SPRINT - 2

Software (Create Device in The IOT Watson Platform, connect it with python code using IOT device Credentials and construct a node flow in node red)

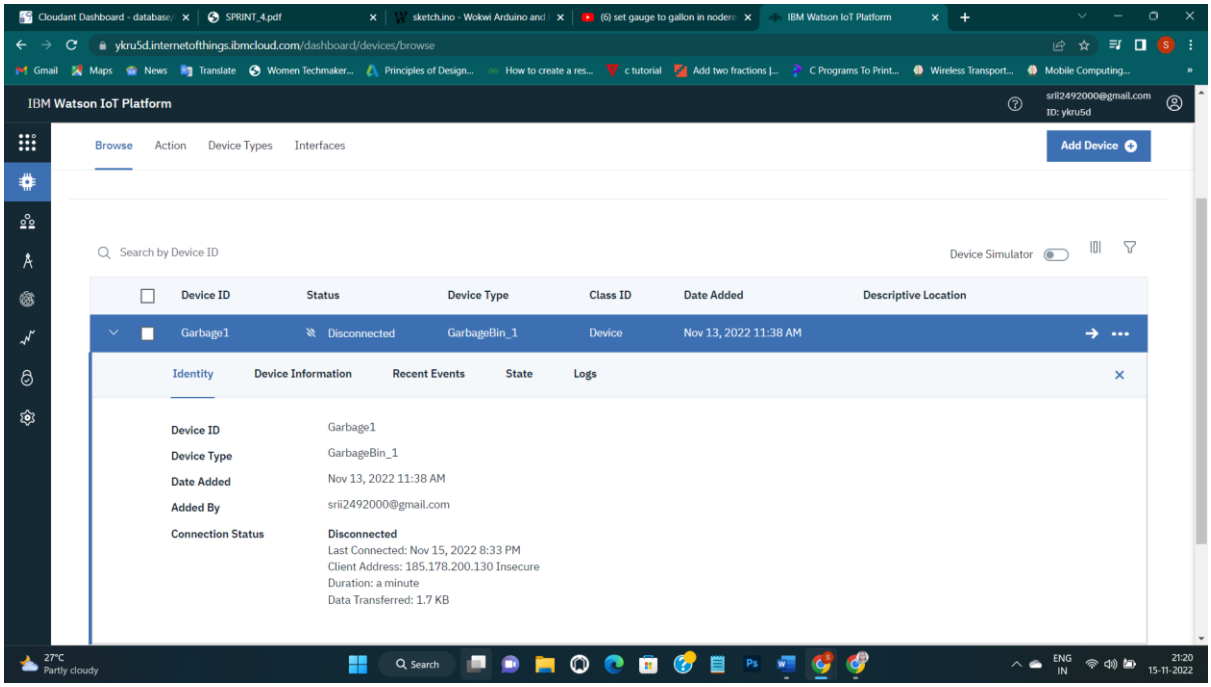
Date	15 November 2022
Project Name	Smart Waste Management System for Metropolitan Cities
Project ID	PNT2022TMID03917

