



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)

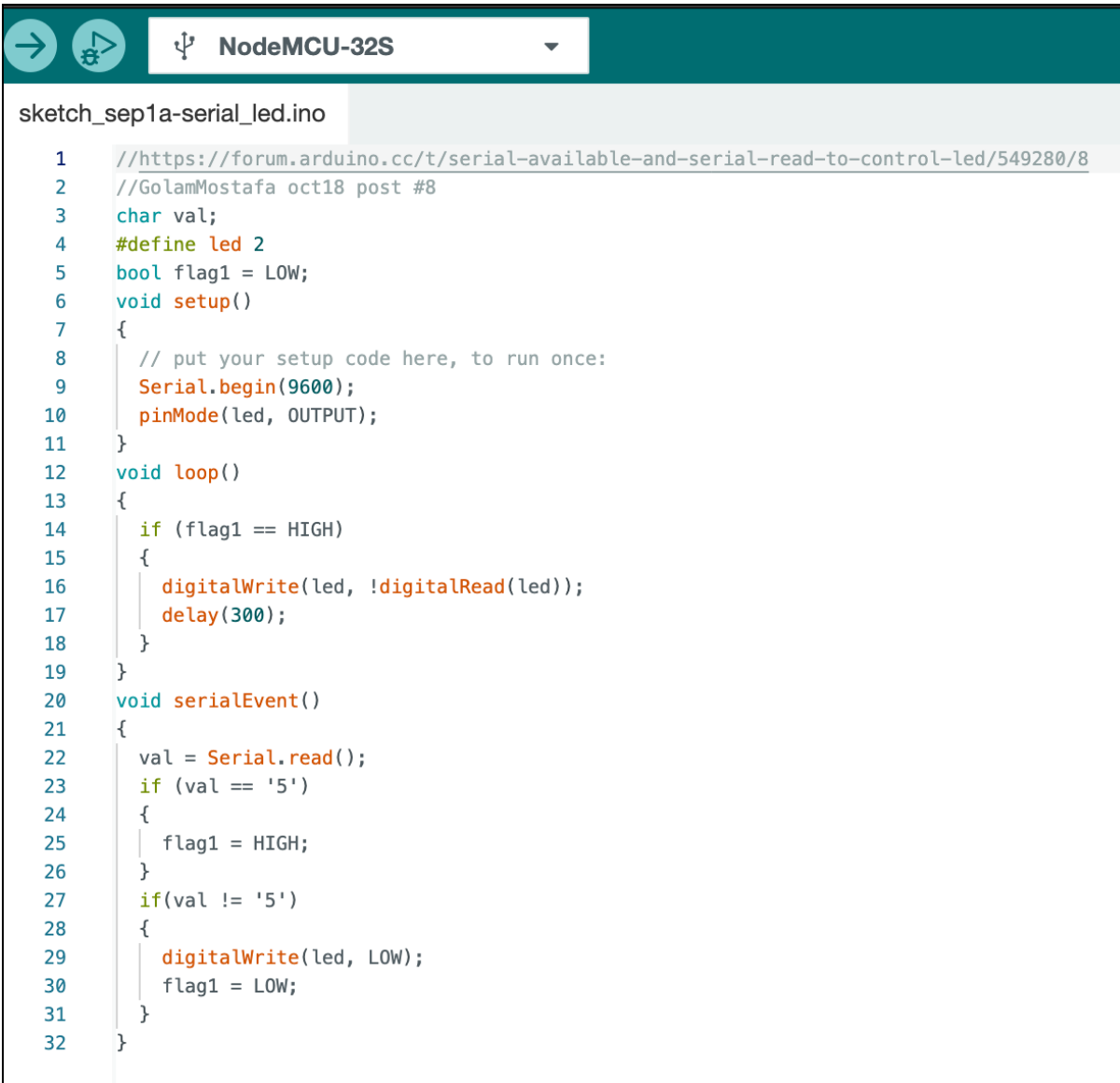
Step 2: Upload the sketch to NodeMCU ESP32-s & test its function.

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.

