# HOME AUTOMATION USING NODEMCU WITH BLYNK 2.0

## Components :

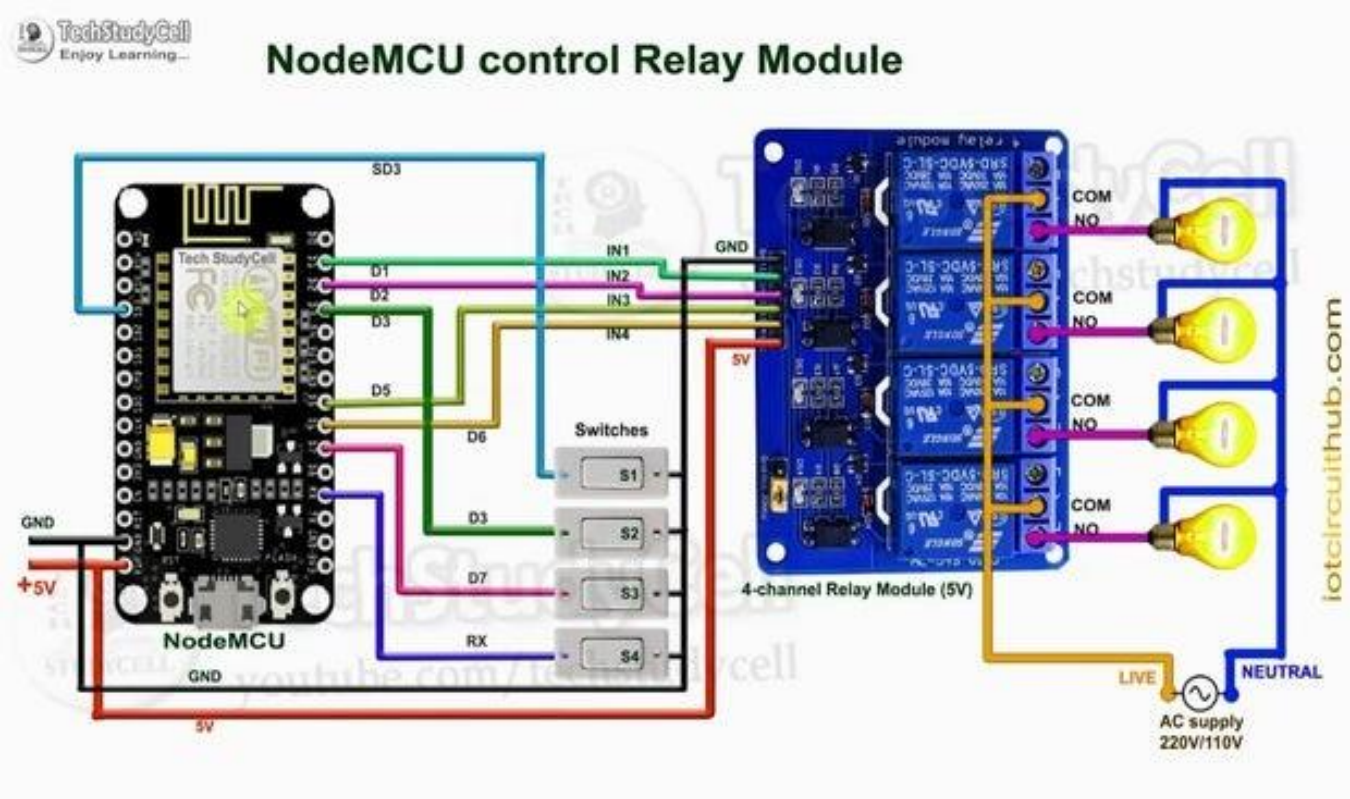
You can make this project just by using NodeMCU and 2-channel relay module

- NodeMCU
- Relays 5v (SPDT) (2 no)
- LED 5-mm (2 no)
- Terminal Connectors
- 5V DC supply
- Jumper Wires
- Blynk2.0

## Step 1 : Circuit Diagram for NODEMCU

The circuit is very simple, I have used the GPIO pins **D1, D2** to control the 2 relays.

I have used a 5V mobile charger to supply the smart relay module. the booting process of NodeMCU.

