



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)

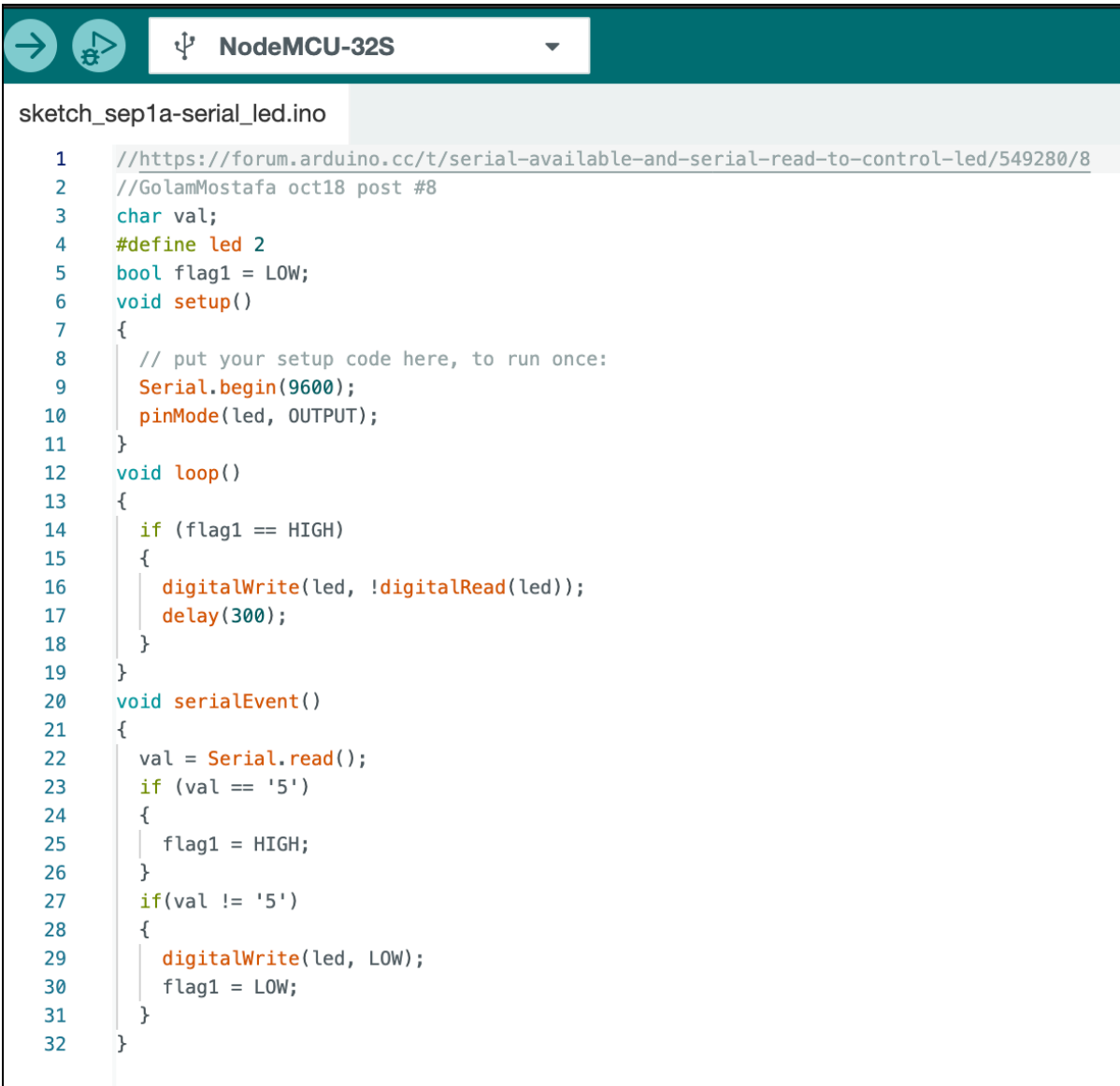
Step 2: Upload the sketch to NodeMCU ESP32-s & test its function.

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](#).



