IoT Automation Project

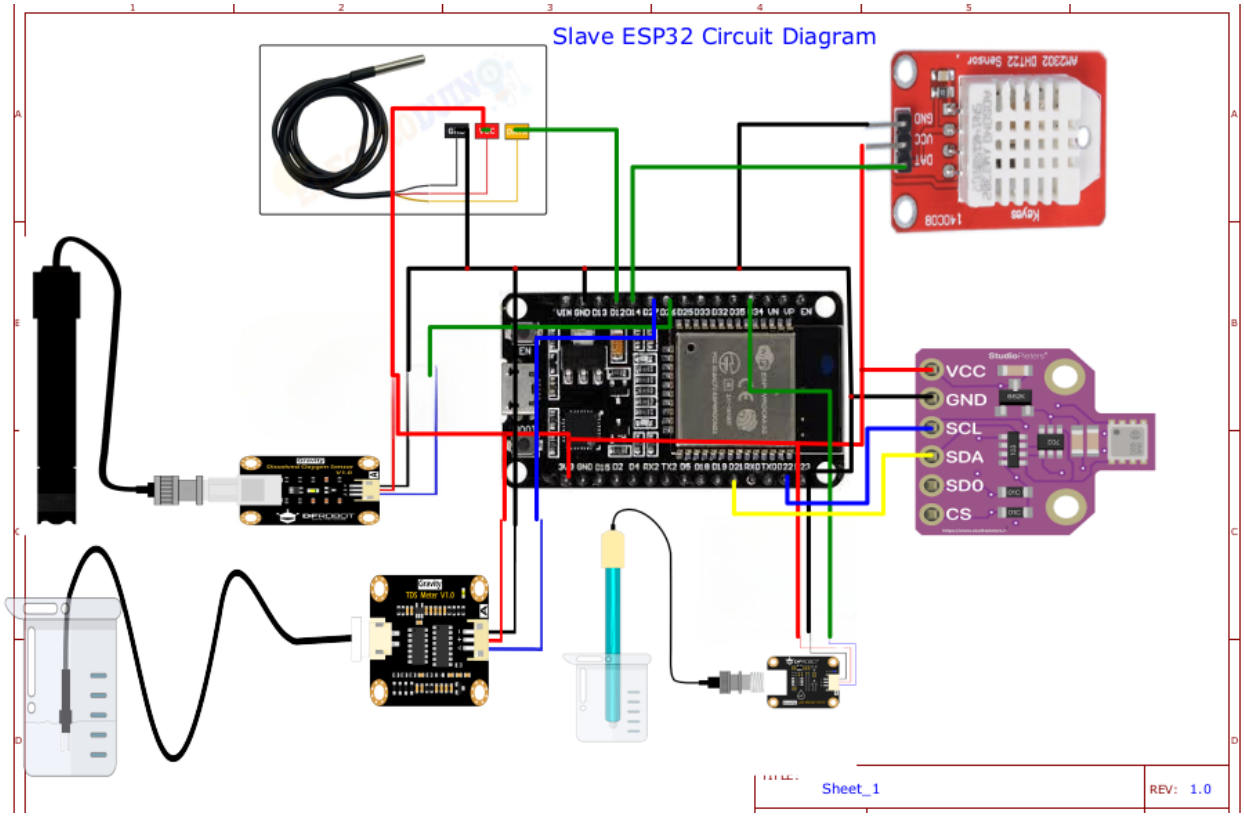
1. IoT Automation Project contain mainly two parts:

a. Hardware section
b. Bylink IoT cloud section

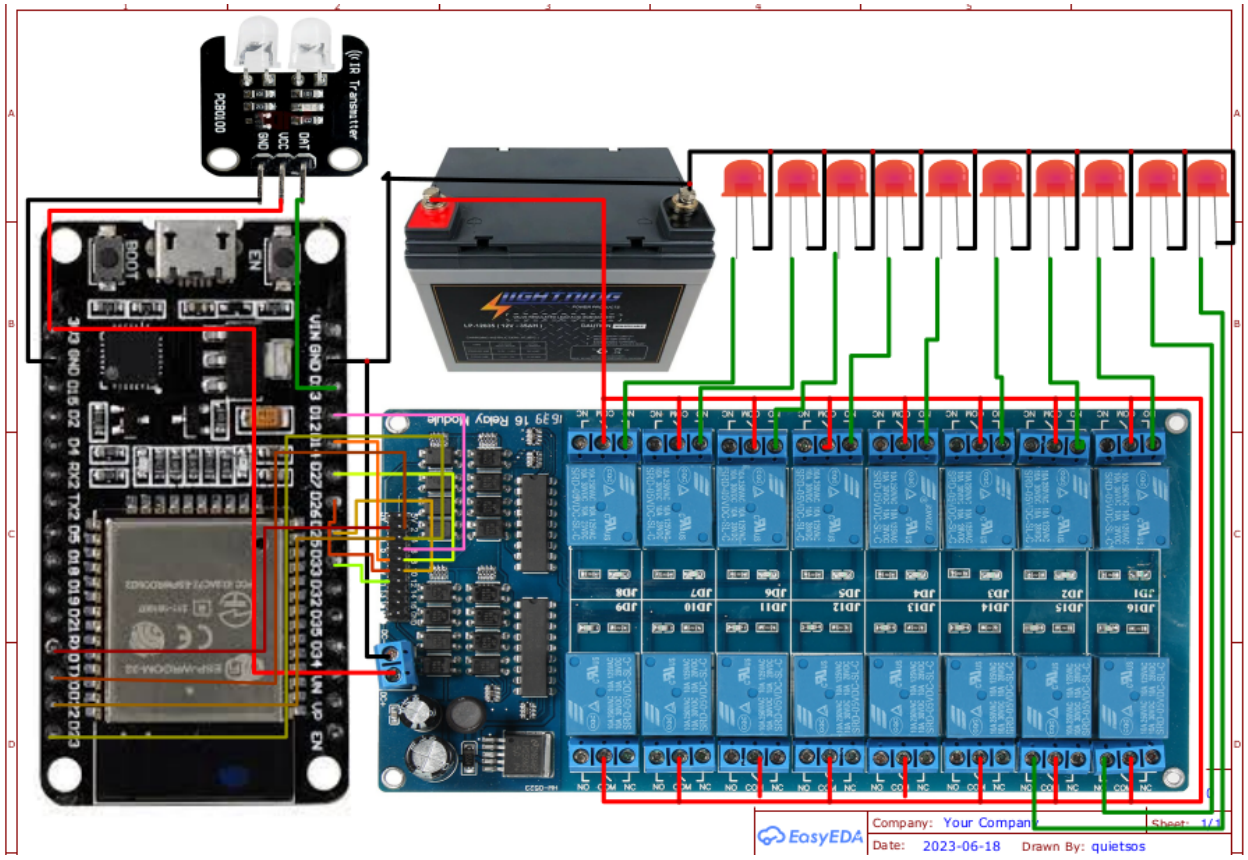
a. Hardware section:

i. **Master esp32 device:** Which control Air conditioner(AC) , lights and pumps.
ii. **Slave esp32 device:** Which basically read sensor's data and sent it to the master Esp32 board which will sent the data to IoT server.

Slave ESP32 circuit diagram:

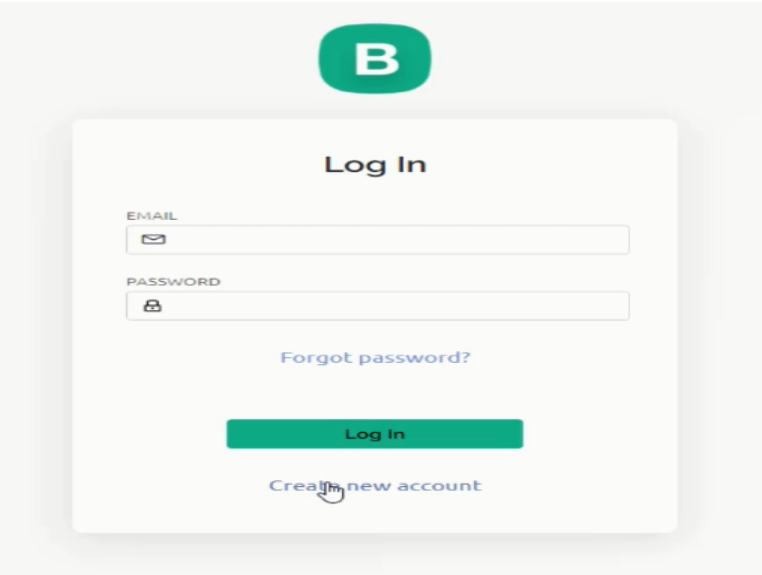


Master ESP32 Circuit diagram:

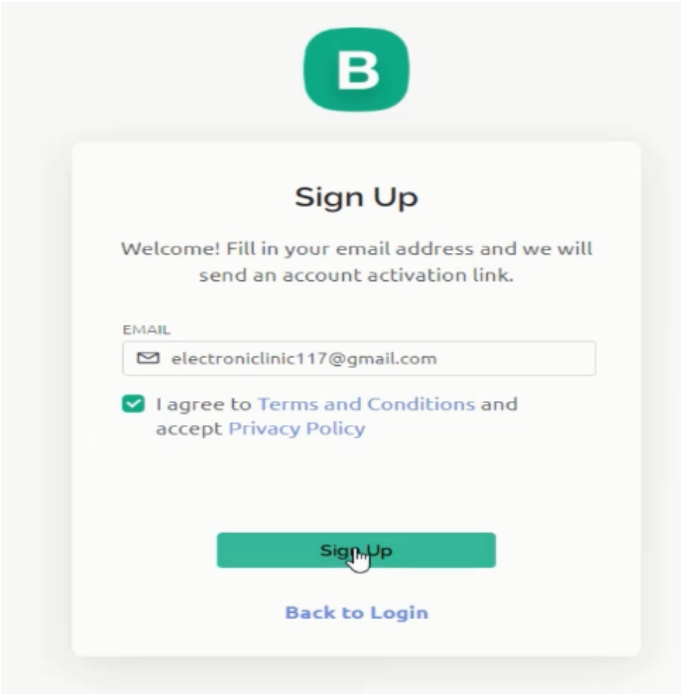


Bylink IoT server Dashboard setup:

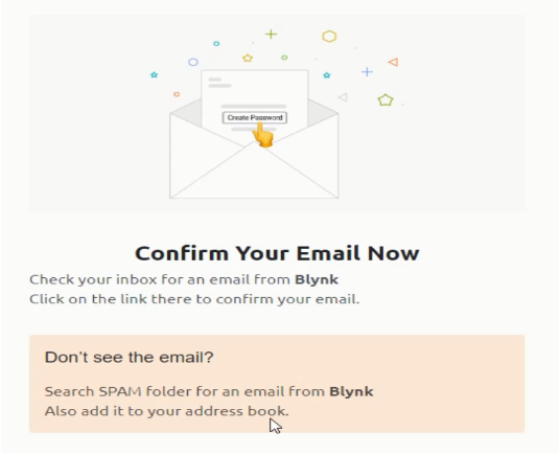
1. Go to blynk.cloud and register a free account. For this click on the Create new account.



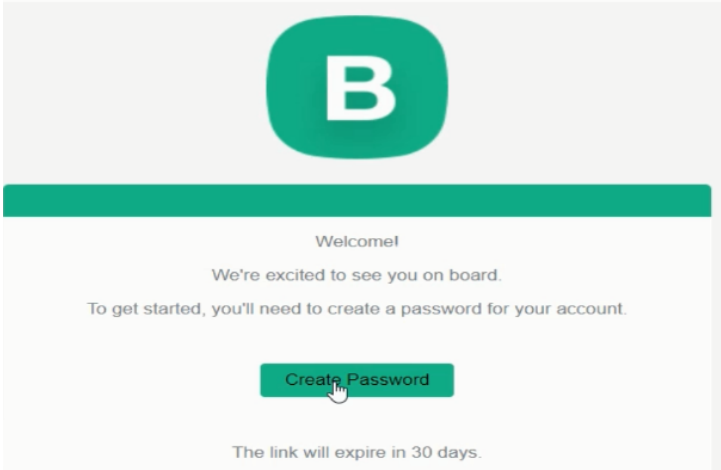
2. Write your email address, make sure you use the same email on the Mobile Blynk App too. Check the box; I agree statement and click on the Sign Up button.



