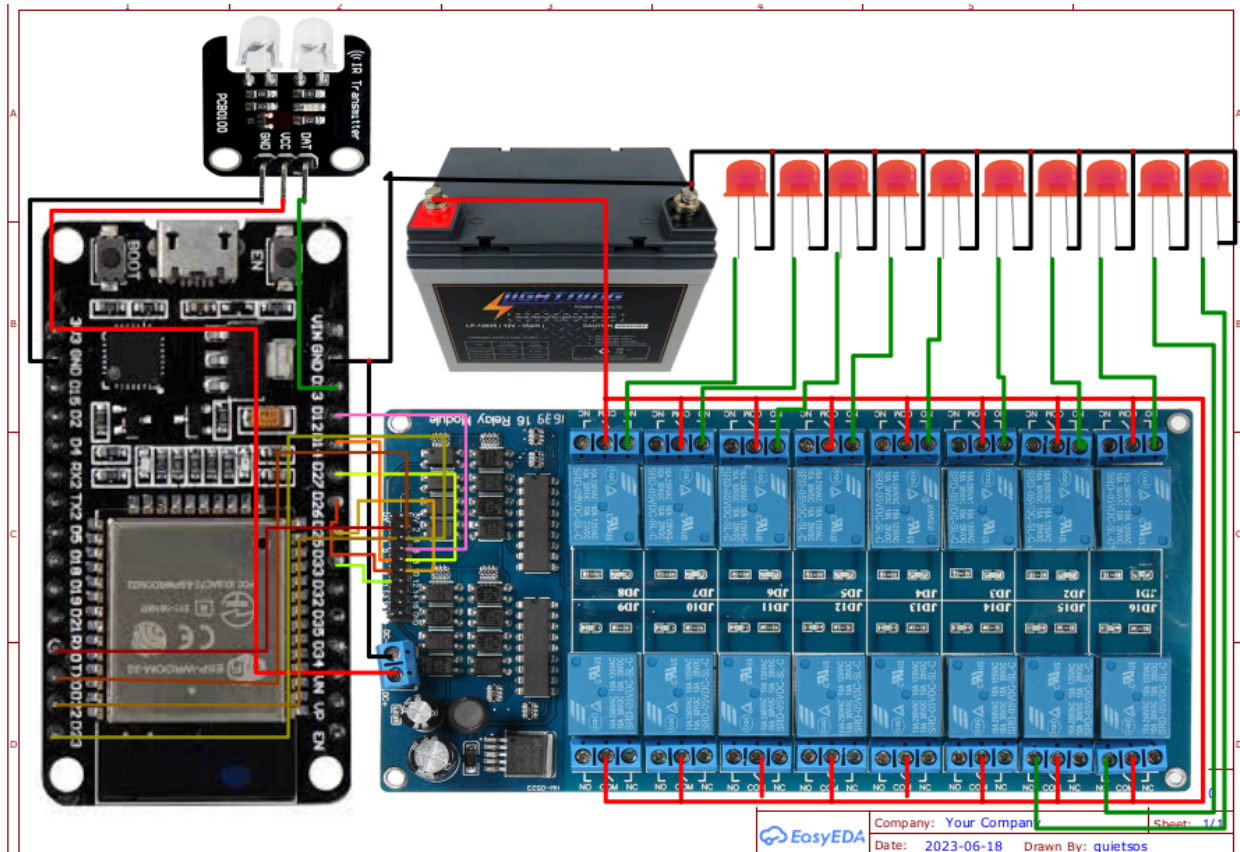


Master ESP32 Circuit diagram:

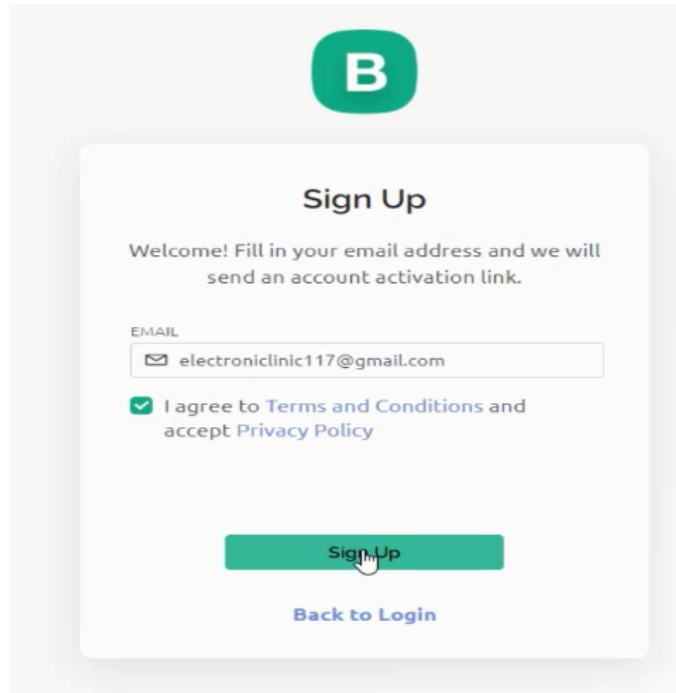


Bylink IoT server Dashboard setup:

1. Go to blynk.cloud and register a free account. For this click on the Create new account.

The image shows the login screen of the Bylink IoT server dashboard. It features a green 'B' logo at the top. Below the logo is a 'Log In' section with input fields for 'EMAIL' and 'PASSWORD'. A 'Forgot password?' link is located below the password field. At the bottom of the login section is a green 'Log In' button. Below the button is a link for 'Create new account'.

