# Node-RED + NodeMCU ESP32*s* + BuiltIn LED thru Serial Port

02 Sept 2023 – Safyzan Salim

# Scenario:
# To control ESP32's built in led from Node-RED's dashboard thru serial comm.

Step 1: Write code for excepting serial input and switch on if the data is 5 (it's a string data)
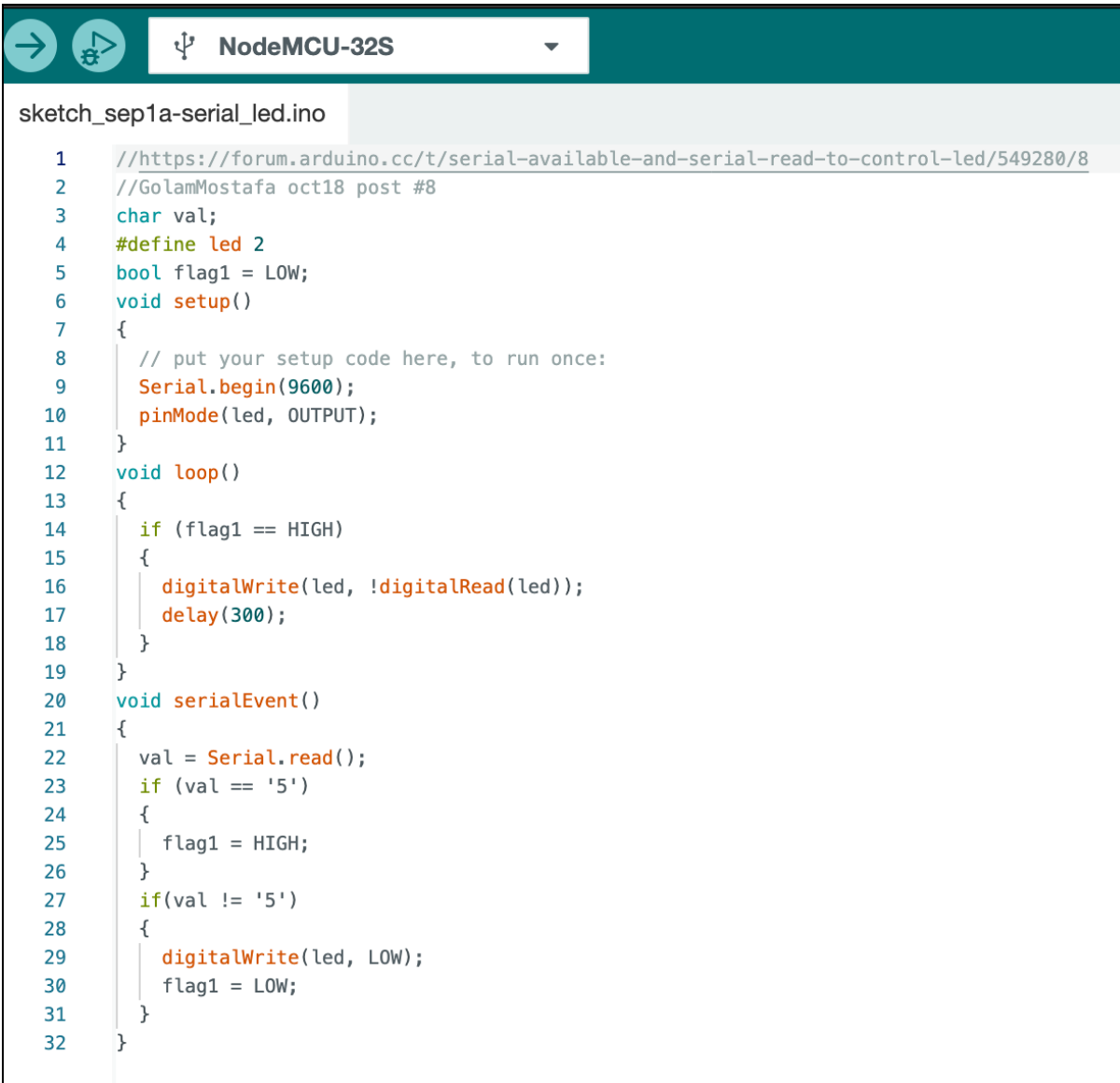Step 2: Upload the sketch to NodeMCU ESP32-s & test its function.
Step 3: At Node-RED, add 2 x inject nodes and 1 x serial out node.
Step 4: Configure accordingly – refer to slide 4.
Step 5: Load dashboard – use button as switch.