The Sketch



```
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

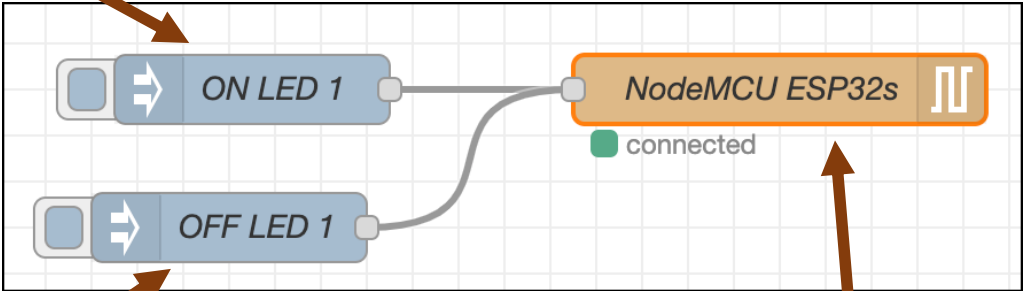
msg. payload = a_z 5

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 the '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 named 'Group 1'. Annotations with arrows point to specific elements: a dashed arrow points from the '+ tab' button to 'Tab 5'; a solid arrow labeled '4' points to the '+ tab' button; and a solid arrow labeled '5' points to the '+ group' button within the 'Tab 5' group.

dashboard

Layout Site Theme

Tabs & Links

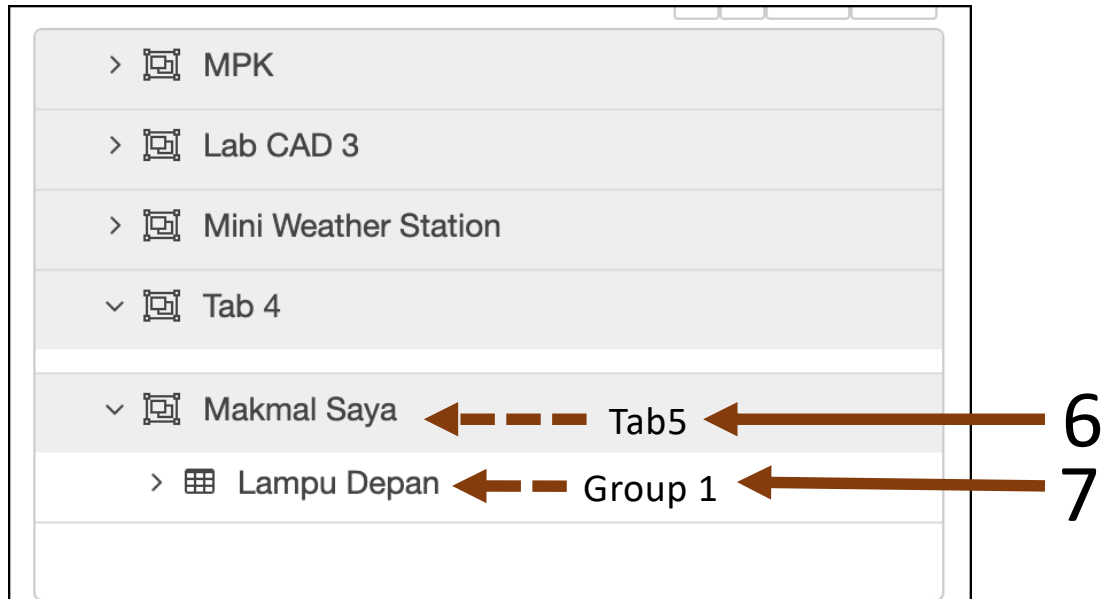
<< >> + tab + link

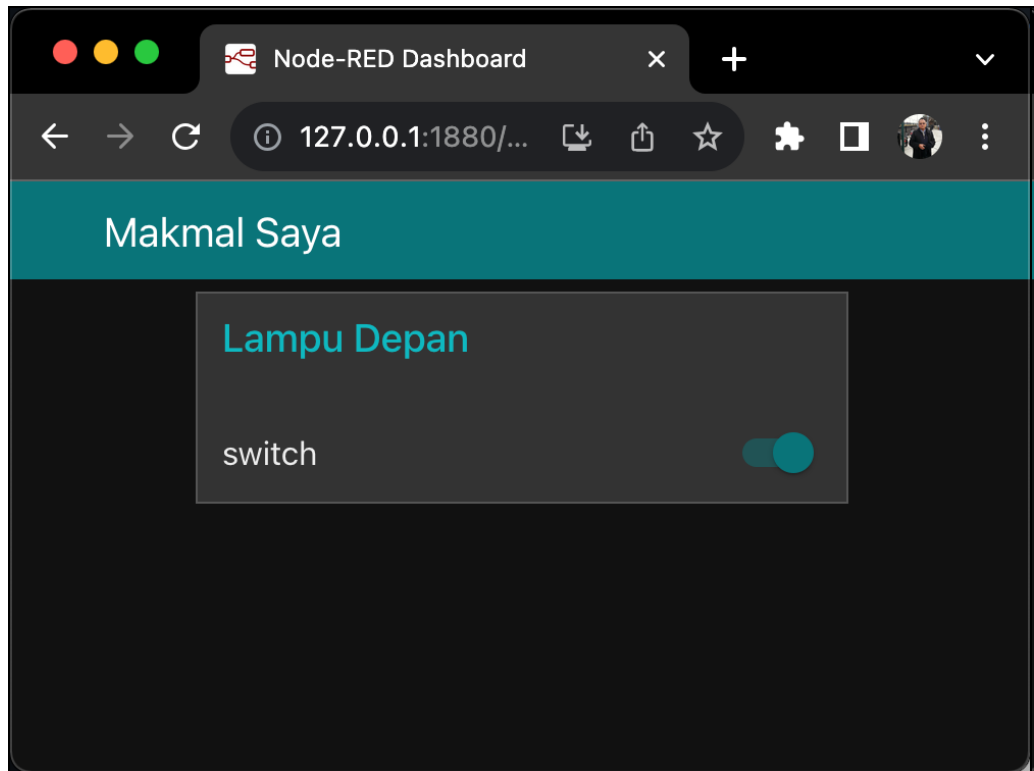
