**Part A: Node-RED (LINE notification)**

**Continue from Activity 10,**

1. Set up the circuit for AHT20 and LED. And upload the “ESP32-NodeRED-LINE-Blynk-AHT20-LED.ino” to your ESP32.

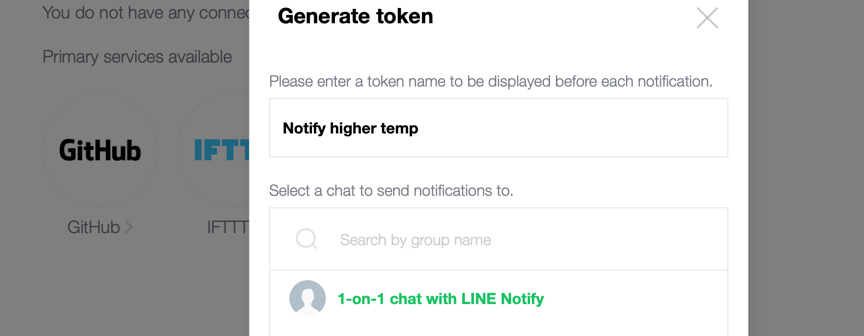
AHT20 pin connection

|  |  |
| --- | --- |
| AHT20 | ESP32 |
| Vin | 3.3V |
| GND | GND |
| SCL | GPIO22 |
| SDA | GPIO21 |

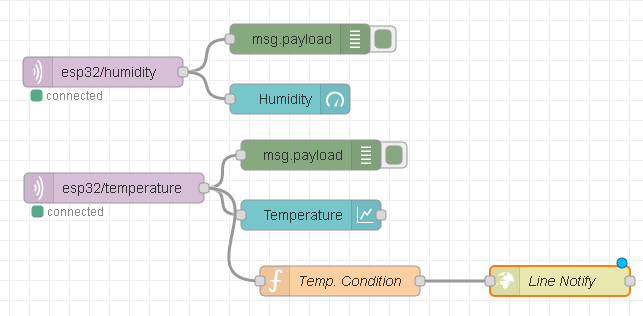
LED pin connection

|  |  |
| --- | --- |
| LED | ESP32 |
| cathode | GND |
| anode + resistor (220 kW) |  |

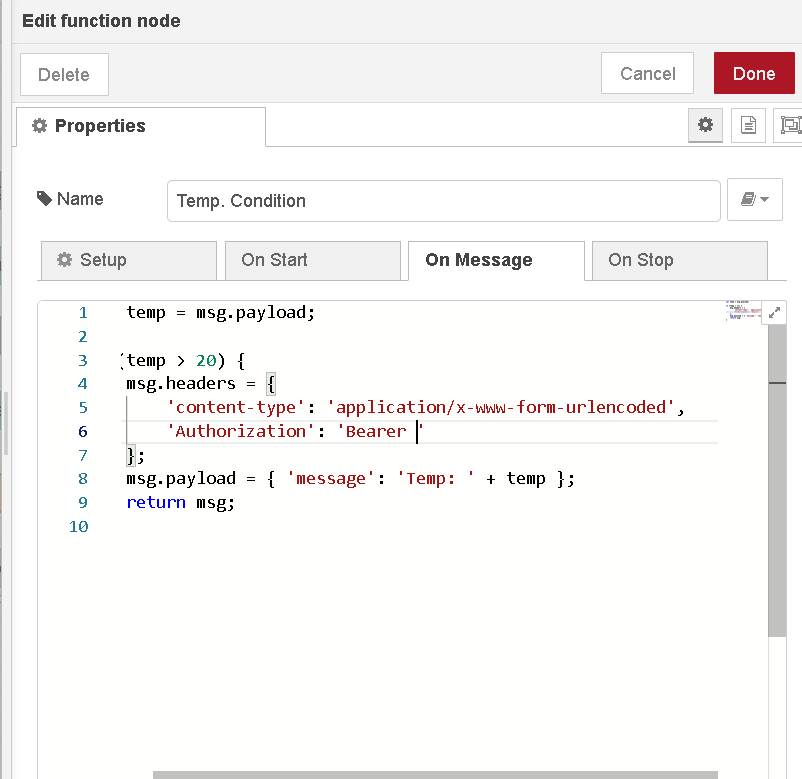
1. Generate token for LINE notify. Open this link “<https://notify-bot.line.me/en/>” and sign in with your LINE account. Go to “my page” and then click “Generate token”. Give your token name and select “1-on-1 chat with LINE notify”. Copy the generated token.



