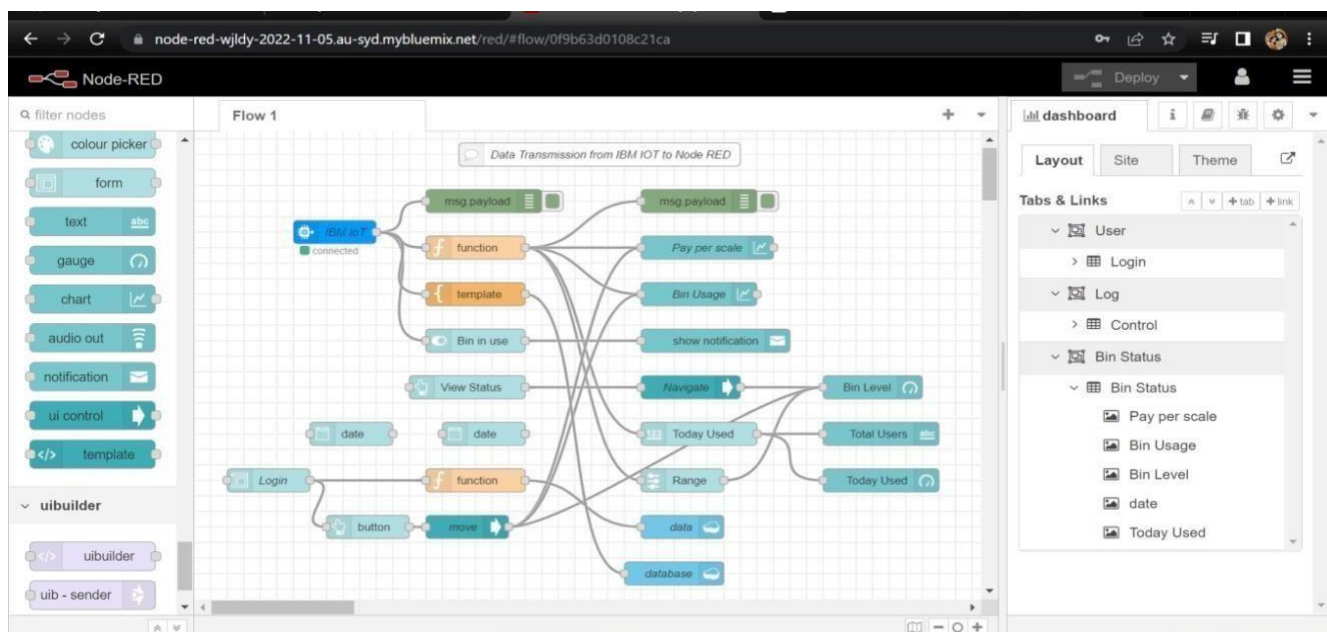
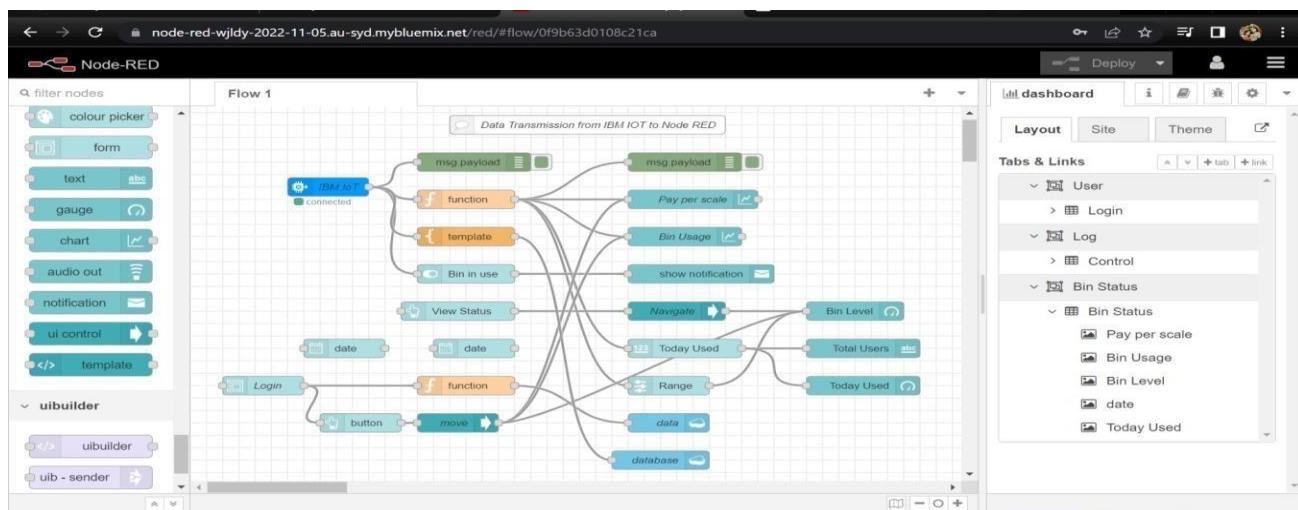