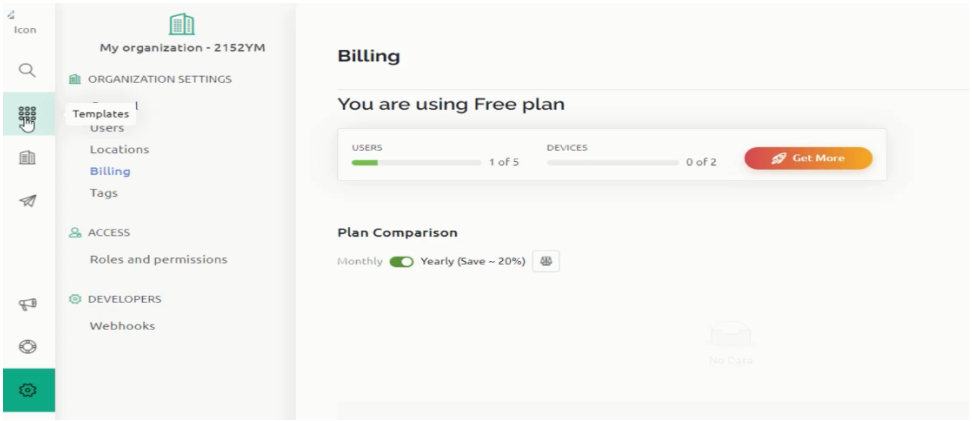
3. A confirmation email will be sent on your email id.



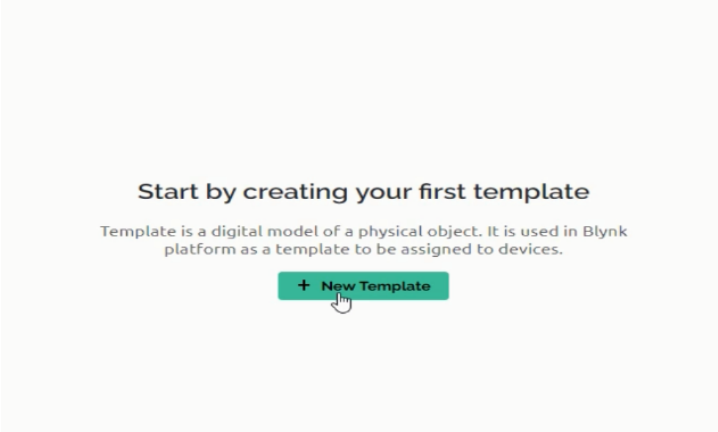
4. Open the email id, click on the Link sent from the Blynk, and click Create Password.



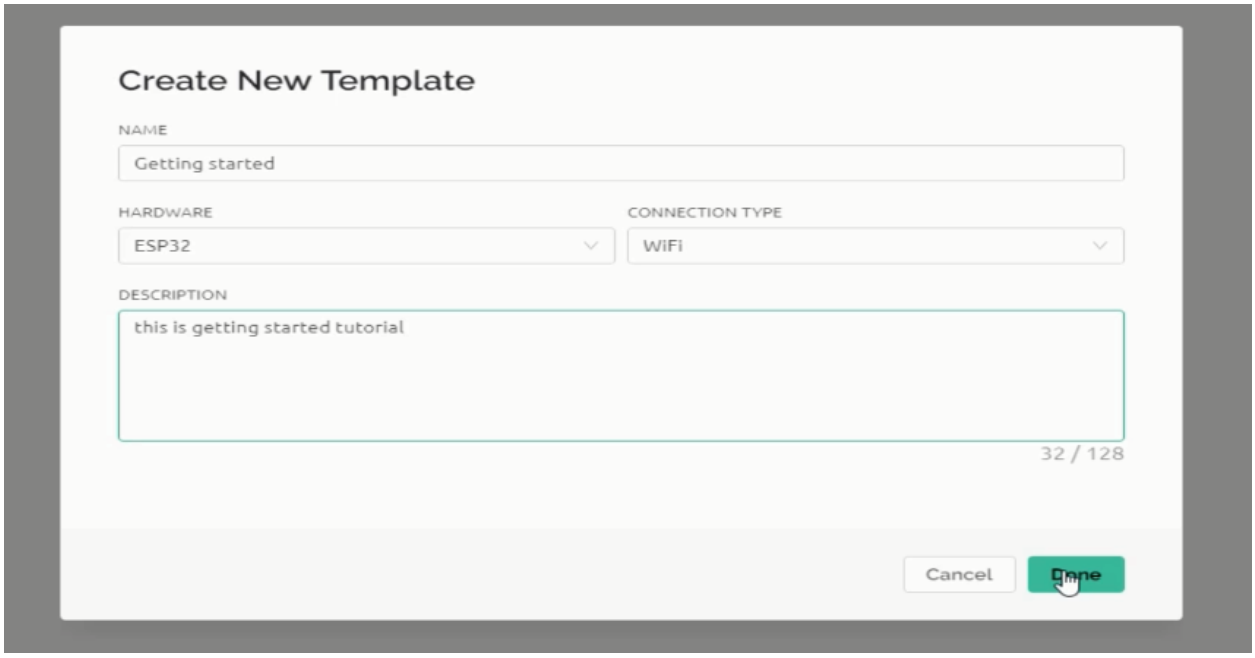
5. If you want to follow a step by step guide then you can click on the Let's go! Button. It will help you with Hardware setup, IDE, Blynk Library, Code, and Device activation. Free plan supports 5 users and 2 devices. If you want more users and devices then simply click on the Get More button. Anyway,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



