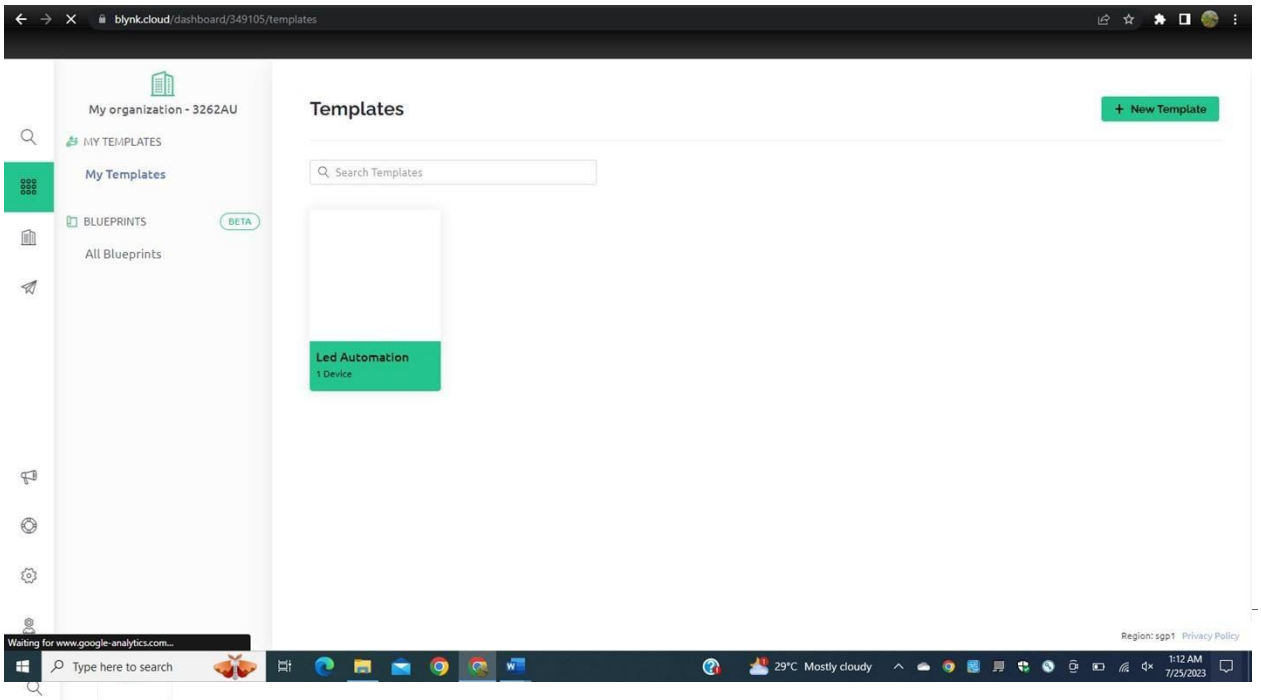
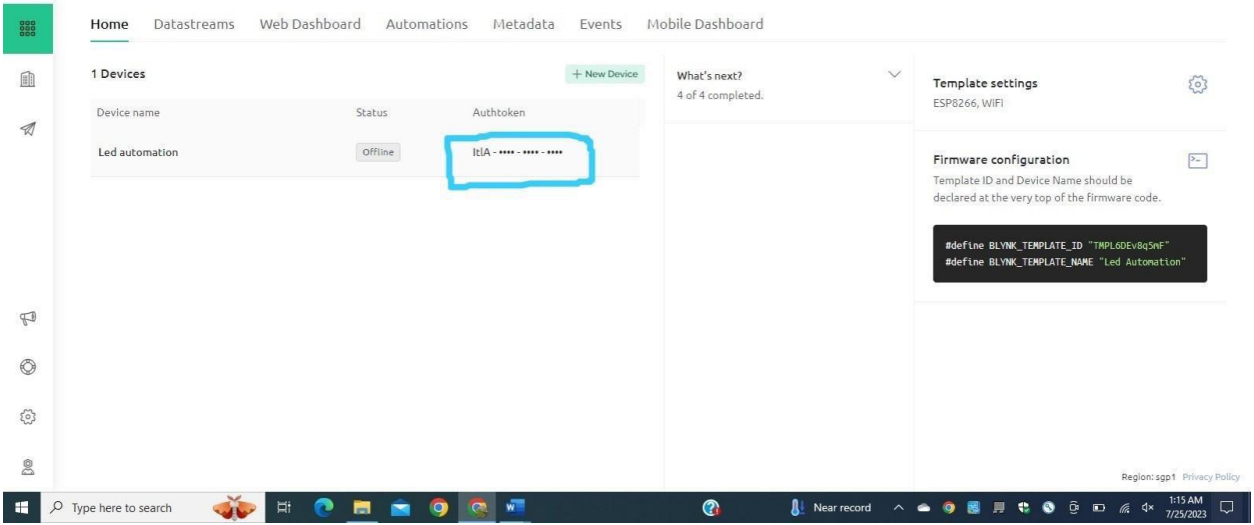
Led Automation Using Blynk, IFTTT and Google Assistant

Introduction:

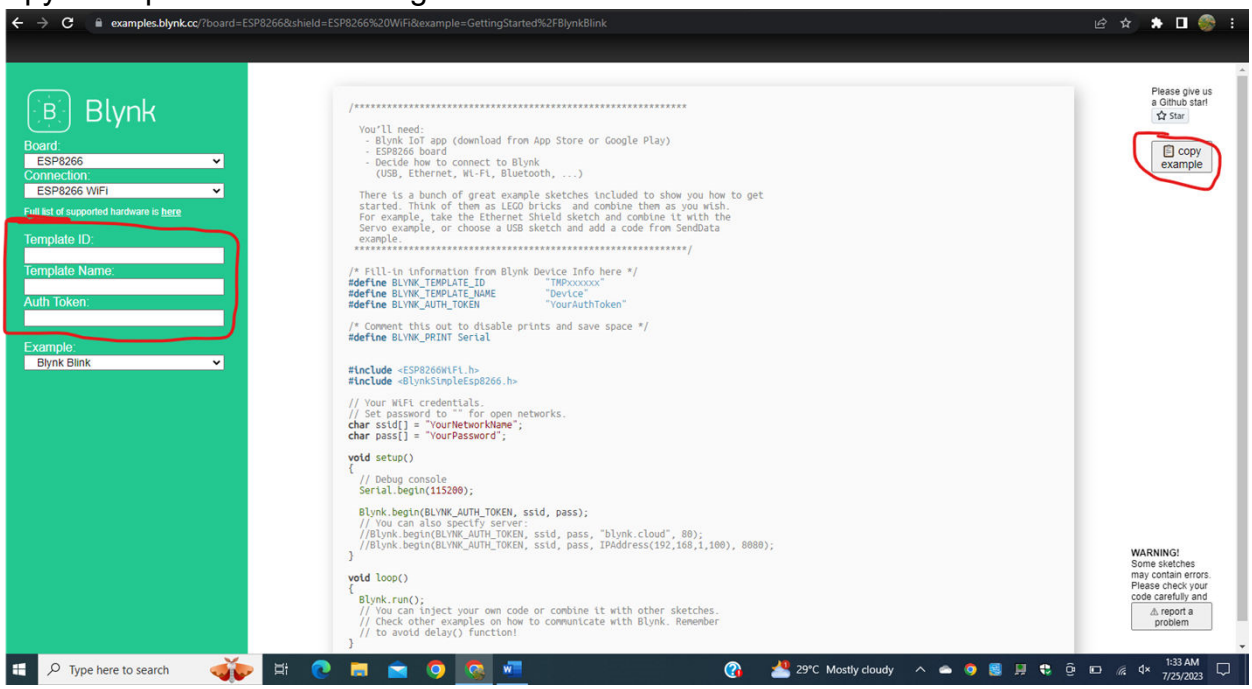
This project is about automation using IoT, I will show you in this project how you can automate and control an led on the commands of your voice. This project uses an Esp8266 microcontroller, and an led, you also need to have a Blynk account, so you can set up the web dashboard and connect it to your IFTTT account using your Auth Token, from the Blynk → Template → Device, then copy Authentication token and google home should also be installed on your phone along with google assistant.