2. Write your email address, make sure you use the same email on the Mobile Blynk App too. Check the box; I agree statement and click on the Sign Up button.



The image shows a 'Sign Up' form for Blynk. At the top is a green circle with a white 'B'. Below it, the title 'Sign Up' is centered. A welcome message says: 'Welcome! Fill in your email address and we will send an account activation link.' There is an email input field with the placeholder 'EMAIL' and the text 'electronicclinic117@gmail.com'. Below the field is a checked checkbox with the text 'I agree to Terms and Conditions and accept Privacy Policy'. At the bottom, there is a green 'Sign Up' button and a blue 'Back to Login' link.

Sign Up

Welcome! Fill in your email address and we will send an account activation link.

EMAIL

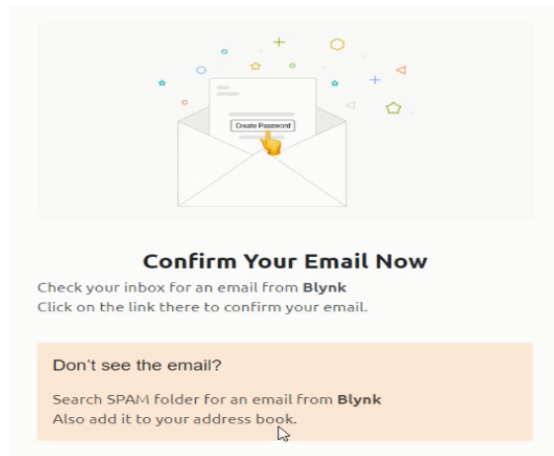
✉ electronicclinic117@gmail.com

☒ I agree to [Terms and Conditions](#) and accept [Privacy Policy](#)

Sign Up

[Back to Login](#)

3. A confirmation email will be sent on your email id.



The image shows a 'Confirm Your Email Now' screen. At the top is an illustration of an open envelope with a 'Create Password' button and a hand cursor. Below it, the title 'Confirm Your Email Now' is centered. A message says: 'Check your inbox for an email from Blynk. Click on the link there to confirm your email.' At the bottom, there is an orange box with the text 'Don't see the email?' and 'Search SPAM folder for an email from Blynk. Also add it to your address book.' with a mouse cursor pointing at the text.

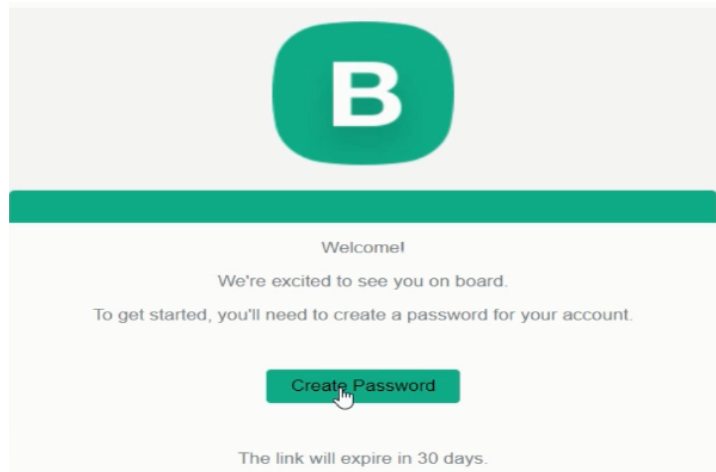
Confirm Your Email Now

Check your inbox for an email from **Blynk**.
Click on the link there to confirm your email.

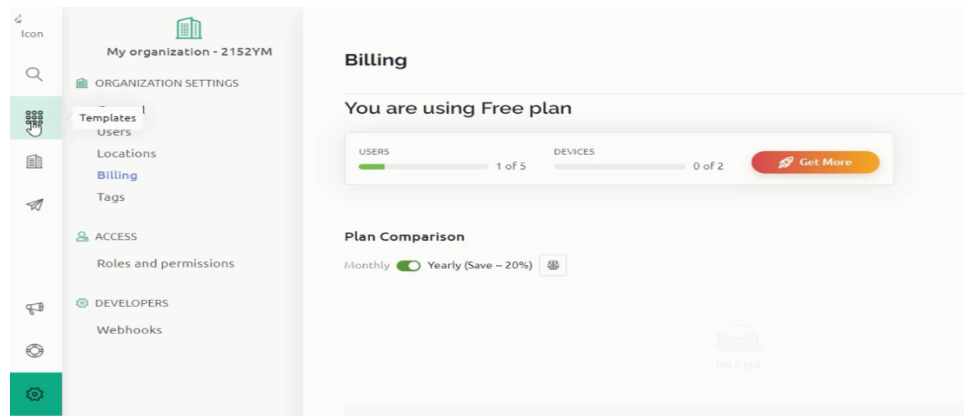
Don't see the email?

Search SPAM folder for an email from **Blynk**.
Also add it to your address book.