Step-1: Device creation in IOT Watson Platform

Device ID
Garbage1

Device Type
GarbageBin_1

Added By
srii2492000@gmail.com



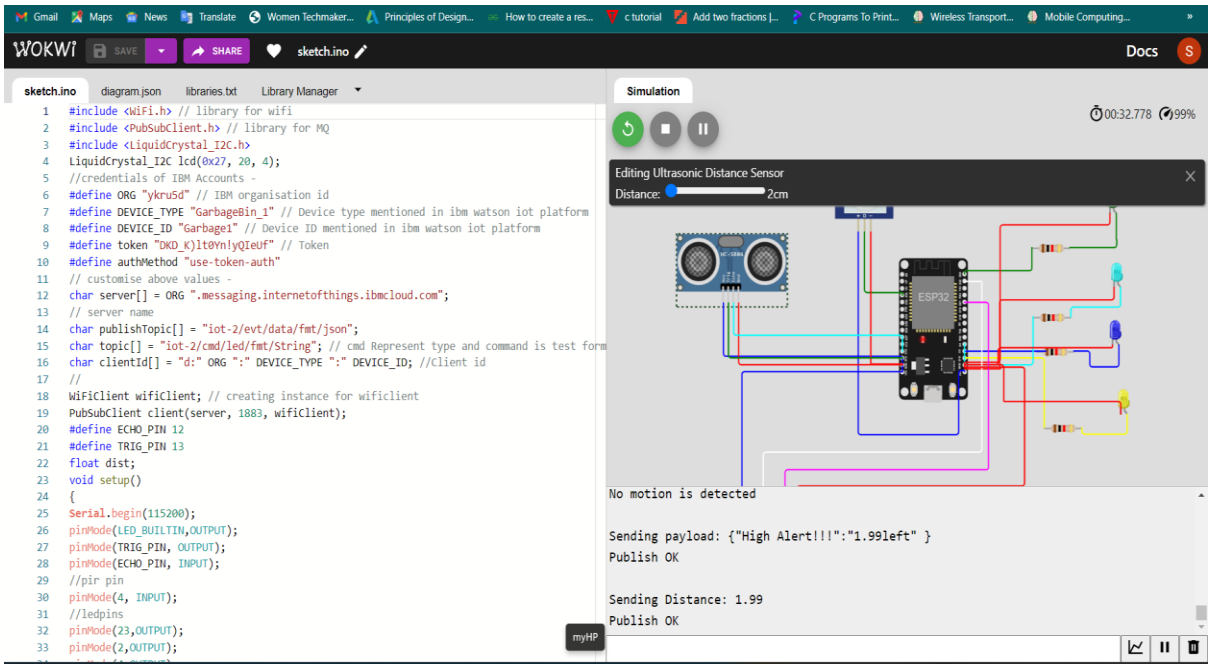
Step-2: Connect the python code written in wokwi with IOT device credentials

WOKWI SAVE SHARE sketch.ino

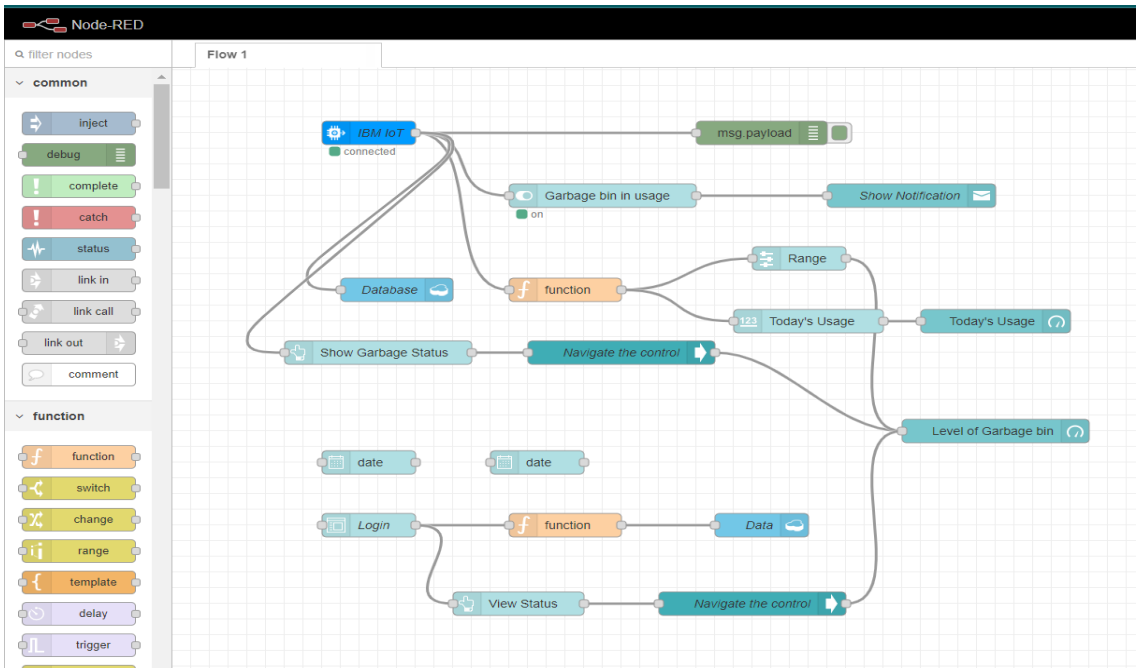
sketch.ino | diagram.json | libraries.txt | Library Manager

```
#include <WiFi.h> // library for wifi
#include <PubSubClient.h> // library for MQ
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 20, 4);
//credentials of IBM Accounts -
#define ORG "ykru5d" // IBM organisation id
#define DEVICE_TYPE "GarbageBin_1" // Device type mentioned in ibm watson iot platform
#define DEVICE_ID "Garbage1" // Device ID mentioned in ibm watson iot platform
#define token "DKD_K)lt0Yn!yQIeUf" // Token
#define authMethod "use-token-auth"
// customise above values -
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
// server name
char publishTopic[] = "iot-2/evt/data/fmt/json";
char topic[] = "iot-2/cmd/led/fmt/String"; // cmd Represent type and command is test format
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //Client id
//
WiFiClient wifiClient; // creating instance for wificlient
PubSubClient client(server, 1883, wifiClient);
#define ECHO_PIN 12
#define TRIG_PIN 13
float dist;
void setup()
{
Serial.begin(115200);
pinMode(LED_BUILTIN,OUTPUT);
pinMode(TRIG_PIN, OUTPUT);
pinMode(ECHO_PIN, INPUT);
//pir pin
pinMode(4, INPUT);
//ledpins
pinMode(23,OUTPUT);
pinMode(2,OUTPUT);
pinMode(4,OUTPUT);
pinMode(15, OUTPUT);
```

