SPRINT 3

Framework (Local system deployment)

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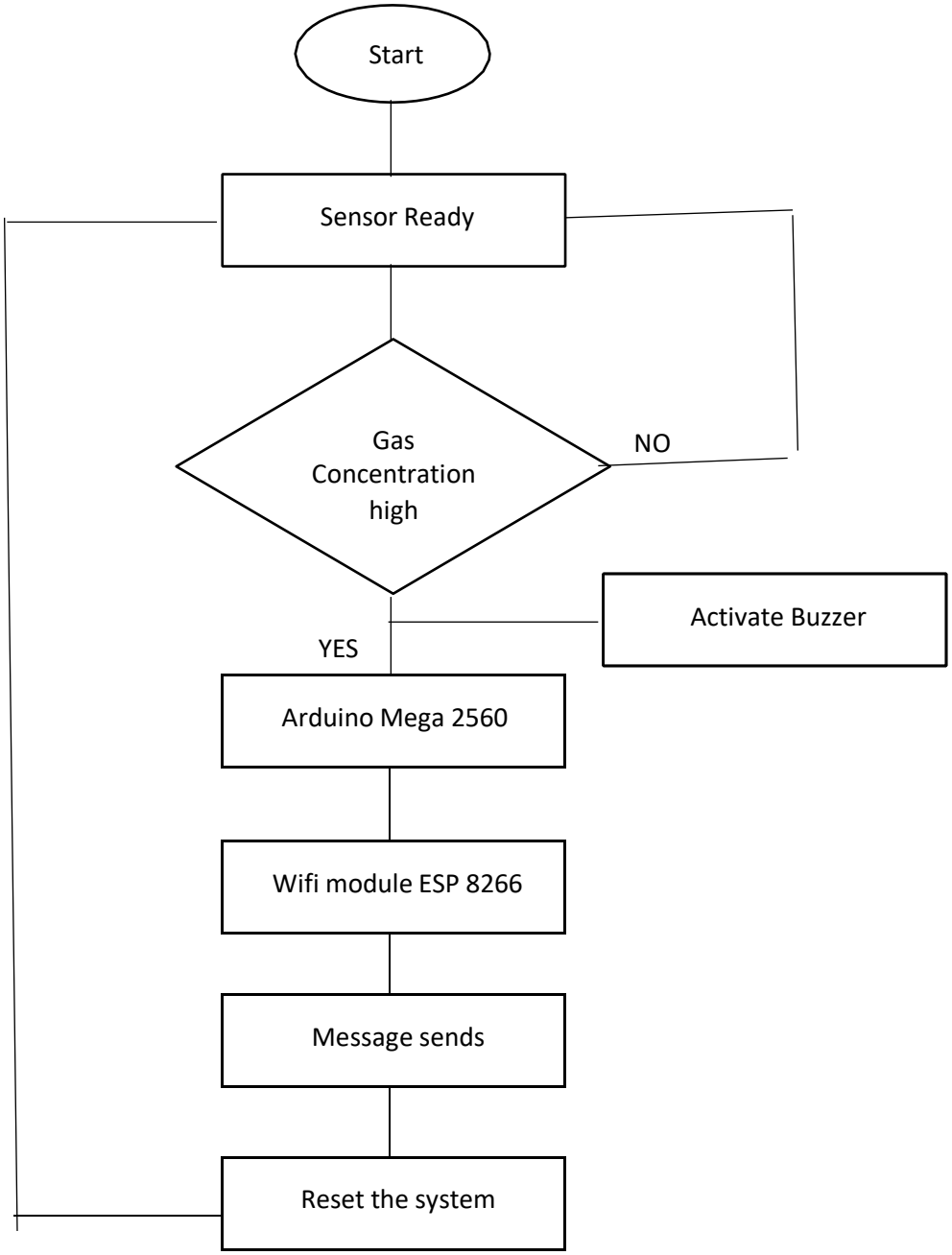
Project Name	Project - Gas Leakage Monitoring and Alerting System for Industries.

Local deployment:

- In this case, the entire application is contained within a virtual directory and all the contents and assemblies are contained within it and available to the application.



Code:

```
#include <ESP8266WiFi.h>
#include <PubSubClient.h>
WiFiClient wifiClient;

//Enter your network credentials below in ssid and password const
char* ssid = " ";
const char* password = " ";

//Provide your IBM IOT Platform credentials
```

```
#define ORG ""
#define DEVICE_TYPE ""
#define DEVICE_ID ""
#define TOKEN ""



char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; char
publishTopic[] = "iot-2/evt/Data/fmt/json";
char topic[] = "iot-2/cmd/home/fmt/String"; // cmd REPRESENT command type AND COMMAND IS TEST OF FORMAT STRING
char authMethod[] = "use-token-auth"; char
token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;


void callback(char* topic, byte* payload, unsigned int payloadLength); PubSubClient
client(server, 1883, callback, wifiClient);


int publishInterval = 5000; // 30 seconds long
lastPublishMillis;
String data;


void setup()
{
  Serial.begin(9600);
  pinMode(D0, OUTPUT);
  wifiConnect();
  mqttConnect();
}


void loop() {
  if (millis() - lastPublishMillis > publishInterval)
```

```
  {

    publishData(); lastPublishMillis
    = millis();
  }

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


  }
}

void wifiConnect() {
  Serial.print("Connecting to "); Serial.print(ssid);
  WiFi.begin(ssid, password); while (WiFi.status()
  != WL_CONNECTED) {
    delay(500);
    Serial.print(".");

  }
  Serial.print("nWiFi 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);

    }
    initManagedDevice();
```

```
    Serial.println();
  }
}

void initManagedDevice() {
  if (client.subscribe(topic)) {
    // Serial.println(client.subscribe(topic));
    Serial.println("subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");

  }
}

void callback(char* topic, byte* payload, unsigned int payloadLength) {

  Serial.print("callback invoked for topic: ");
  Serial.println(topic);

  for (int i = 0; i < payloadLength; i++)
    { //Serial.print((char)payload[i]);
    data += (char)payload[i];
  }

  Serial.println("Data: " + data ); if
  (data == "lon") {
  digitalWrite(D0, HIGH);
  }
  else if (data == "loff") {
    digitalWrite(D0, LOW);
  }
```

```
  data = "";
}

void publishData()
{

  int a = 10;
  Serial.print("Sample Value: ");
  Serial.println(a);

  String payload = "{\"d\":{\"data\":"; payload
  += a;
  payload += "}}";

  Serial.print("\n");
  Serial.print("Sending payload: ");
  Serial.println(payload);

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

  } }
```