SPRINT - 3

Date	8 November 2022
Team ID	PNT2022TMID42565
Project Name	Smart waste management system for metropolitan cities
Points	20

Created a IOT device to sense the level of bins and do code for device and send to Node Red using the API keys from Watson platform

CODE :

```
#include <cstdlib>
#include <time.h>
#include <WiFi.h>
#include <PubSubClient.h>

#define ORG "zuhtbq"
#define DEVICE_TYPE "Rasp"
#define DEVICE_ID "12345"
#define TOKEN "12345678"
#define speed 0.034

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/data/fmt/json";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;

WiFiClient wifiClient;
PubSubClient client(server, 1883, wifiClient);
int weight = 0;
```

```
String location = "Coimbatore";
String status = "";
```

```
    p = 1;
}
else{
p = 2;
```

```
    }
```

[redacted]

```
payload+="\"Status\":\""+status+"\"}";

Serial.println(payload);
if(client.publish(publishTopic,
(char*) payload.c_str()))
```

[redacted]

```
}
```

```
{
  Serial.println("Publish OK");
}
```

[redacted]

```
WiFi.begin("Wokwi-GUEST", "", 6);

while (WiFi.status() != WL_CONNECTED)

{
```

[redacted]

```
    delay(500);
    Serial.print(".");
  }
  Serial.print("WiFi connected, IP address: ");
  Serial.println(WiFi.localIP());

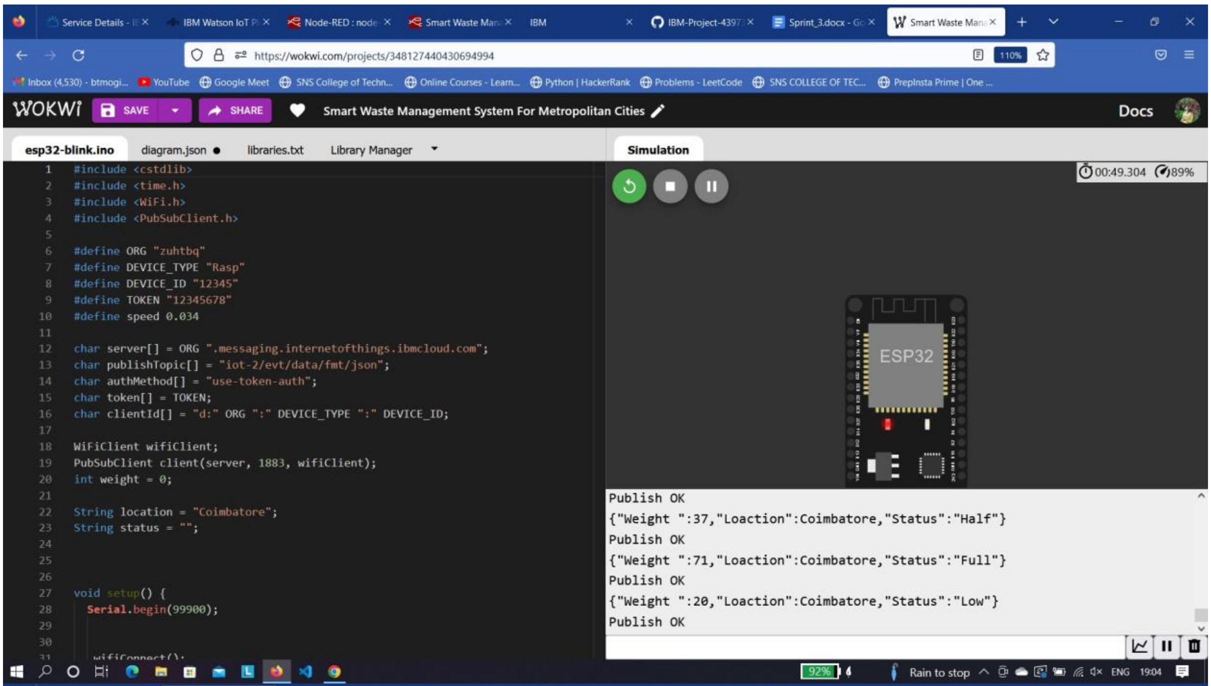
}


void mqttConnect()
{
  if (!client.connected())
  {
    Serial.print("Reconnecting MQTT client to ");
    Serial.println(server);
    while (!client.connect(clientId, authMethod, token))
    {
      Serial.print(".");
      delay(500);
    }

    Serial.println();
  }
}
```