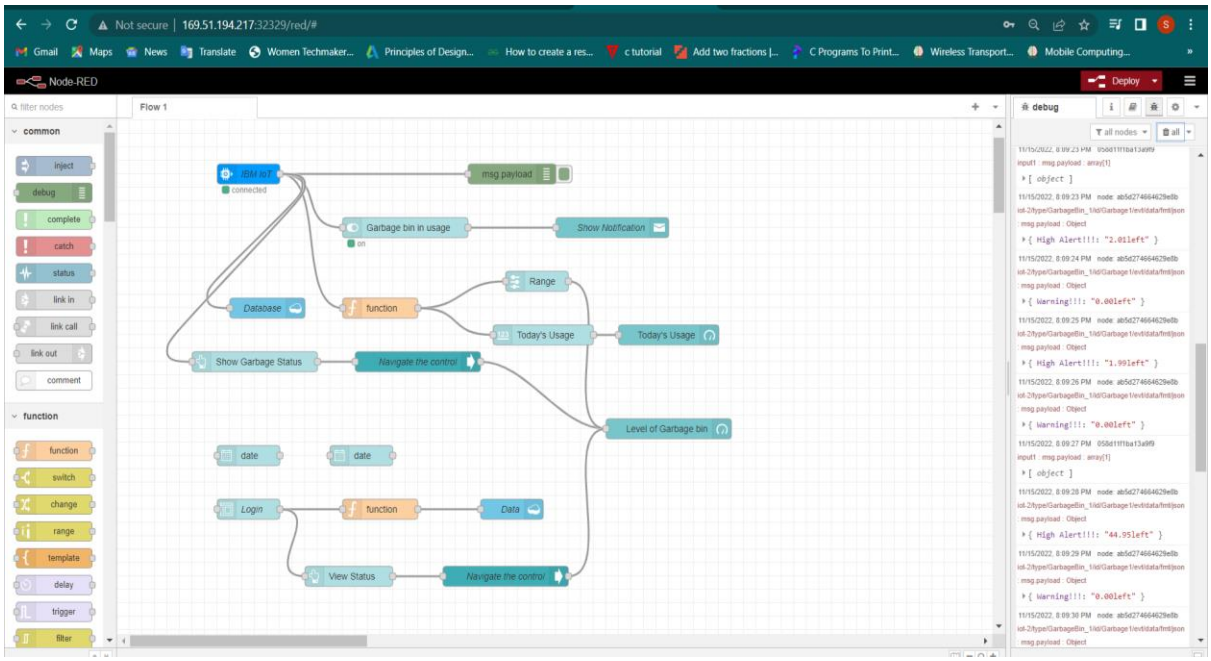
Step 3: Simulate to display the output in node red



Step 4: Node-Red flow creation



Step 5: Using IBM IOT constructing a node flow according to the Python Script and simulating the wokwi python code to display the output in node red.



Step 6: Displaying the values in the Recent Events of the iot device created