



Node-RED + NodeMCU ESP32s + 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)

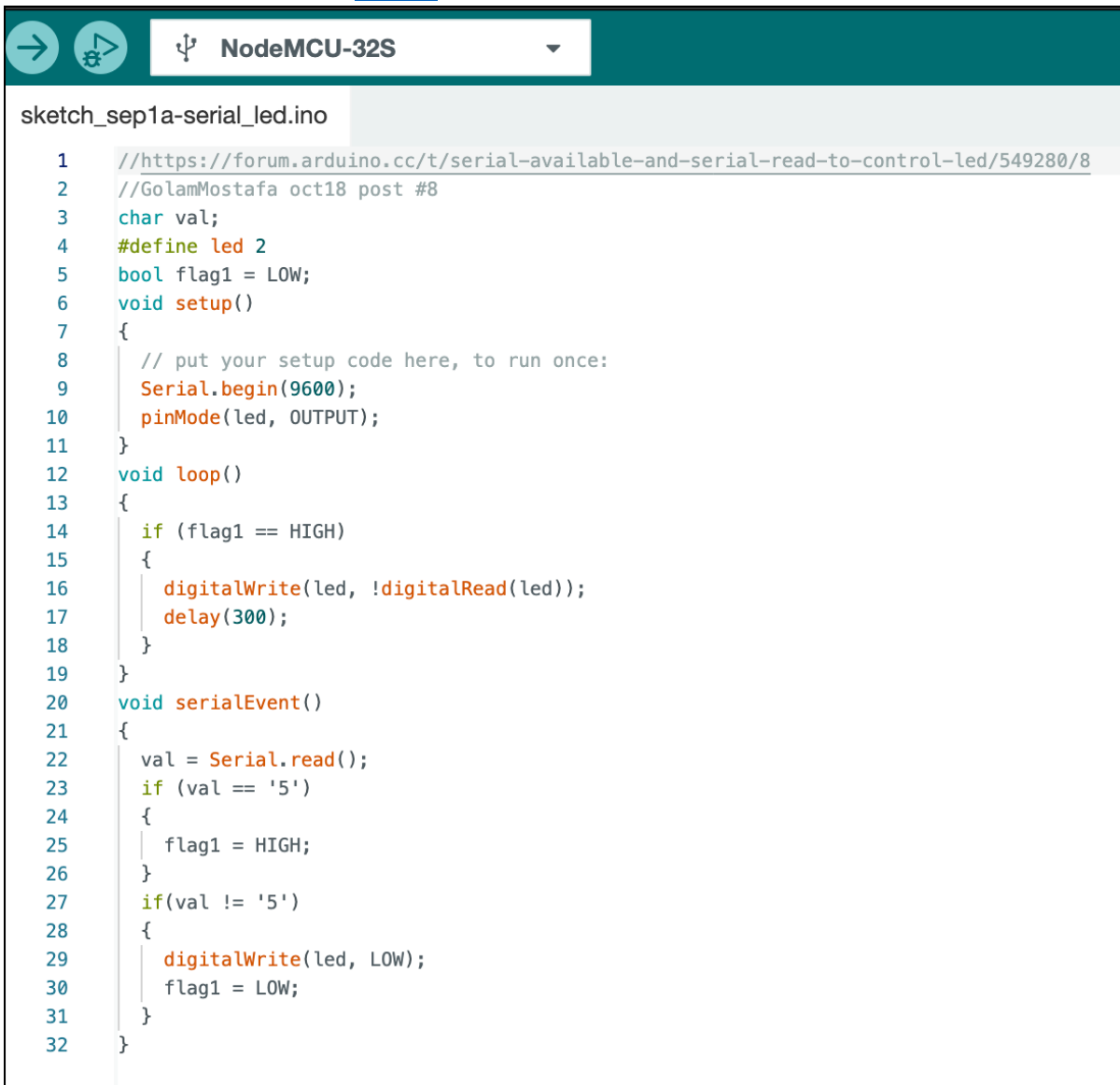
Step 2: Upload the sketch to NodeMCU ESP32-s & test its function.

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.

Download this sketch [HERE](#).