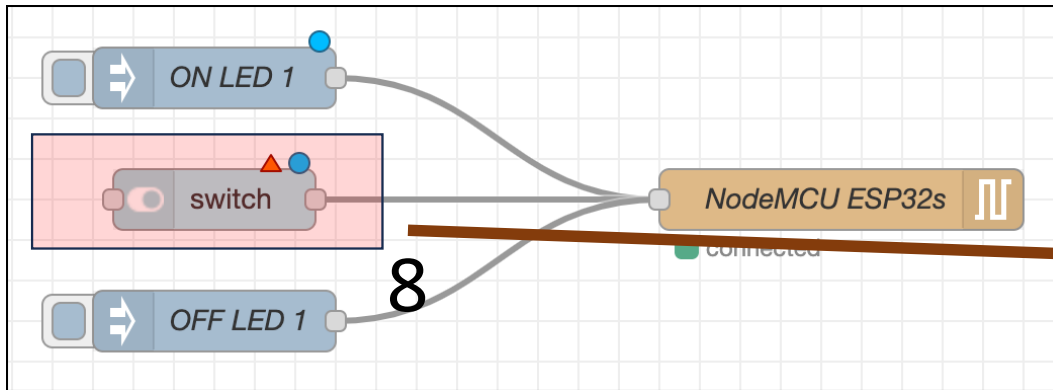
- > MPK
- > Lab CAD 3
- > Mini Weather Station
- ∨ Tab 4
- ∨ Tab 5
 - + group edit layout
 - > Group 1

4

5

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





The 'Edit switch node' configuration panel. At the top, there are buttons for 'Delete', 'Cancel', and 'Done'. Below is the 'Properties' section with various settings: 'Group' is set to '[Makmal Saya] Lampu Depan'; 'Size' is 'auto'; 'Label' is 'switch'; 'Tooltip' is 'optional tooltip'; '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 menu showing 'a_z' and the value '1', and 'Off Payload' with a dropdown menu showing '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