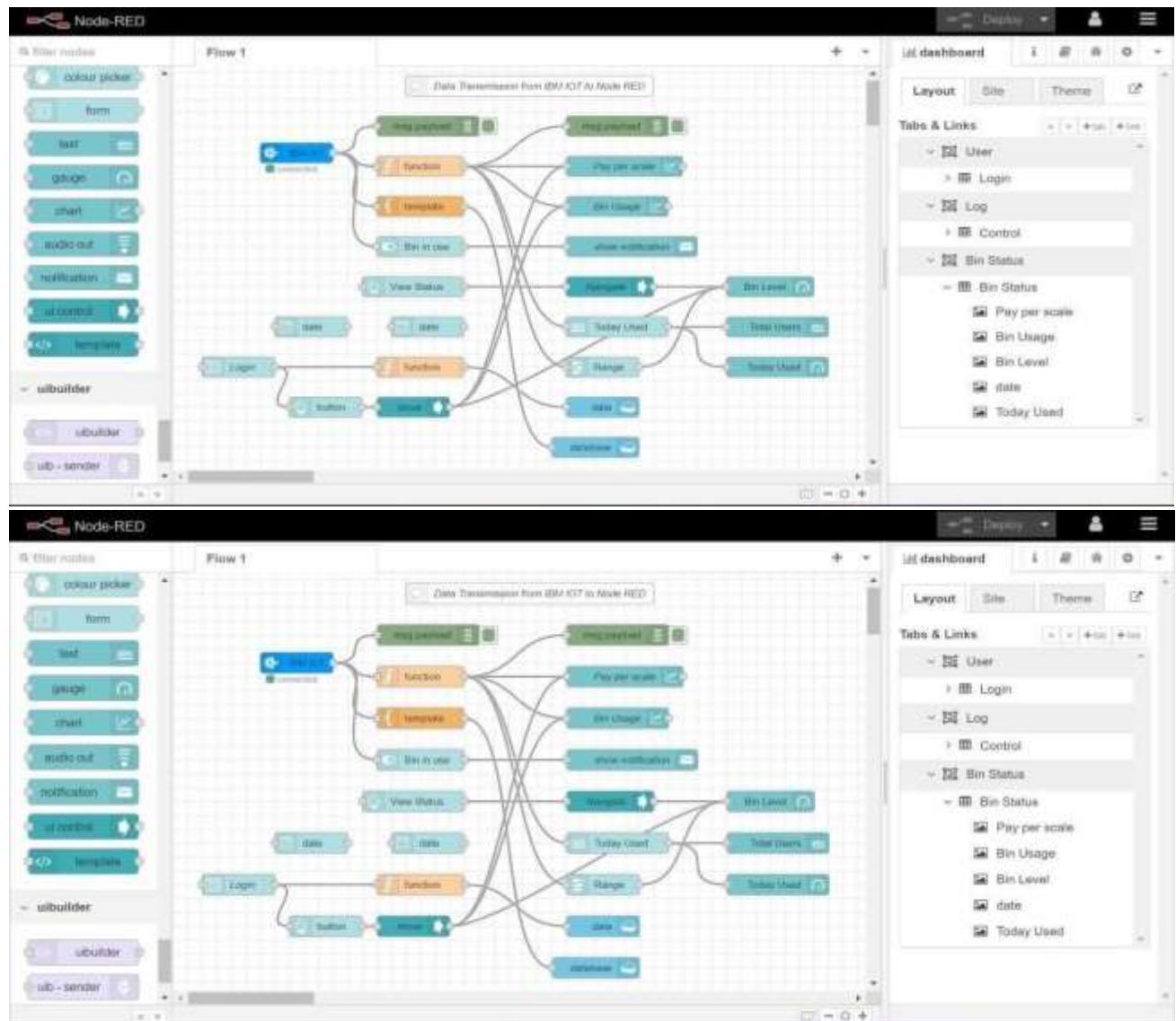


Delivery of Sprint – 3

Node Red Connection to IBM Cloudant

Date	09 November 2022
Team ID	PNT2022TMID53722
Project Name	Smart Waste Management 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 IDE interface. On the left, the code editor displays `esp32-blink.ino` with several lines of C-like pseudocode. On the right, the simulation window titled "PIR Motion Sensor" shows a breadboard setup with a PIR sensor connected to pins 13 and 14, and a digital output pin connected to a green LED. A serial monitor window below the simulation shows the following log entries:

```

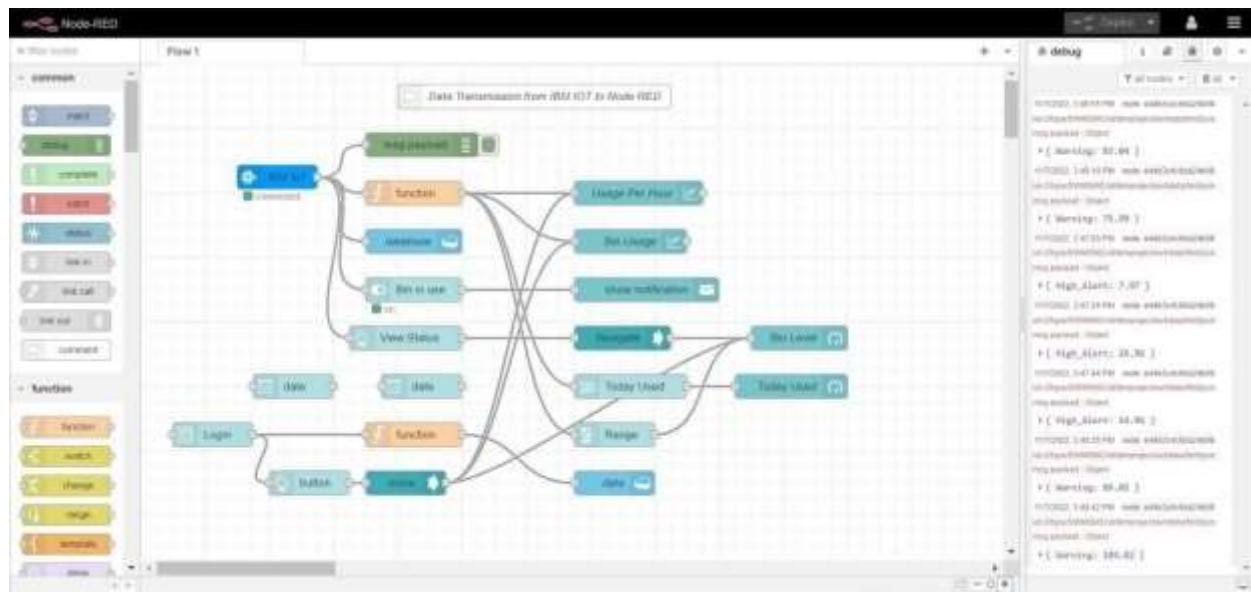
  Sending distance: 26.94
  Publish OK
  Motion Detected
  Lid Opened
  High Alert!!!, Trash bin is about to be full
  Lid Closed
  
```

3. Data transfer to Watson IOT platform.

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

The screenshot shows the IBM Watson IoT Platform interface. On the left, a sidebar menu includes options like "Browse", "Actions", "Device Types", and "Interfaces". The main area displays a table of recent events for a specific device, with the following data:

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":49.95}	json	a minute ago
data	{"Warning":49.95}	json	a minute ago
data	{"Warning":11.03}	json	a minute ago



5. Storing database in IBM cloudant DB.

The screenshot shows the IBM Cloudant Database interface with a list of databases.

Databases List:

Name	Size	# of Docs	Partitioned	Actions
sign_credentials	13.7 KB	111	No	[Edit, Lock, Delete]
node-red-wdly703221305	37.4 KB	4	No	[Edit, Lock, Delete]
sample	59.4 KB	351	No	[Edit, Lock, Delete]
sensor_data	15.7 KB	90	No	[Edit, Lock, Delete]

UI Elements:

- Sidebar:** Includes icons for Home, Databases, Functions, Flows, and Help.
- Top Bar:** Includes "Database name" dropdown, "Create Database" button, "JSON" icon, and a bell icon.
- Bottom Bar:** Includes "Showing 1-4 of 4 databases.", "Databases per page" dropdown (set to 20), and navigation arrows.