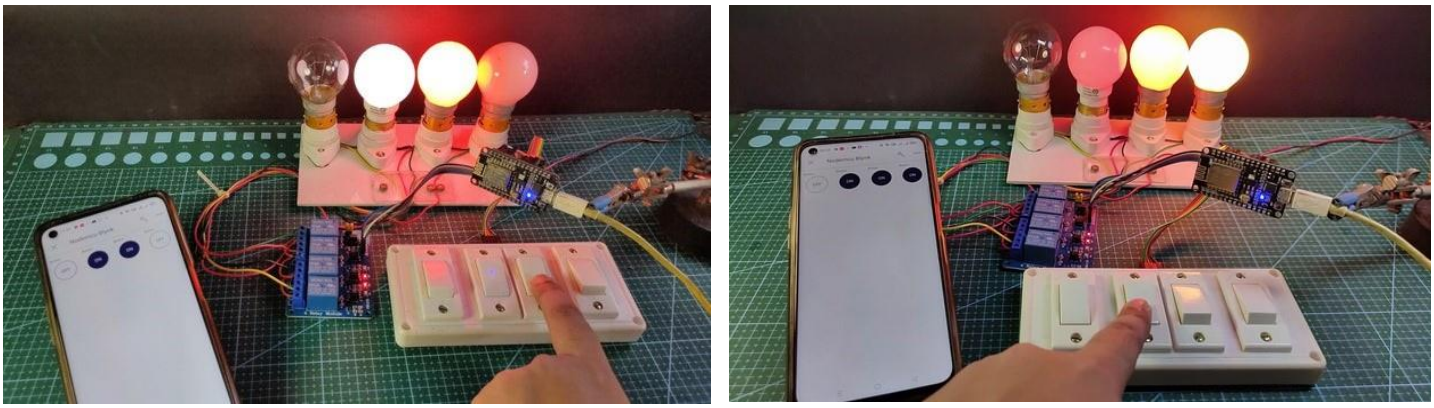



## Step2 : How Blynk IOT works.

If the **NodeMCU** is connected with WiFi, then you can the relays from anywhere in the world with the Blynk IoT In this way, all smartphones will be control the home appliances from **Blynk IoT App**. You also use **multiple smartphones** to control the appliances with Blynk App.

## Step 3: Control Relays Manually With Switches

You can also control the relays from the switches or pushbuttons. You can monitor the real-time feedback in the Blynk IoT App. Please refer to the circuit diagram to connect the pushbuttons or switches.

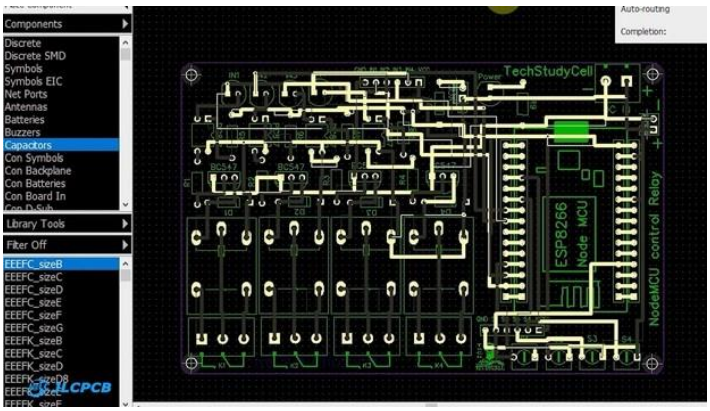


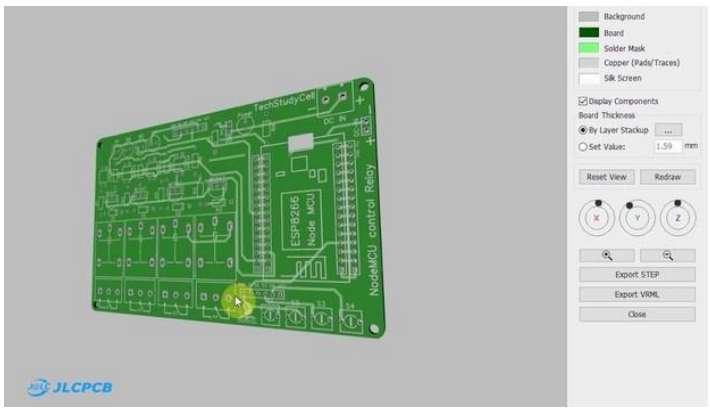
## Step 4: Design the PCB for This Smart Home System