Sensor circuit:

Watson IOT Platform:



https://wokwi.com/projects/348127440430694994

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char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;

WiFiClient wifiClient;
PubSubClient client(server, 1883, wifiClient);
int weight = 0;

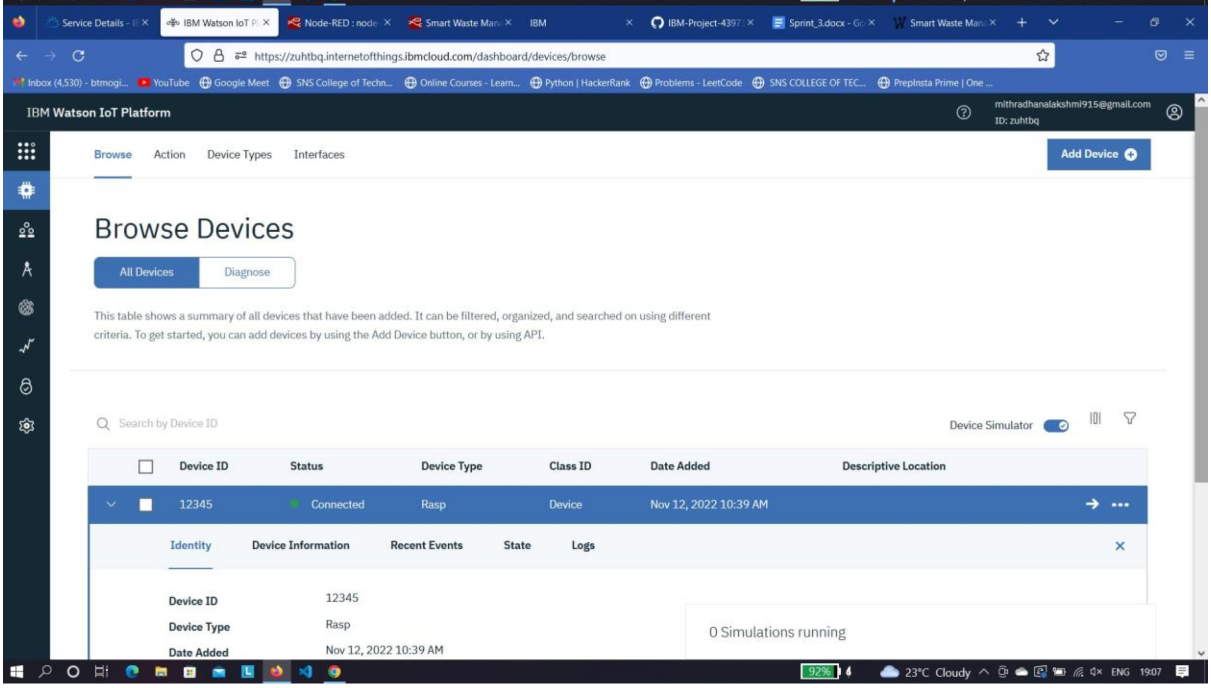
String location = "Coimbatore";
String status = "";



void setup() {
  Serial.begin(99900);


