

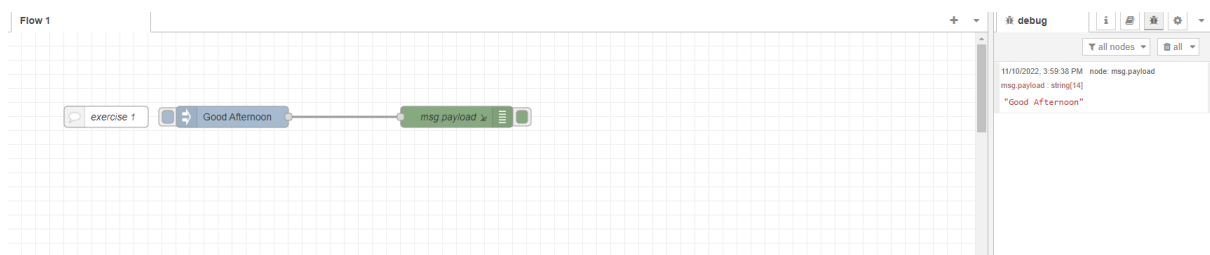
Chancheep Mahacharoensuk 6288092

Kantapong Matangkarat 6288160

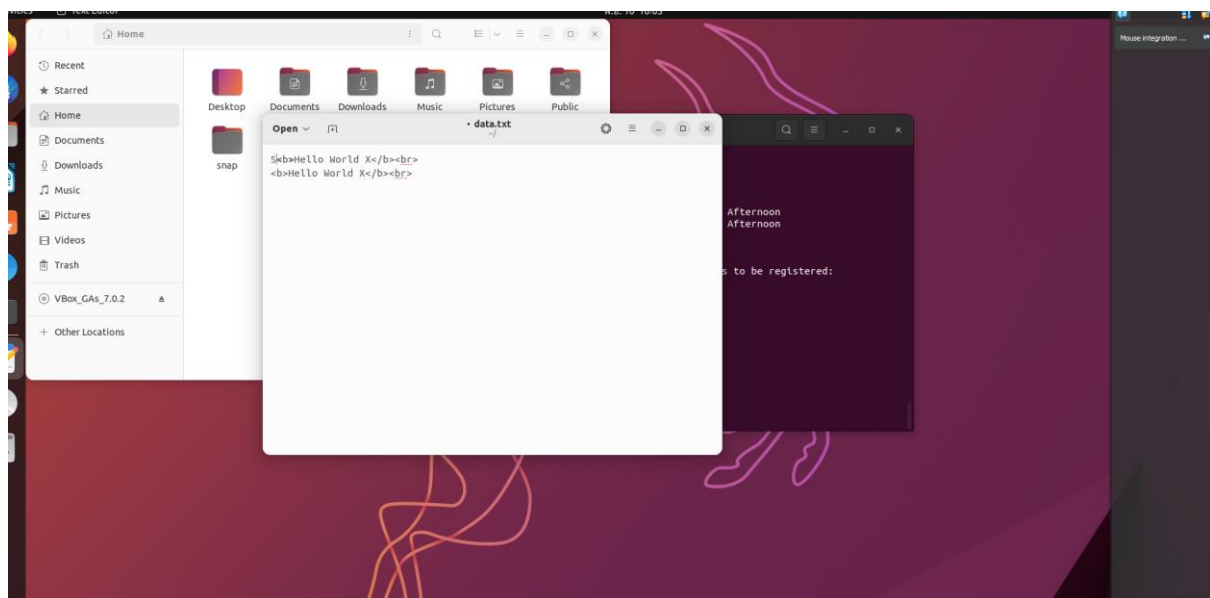
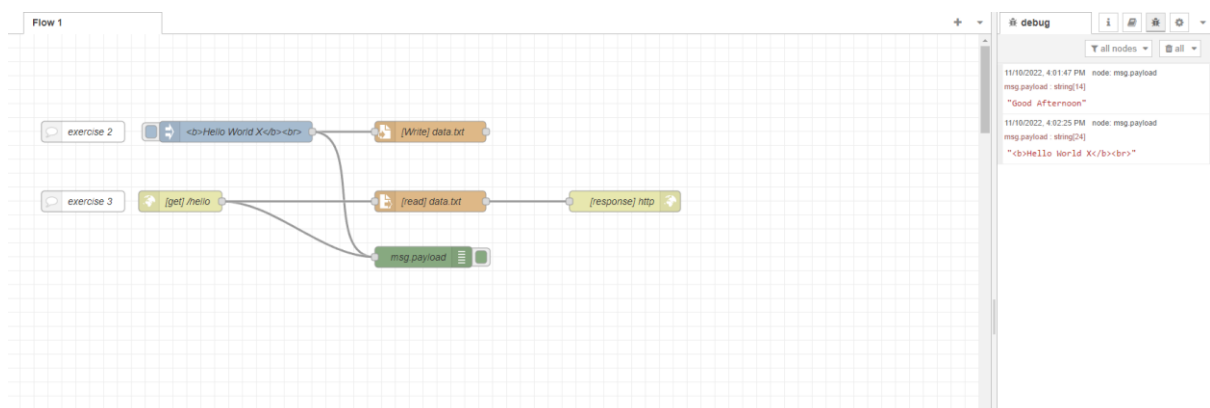
Let's do some basic usage of "function" and "dashboard" of NodeRED.