1. Add a new “function” and “http post” node as shown below.



1. Edit “function” node as follow. At the Authorization part, paste your LINE token.



var temp = msg.payload;

if (temp > 20) {

msg.headers = {

'content-type': 'application/x-www-form-urlencoded',

'Authorization': 'Bearer **xxx**'

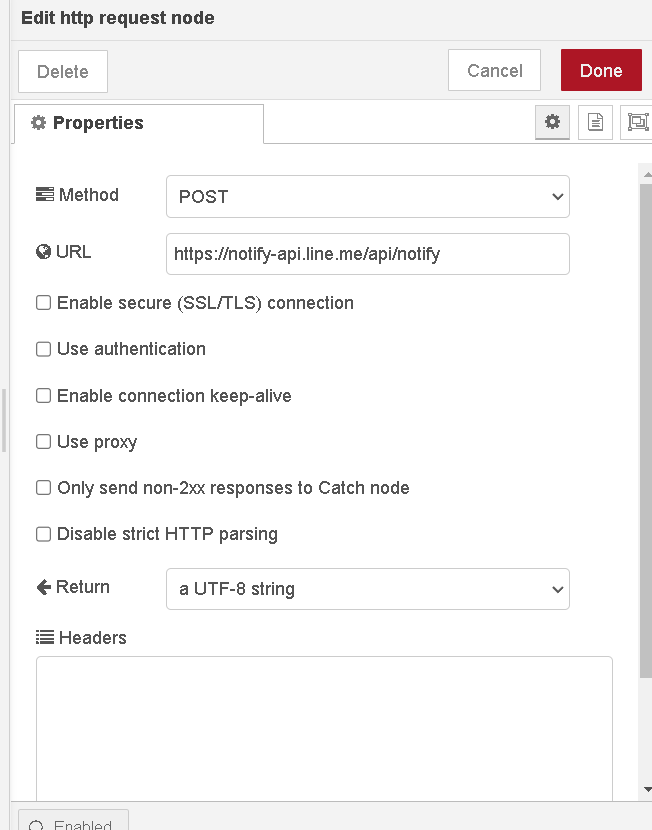
};

msg.payload = { 'message': 'Temp: ' + temp };

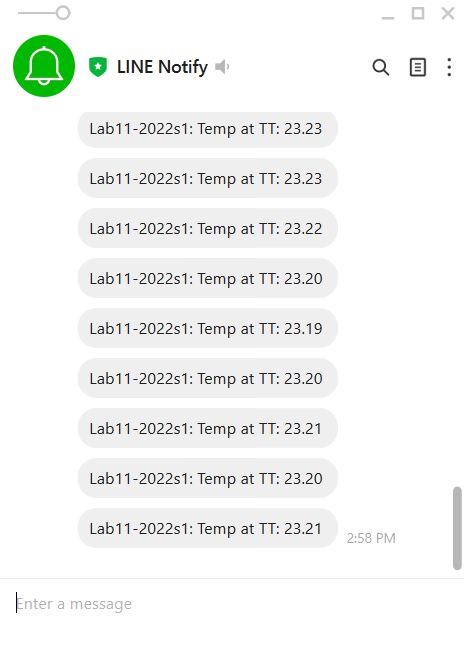
return msg;

}

1. Edit the “http request” node as follow. Use POST method and paste the <https://notify-api.line.me/api/notify> as URL box.