   wifiConnect();
```

```
Publish OK
{"Weight ":37,"Loaction":Coimbatore,"Status":"Half"}
Publish OK
{"Weight ":71,"Loaction":Coimbatore,"Status":"Full"}
Publish OK
{"Weight ":20,"Loaction":Coimbatore,"Status":"Low"}
Publish OK
```



https://zuhtbq.internetofthings.ibmcloud.com/dashboard/devices/browse

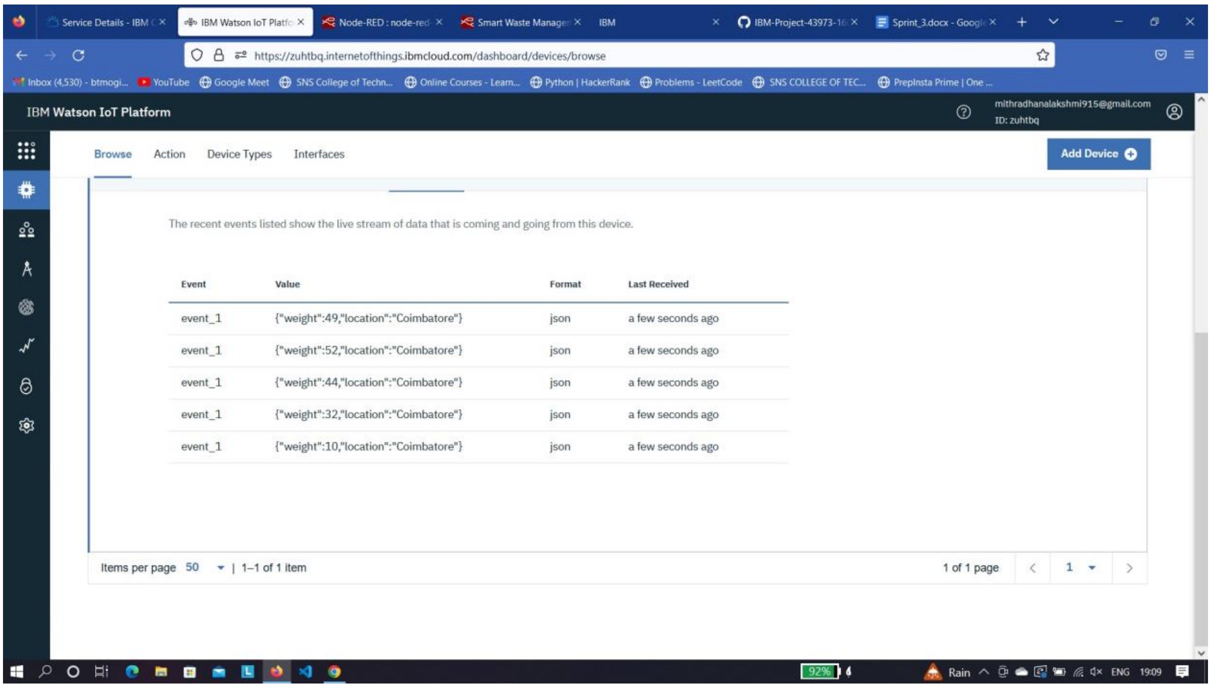
Browse Devices

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Connected	Rasp	Device	Nov 12, 2022 10:39 AM	

Device ID	12345
Device Type	Rasp
Date Added	Nov 12, 2022 10:39 AM

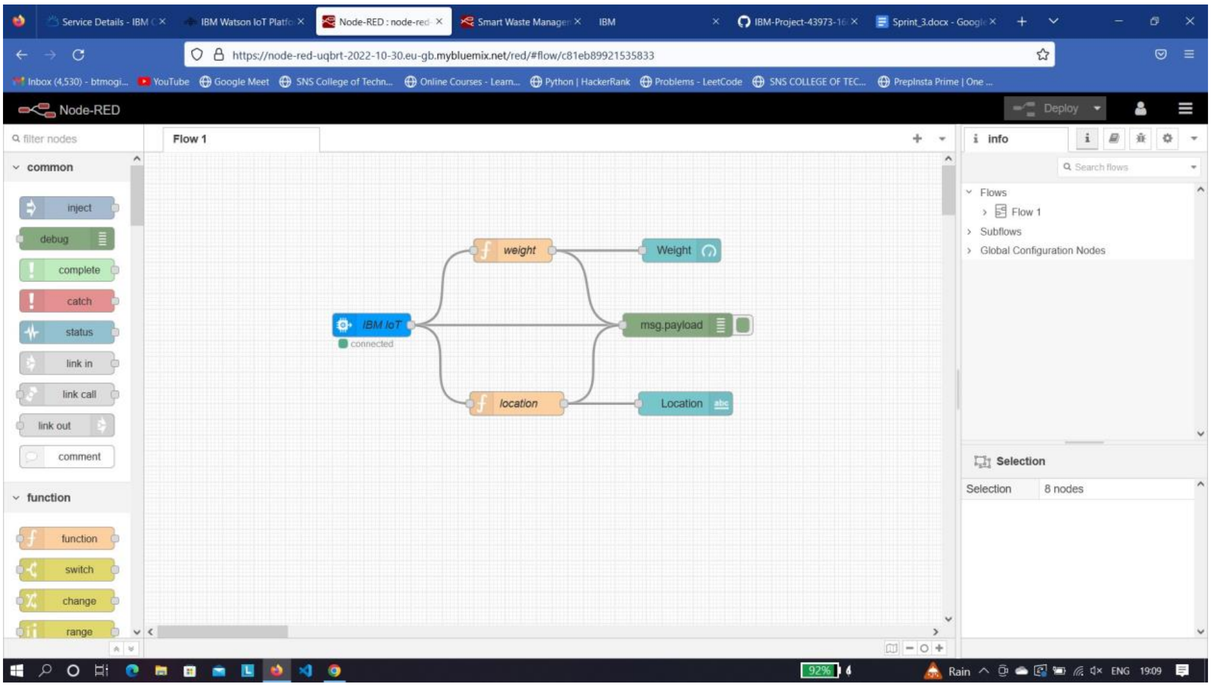
0 Simulations running


IBM Watson IoT Platform
https://zuhtbq.internetofthings.ibmcloud.com/dashboard/devices/browse
mithradhanalakshmi915@gmail.com