The screenshot shows the Apache CouchDB Futon interface. On the left is a sidebar with icons for All Documents, Query, Permissions, Changes, Design Documents, and Log Out. The main area has a title bar "sensor_data" with a back arrow, a "Document ID" dropdown, and a "Create Document" button. Below this is a toolbar with "Table", "Metadata", "JSON", and a search icon. A table lists 20 documents. The columns are "id", "key", and "value". The "value" column contains JSON objects. At the bottom right, it says "Showing document 1 - 20" and "Documents per page: 20".

	id	key	value
1	0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{"rev": "1-cde20f17c519394df..."}
2	0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{"rev": "1-d26c5b40891e13c6c..."}
3	0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{"rev": "1-cde20f17c519394ff..."}
4	0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{"rev": "1-096e6b0460bc16cfab0..."}
5	1a921f21cbe22958bf99ac45...	1a921f21cbe22958bf99ac45...	{"rev": "1-7228d08794cd47b7c..."}
6	1a921f21cbe22958bf99ac45...	1a921f21cbe22958bf99ac45...	{"rev": "1-5bbdd9a985bd56cf9..."}
7	20a854e5445fa810e6c1de049...	20a854e5445fa810e6c1de049...	{"rev": "1-7228d08794cd47b7c..."}
8	20a854e5445fa810e6c1de049...	20a854e5445fa810e6c1de049...	{"rev": "1-3ad288ecad57f039e..."}
9	20a854e5445fa810e6c1de049...	20a854e5445fa810e6c1de049...	{"rev": "1-166dd9a985bd56cf9..."}
10	298ad6fb9b3bf150%ac7c061n...	298ad6fb9b3bf150%ac7c061n...	{"rev": "1-ade22409ee5307a1b9..."}

6. Data is stored in JSON format

The screenshot shows the Apache CouchDB Futon interface for a specific document. The title bar says "sensor_data > 0198213c192cb2c244cc2433f1802b91". The main area shows the document's JSON structure. The "payload" field contains a nested object with a "warning" key. The "warning" value is a string: "244.871ePs".

```

1  "_id": "0198213c192cb2c244cc2433f1802b91",
2  "_rev": "1-cde20f17c519394df77473b40894fb",
3  "topic": "iot-2/type/SensorIC/IoT/IotProject/event/data/Fmt/json",
4  "payload": {
5    "warning": "244.871ePs"
6  },
7  "deviceID": "1beproject",
8  "deviceType": "SNMPv2",
9  "eventType": "data",
10 "format": "json"
11
12

```