Import "NodeRED-Basic-Functions-Dashboards.json" in your NodeRED workflow. There are 14 exercises. Answer the following questions with their respective screenshots.

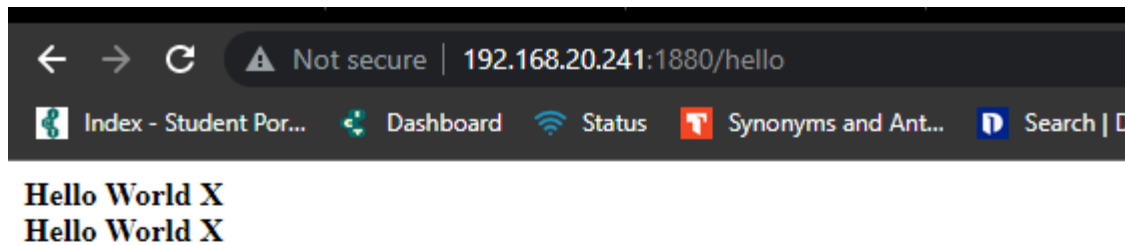
Exercise 1: Show your input message at the "debug messages" console.



Exercise 2: Show your "data.txt" file and open it on your machine (Ubuntu).

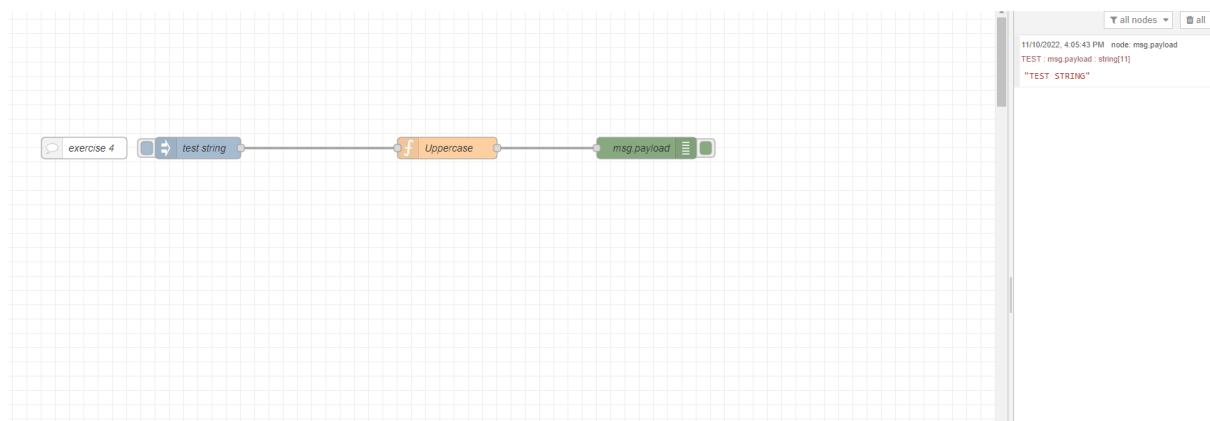


Exercise 3: Open the web browser (<http://UbuntuIP:1880/hello>) and then compare the text with exercise 2. Are they the same? Why?

