# PROJECT DEVELOPMENT PHASE
## SPRINT-3

| TEAM ID | PNT2022TMID37762 |
|---|---|
| PROJECT NAME | Smart waste management system in metropolitan cities |
| DATE | 10 November |

```
#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 = "";
void setup() {
Serial.begin(99900);
wifiConnect();
mqttConnect();
}
void loop() {
srand(time(0));
int p;
weight = random(0,80);
if(weight > 0 && weight < 25){
p = 0;
}
else if(weight > 25 && weight < 50){
p = 1;
}
else{
p = 2;
}
switch (p) {
case 0:
```

```
status = "Low";
break;
case 1:
status = "Half";
break;
case 2:
status = "Full";
break;
}
String payload = "{";
payload+="\"Weight \":";
payload+=weight;
payload+=",";
payload+="\"Loaction\":";
payload+="Coimbatore";
payload+=",";
payload+="\"Status\":\""+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())
```
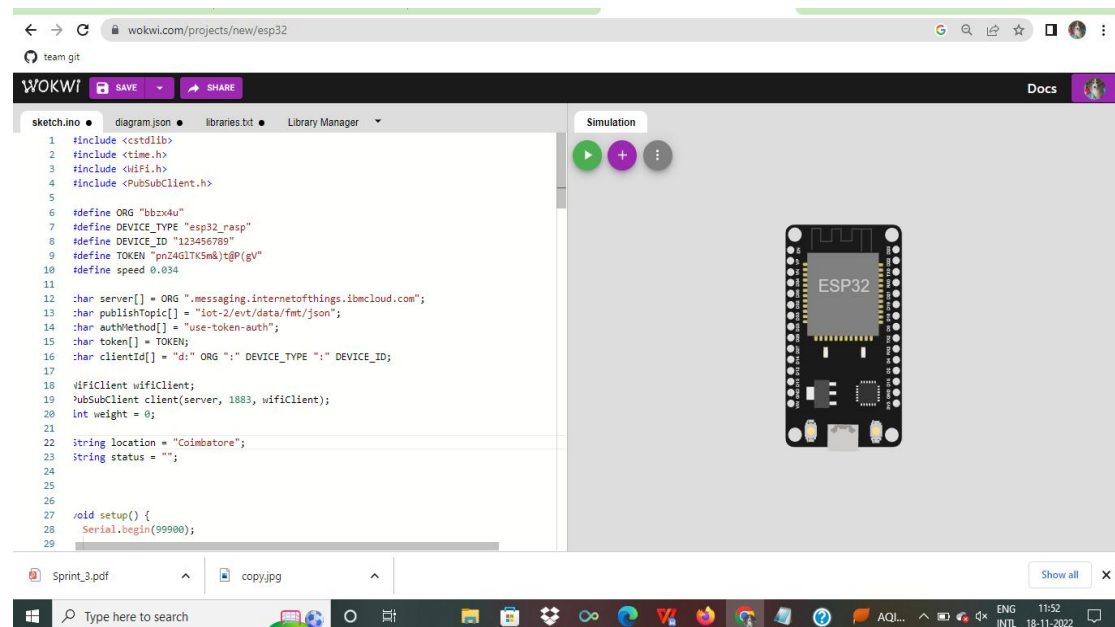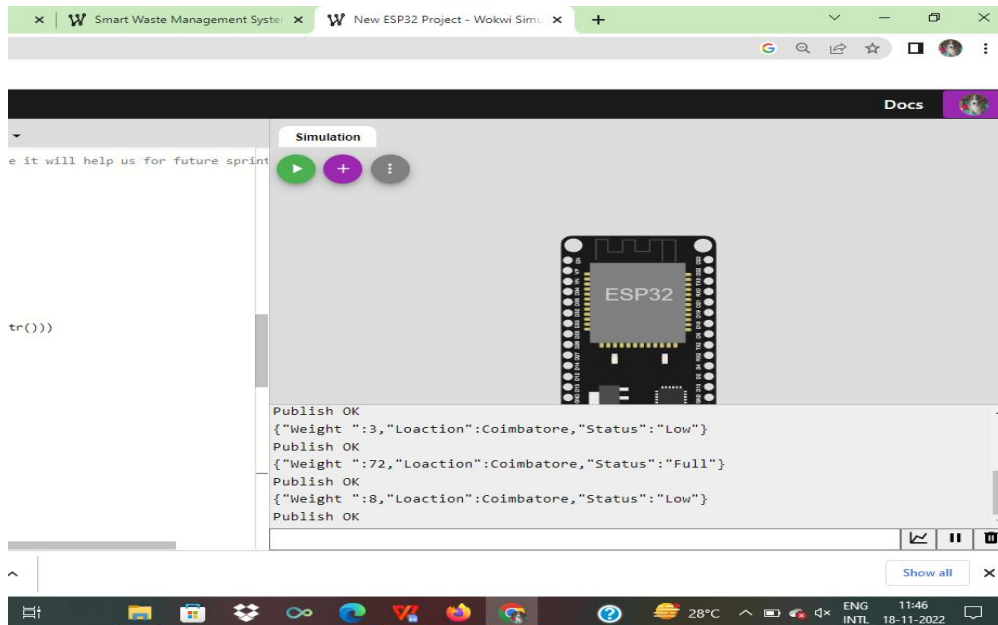
```
{
Serial.print("Reconnecting MQTT client to ");
Serial.println(server);
while (!client.connect(clientId, authMethod, token))
{
Serial.print(".");
delay(500);
}
Serial.println();
}
}
```
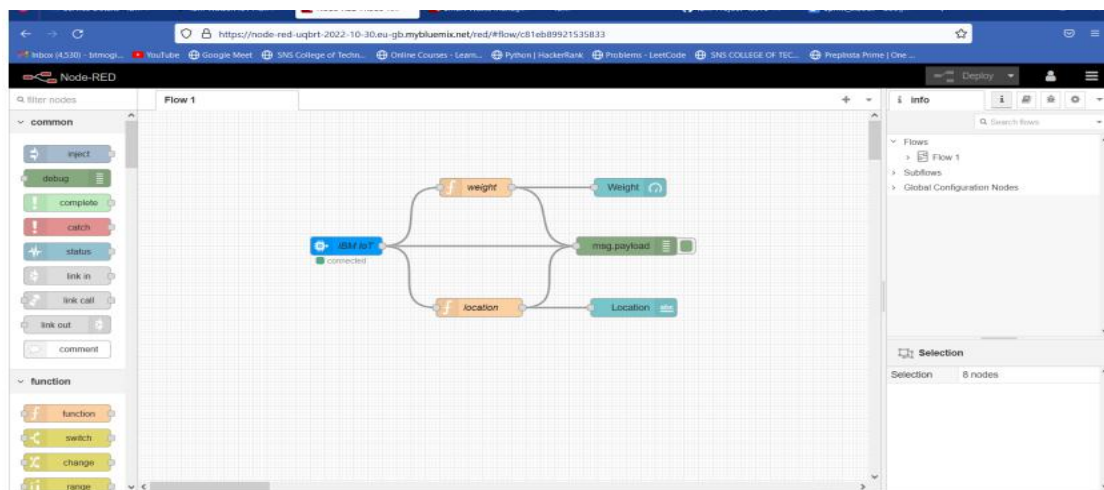
**OUTPUT:**

The following Publish OK messages appear in the simulation console:

```
Publish OK
{"Weight ":3,"Loaction":Coimbatore,"Status":"Low"}
Publish OK
{"Weight ":72,"Loaction":Coimbatore,"Status":"Full"}
Publish OK
{"Weight ":8,"Loaction":Coimbatore,"Status":"Low"}
Publish OK
```

## Node-RED Connections :

**Web UI :**