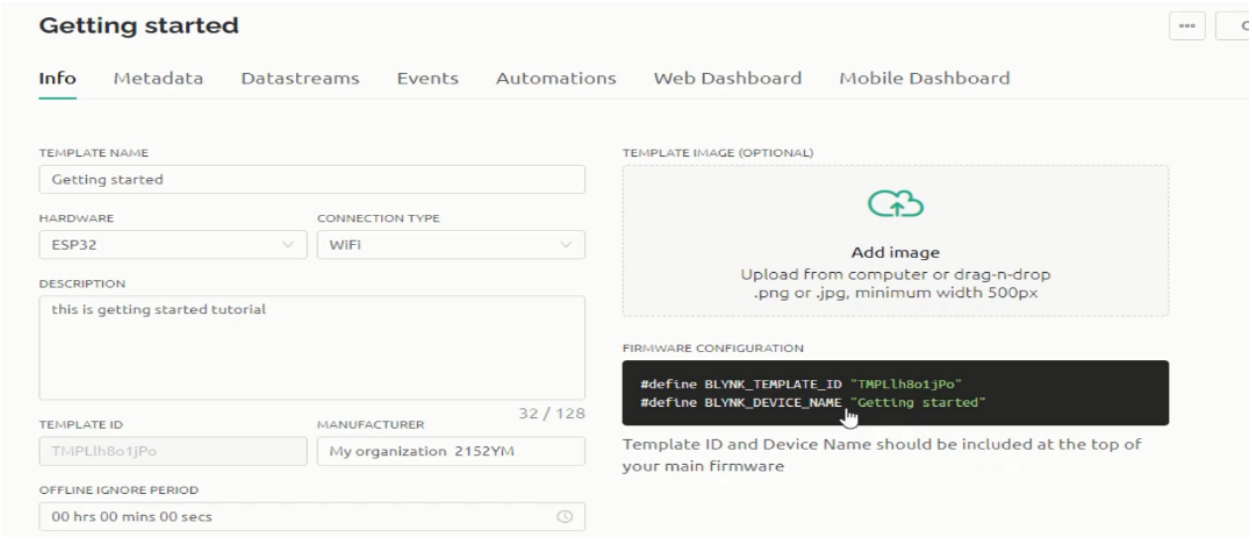
6. Then click on the New Template to create your first Template



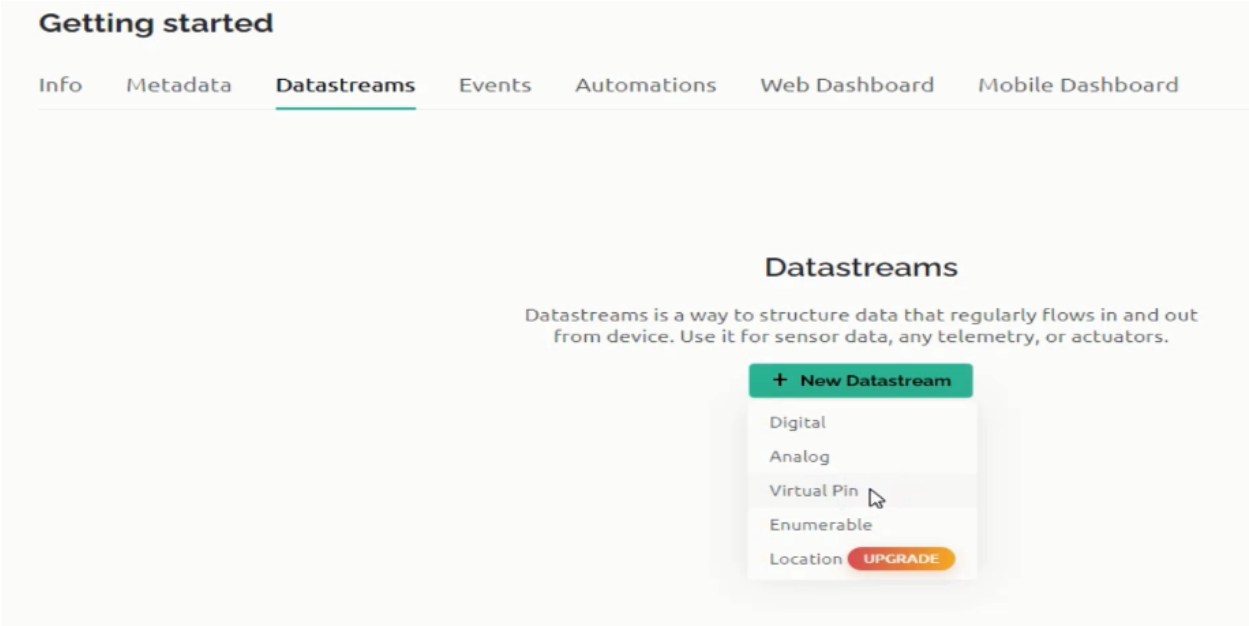
7. Enter the template name, select the Hardware type, select Connection type, you can also write a description, and finally, click on the Done button.