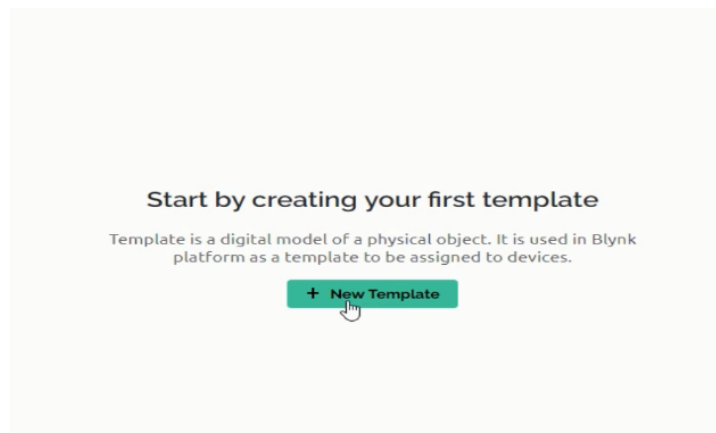
4. Open the email id, click on the Link sent from the Blynk, and click Create Password.



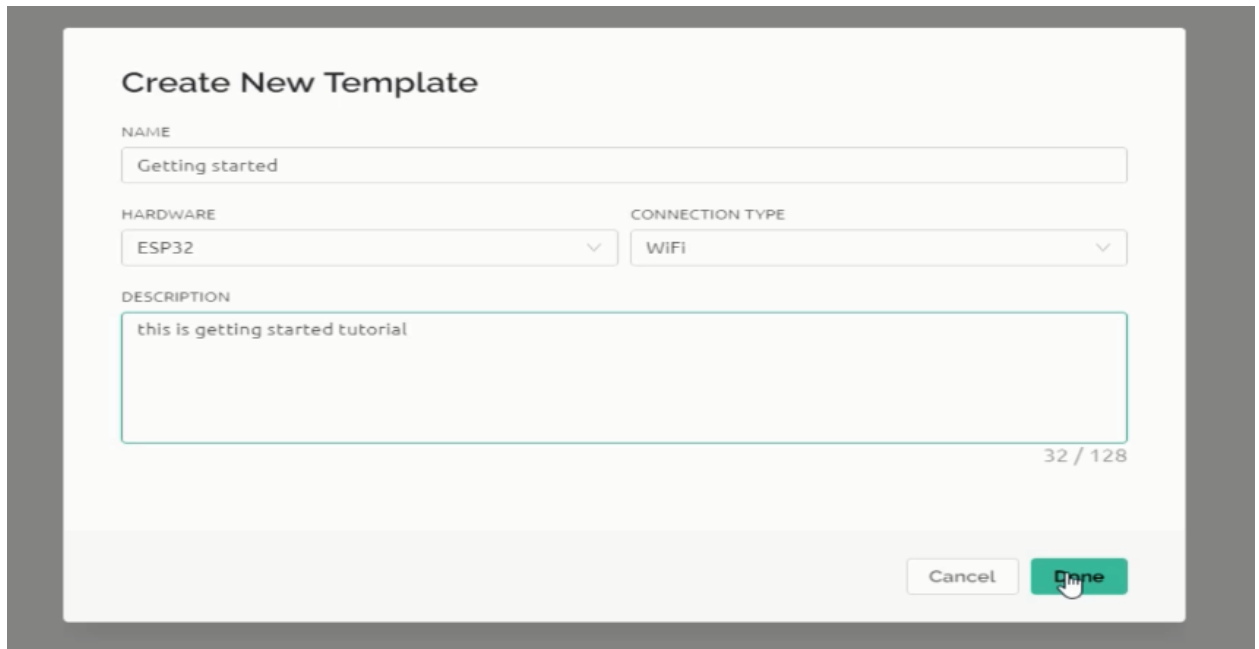
5. If you want to follow a step by step guide then you can click on the Let's go! Button. It will help you with Hardware setup, IDE, Blynk Library, Code, and Device activation. Free plan supports 5 users and 2 devices. If you want more users and devices then simply click on the Get More button. Anyway, I am going to start by clicking on the Templates



6. Then click on the New Template to create your first Template



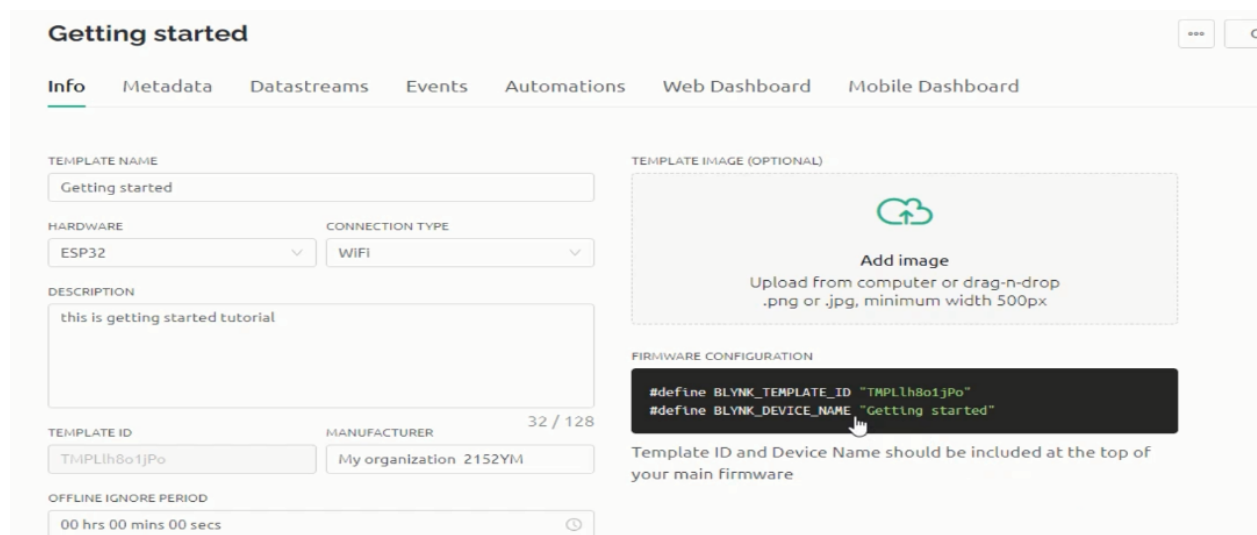
7. Enter the template name, select the Hardware type, select Connection type, you can also write a description, and finally, click on the Done button.