The screenshot shows the Arduino IDE interface. At the top, there is a toolbar with a green arrow icon, a green icon with a gear, and a dropdown menu showing 'NodeMCU-32S'. Below the toolbar, the sketch name 'sketch_sep1a-serial_led.ino' is displayed. The main area contains the following C++ code:

```
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 }
```

Node-RED: Test by using minimal nodes

Name ON LED 1

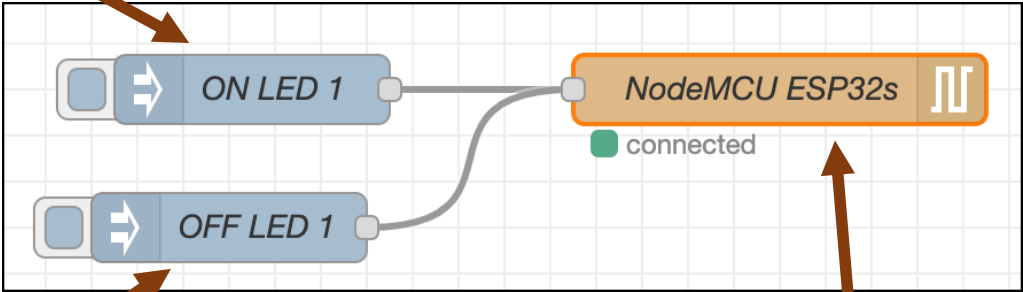
msg. payload = a_z 5

1

Name OFF LED 1

msg. payload = a_z 0

2



3

Serial Port /dev/tty.usbserial-1410:9600-8N1

Name NodeMCU ESP32s

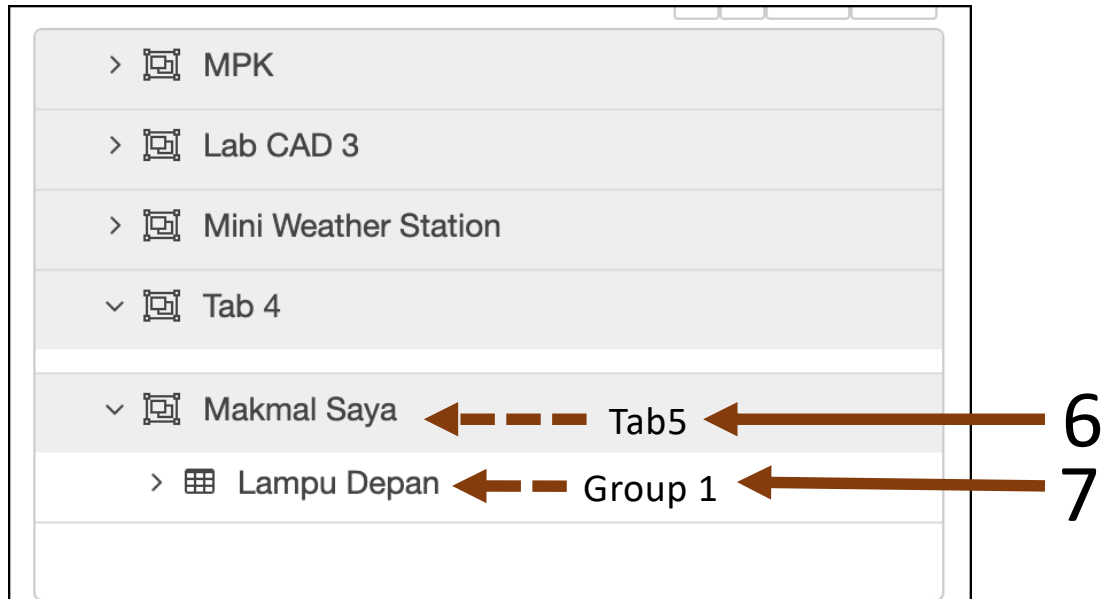
Node-RED: Dashboard → add 1 tab and 1 group