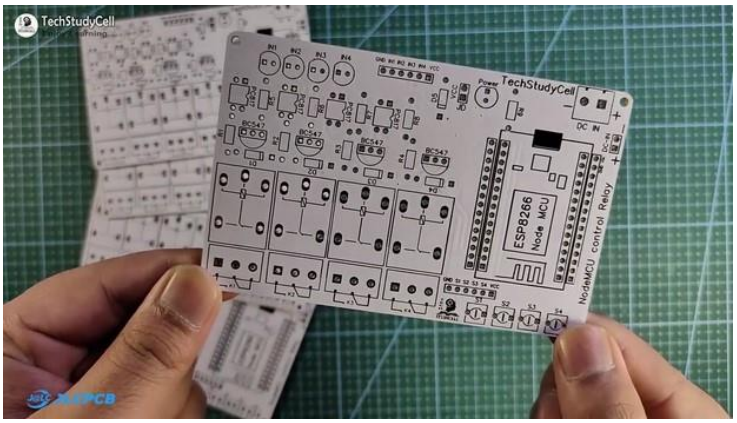
To make the circuit compact and give a professional look, I have designed the PCB after testing all the features of the smart relay module.

You can download the PCB Gerber le of this home automation project from the following link:

https://drive.google.com/uc?export=download&id=1J...



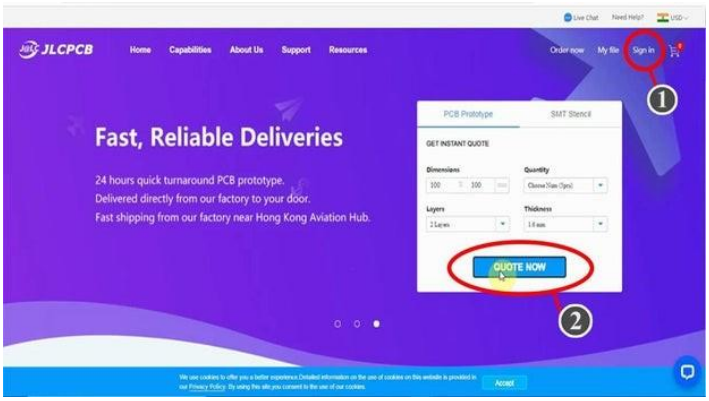

## Step 5: Order the PCB

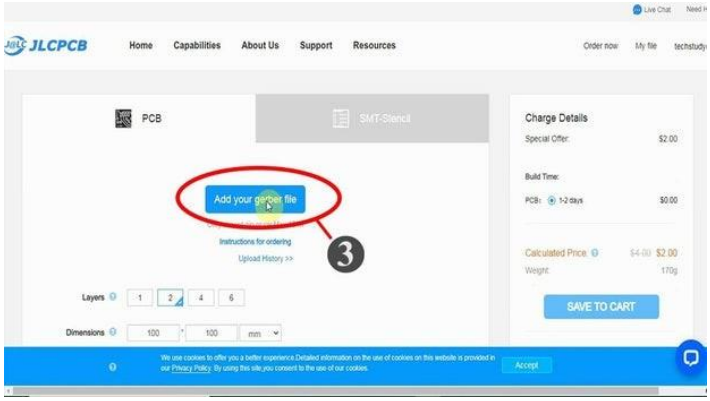
After downloading the Garber le you can easily order the PCB