The screenshot shows a 'Create New Template' dialog box with the following fields and options:

- NAME:** A text input field containing 'Getting started'.
- HARDWARE:** A dropdown menu with 'ESP32' selected.
- CONNECTION TYPE:** A dropdown menu with 'WIFI' selected.
- DESCRIPTION:** A text area containing 'this is getting started tutorial'.
- Character Count:** '32 / 128' is displayed at the bottom right of the description field.
- Buttons:** 'Cancel' and 'Done' buttons are at the bottom right. A mouse cursor is clicking the 'Done' button.

8. Go to the Datastreams.



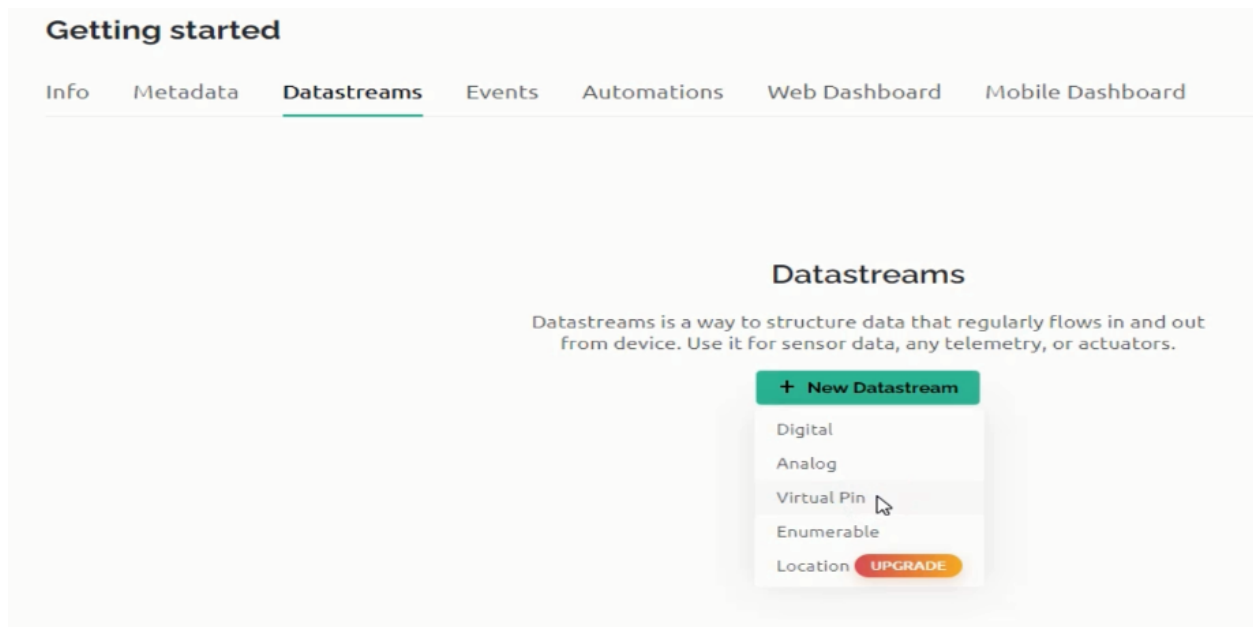
The screenshot shows the 'Getting started' template configuration page with the following sections and fields:

- Navigation Tabs:** Info (selected), Metadata, Datastreams, Events, Automations, Web Dashboard, Mobile Dashboard.
- TEMPLATE NAME:** A text input field containing 'Getting started'.
- HARDWARE:** A dropdown menu with 'ESP32' selected.
- CONNECTION TYPE:** A dropdown menu with 'WIFI' selected.
- DESCRIPTION:** A text area containing 'this is getting started tutorial'.
- Character Count:** '32 / 128' is displayed at the bottom right of the description field.
- TEMPLATE ID:** A text input field containing 'TMPL1h8o1jPo'.
- MANUFACTURER:** A text input field containing 'My organization 2152YM'.
- OFFLINE IGNORE PERIOD:** A time input field set to '00 hrs 00 mins 00 secs'.
- TEMPLATE IMAGE (OPTIONAL):** A dashed box containing an 'Add image' button and instructions: 'Upload from computer or drag-n-drop .png or .jpg, minimum width 500px'.
- FIRMWARE CONFIGURATION:** A code block showing:

```
#define BLYNK_TEMPLATE_ID "TMPL1h8o1jPo"
#define BLYNK_DEVICE_NAME "Getting started"
```

A mouse cursor is pointing at the device name.
- Instructions:** Text below the code block: 'Template ID and Device Name should be included at the top of your main firmware'.

9. On the Datastreams click on the New Datastream and select Virtual Pin.



10. Write the name, select virtual PIN, Data Type, you can also select units, and you can also set the Minimum and Maximum limits. After all the parameters are set then you can click on the Create button.