Node Red Connection to IBM Cloudant

Date	10 November 2022
Team ID	PNT2022TMID05290
Project name	Smart Waste management in metropolitan cities

1.Node-RED Connection setup for data transmission from IBM Watson IOTplatform to Node REDdashboard.



Simulate Wokwi connection to transmit data from wokwi account to IBM WatsonIoT platform and then to Node Red dashboard.

The screenshot shows the Wokwi web interface for a project named "ESP32-IBMCconnection". The code editor on the left contains the following C++ 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");

```

The simulation window on the right shows a PIR Motion Sensor connected to an ESP32. 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

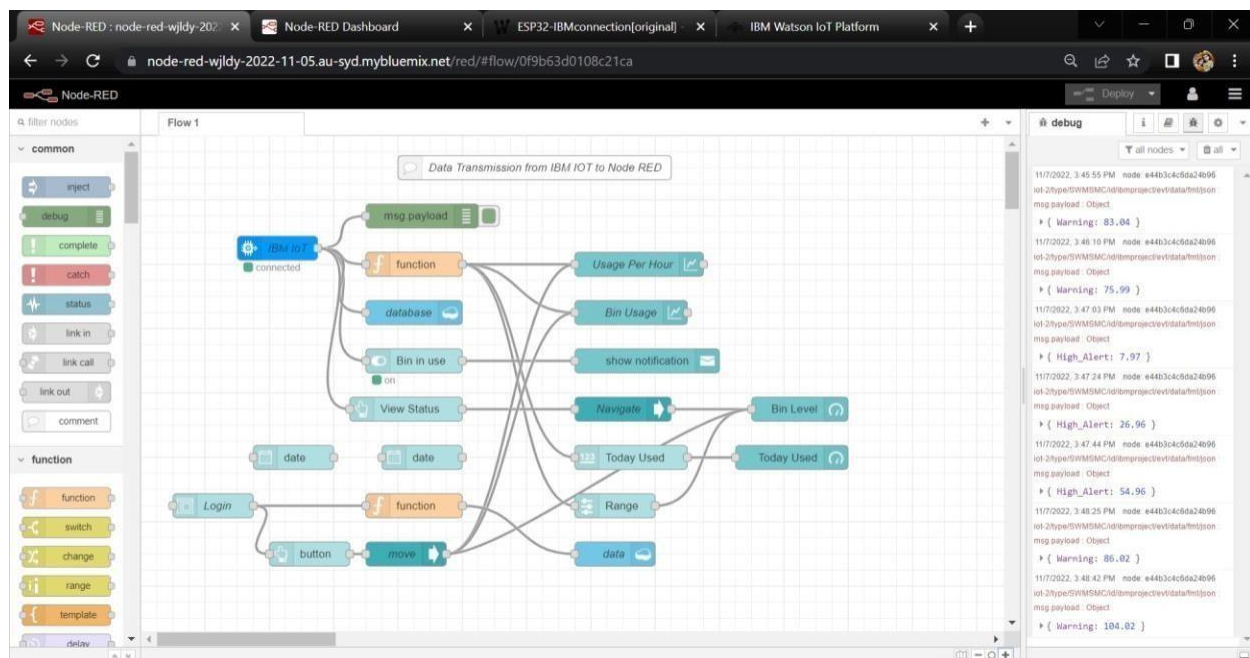
```

Data transfer to Watson IOT platform.

The screenshot shows the IBM Watson IoT Platform dashboard for a device with ID "9gbe4w". The "Browse" tab is selected, and the "Recent events" section displays a table of live data streams.

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

Data transfer from IBM Watson IOT platform and wokwi to Node red.