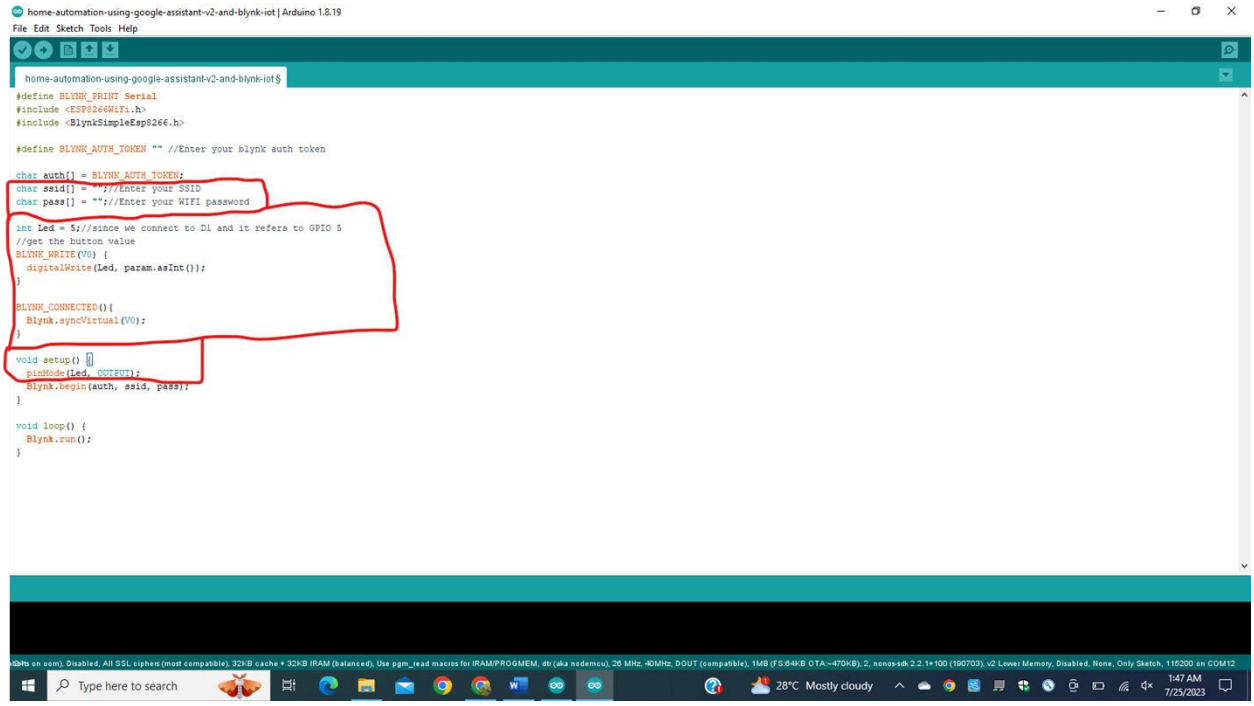


Code:

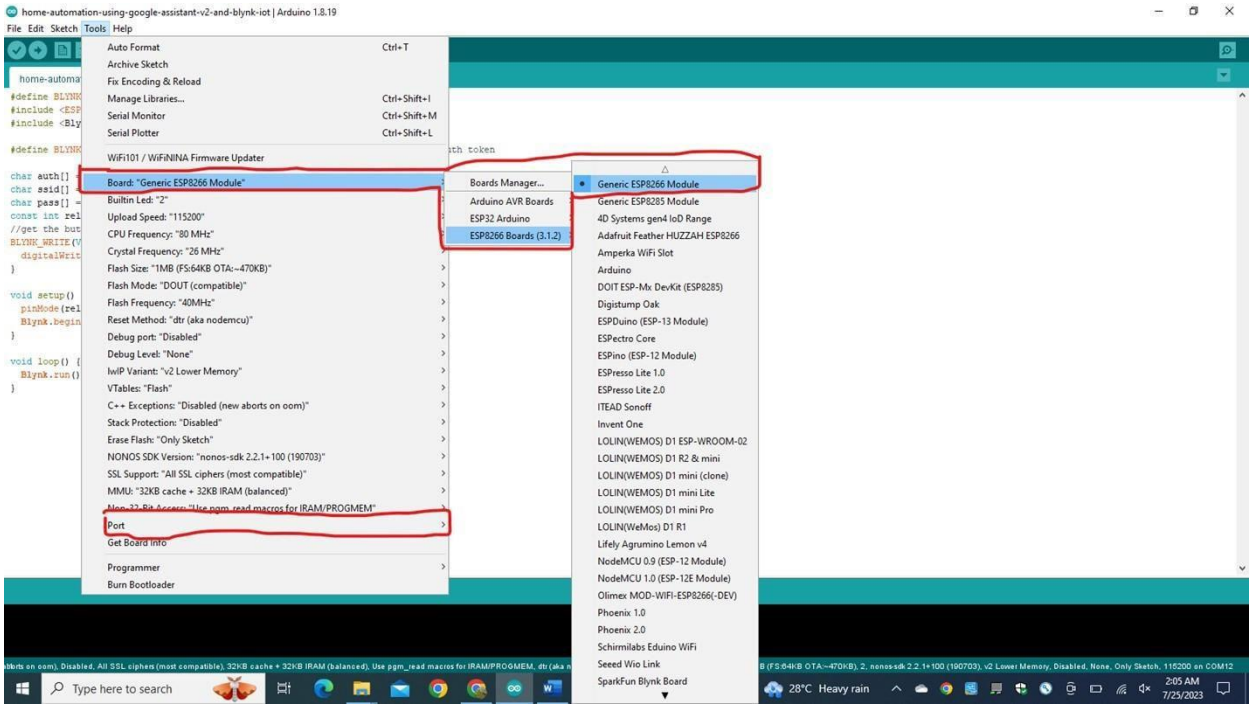
Search Blynk Example Browser on Google and put in the template id and name found on the right side inside your blynk template and also copy the authentication token and put it in the Auth token box on the Blynk Example Browser website and then click on the copy example button on the right side.



Then Insert the code into your Arduino IDE and add this part to your code and also edit the SSID and pass sections and replace the “ ” with your actual network SSID and password:



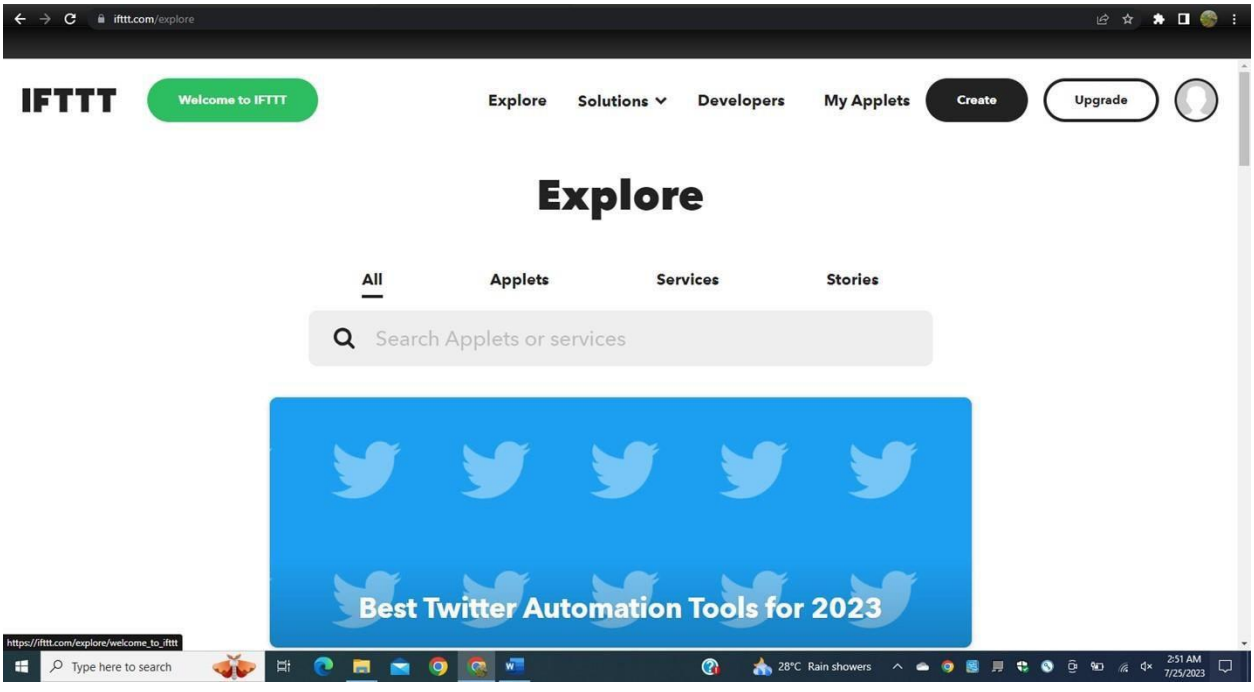
Then Select your board and port in the tools menu, in my case, it is the Generic Esp8266 Module (With the ESP-12F Chip):



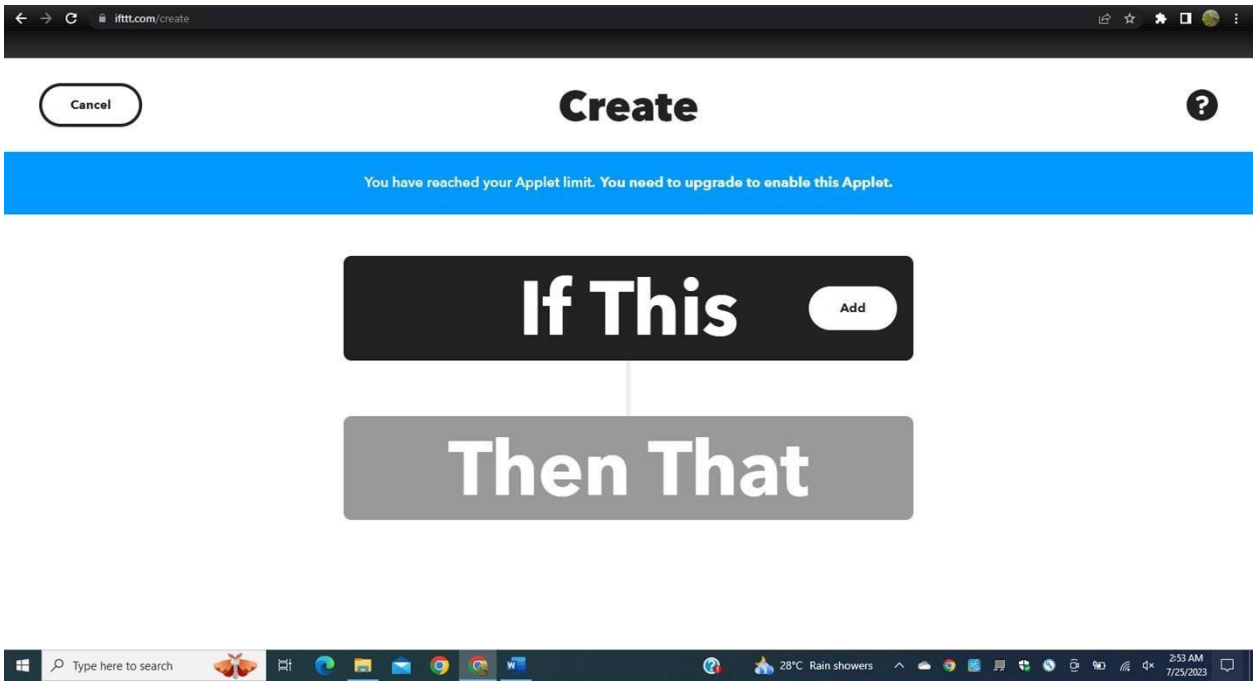
Then Hit Upload or Press Ctrl+U keys together, to upload the code to your esp8266 microcontroller.