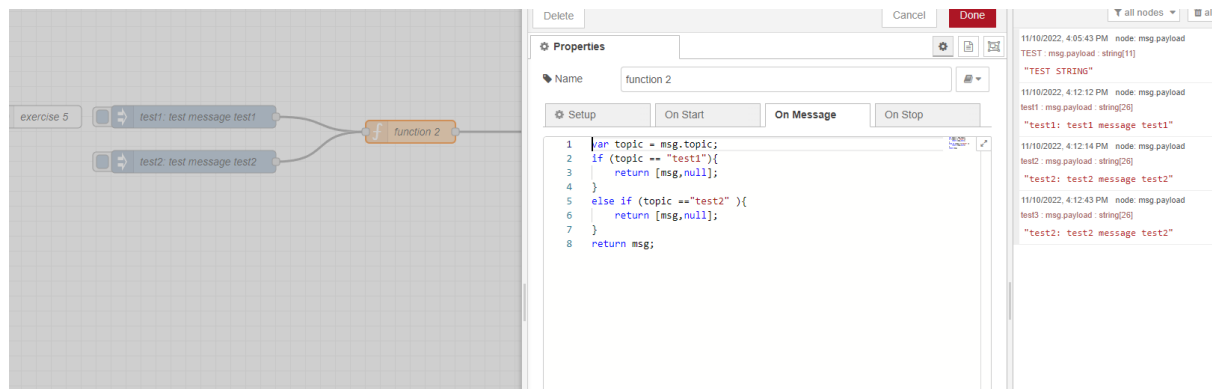


Ans: The context is the same but some text that use as a code will be apply on the html web.

Exercise 4: Show its output message at the “debug messages” console.

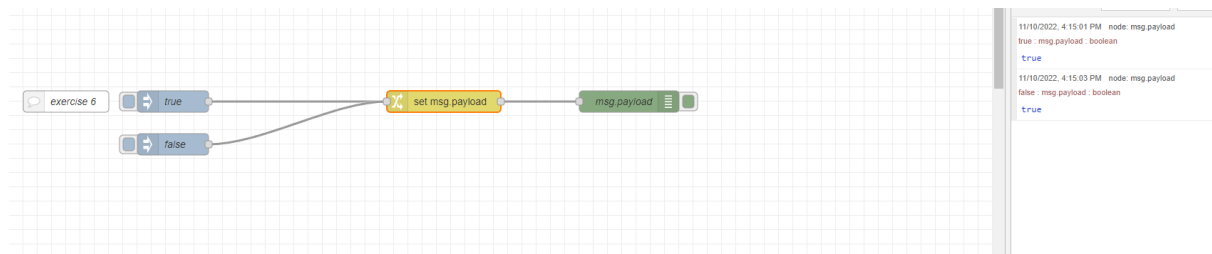


Exercise 5: Show its output message at the “debug messages” console. Explain about the “function 1” node.



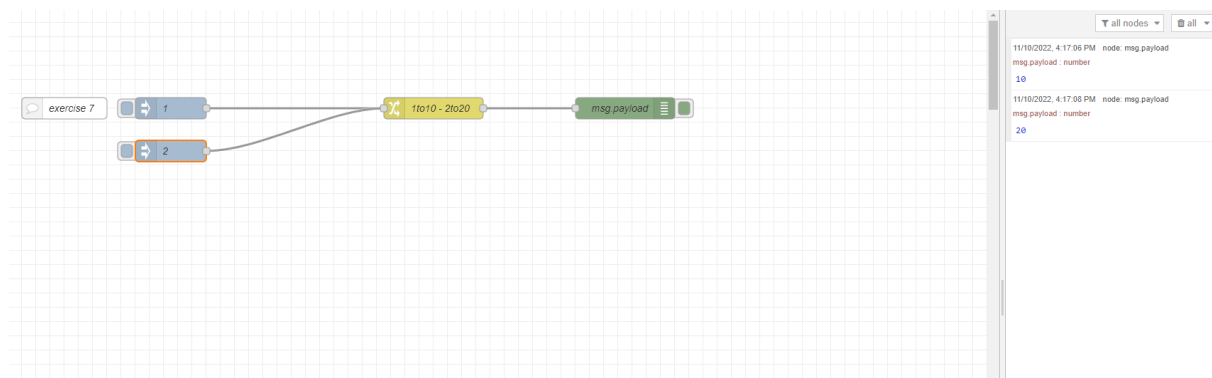
Ans: On the node-red it is “function 2” and it will return msg anyway.

