```
/*
Statement : MQTT protocol with ESP8266 Witty Cloud Development
Board and Adafruit IO.
```

**Code:**

```
#include <ESP8266WiFi.h> // library file for ESP8266
#include "Adafruit_MQTT.h"    // library included through
Adafruit IO Arduino
#include "Adafruit_MQTT_Client.h" // library included through
Adafruit IO Arduino
#define led    2    // debug LED, tiny blue
#define red    15   // RGB LED red
#define green 12    // RGB LED green
#define blue 13     // RGB LED blue
#define ldr    A0   // LDR
#define WLAN_SSID   "Ashlesha"
#define WLAN_PASS   "Ashlesha"
#define AIO_SERVER  "io.adafruit.com"
#define AIO_SERVERPORT 1883   // mqtt: 1883, secure-mqtt: 8883
#define AIO_USERNAME "Rucha_13"
#define AIO_KEY     "aio_ojQN41ATOvoaYfvFqBmn4iPAlhb3"
WiFiClient client;
// declare client
Adafruit_MQTT_Client mqtt(&client, AIO_SERVER, AIO_SERVERPORT,
AIO_USERNAME, AIO_KEY);  // declare MQTT client
Adafruit_MQTT_Publish lightintensity = Adafruit_MQTT_Publish(
&mqtt, AIO_USERNAME "/feeds/ldr"); // declare publisher
Adafruit_MQTT_Subscribe redbutton =
Adafruit_MQTT_Subscribe(&mqtt, AIO_USERNAME "/feeds/red led");
// declare subscriber
Adafruit_MQTT_Subscribe greenbutton =
Adafruit_MQTT_Subscribe(&mqtt, AIO_USERNAME "/feeds/green
led");
```

```
// declare subscriber

Adafruit_MQTT_Subscribe bluebutton =

Adafruit_MQTT_Subscribe(&mqtt, AIO_USERNAME "/feeds/blue
led");

// declare subscriber

void MQTT_connect(); // bug fixes

void setup() {

// put your setup code here, to run once:

pinMode(led, OUTPUT); pinMode(red, OUTPUT); pinMode(green,
OUTPUT); pinMode(blue, OUTPUT);

Serial.begin(115200); delay(10);

Serial.println(F("Adafruit MQTT demo"));

// Connect to WiFi access point.

Serial.println();

Serial.print("Connecting to ");

Serial.println(WLAN_SSID);

WiFi.begin(WLAN_SSID, WLAN_PASS); while (WiFi.status() !=
WL_CONNECTED) { delay(500); Serial.print(".");

}

Serial.println();

Serial.println("WiFi connected");

Serial.println("IP address: ");

Serial.println(WiFi.localIP());

// Setup MQTT subscription for onoff feed.

mqtt.subscribe(&redbutton); mqtt.subscribe(&greenbutton);
mqtt.subscribe(&bluebutton);

}

void loop() {

// put your main code here, to run repeatedly:

MQTT_connect();

Adafruit_MQTT_Subscribe *subscription; while ((subscription =
mqtt.readSubscription(5000))) { if (subscription ==
&redbutton) {
```

```
Serial.print(F("Got: "));

Serial.println((char *)redbutton.lastread);
if(strcmp((char*)redbutton.lastread, "ON")) digitalWrite(red,
LOW); else digitalWrite(red, HIGH);

} if (subscription == &greenbutton) {

Serial.print(F("Got: "));

Serial.println((char *)greenbutton.lastread);
if(strcmp((char*)greenbutton.lastread, "ON"))
digitalWrite(green, LOW); else digitalWrite(green, HIGH);

} if (subscription == &bluebutton) {

Serial.print(F("Got: "));

Serial.println((char *)bluebutton.lastread);
if(strcmp((char*)bluebutton.lastread, "ON"))
digitalWrite(blue, LOW); else digitalWrite(blue, HIGH);

}

}

Serial.print(F("\nSending light val "));

Serial.print(analogRead(ldr)); Serial.print("..."); if (!
lightintensity.publish(analogRead(ldr)))

Serial.println(F("Failed")); else

Serial.println(F("OK!"));

}

// Function to connect and reconnect as necessary to the MQTT
server.

void MQTT_connect() {

int8_t ret;

// Stop if already connected.

if (mqtt.connected()) { return;

}

Serial.print("Connecting to MQTT... ");

uint8_t retries = 3;

while ((ret = mqtt.connect()) != 0) { // connect will return 0

for connected

Serial.println(mqtt.connectErrorString(ret));
```

```
Serial.println("Retrying MQTT connection in 5 seconds...");
mqtt.disconnect(); delay(5000); // wait 5 seconds retries--;

if (retries == 0) {

// basically die and wait for WDT to reset me while (1);

}

}

Serial.println("MQTT Connected!");

}
```