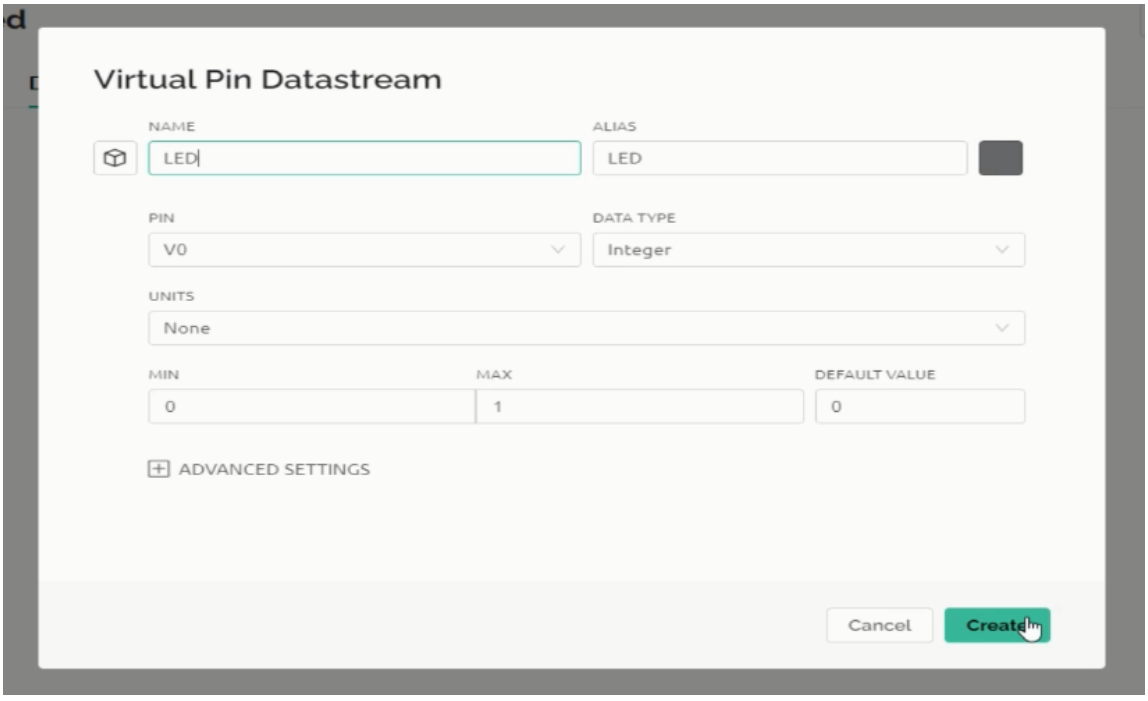
8. Go to the Datastreams.



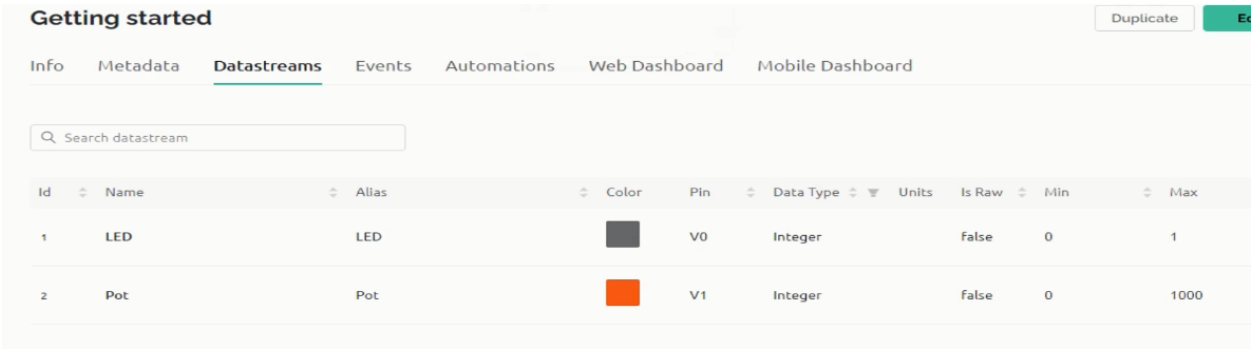
9. On the Datasteams click on the New Datastream and select Virtual Pin.



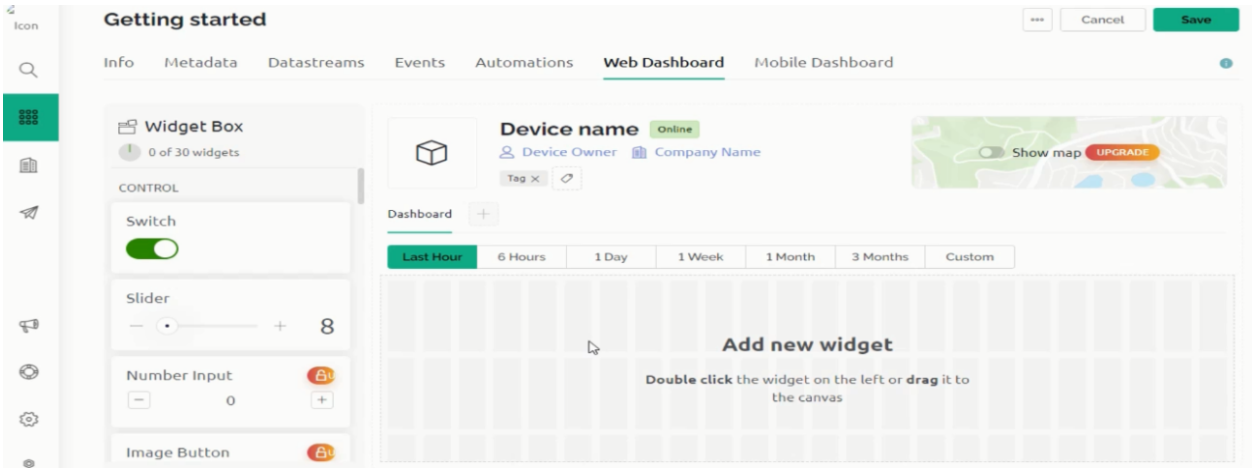
10. Write the name, select virtual PIN, Data Type, you can also select units, and you can also set the Minimum and Maximum limits. After all the parameters are set then you can click on the Create button.