Exercise 6: Show its output message at the “debug messages” console. How do you understand this flow?



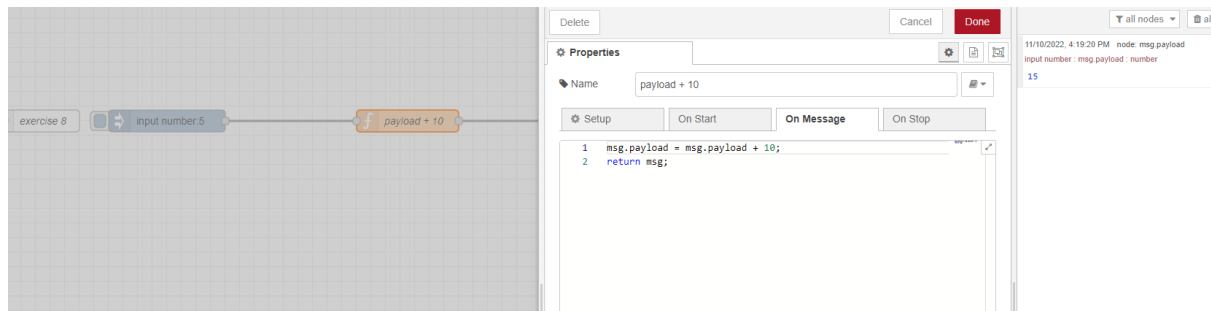
Ans: This flow first it will start with inject either true or false ,but the change node will be always return true anyway.

Exercise 7: Show its output message at the “debug messages” console. How do you understand this flow?



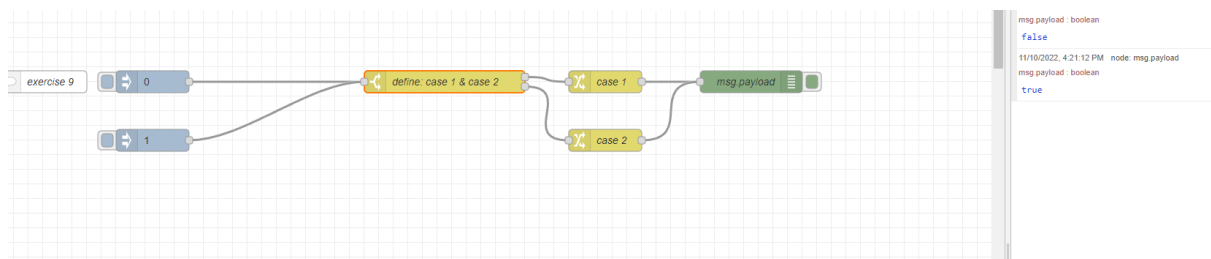
Ans: it will inject integer 1 or 2, and it will replace with the number that set on a middle function like 1 is 10 and 2 is 20.

Exercise 8: Show its output message at the “debug messages” console. How do you understand this flow?