The screenshot shows the 'Virtual Pin Datastream' configuration form. It includes fields for NAME (LED), ALIAS (LED), PIN (V0), DATA TYPE (Integer), UNITS (None), MIN (0), MAX (1), and DEFAULT VALUE (0). There is an 'ADVANCED SETTINGS' section with a plus icon. At the bottom right, there are 'Cancel' and 'Create' buttons.

11. Now again click on the New Datastream button and follow the same exact steps for the Potentiometer. The virtual PIN is automatically incremented. After you have defined all the parameters then you can click on the Create button. Anyway, you can see our two datastreams are ready and now we can click on the Save button.

Getting started

Duplicate

Export

Info

Metadata

Datastreams

Events

Automations

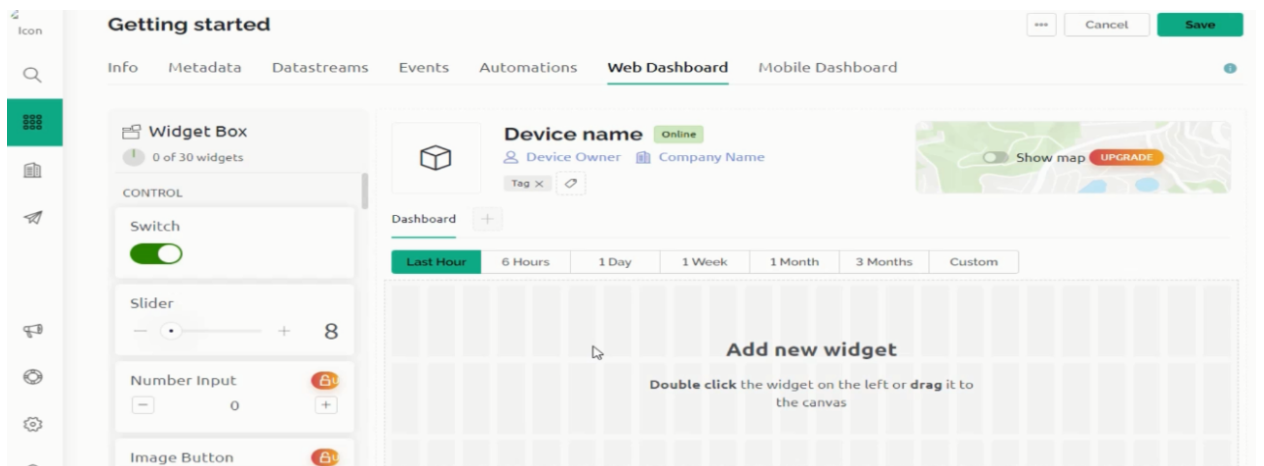
Web Dashboard

Mobile Dashboard

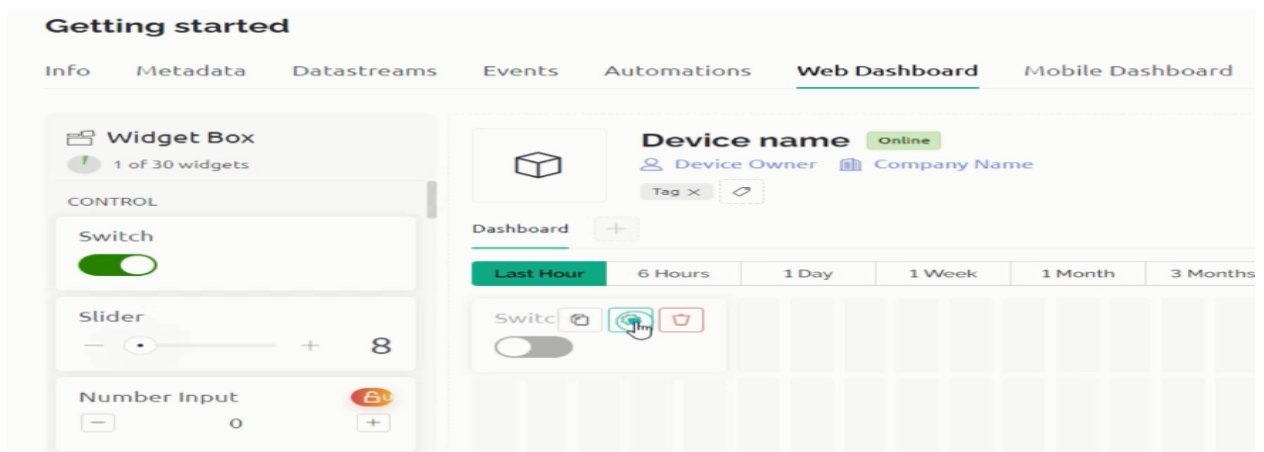
Search datastream

<div>Id</div>	<div>Name</div>	<div>Alias</div>	<div>Color</div>	<div>Pin</div>	<div>Data Type</div>	<div>Units</div>	<div>Is Raw</div>	<div>Min</div>	<div>Max</div>
1	LED	LED	<div></div>	V0	Integer		false	0	1
2	Pot	Pot	<div></div>	V1	Integer		false	0	1000