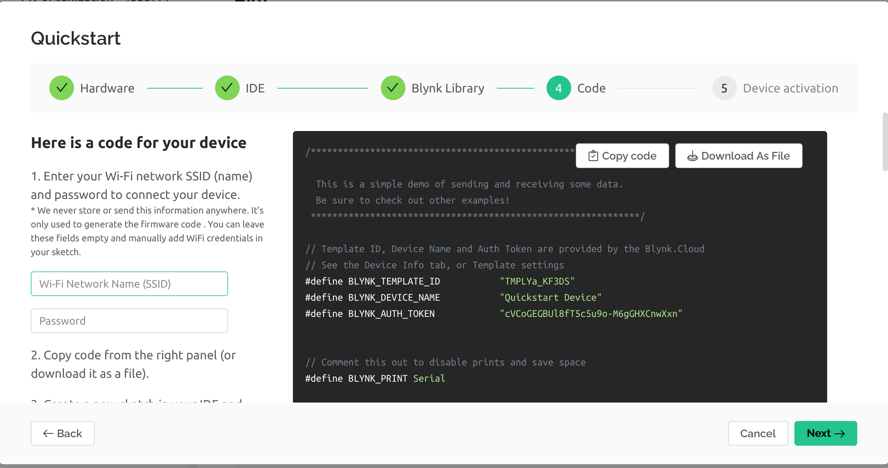
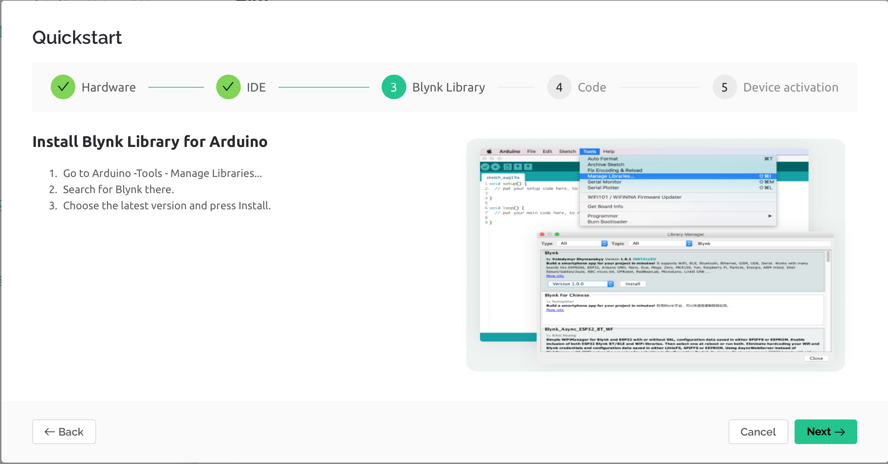
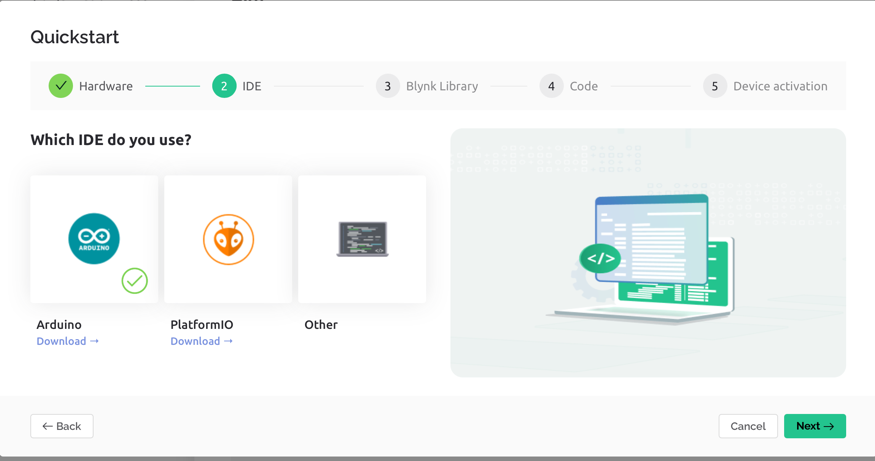
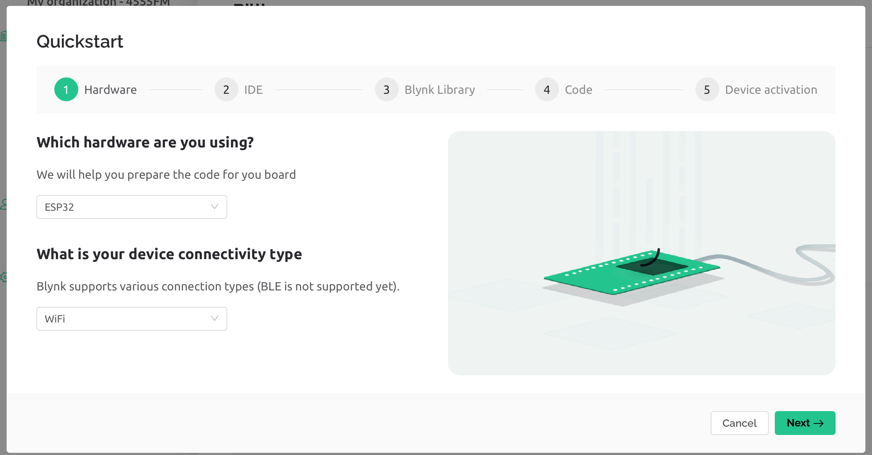