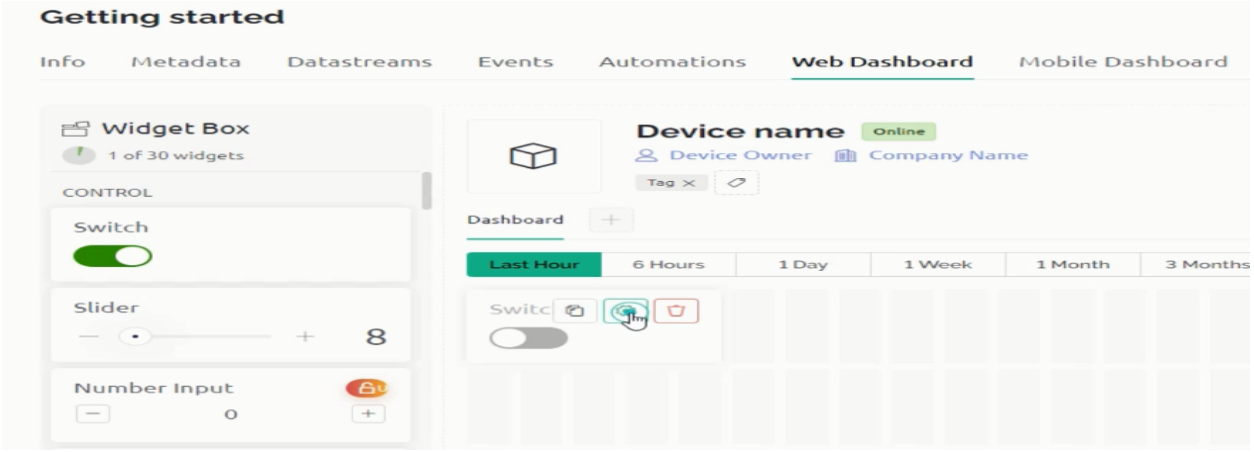
11. Now again click on the New Datastream button and follow the same exact steps for the Potentiometer. The virtual PIN is automatically incremented. After you have defined all the parameters then you can click on the Create button.Anyway, you can see our two datastreams are ready and now we can click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



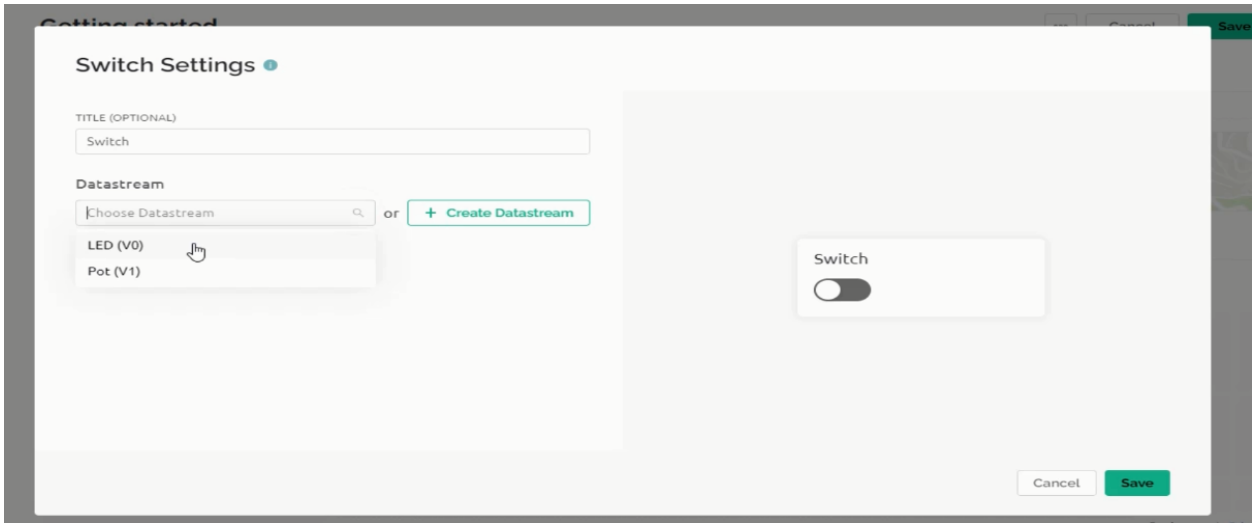
12. Now go to Web Dashboard and click on the Edit Button.



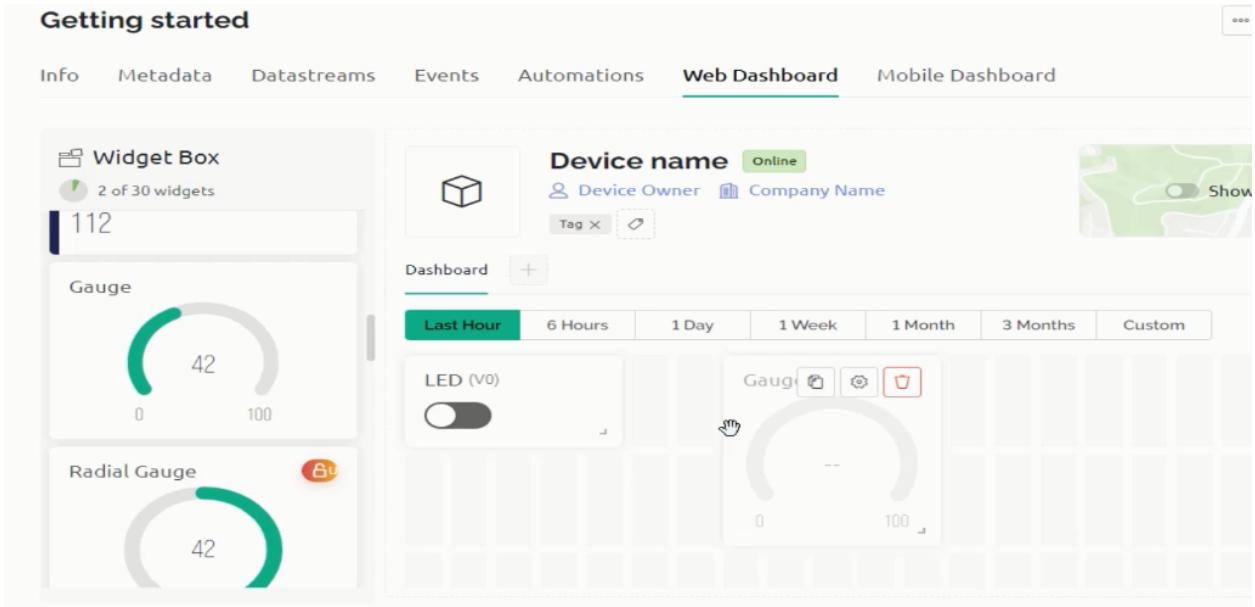
13. Drag and drop the Switch for controlling the LED. Click on the settings.