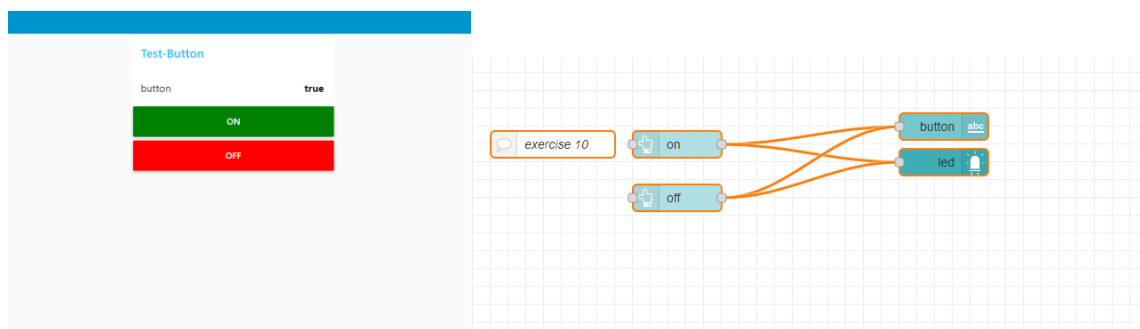
Ans: It will inject integer 5 and it will add with 10 in the middle function ,so the output will be 15.

Exercise 9: Show its output message at the “debug messages” console. How do you understand this flow?



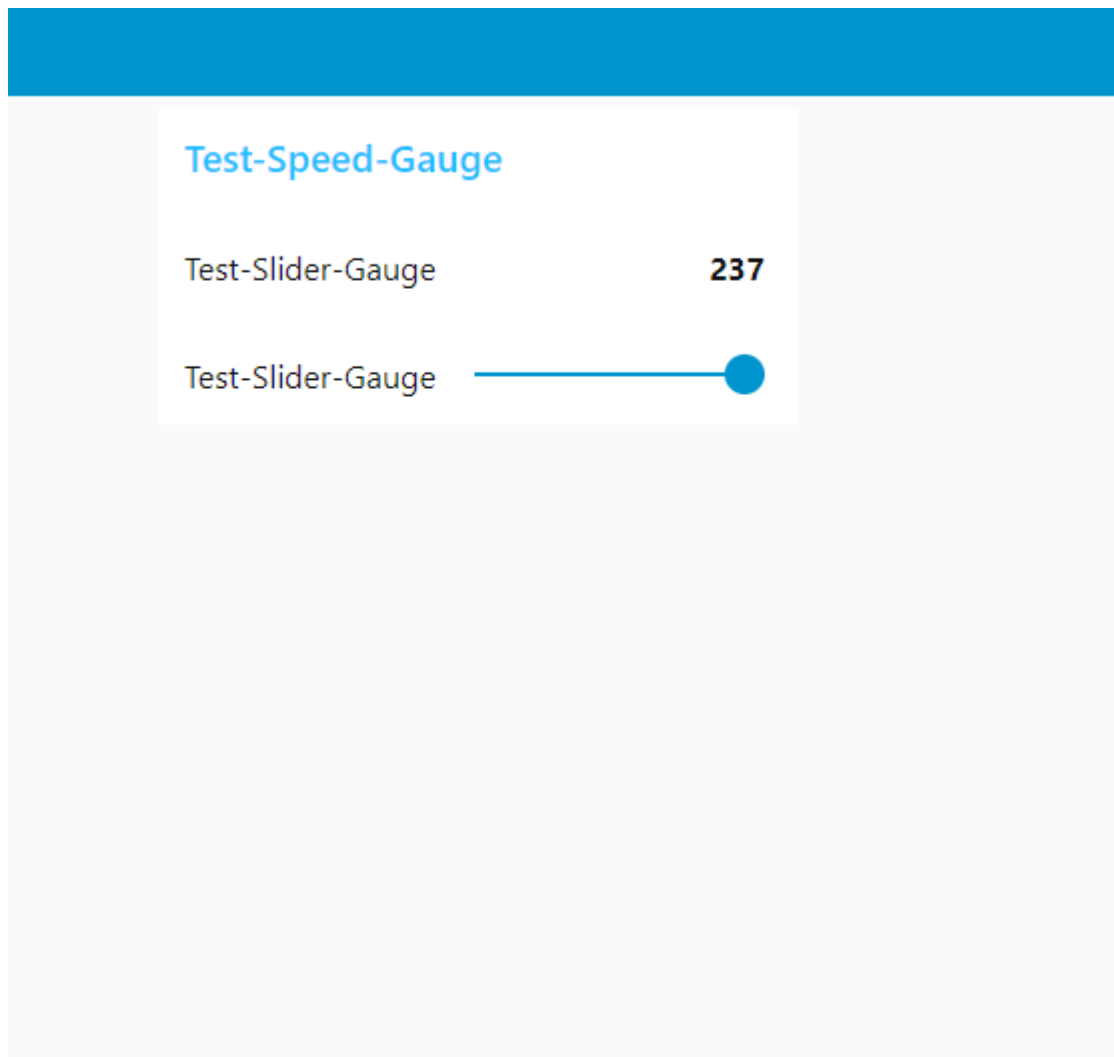
Ans: In this case it will inject 0 and 1. After that, it will define 0 and 1 to case 1 and 2. After we define it, it will set the value to true and false.