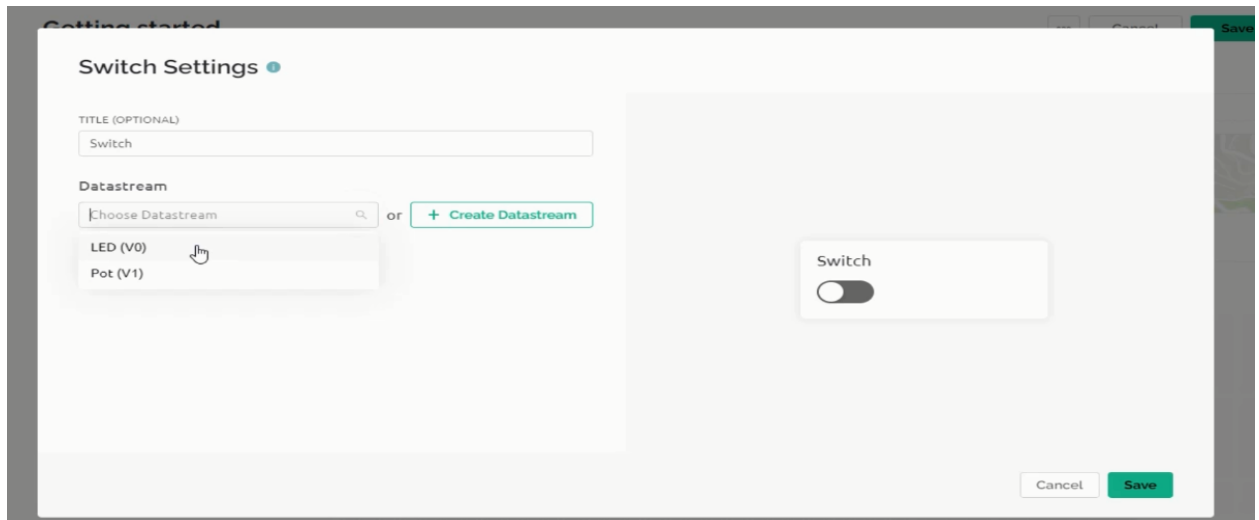
12. Now go to Web Dashboard and click on the Edit Button.



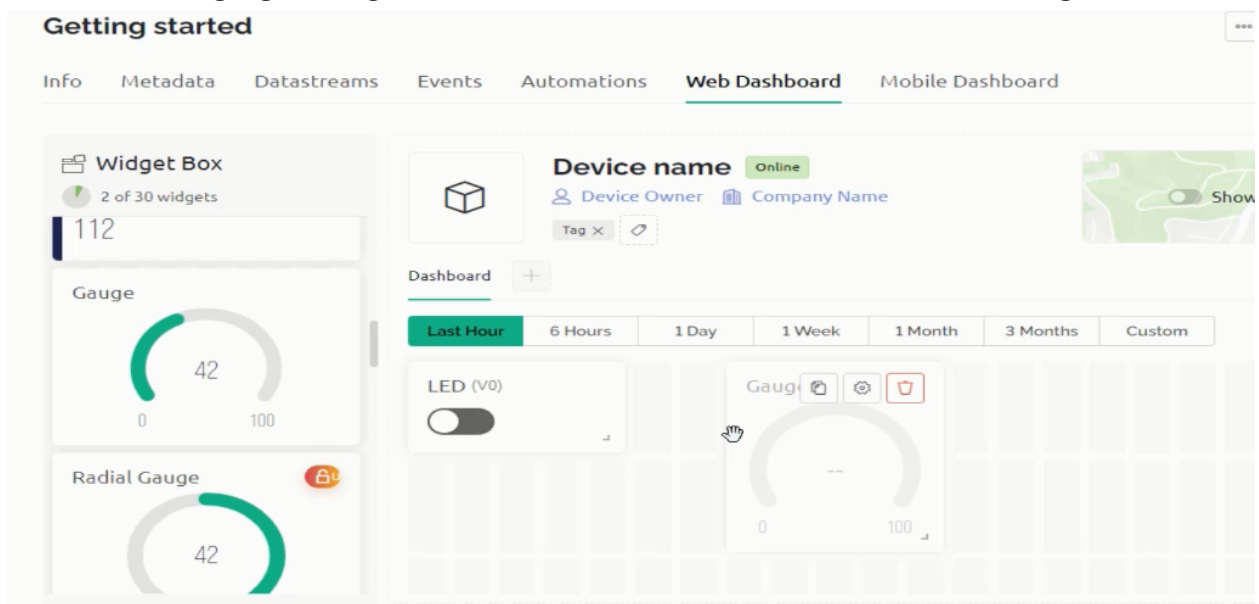
13. Drag and drop the Switch for controlling the LED. Click on the settings.



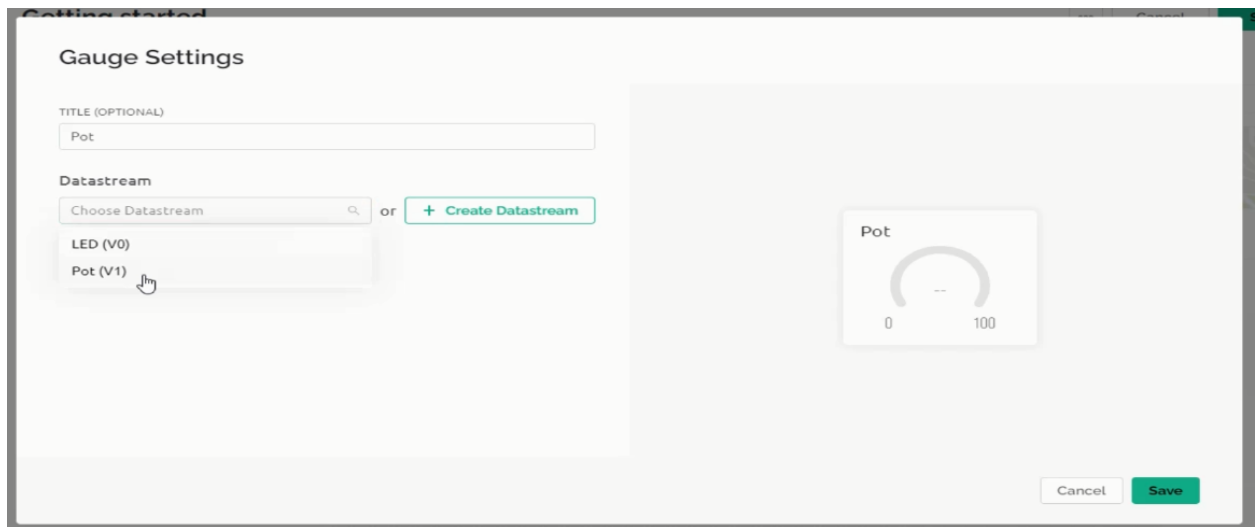
14. Select the Datastream “LED(V0)”, activate the Show on/off labels, If you want you can also change the color, and finally, click on the Save button.