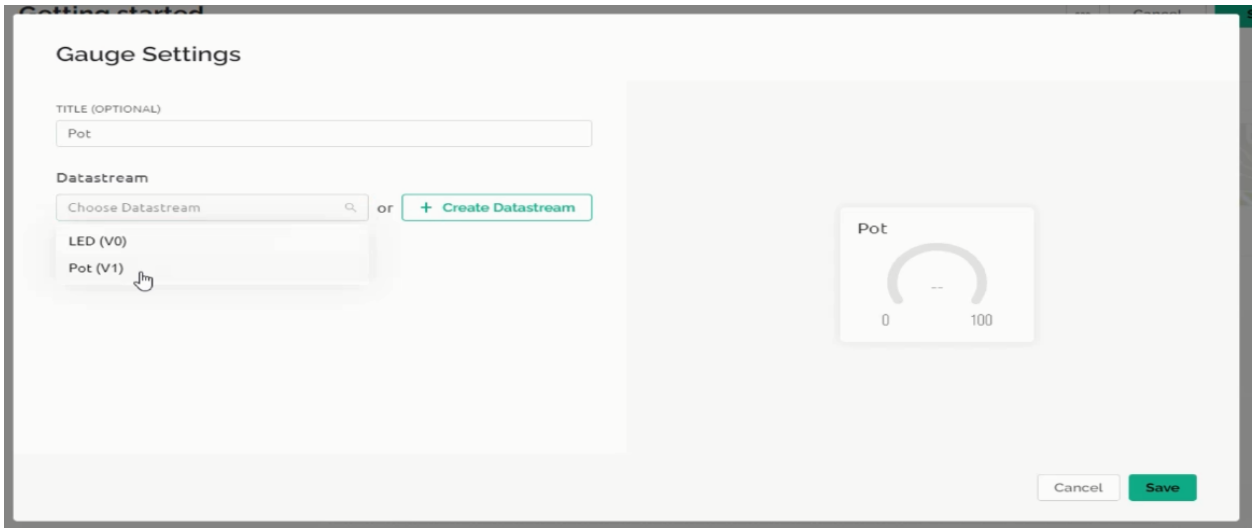
14. Select the Datastream “LED(V0)”, activate the Show on/off labels, If you want you can also change the color, and finally, click on the Save button.



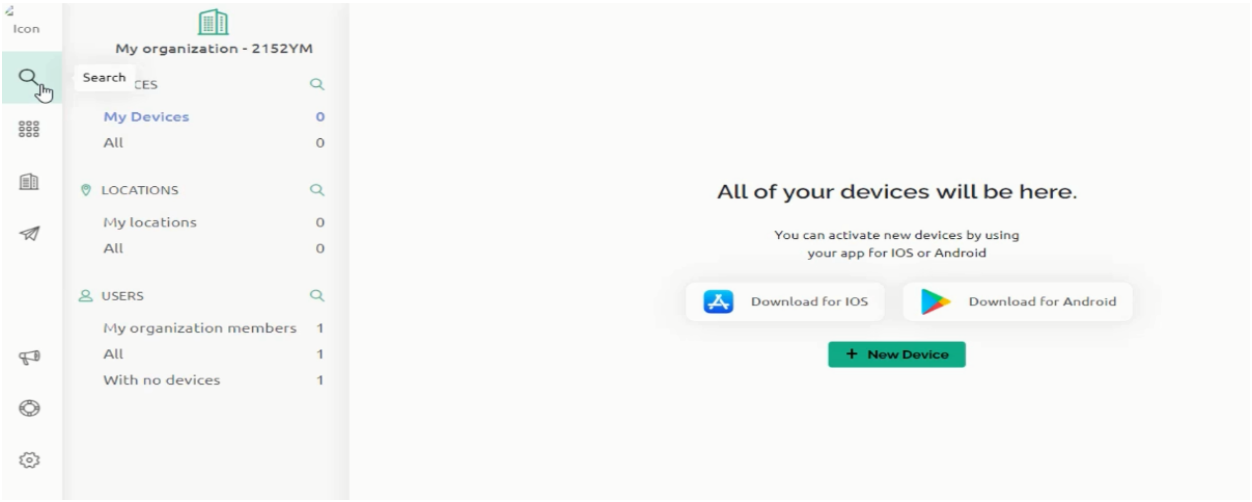
15. Now, I am going to add a Gauge for monitoring the Potentiometer. The same way you can click on the gauge settings button and select the datastream and do other settings.