Exercise 10: Go to your NodeRED dashboard. Can you control the light of LED?



Ans: Yes it can.

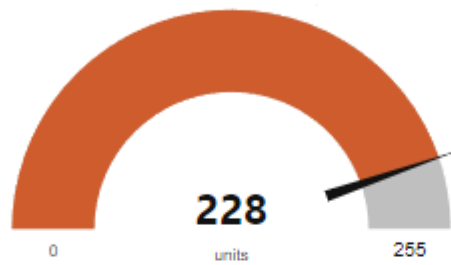
Exercise 11: Show its output message at the NodeRED dashboard.



Exercise 12: Show its output message at the NodeRED dashboard.

Test-Speed-Gauge

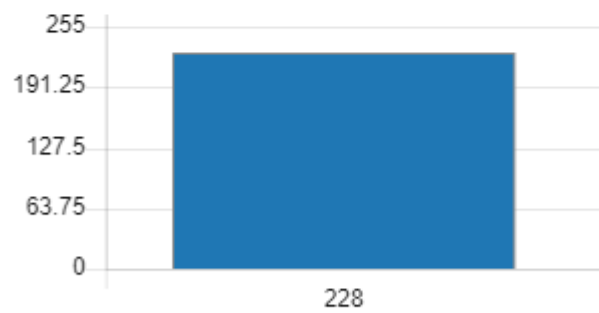
gauge



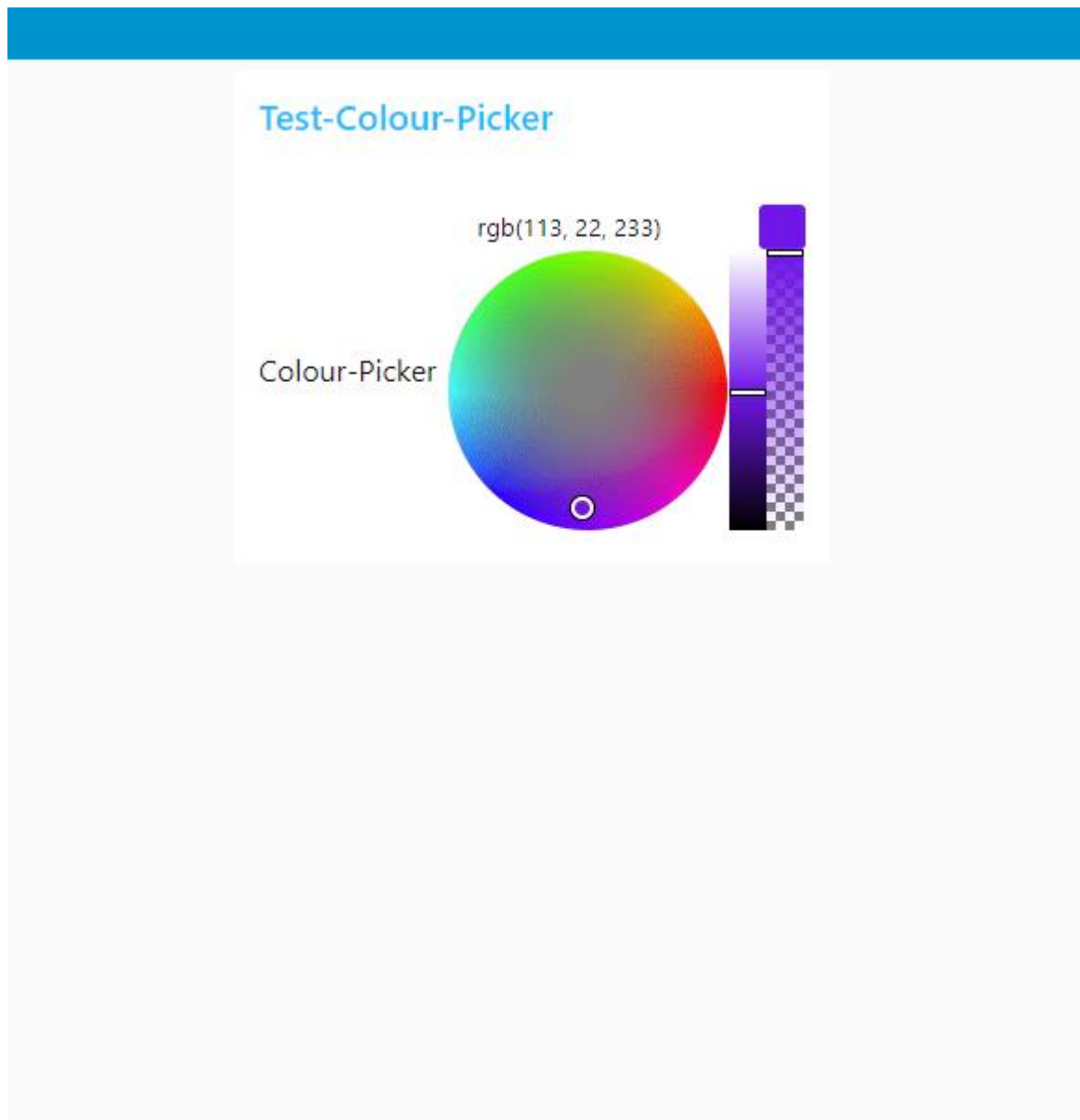
Test-Speed-Gauge



speed



Exercise 13: Show its output message at the NodeRED dashboard.

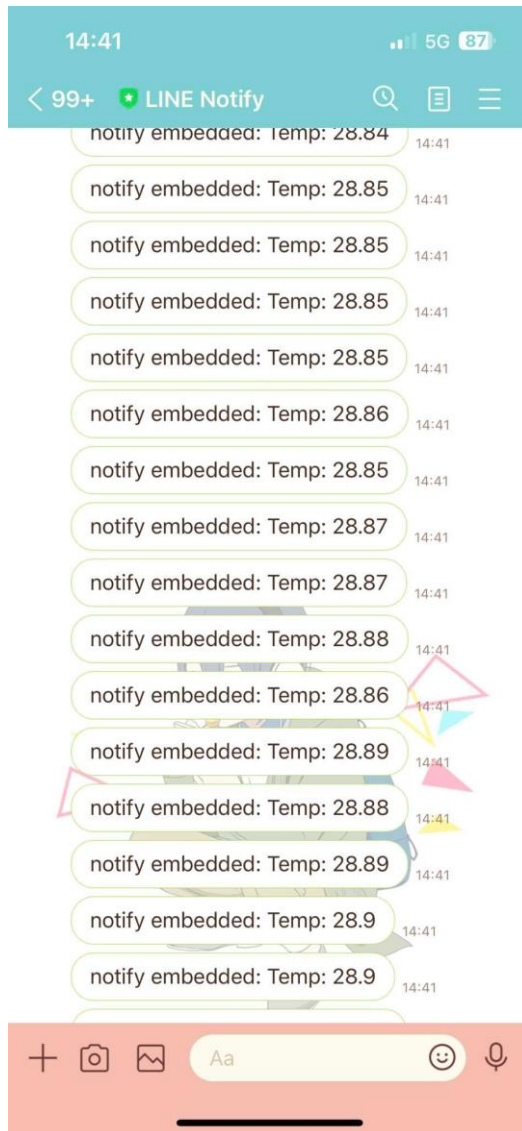


Exercise 14: How to you understand the process of “function” node. Explain it and show your result.