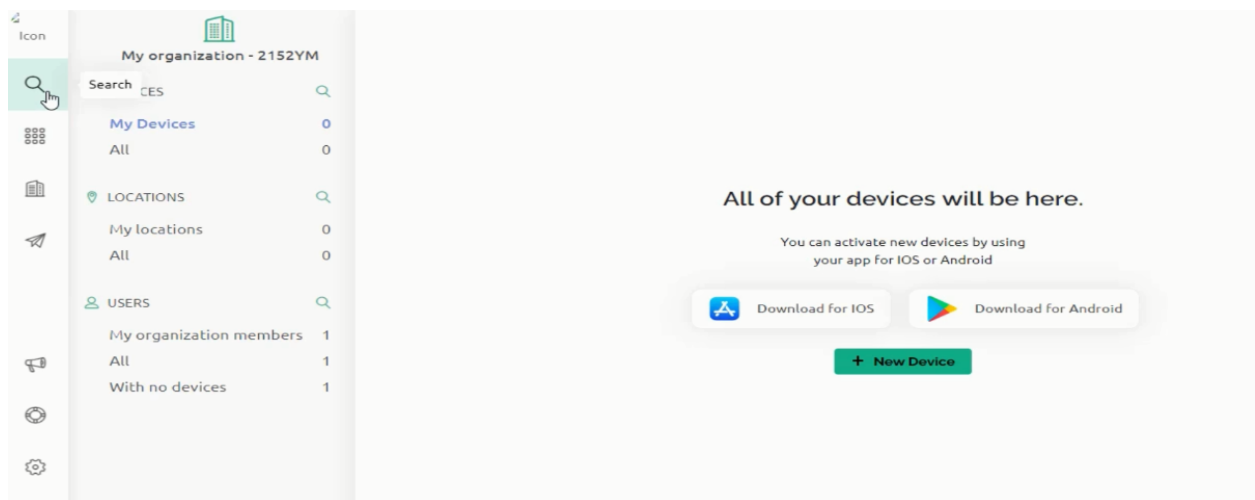
15. Now, I am going to add a Gauge for monitoring the Potentiometer. The same way you can click on the gauge settings button and select the datastream and do other settings.



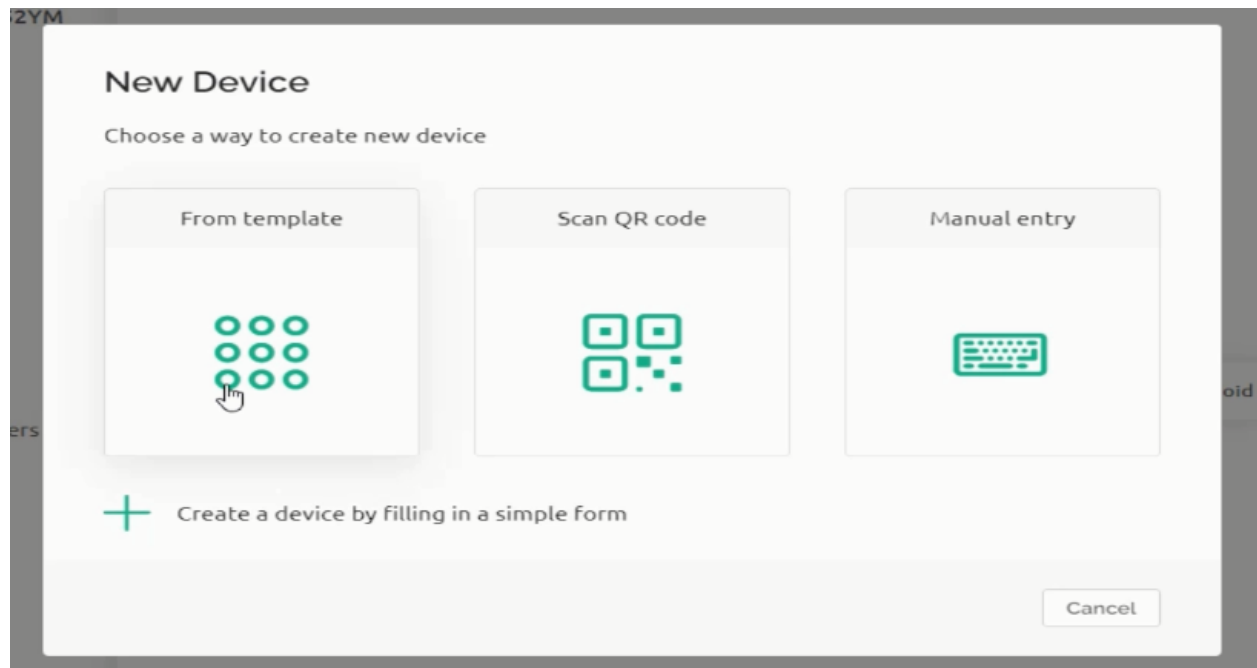
16. Once you have added all the widgets then click on the Save button.