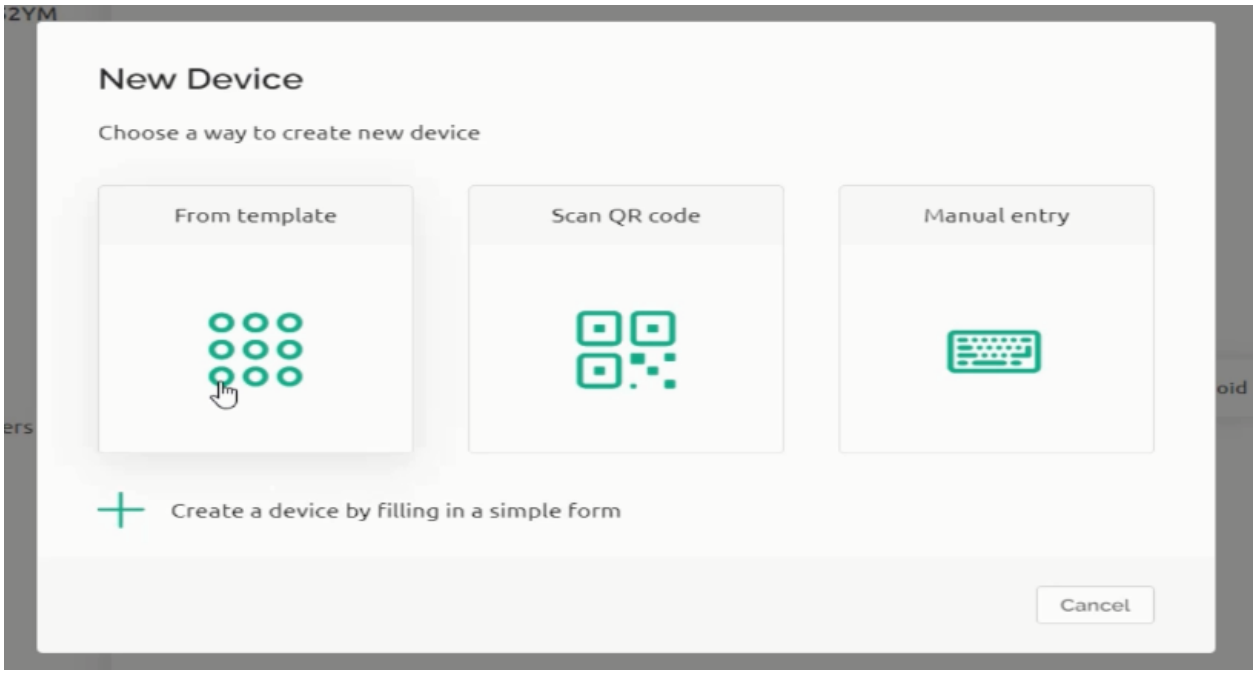
16. Once you have added all the widgets then click on the Save button.



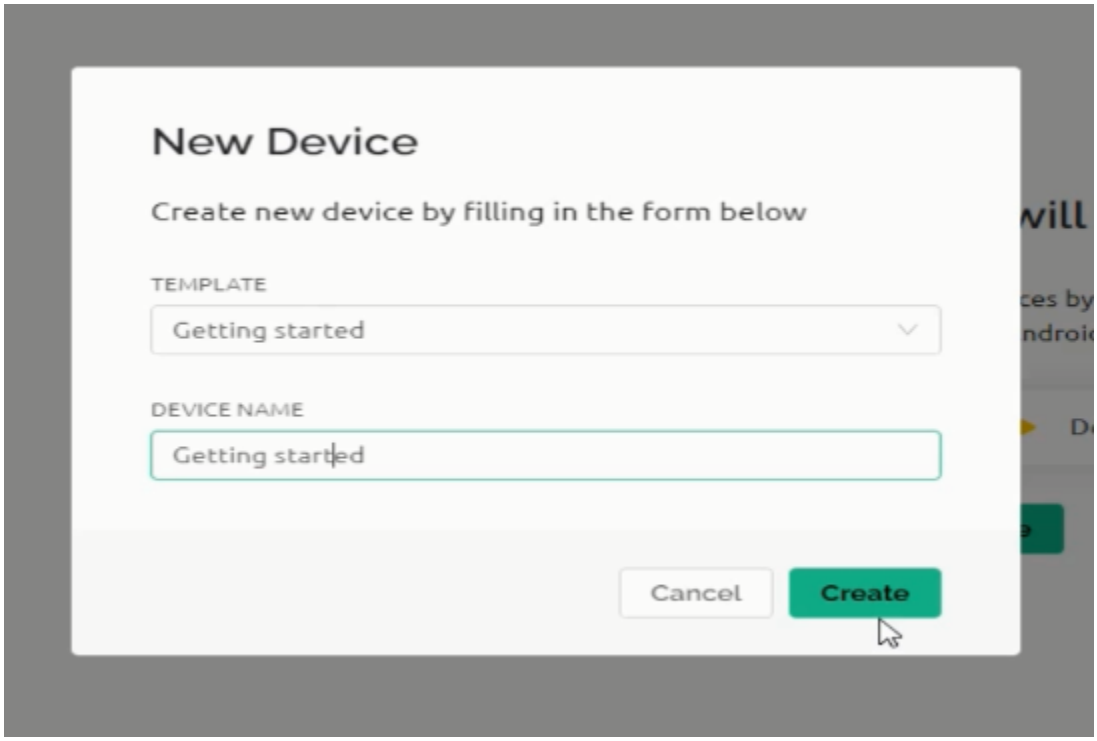
18. Click on the Search, then click on New Device.



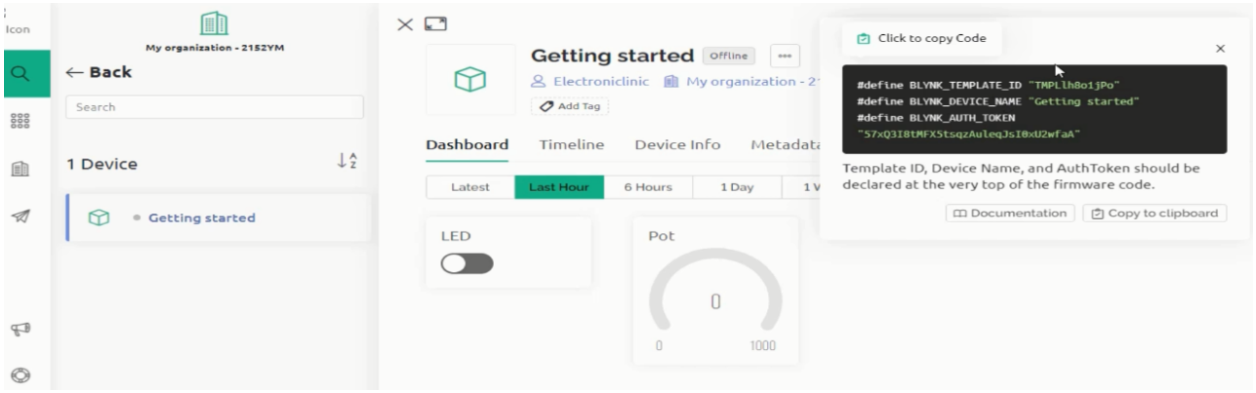
19. Click on From template to create a new device.



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.