

## SPRINT - 3

Date	17 November 2022
Team ID	PNT2022TMID51107
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 "uwfajw"
#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 = "";

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

```

    wifiConnect();
    mqttConnect();
}

void loop() {

    srand(time(0));

    //initial variable
    int p;

    weight = random(0,80);
    if(weight > 0  && weight < 25){
        p = 0;
    }
    else if(weight > 25  && weight < 50){
        p = 1;
    }
    else{
        p = 2;
    }

    //set a quality status

    switch (p) {
    case 0:
        status = "Low";
        break;
    case 1:
        status = "Half";
        break;
    case 2:
        status = "Full";
        break;
    }

    //Obviously the output.It is like json format 'cause it will help us for future
    sprintfs
    String payload = "{";
    payload+="\"Weight \":";
    payload+=weight;
    payload+=",";
    payload+="\"Loaction\":";
    payload+="Coimbatore";
    payload+=",";
    payload+="\"Status\":";
    payload+=status+"\"}";
    Serial.println(payload);

    if(client.publish(publishTopic, (char*) payload.c_str()))
    {
        Serial.println("Publish OK");
    }
}

```

```

else{
    Serial.println("Publish failed");
}
delay(1000);

if (!client.loop())
{
    mqttConnect();
}

}

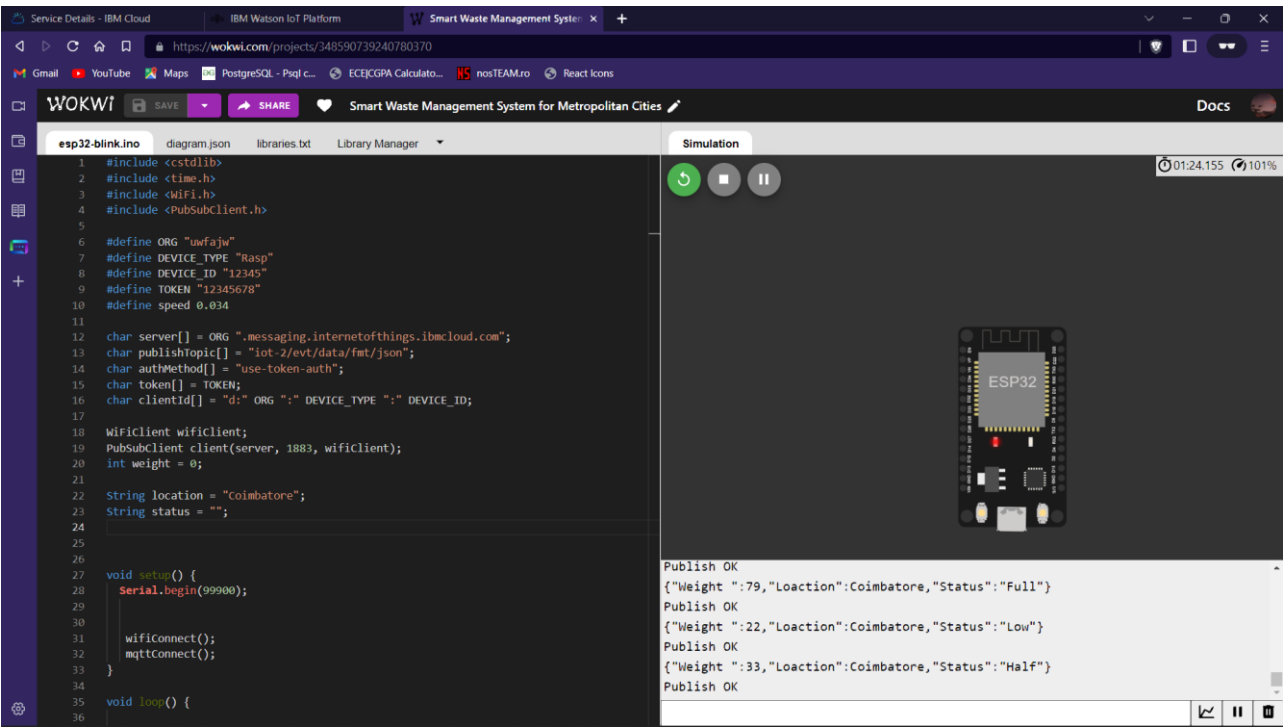
void wifiConnect()
{
    Serial.print("Connecting to ");
    Serial.print("Wifi");
    WiFi.begin("Wokwi-GUEST", "", 6);
    while (WiFi.status() != WL_CONNECTED)
    {
        delay(500);
        Serial.print(".");
    }
    Serial.print("WiFi connected, IP address: ");
    Serial.println(WiFi.localIP());
}

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

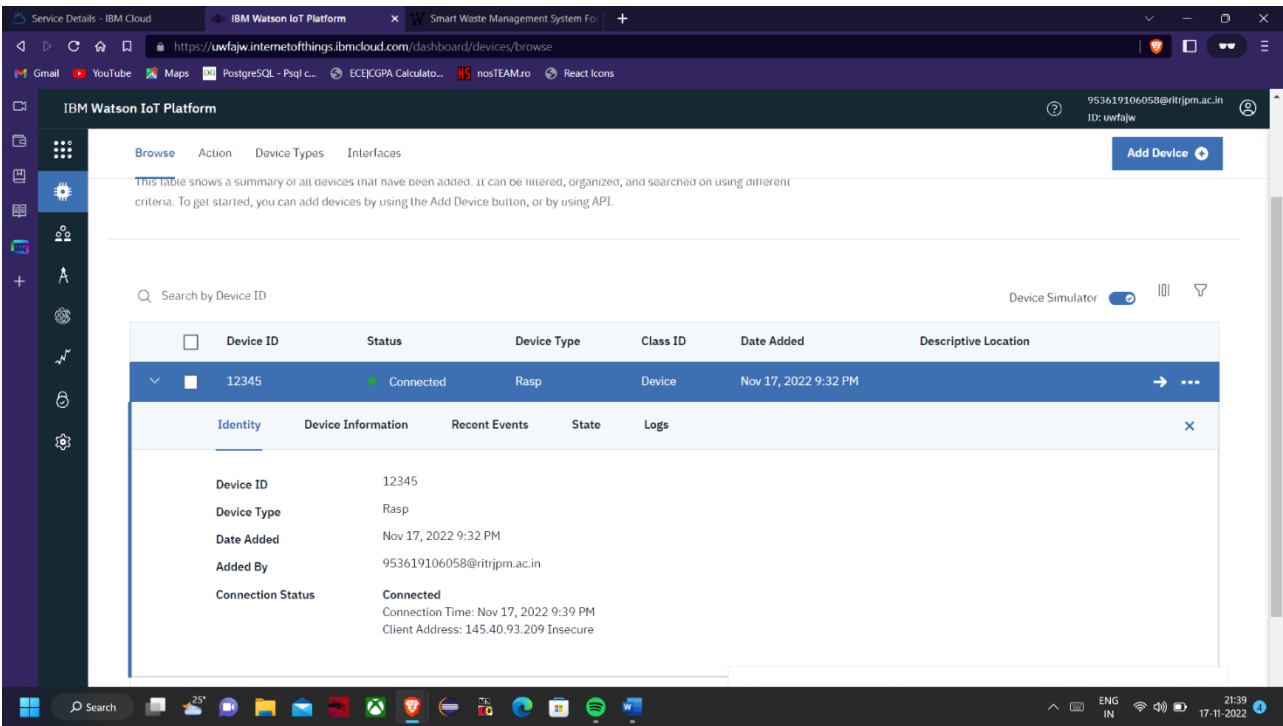
        Serial.println();
    }
}