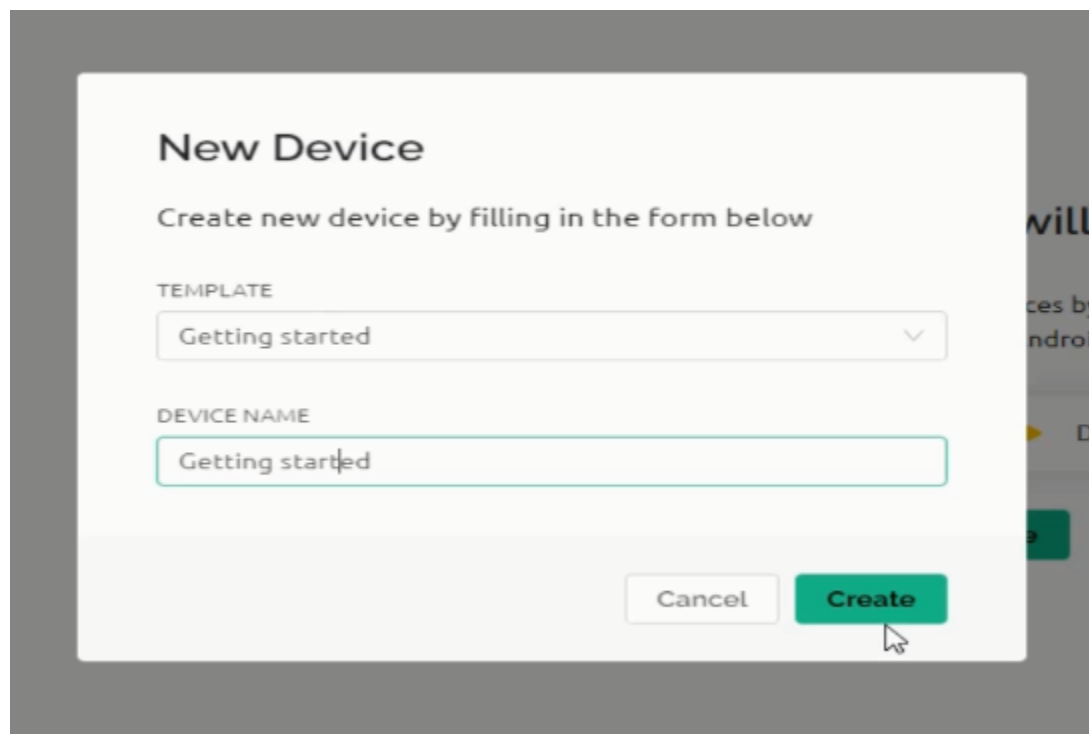
18. Click on the Search, then click on New Device.



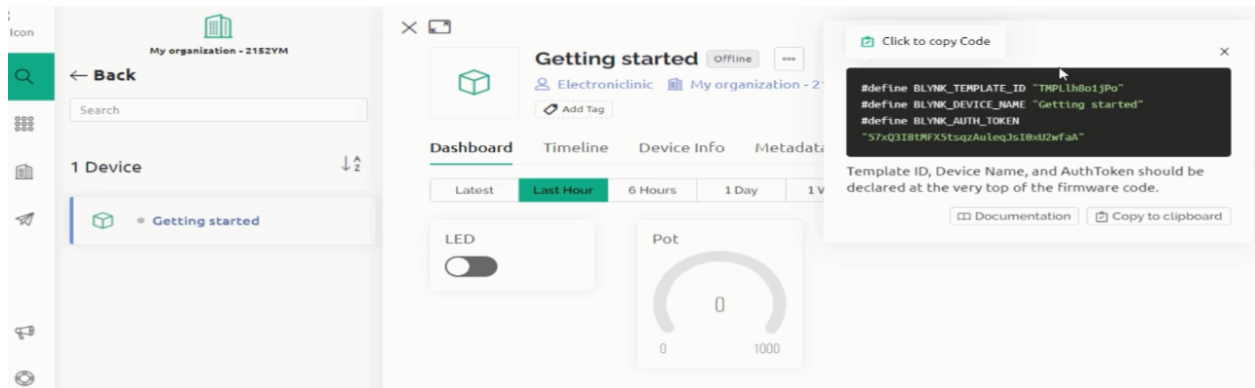
19. Click on From template to create a new device.



20. Select the template we just created, write the device name, and finally click on the Create button.



21. My Dashboard is ready, now I can use this button to control the LED and Gauge for monitoring the Potentiometer.



Now, we have to use the Template ID, Device Name, and Authorization Token in the programming. In the image above, you can see the BLYNK_TEMPLATE_ID, BLYNK_DEVICE_NAME, and BLYNK_AUTH_TOKEN on the right side. We are going to use these in the programming. Copy the TEMPLATE_ID and paste it next to the BLYNK_TEMPLATE_ID. Repeat the same steps for the Device Name and Authorization Token.