ID: zuhtbq
Browse
Action
Device Types
Interfaces
Add Device

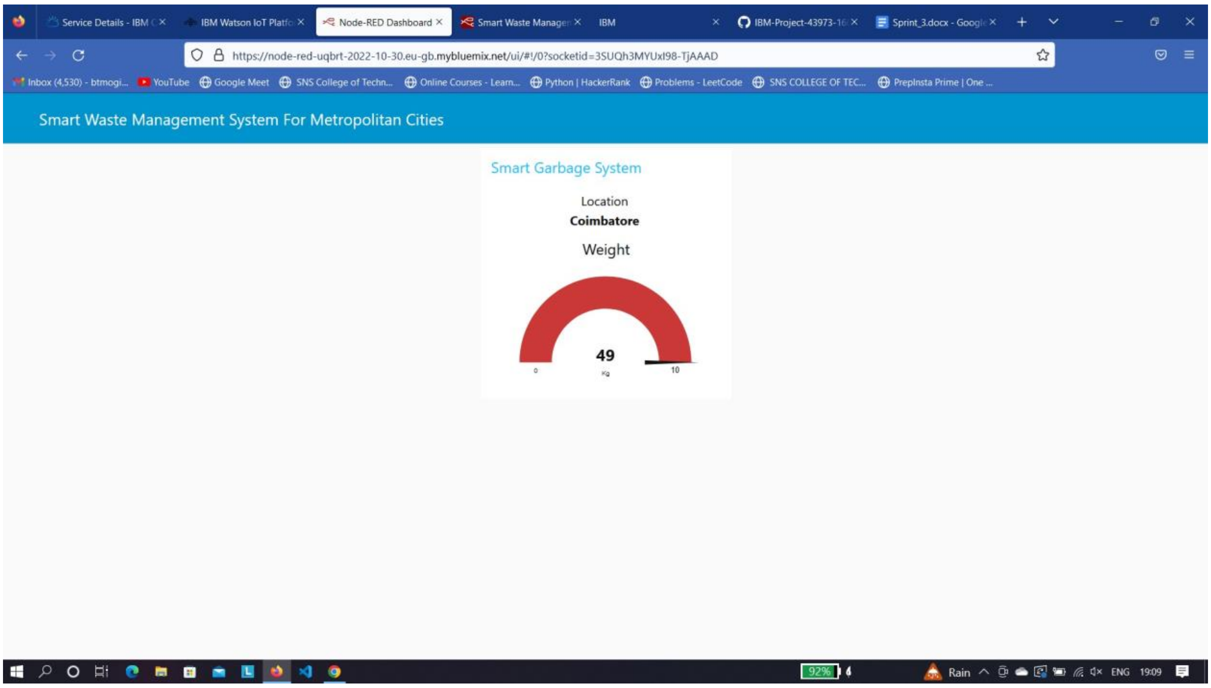
The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	{"weight":49,"location":"Coimbatore"}	json	a few seconds ago
event_1	{"weight":52,"location":"Coimbatore"}	json	a few seconds ago
event_1	{"weight":44,"location":"Coimbatore"}	json	a few seconds ago
event_1	{"weight":32,"location":"Coimbatore"}	json	a few seconds ago
event_1	{"weight":10,"location":"Coimbatore"}	json	a few seconds ago

Node-RED Connections :



Web UI :



Smart Waste Management System For Metropolitan Cities

Smart Garbage System

Location
Coimbatore

Weight

49
Kg

Run the code here :
https://wokwi.com/projects/348127440430694994