1. Click done and deploy it. And then check your line account and you will see the notification message.

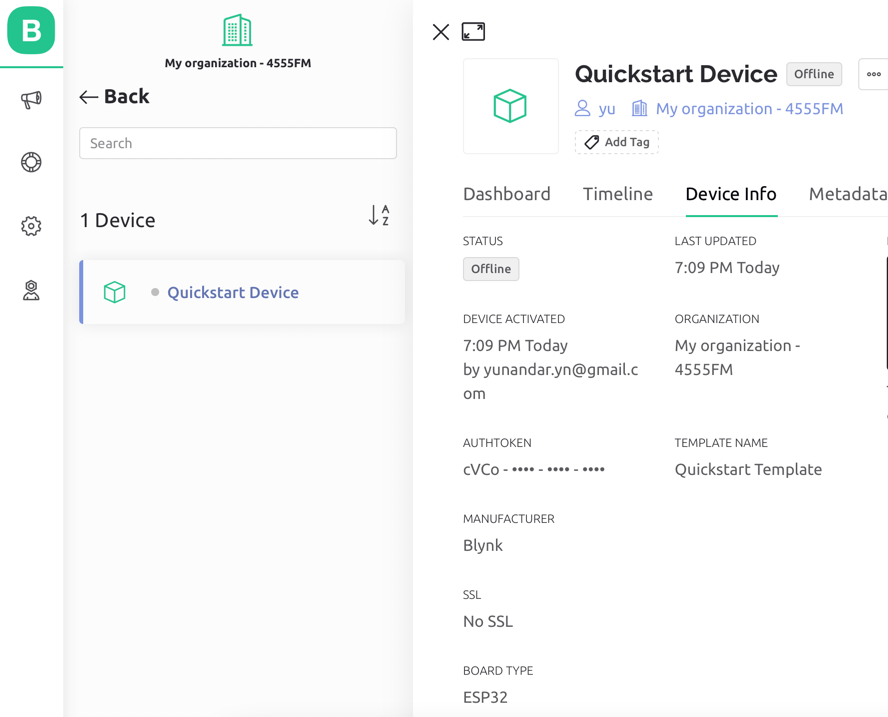
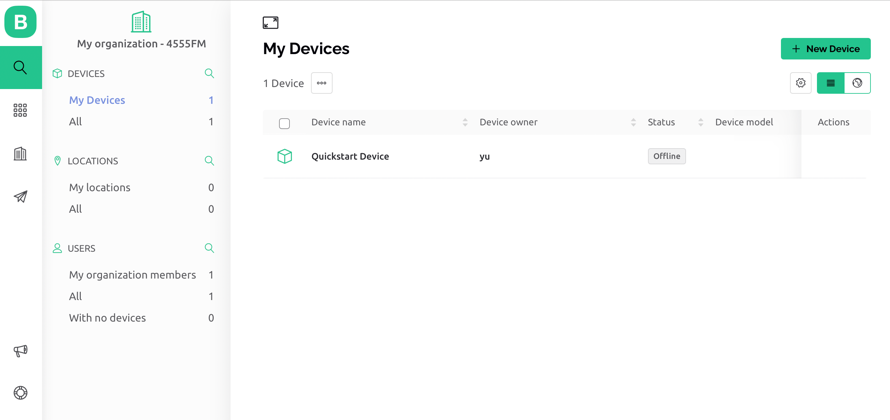


**Part B: Blynk**

1. Install “Blynk” application on your mobile phone and sing up for it.
2. Activate “Blynk” from your registerd email and then continue the following steps.



1. You may skip, device activation part and then go back to your “Blynk” mobile app.
2. On your Arduino IDE, install “Blynk” library via Manage Libraries.
3. In “Blynk” application of your mobile phone, create the following widgets via from the “Developer mode”.
   1. Gauge: To display Temp value from AHT20, it binds to virtual pin V0 (range from 0 to 100, V0)
   2. Gauge: To display Humid value from AHT20, it binds to virtual pin V1, (range from 0 to 100, V1)
   3. Slider: To control the brightness of the LED, it binds to virtual pin V2, (range from 0 to 1023, V2)
4. After you created the template,
5. In “Blynk” application of your browser, go to Quickstart Device>Device Info to copy “Blynk” authentication token. You will use the token in your ESP32 program.



1. Upload “ESP32-NodeRED-LINE-Blynk-AHT20-LED.ino” to ESP32. Remark, do not forget to fill your WiFi SSID, password, Blynk authentication token, and MQTT broker address of your Ubuntu system.
2. Now, you can control dimming of LED via “Blynk” app and you can monitor Temp and Humid value from it too.
3. Take a vide record of your final result.