Ans: Function node is like Javascript in the web coding. Since, it can make the logical coding to set or make some condition of it.

Part A: Node-RED (LINE notification)

1. Show your LINE notification result together with NodeRED dashboard.



2. Modify Arduino program to use both slider and on/off button to control LED. Submit arduino program (ino) and NodeRED json files.

```

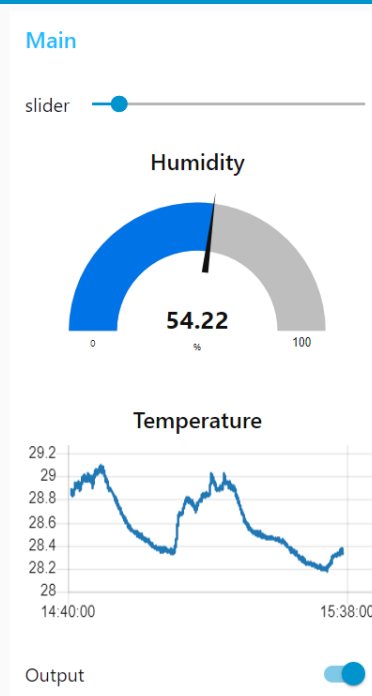
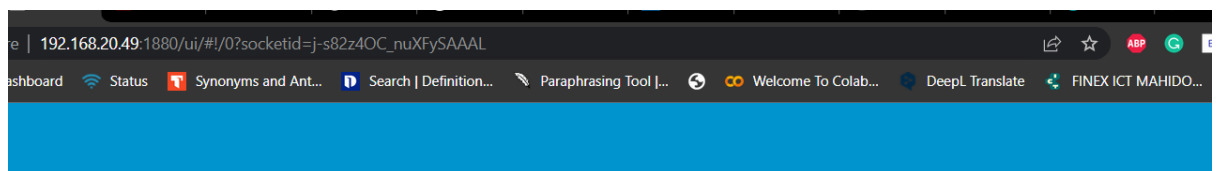
Serial.print((char)message[i]);
messageTemp += (char)message[i];
}
Serial.println();

// Feel free to add more if statements to control more GPIOs with MQTT

// If a message is received on the topic esp32/output, you check if the message
// Changes the output state according to the message
if (String(topic) == "esp32/output") {
  Serial.print("Changing output to ");
  if (messageTemp == "on" || messageTemp >= "5") {
    Serial.println("on");
    digitalWrite(ledPin, HIGH);
  }
  else if (messageTemp == "off" || messageTemp <= "4") {
    Serial.println("off");
    digitalWrite(ledPin, LOW);
  }
}

void reconnect() {
  // Loop until we're reconnected
  while (!client.connected()) {
    Writing at 0x00054000... (69 %)
    Writing at 0x00058000... (73 %)
    Writing at 0x0005c000... (76 %)
    Writing at 0x00060000... (80 %)
    Writing at 0x00064000... (84 %)
    Writing at 0x00068000... (88 %)
    Writing at 0x0006c000... (92 %)
    Writing at 0x00070000... (96 %)
    Writing at 0x00074000... (100 %)
    Data 71419 bytes (61827 compressed) at 0x00010000 in 7.3 seconds (effective 784.3 kbit/s)
  }
}

```



Part B: Blynk

1. Can you use blynk to control LED and monitor temperature and humidity at different other networks from your esp32? Why?

Ans: Yes, it can because blynk is the platform that you can use anywhere by connecting via wifi.

2. Video record link for your final blynk/node-red/line results.

Ans: https://drive.google.com/file/d/1LbOzgGgYyZlCXgonv-bnArDnV9ny6JBt/view?usp=share_link

Part C: Noder-RED + RGB

Run RGB-Web as an example to control RGB from a web browser. Program Node-RED and Arduino IDE to control RGB instead. Submit arduino program (ino) and json files.

Video record link for your final result.

Ans:

https://drive.google.com/file/d/1IABucYYaCx0wfOgnGaNrGQnp69ACAxKy/view?usp=share_link