```

# SENSOR CIRCUIT:

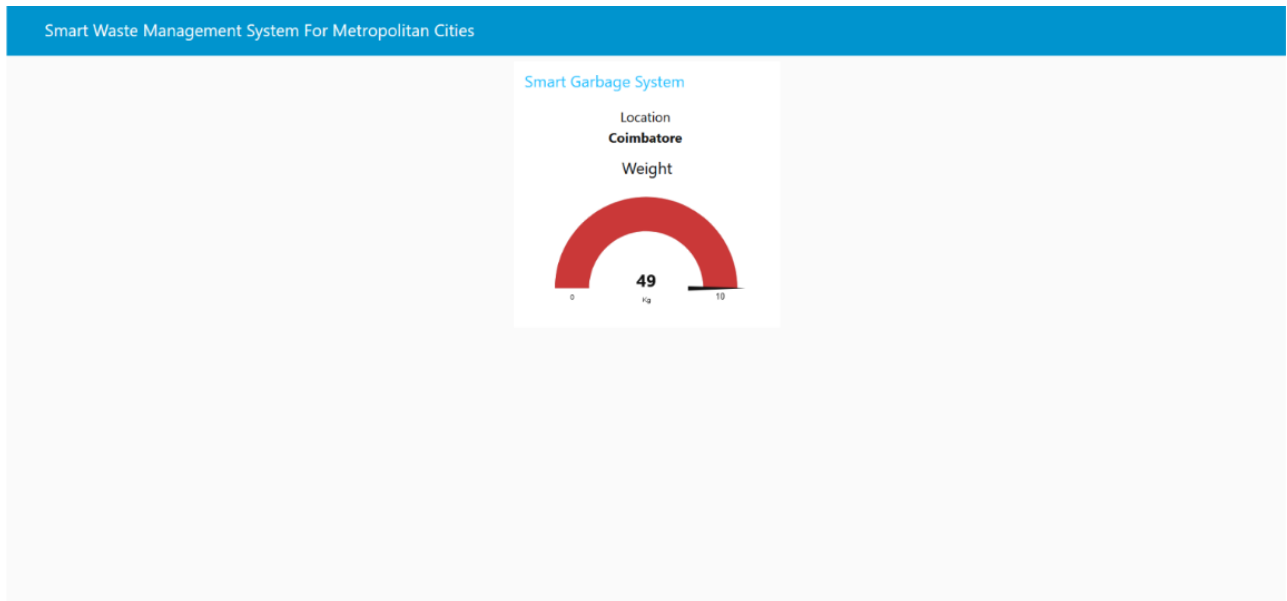


# Watson IoT Platform:





## WEB UI:



**Run the Code Here:** <https://wokwi.com/projects/348590739240780370>