1. Visit https://jlcpcb.com/RHS and **Sign in / Sign up**

2. Click on the **QUOTE NOW** button.

3. Click on the **"Add your Gerber le"** button. Then browse and select the Gerber le you have downloaded.

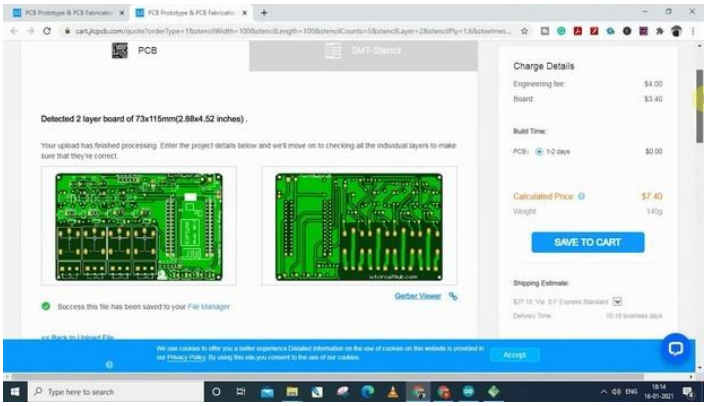


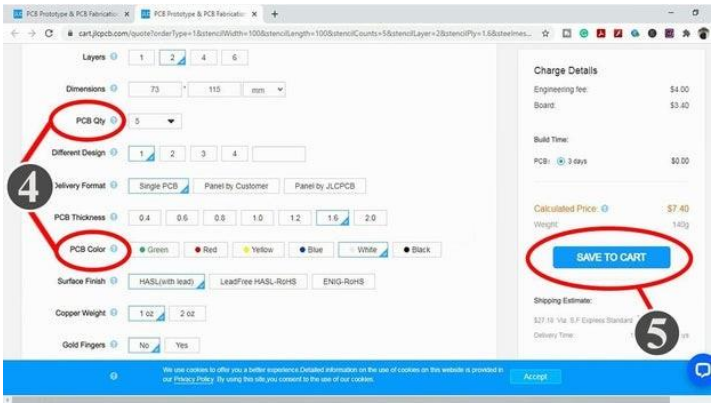




## Step 6: Uploading the Gerber File and Set the Parameters

4. Set the required parameter like **Quantity, PCB masking color**, etc

5. After selecting all the Parameters for PCB click on **SAVE TO CART** button.



## Step 7: Select Shipping Address and Payment Mode

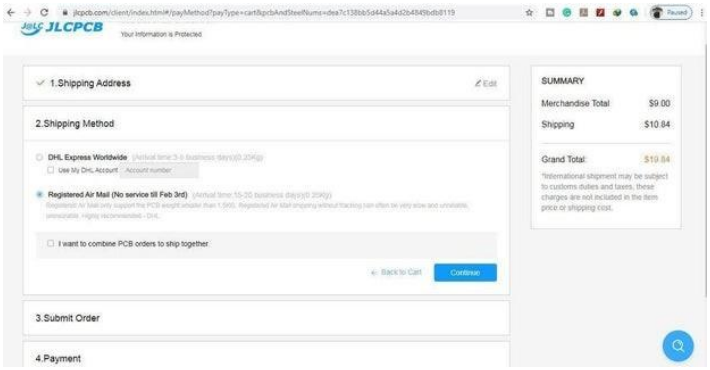
6. Type the **Shipping Address.**

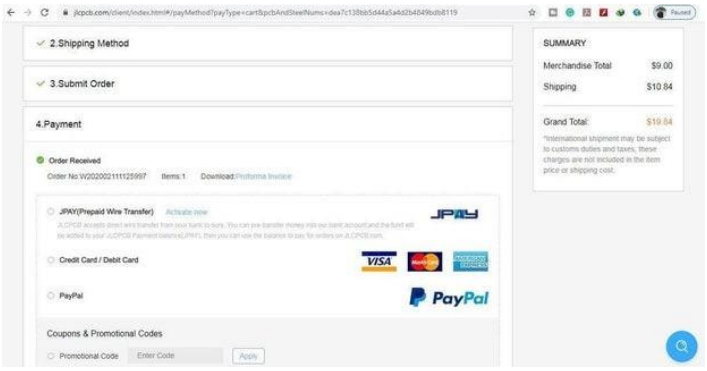
7. Select the **Shipping Method** suitable for you.

8. **Submit the order** and proceed with the **payment**. You can also track your order from JLCPCB.com.

My PCBs took 2 days to get manufactured and arrived within a week using the DHL delivery option.

PCBs were well packed and the quality was really good at this a ordable price.