Setting Up IFTTT:

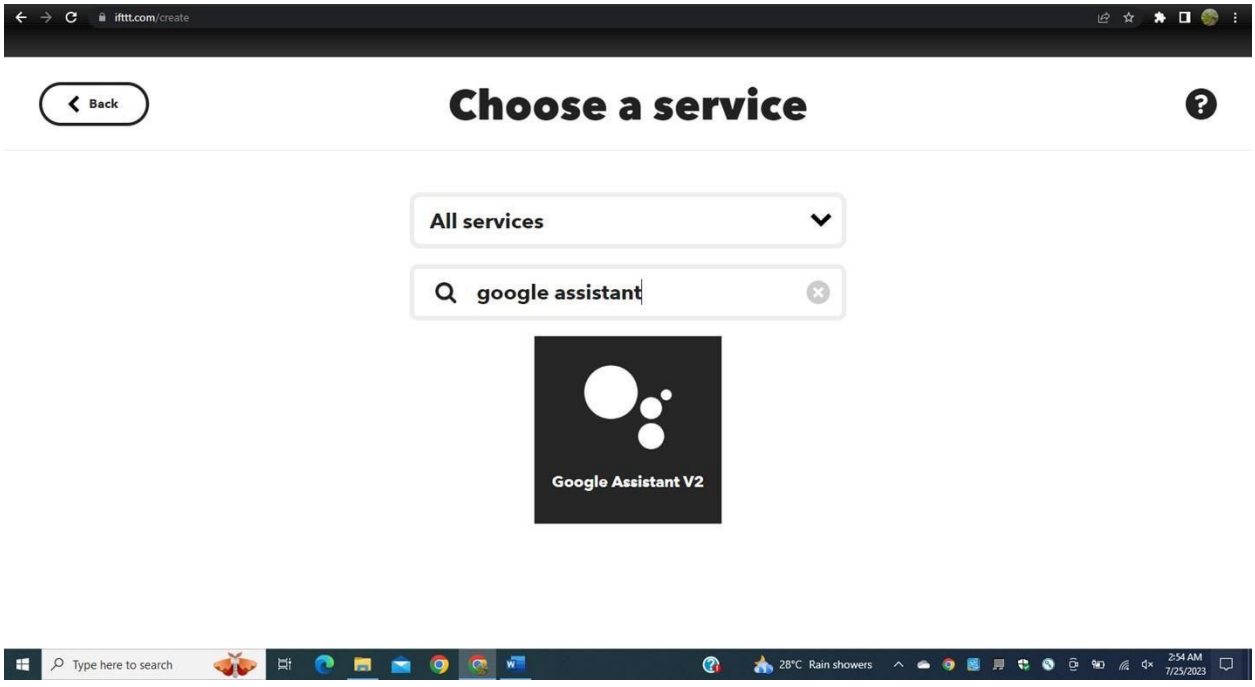
Now for setting up IFTTT go to https://ifttt.com/explore then signup, then click on create button next to it:



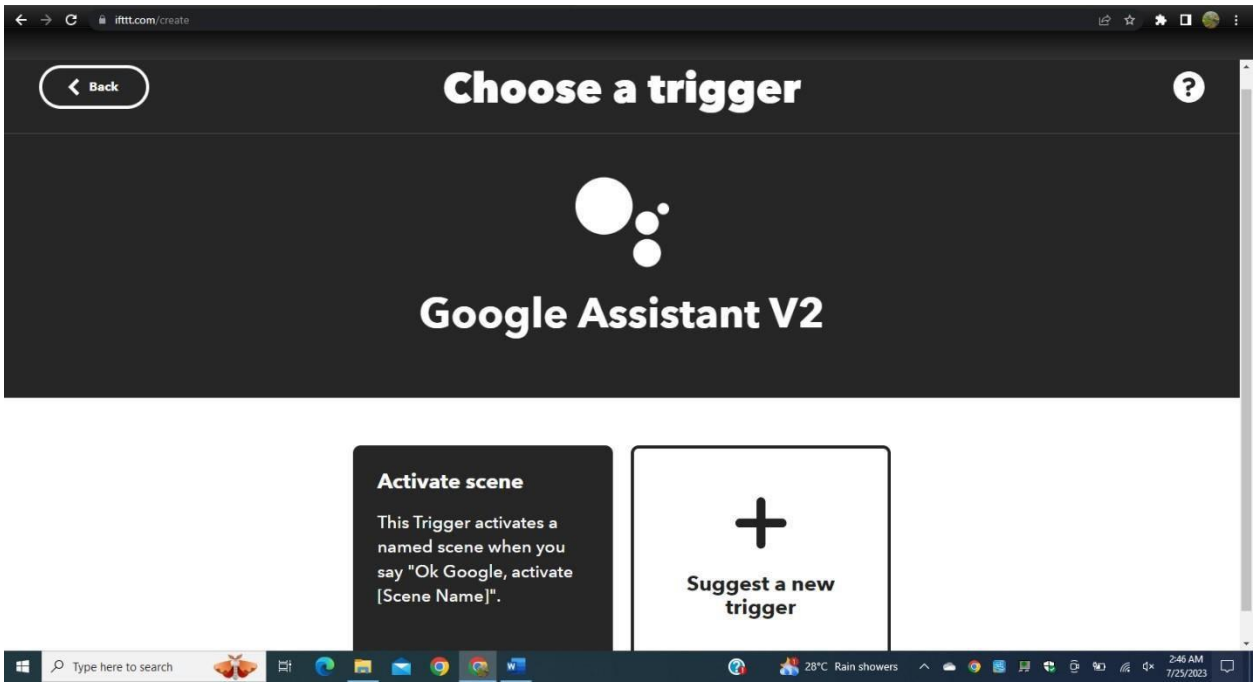
then click the “If this” button:



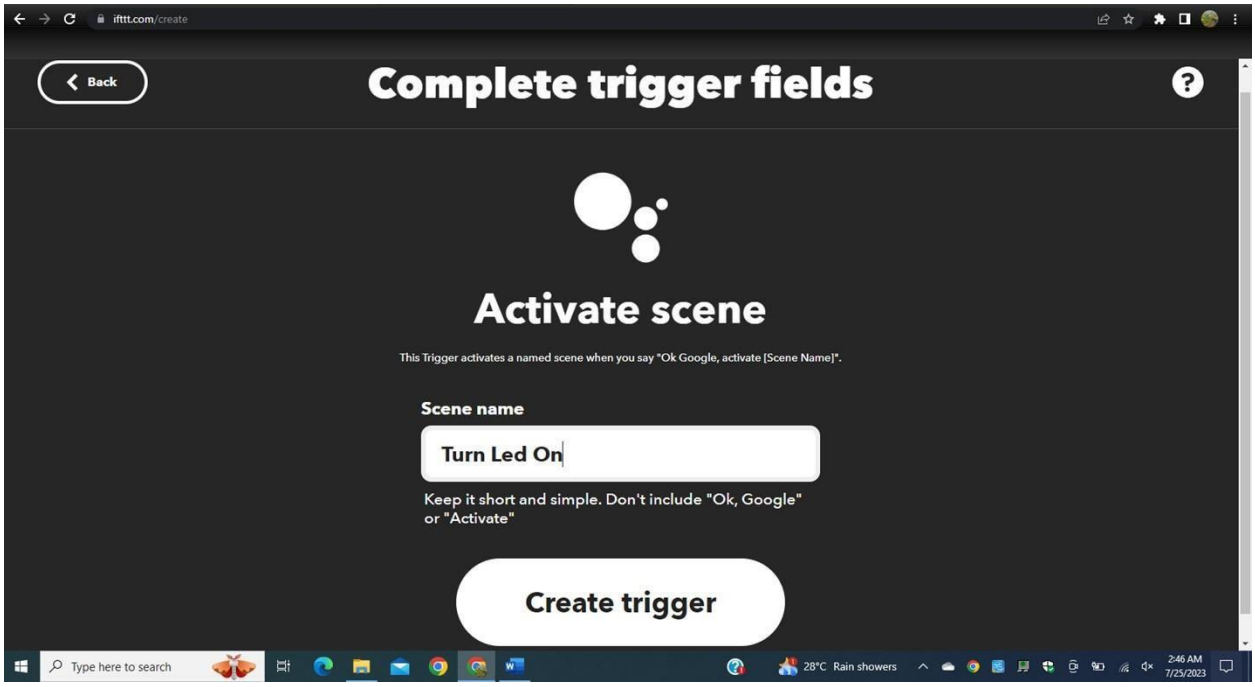
And search the Google Assistant in the services and select Google Assistant 2.0:



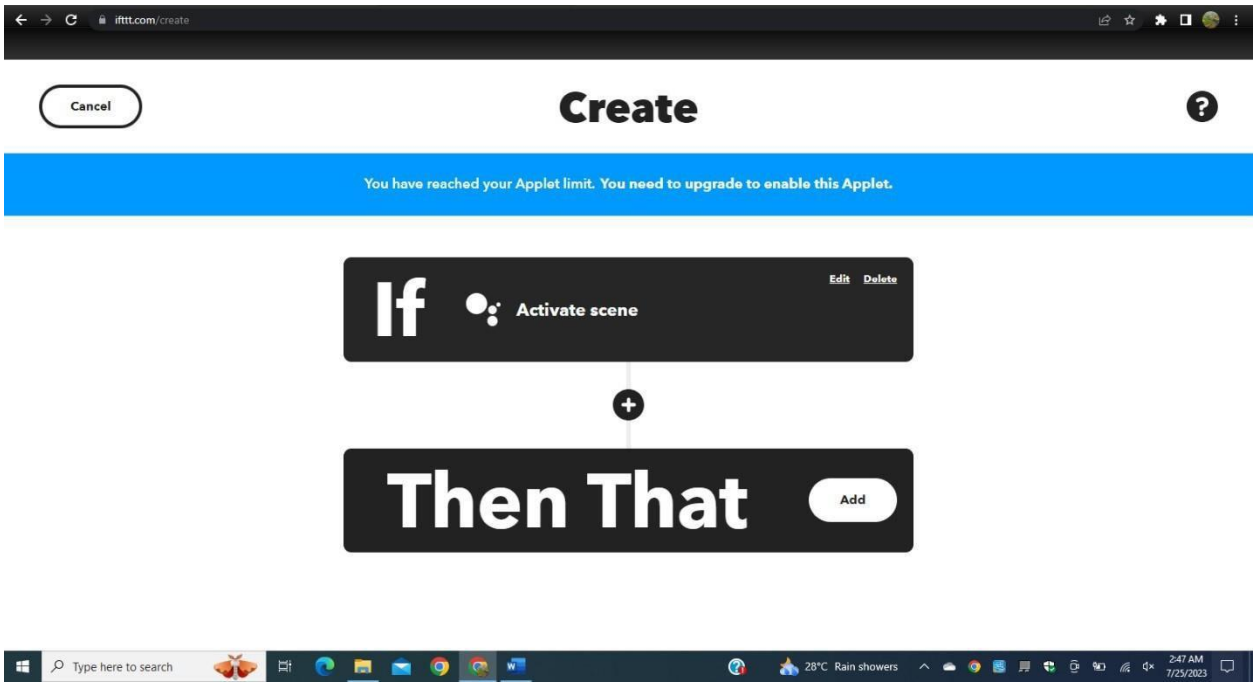
Then Click on Activate Scene:



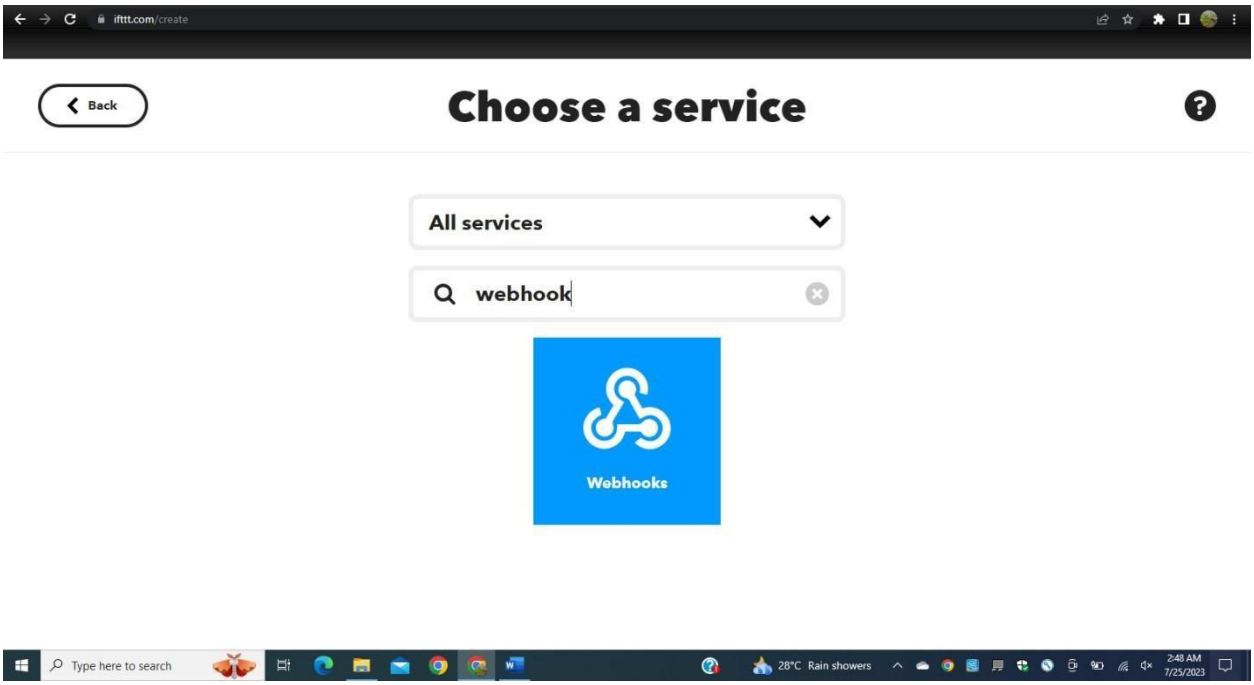
then type in the scene name box Turn Led On and click on create trigger button:



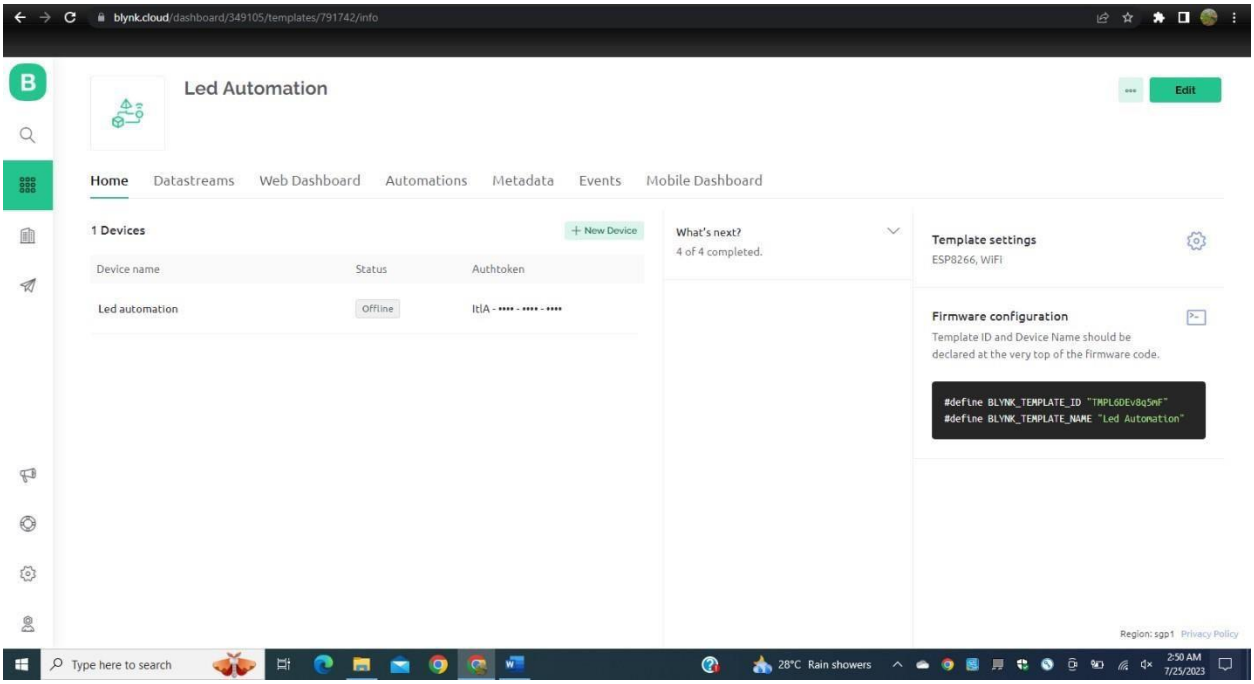
then click on “Then that” button:



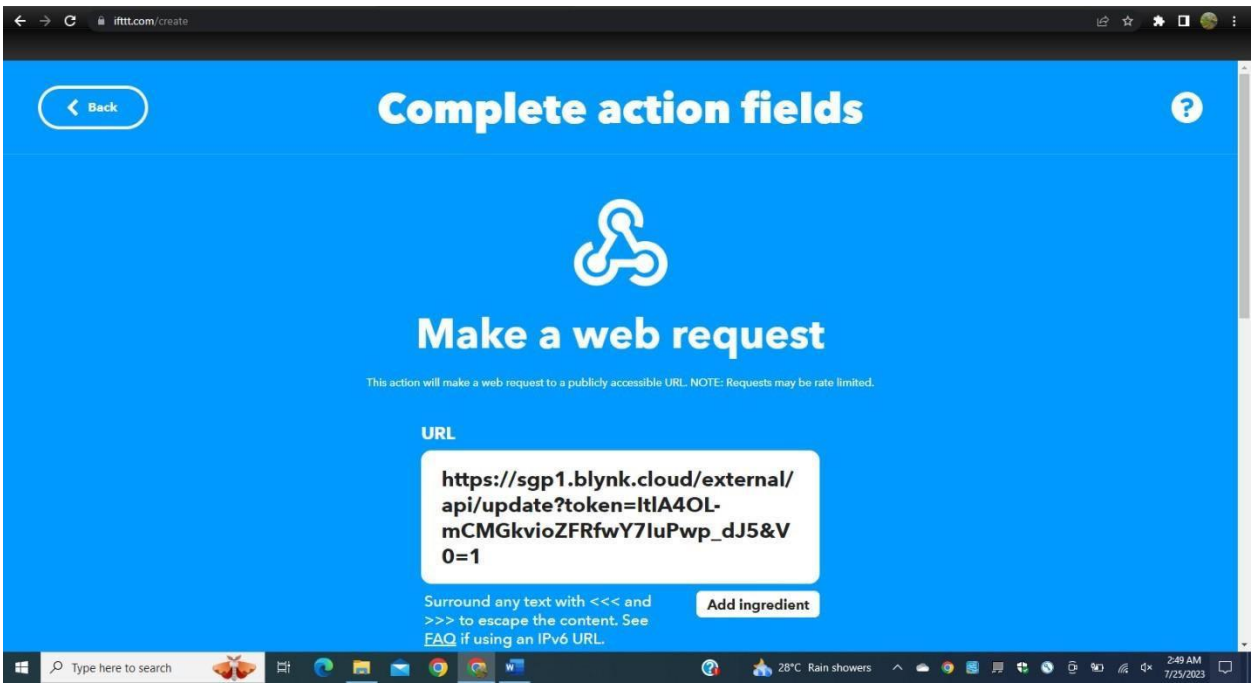
Search for Webhooks, then select Webhooks:



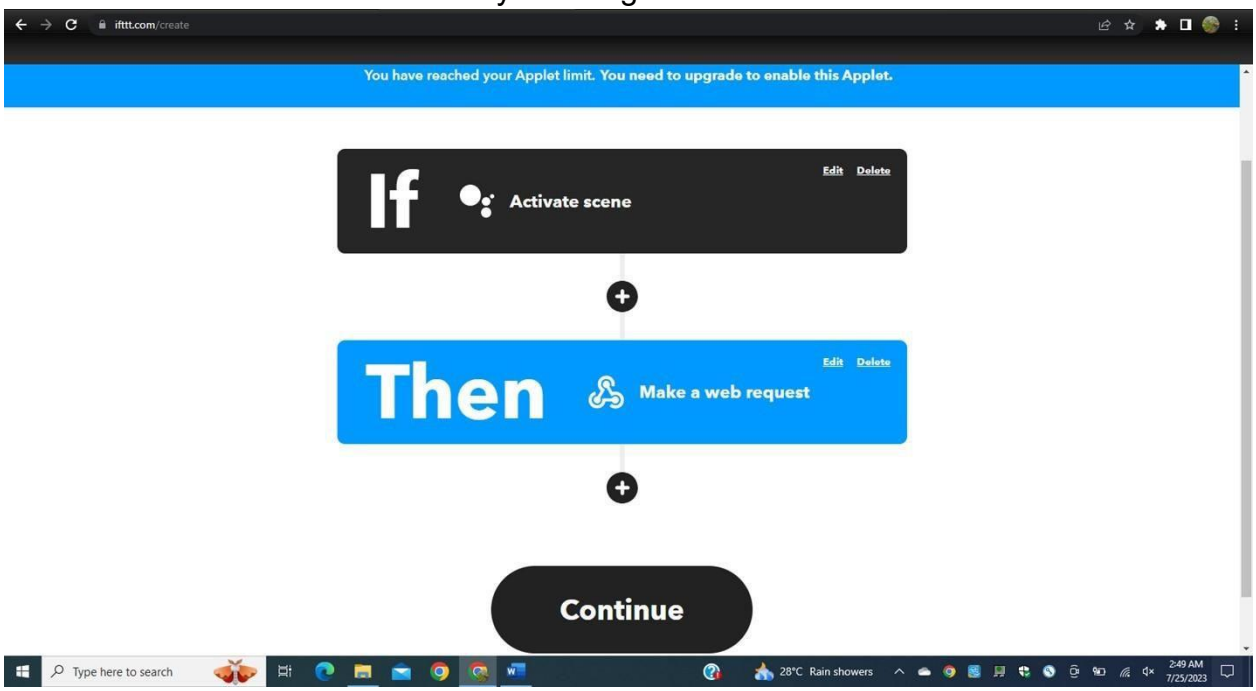
Now you must carry out this part very carefully, ensure that you have already created a template with the datastream created with the Virtual pin (V0) and your device is already setup, for the web dashboard just insert a switch with the selected datastream (V0), and check you region on the bottom right side of the Blynk Website inside your template:



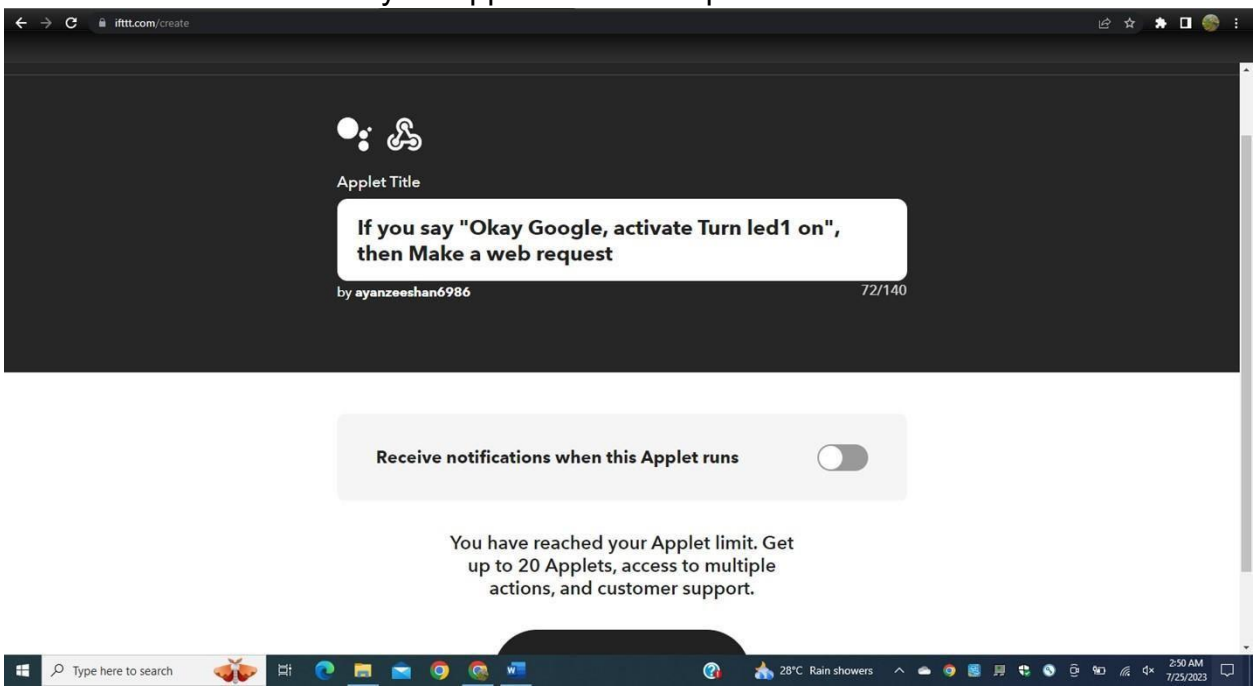
As you can see mine is Singapore region and the region server code is sgp1, you should also check your server for proper connection to IFTTT and Google Assistant, then go to IFTTT again and in the webhooks URL box, type in this URL: https://sgp1.blynk.cloud/external/api/update?token={token}&V0=1



Now notice that I have used sgp1 in sgp1.blynk.cloud , you should check yours and change it with your region and also in the {token} part, replace the {token} (along with the curly brackets) with your authentication token and change V0 with your virtual pin:
Now click on Create Action button by scrolling down and then click on continue button:

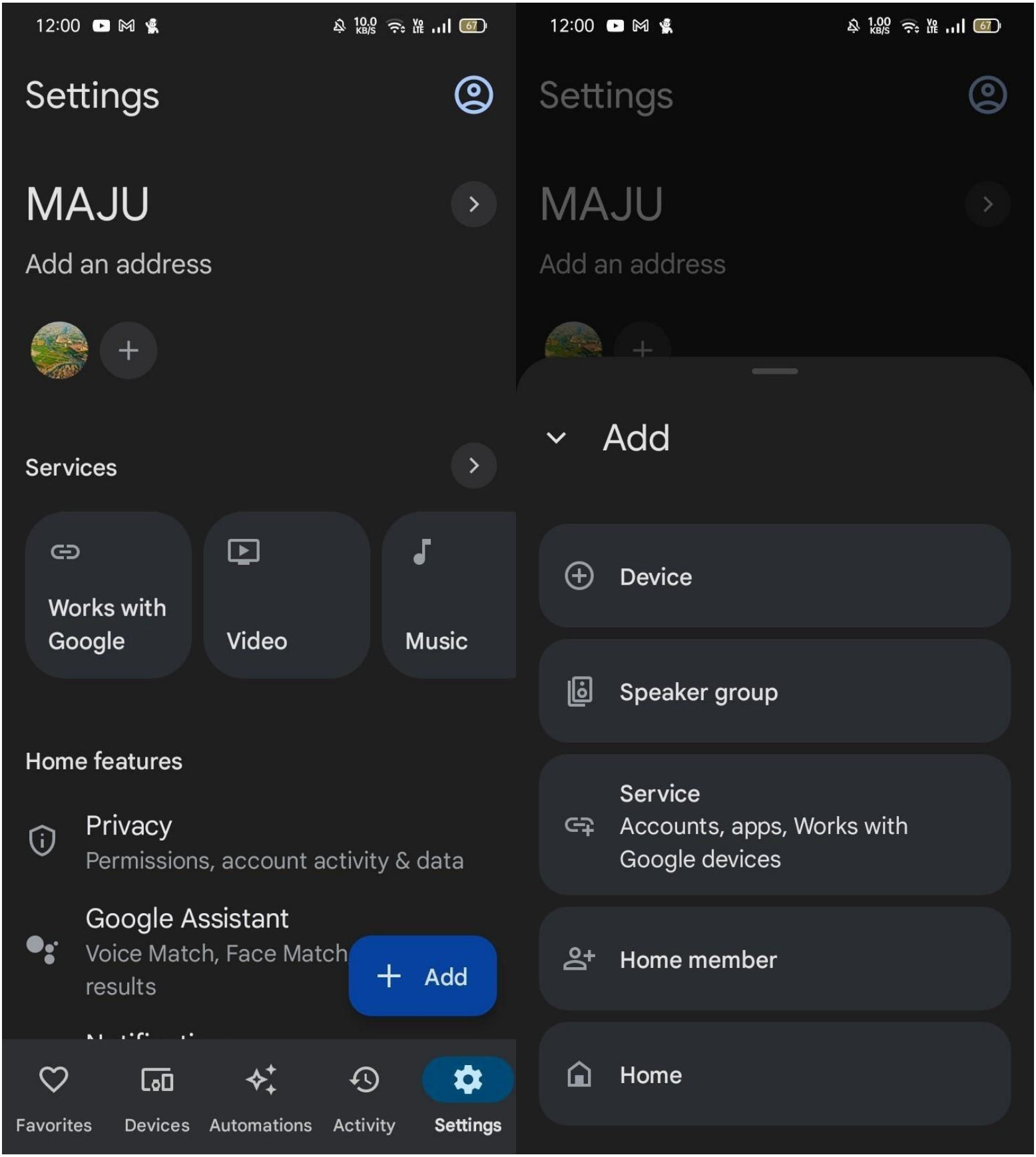


Then click on continue and your applet will be completed.

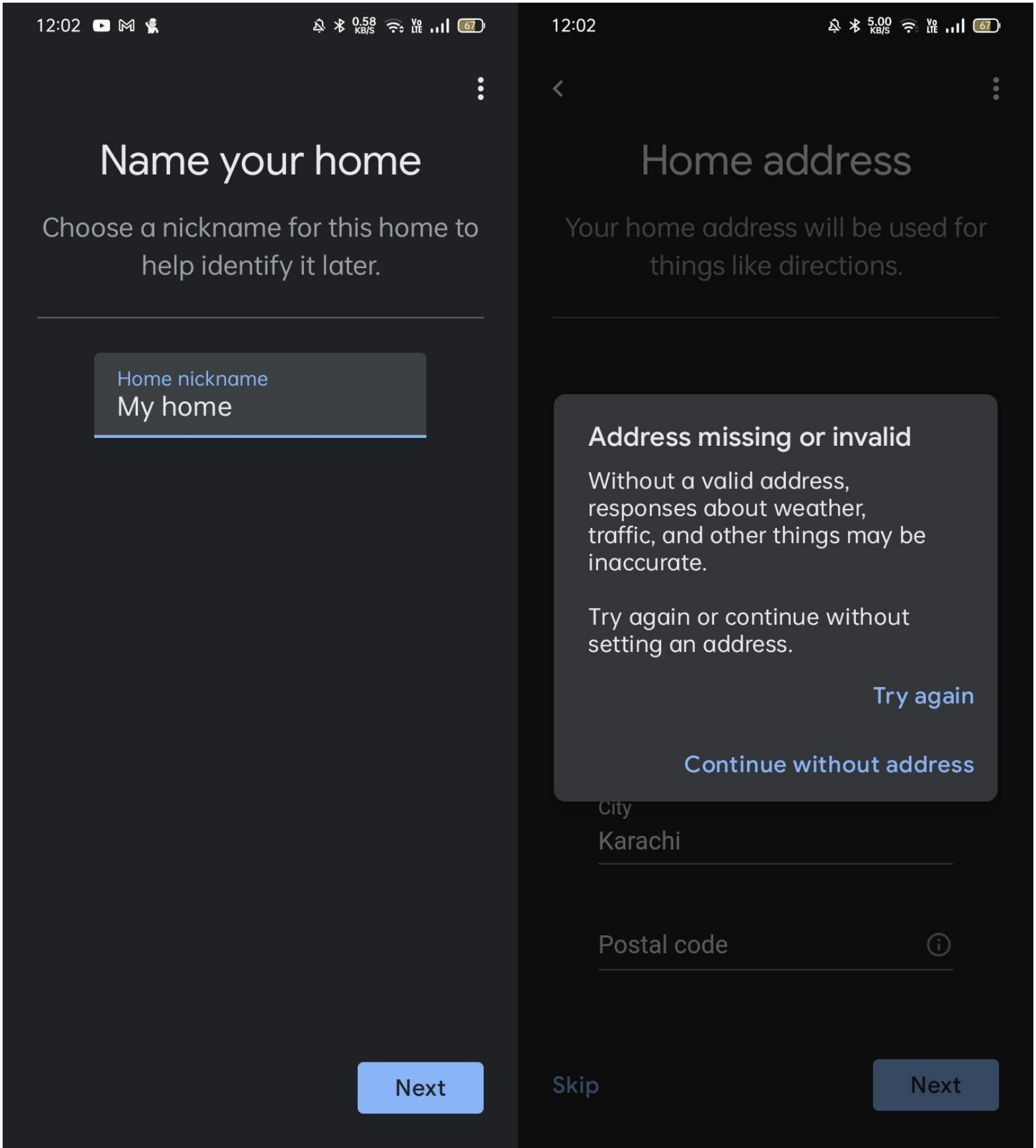


Now carry out the same steps for Turning your Led Off, but just type Turn Led Off in the scene name box instead of turn led on and in the URL given above: https://sgp1.blynk.cloud/external/api/update?token={token}&V0=1 change V0=1 to V0=0, because 1 and 0 represent On and Off, as you may notice I've done here: https://sgp1.blynk.cloud/external/api/update?token={token}&V0=0

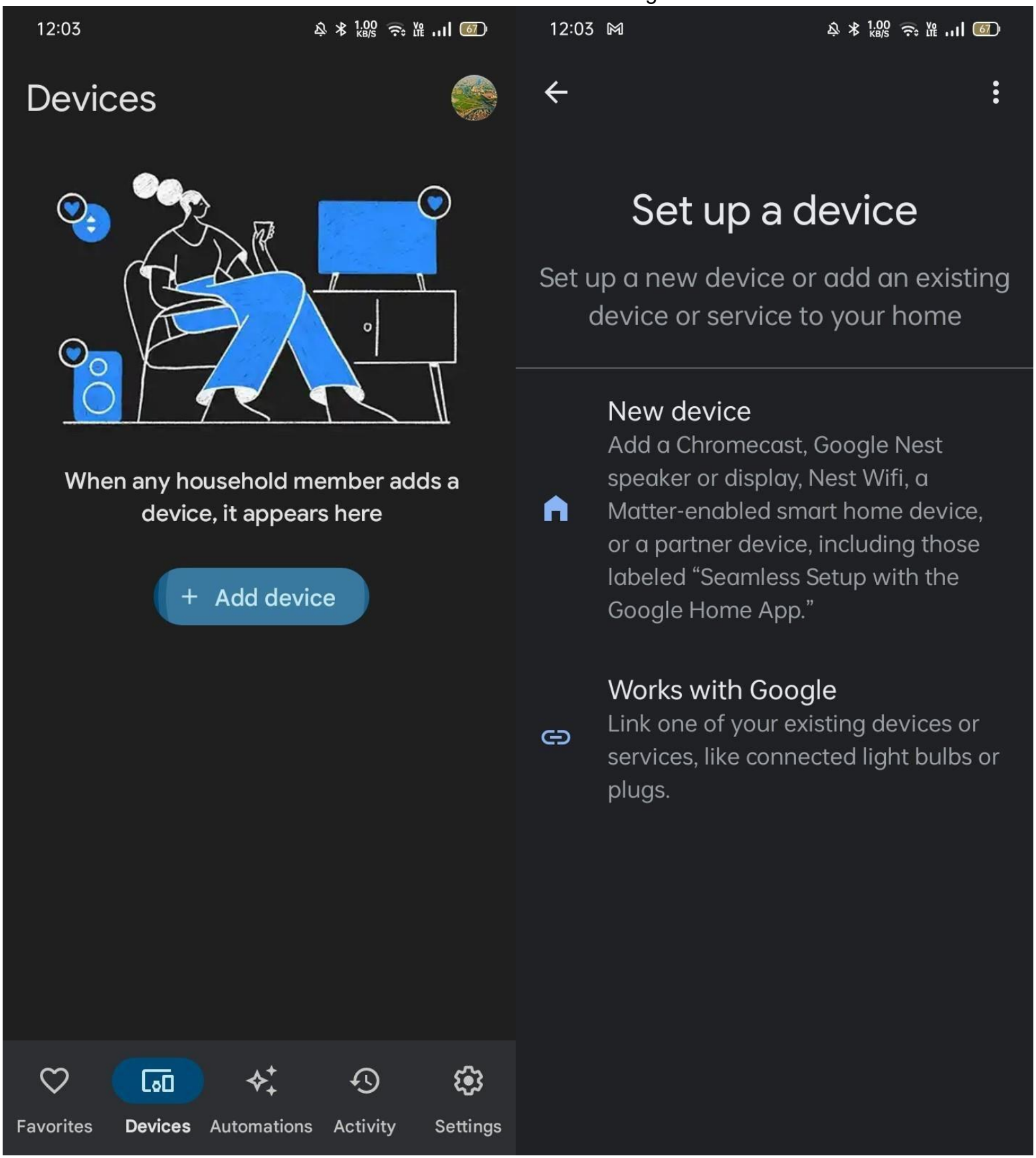
Now in your phone go to the google home app and create a new home:



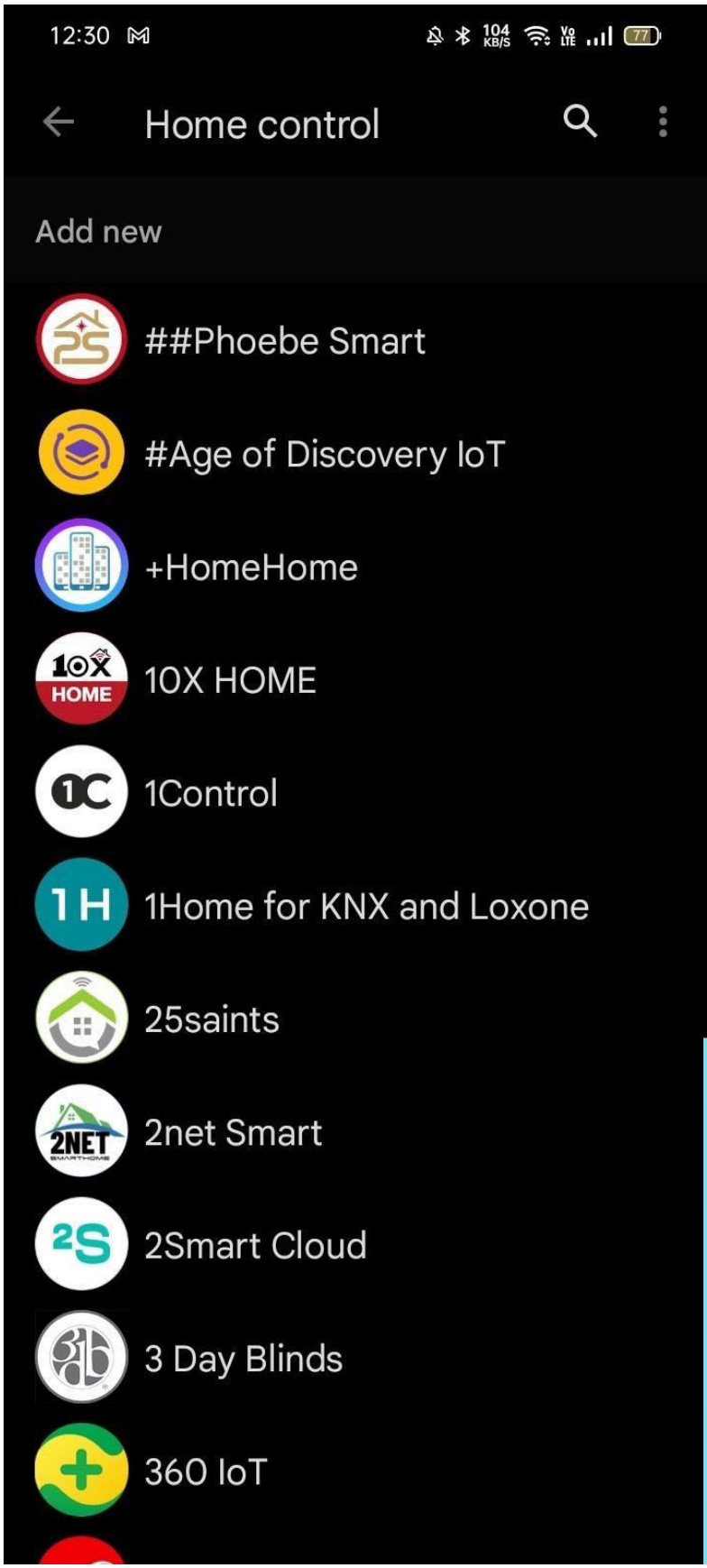
Then type in your desired name and select continue then select continue without address:

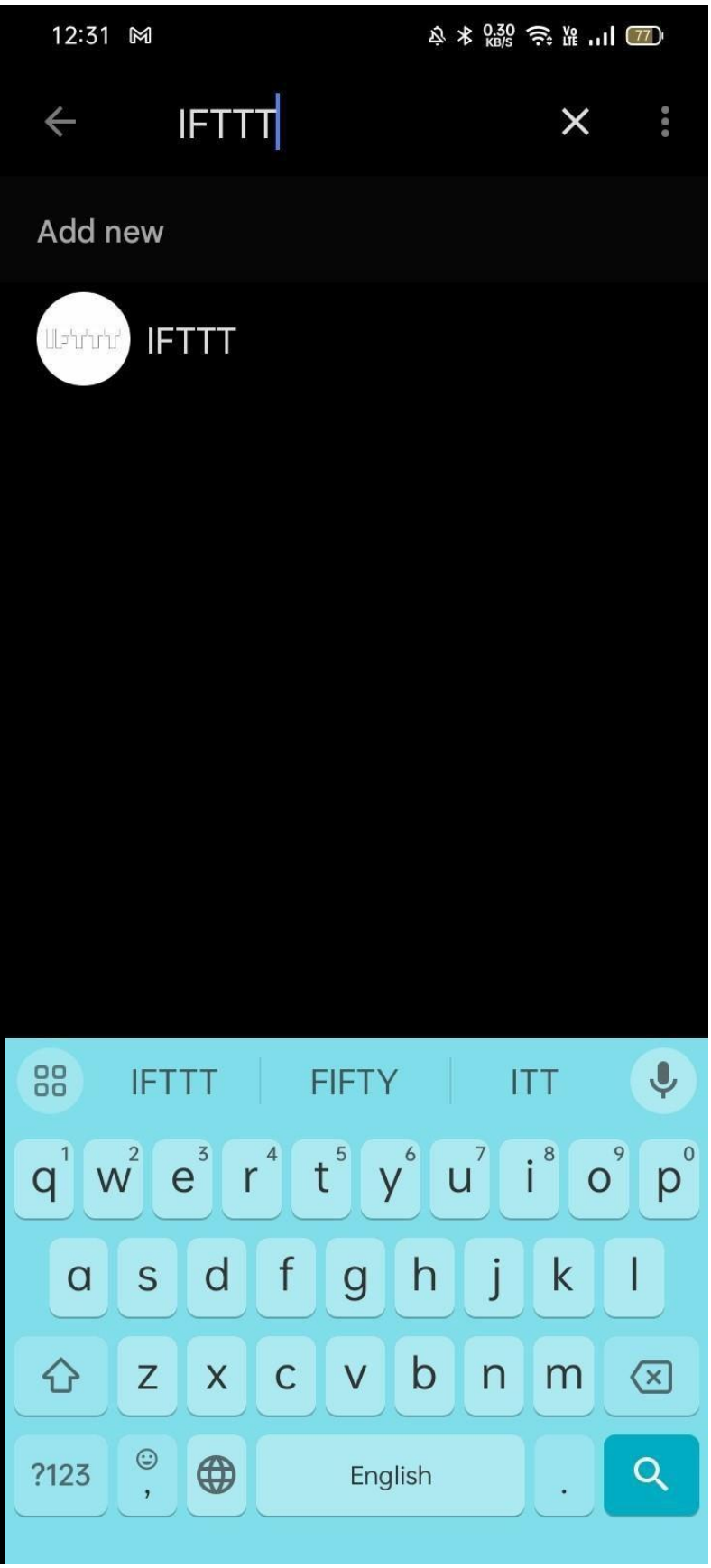


Then click on Add device button and select Works with Google:

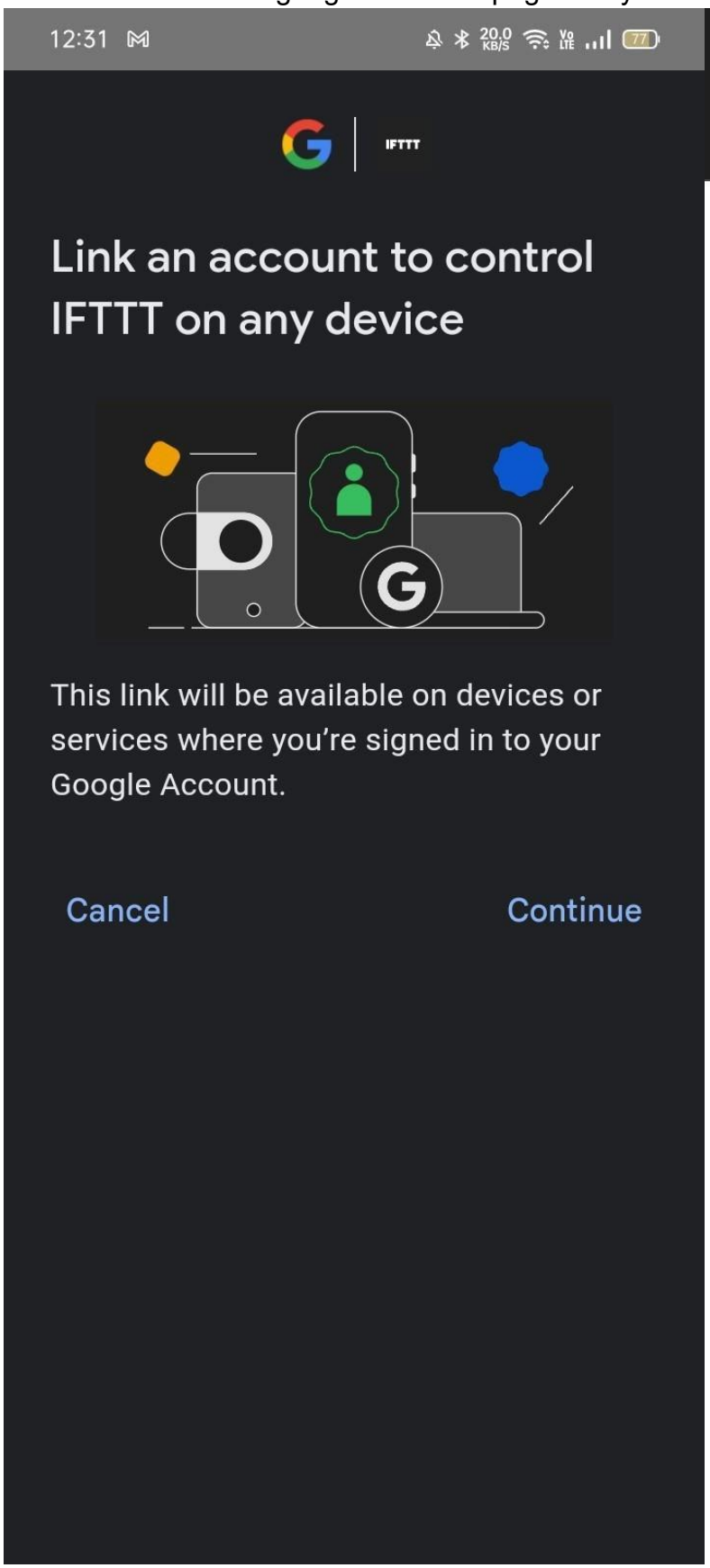


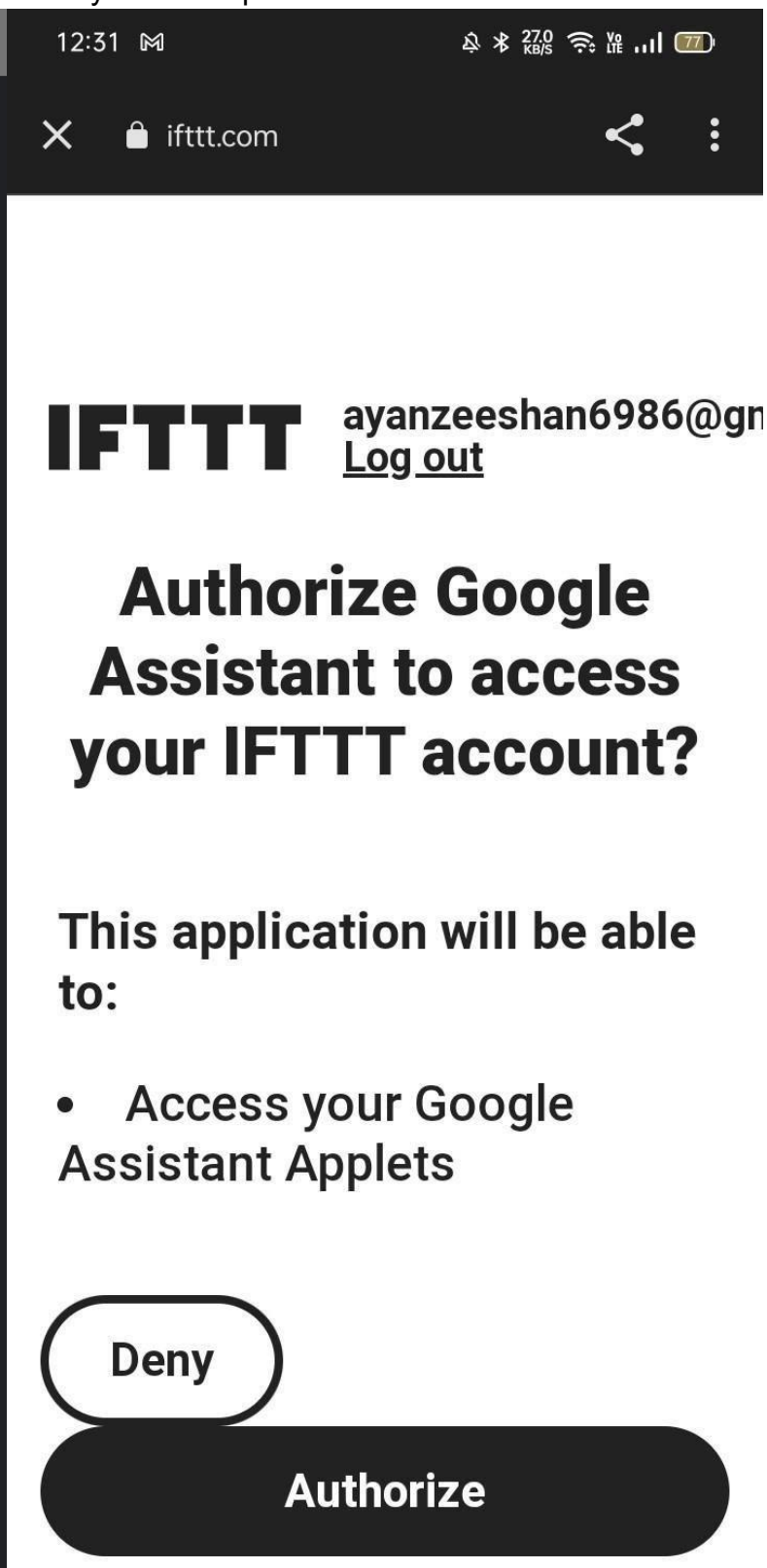
Then click on the search button and search for IFTTT and click on IFTTT and click on link account:





Then in the link an account page click on continue, then click on authorize in the authorize google assistant page and you are ready and set up!





Speech Commands:

Now the thing is that with google assistant you can't directly say Turn Led On, you have to say Activate Turn Led On or Ok Google, Turn Led On.

Circuit Diagram and Connections:

- Connect D2 of Esp8266 to the IN pi of the relay module.
- Connect GND of the Esp8266 to the GND of the relay module.
- Connect 3V of the Esp8266 to the VCC of the relay module.
- Connect one of the wires of the bulb to the NO of the relay module.
- Connect the second end of the same wire coming from the switch to the COM of the relay module.

- Connect the USB Cable from the laptop to the Esp8266.

Components List:

- Esp8266 Micro-controller.
- USB Cable.
- Light Bulb.
- Light Bulb Holder with High Gauge Copper Wire attached to Adapter.
- Relay module.
- Female to Female Jumper wires.

Important Steps!

- Change the SGP1 with your region server and also replace {token} with your auth token https://sgp1.blynk.cloud/external/api/update?token={token}&V0=1

- Sometimes The light bulb lights on ‘OFF’ command and turn off on ‘ON’ command, if that happens just go to your applet and replace the activate scene names with each other by going to your applet and clicking on settings button on the top-right corner and then clicking on “If Activate Scene” edit button on top-left corner of the button.

- Also replace the WIFI SSID and password with your WIFI SSID and password and also replace the authentication token, Template name and ID with your auth token, template name and ID on Blynk.

Caution!

- We do not recommend you try this on your own if you’re under-age and use the help of an adult to perform this and use all the safety measures required as told below:

- Use Rubber or Silicon gloves for proper insulation.

- Glue all the pins under the relay module to reduce chance of short-circuit.

- Use the help of an adult to do so, as this has been done by me a 13 year-old teenager, but I used the help of an adult for safety measures and wiring.

Conclusion:

This system can be used in home automation giving the homeowner a more comfortable and luxurious lifestyle, this can also be used for disabled people whenever they need something they can command google assistant to bring or do it for them using the same algorithm and just like I used the Led, it can be used with anything.

Reference:

- Blynk Community
- YouTube – Utech Digital Education