## The Sketch

NodeMCU-32S

sketch_sep1a-serial_led.ino

```
1   //https://forum.arduino.cc/t/serial-available-and-serial-read-to-control-led/549280/8
2   //GolamMostafa oct18 post #8
3   char val;
4   #define led 2
5   bool flag1 = LOW;
6   void setup()
7   {
8     // put your setup code here, to run once:
9     Serial.begin(9600);
10    pinMode(led, OUTPUT);
11  }
12  void loop()
13  {
14    if (flag1 == HIGH)
15    {
16      digitalWrite(led, !digitalRead(led));
17      delay(300);
18    }
19  }
20  void serialEvent()
21  {
22    val = Serial.read();
23    if (val == '5')
24    {
25      flag1 = HIGH;
26    }
27    if(val != '5')
28    {
29      digitalWrite(led, LOW);
30      flag1 = LOW;
31    }
32  }
```

3

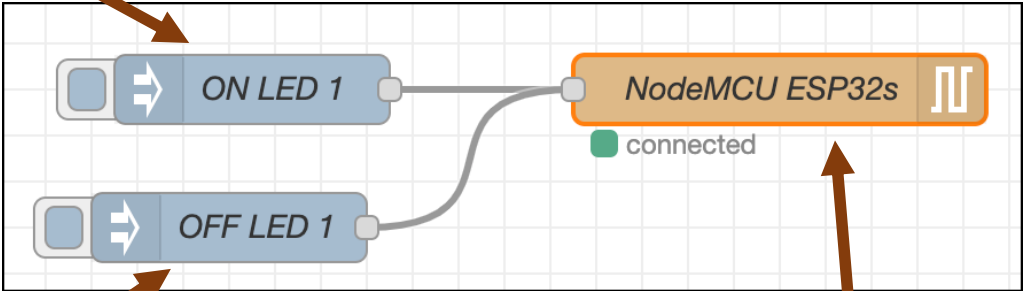# Node-RED: Test by using minimal nodes

| ⬤ Name | ON LED 1 |
| --- | --- |
| ☰  msg. payload | = ▾ ᵃ/z 5 | ✖ |



**1**

**2**

**3**

| ⬤ Name | OFF LED 1 |
| --- | --- |
| ☰  msg. payload | = ▾ ᵃ/z 0 | ✖ |

ON LED 1 → NodeMCU ESP32s
⬤ connected

OFF LED 1

| ⤭ Serial Port | /dev/tty.usbserial-1410:9600-8N1 ▾ | ✏ |
| --- | --- | --- |
| ⬤ Name | NodeMCU ESP32s | |