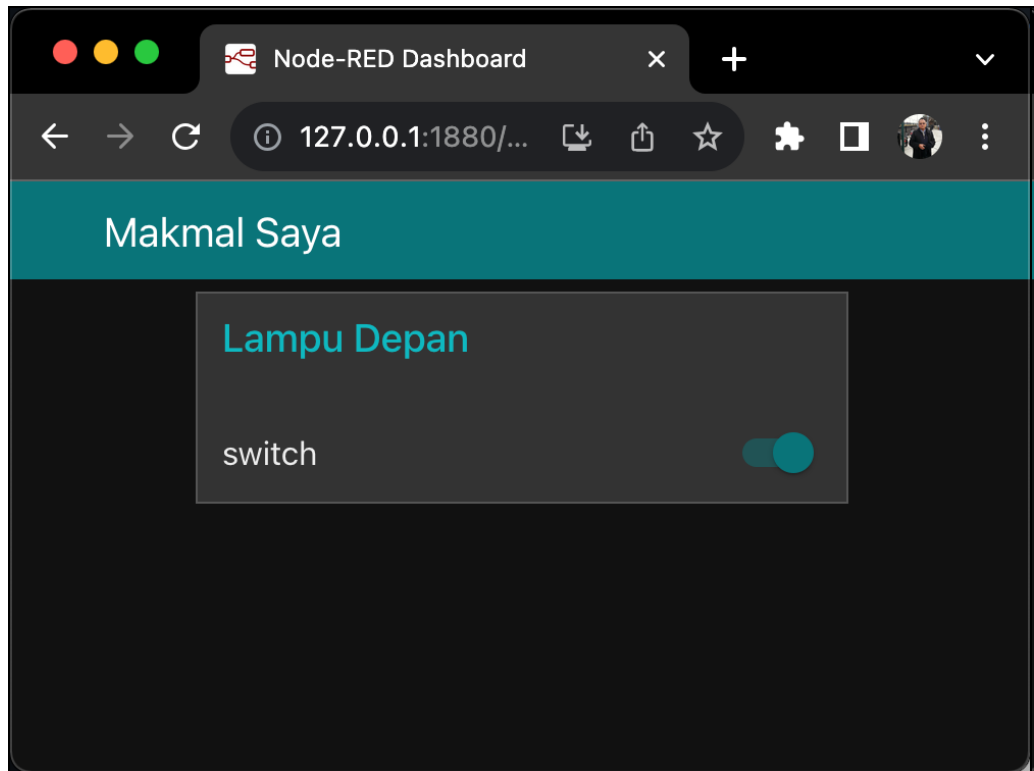
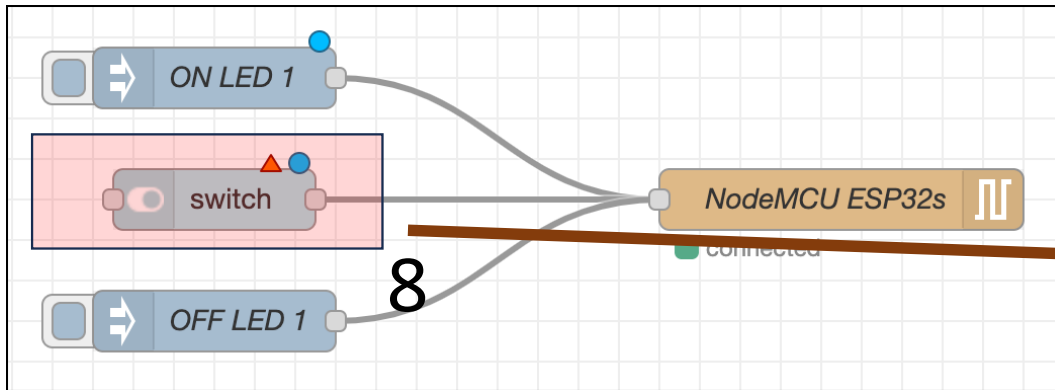
The screenshot shows the Node-RED Dashboard configuration interface. At the top, there's a header bar with the title "dashboard" and several icons. Below this, there are tabs for "Layout", "Site", and "Theme". The "Layout" tab is currently selected. Under the "Layout" tab, there's a section titled "Tabs & Links". In this section, there are several tabs listed: "MPK", "Lab CAD 3", "Mini Weather Station", "Tab 4", and "Tab 5". The "Tab 5" tab is currently selected. To the right of the "Tab 5" tab, there are three buttons: "+ group", "edit", and "layout". The "+ group" button is highlighted with a blue border. There are two arrows pointing to the "+ group" button: a solid brown arrow labeled "4" and a dashed brown arrow labeled "5".

4

5

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





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:

On Payload 9

Off Payload 10

Topic

Name

END