```
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

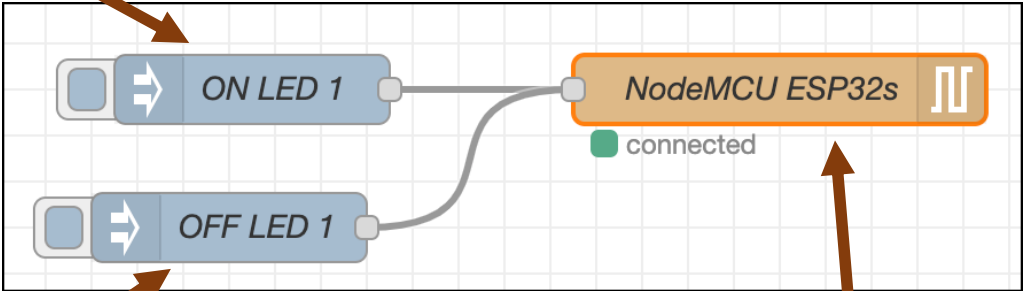
msg. payload = a_z 5

1

Name OFF LED 1

msg. payload = a_z 0

2



3

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

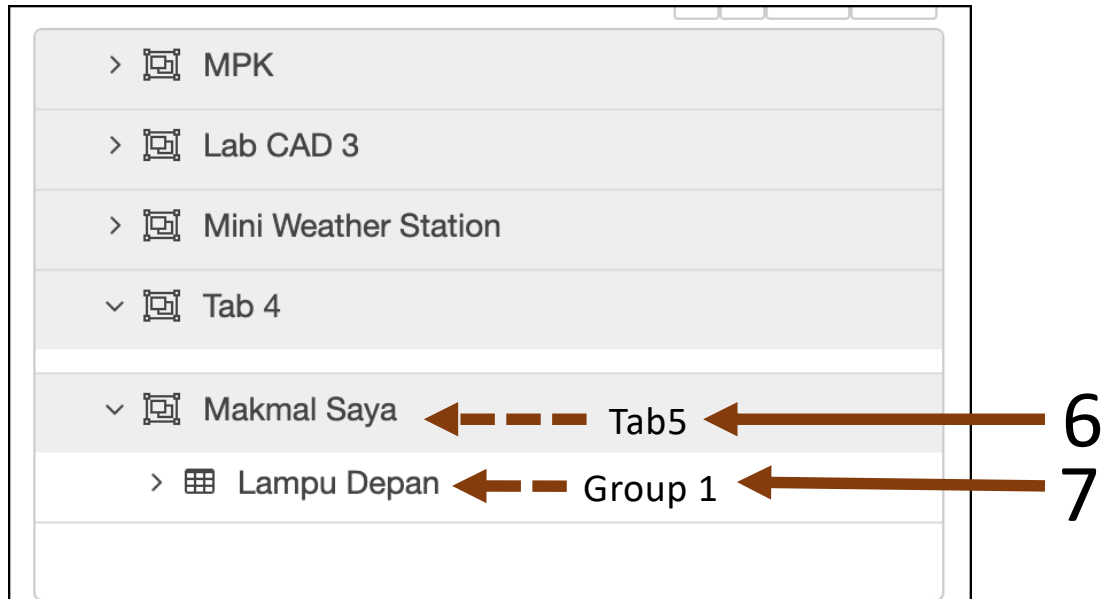
Name NodeMCU ESP32s

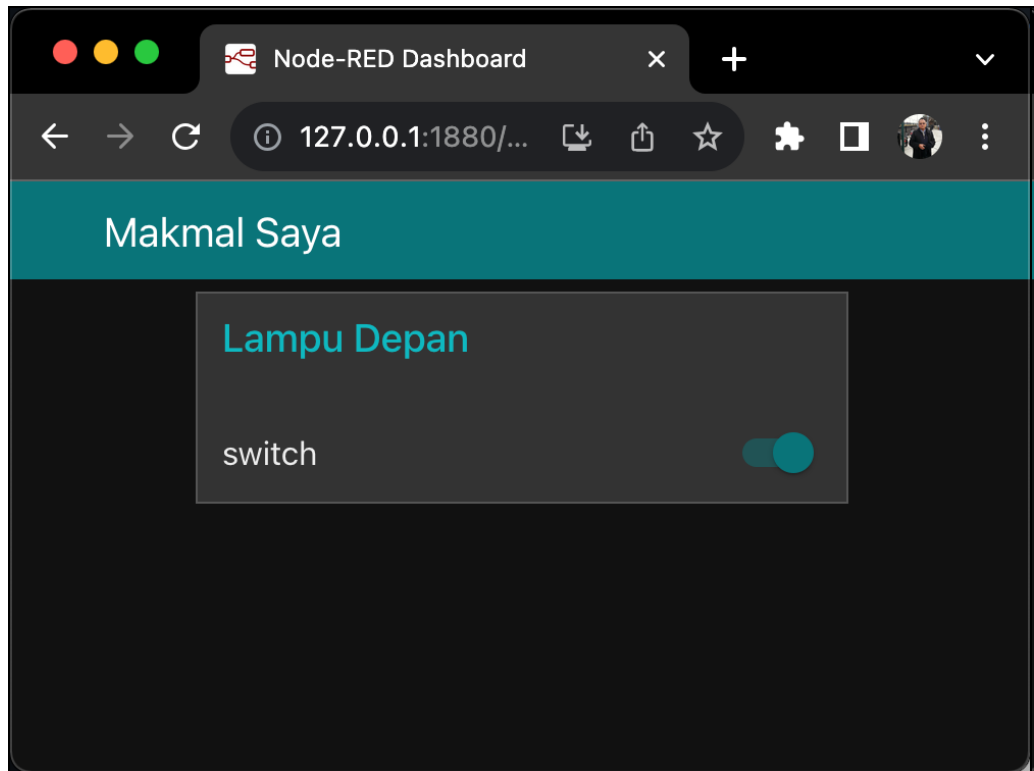
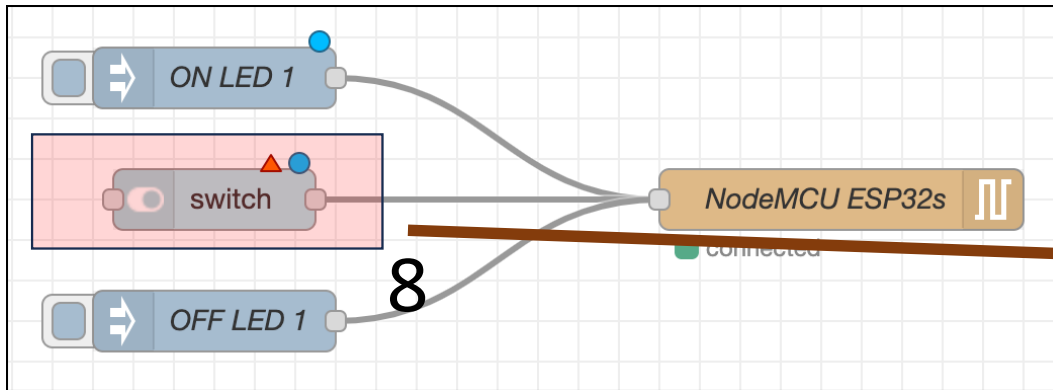
Node-RED: Dashboard → add 1 tab and 1 group

The screenshot shows the Node-RED Dashboard configuration interface. At the top, there's a header with a 'dashboard' title and several icons. Below this, there are tabs for 'Layout', 'Site', and 'Theme'. The 'Layout' tab is active, showing a 'Tabs & Links' section. In this section, there are several tabs listed: 'MPK', 'Lab CAD 3', 'Mini Weather Station', 'Tab 4', and 'Tab 5'. 'Tab 5' is expanded, showing a 'Group 1' below it. There are three annotations with arrows pointing to specific elements:

- Annotation 4: A solid brown arrow points to the '+ tab' button in the 'Tabs & Links' header.
- Annotation 5: A solid brown arrow points to the '+ group' button in the 'Group 1' header.
- A dashed brown arrow points from the '+ tab' button to 'Tab 5'.
- Another dashed brown arrow points from the '+ group' button to 'Group 1'.

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





The 'Edit switch node' configuration panel. At the top, there are 'Delete', 'Cancel', and 'Done' buttons. Below is the 'Properties' section with various settings: 'Group' is '[Makmal Saya] Lampu Depan', 'Size' is 'auto', 'Label' is 'switch', 'Tooltip' is 'optional tooltip', and 'Icon' is 'Default'. A checkbox 'Pass through msg if payload matches new state:' is checked. Under 'When clicked, send:', there are two payload fields: 'On Payload' with a dropdown set to 'a_z' and the value '1', and 'Off Payload' with a dropdown set to 'a_z' and the value 'x'. A large black number '9' is next to the 'On Payload' field, and a large black number '10' is next to the 'Off Payload' field. Below these are fields for 'Topic' (set to 'msg. topic') and 'Name'.

END