Node-RED: Dashboard → add 1 tab and 1 group

Node-RED: Dashboard → add 1 tab and change the properties accordingly.
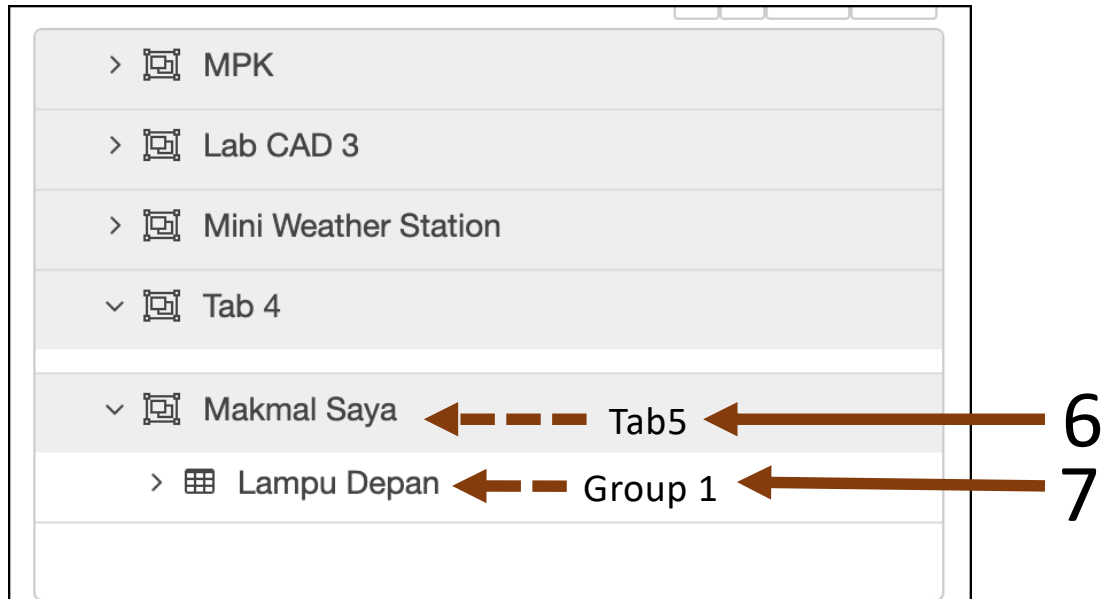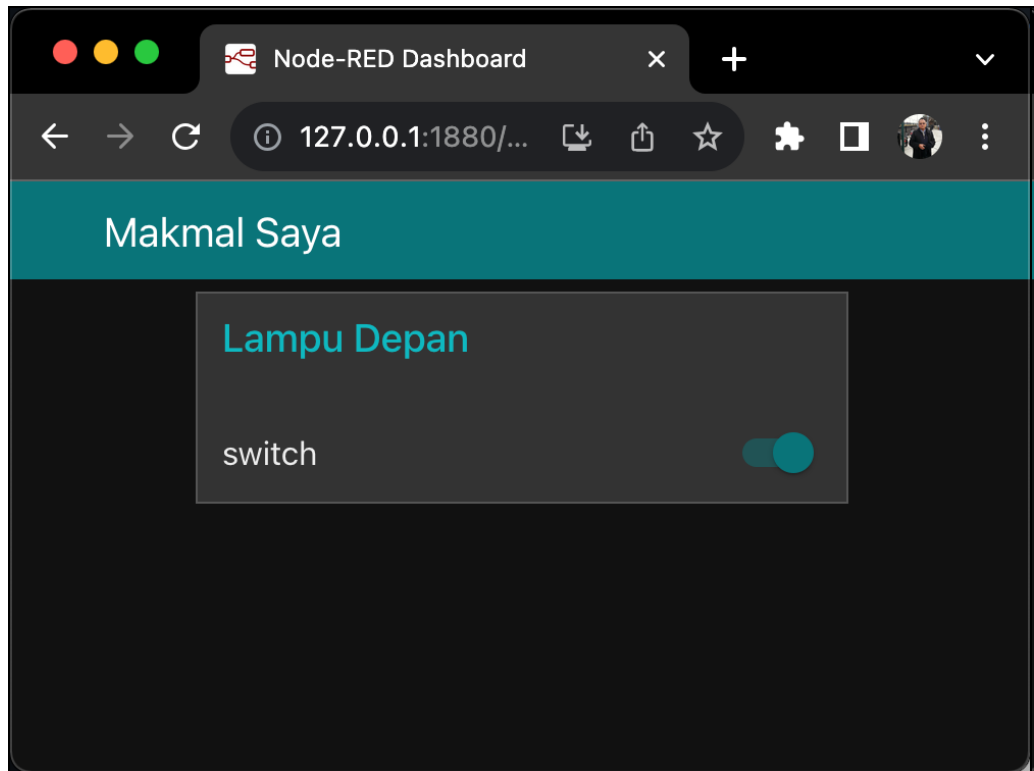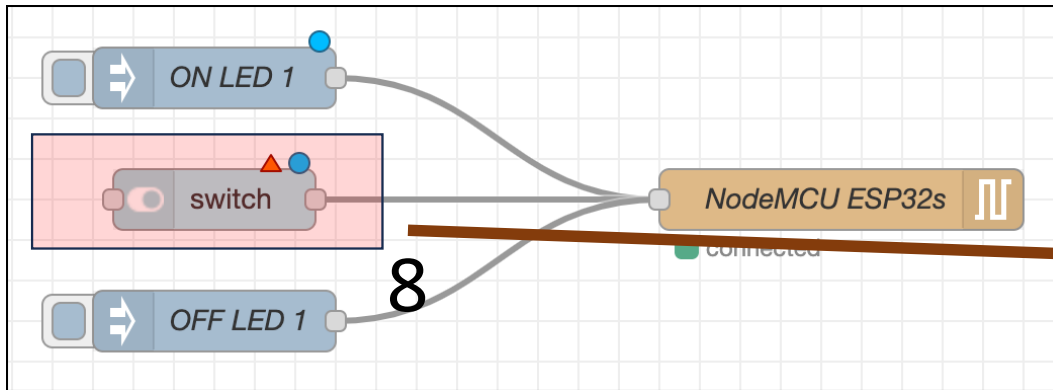
> ▣ MPK

> ▣ Lab CAD 3

> ▣ Mini Weather Station

∨ ▣ Tab 4

∨ ▣ Makmal Saya ◀ --- Tab5 ◀───────── 6

    > ▦ Lampu Depan ◀ -- Group 1 ◀───────── 7

ON LED 1

switch

OFF LED 1

NodeMCU ESP32s

connected

8

**Node-RED Dashboard**

127.0.0.1:1880/...

Makmal Saya

Lampu Depan

switch

**Edit switch node**

Delete                                    Cancel        Done

⚙ Properties

⊞ Group        [Makmal Saya] Lampu Depan

⊡ Size         auto

⌶ Label        switch

ⓘ Tooltip      optional tooltip

🖼 Icon         Default

→ Pass through **msg** if payload matches new state: ☑

✉ When clicked, send:

9

On Payload     ᵃz  1

10

Off Payload    ᵃz  x

Topic          msg. topic

🏷 Name

END