1. Storing database in IBM cloudant DB.

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

Database name

Create Database

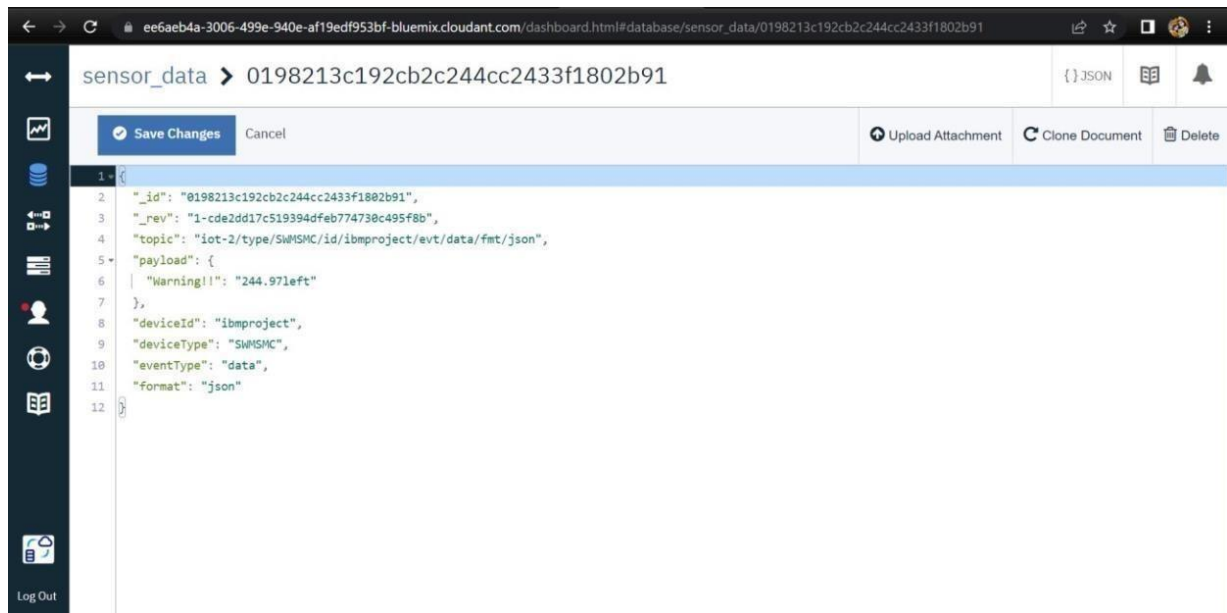
{ } JSON

Your Databases

Name	Size	# of Docs	Partitioned	Actions
login_credentials	13.7 KB	111	No	<div>↔</div> <div>🔒</div> <div>🗑️</div>
noderedwjldy20221105	37.4 KB	4	No	<div>↔</div> <div>🔒</div> <div>🗑️</div>
sample	59.4 KB	351	No	<div>↔</div> <div>🔒</div> <div>🗑️</div>
sensor_data	15.7 KB	90	No	<div>↔</div> <div>🔒</div> <div>🗑️</div>

Showing 1–4 of 4 databases. Databases per page 20

Data is stored in JSON format



The screenshot shows the IBM Cloudant dashboard interface. The browser address bar displays the URL: `ee6aeb4a-3006-499e-940e-af19edf953bf-bluemix.cloudant.com/dashboard.html#database/sensor_data/0198213c192cb2c244cc2433f1802b91`. The page title is `sensor_data > 0198213c192cb2c244cc2433f1802b91`. On the right side, there are buttons for `{ } JSON`, a document icon, and a bell icon. Below the title bar, there is a toolbar with buttons: `Save Changes` (with a checkmark icon), `Cancel`, `Upload Attachment` (with a plus icon), `Clone Document` (with a circular arrow icon), and `Delete` (with a trash icon). The main area displays a JSON document with the following content:

```
1 {  
2   "_id": "0198213c192cb2c244cc2433f1802b91",  
3   "_rev": "1-cde2dd17c519394dfcb774738c495f8b",  
4   "topic": "iot-2/type/SWMSMC/id/ibmproject/evt/data/fmt/json",  
5   "payload": {  
6     "Warning!!": "244.971left"  
7   },  
8   "deviceId": "ibmproject",  
9   "deviceType": "SWMSMC",  
10  "eventType": "data",  
11  "format": "json"  
12 }
```

On the left side, there is a dark sidebar with various icons for navigation. At the bottom of the sidebar, there is a `Log Out` button.