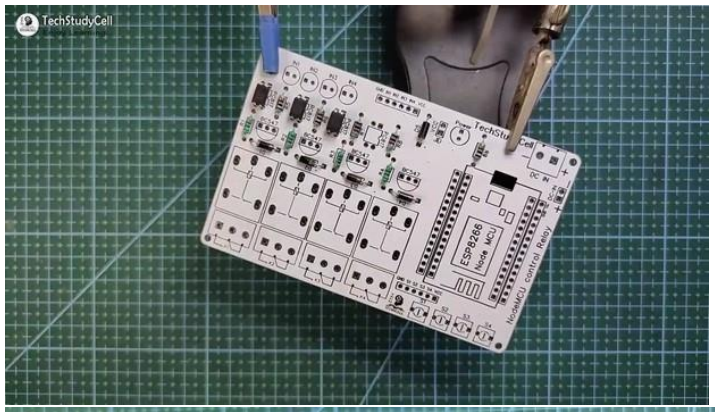


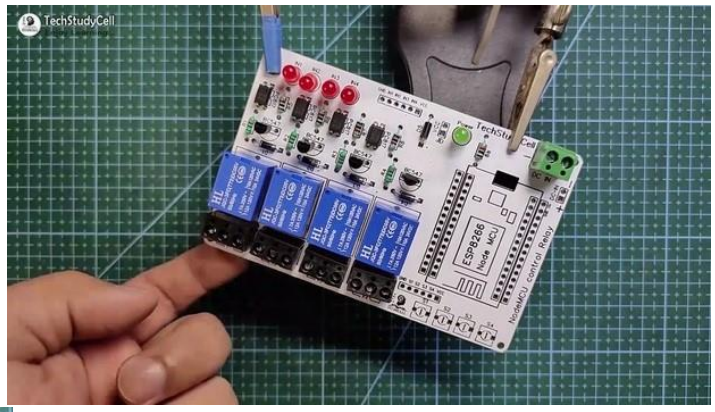



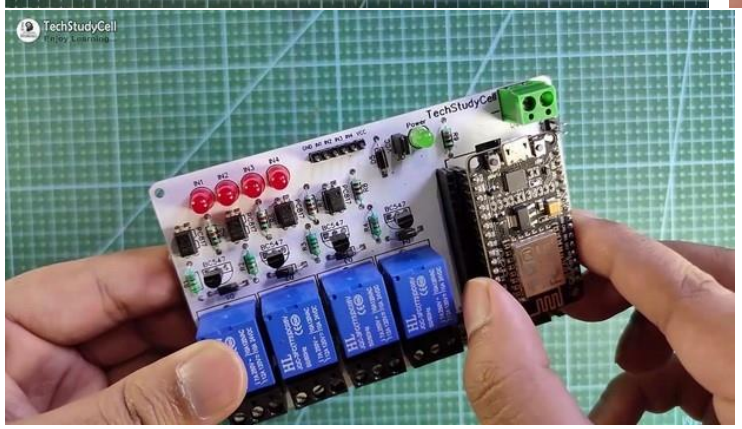

## Step 8: Solder All the Components on PCB

After that, I have soldered all the components as per the circuit diagram.

Then connect the NodeMCU board with the PCB.




## Step 9: Create Blynk Cloud FREE Account

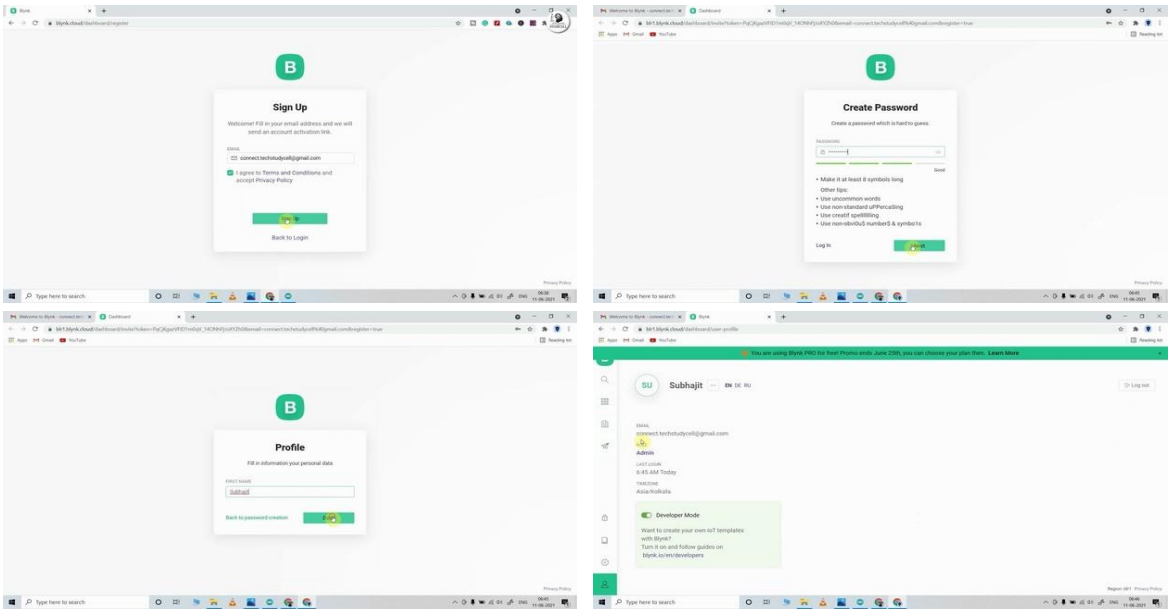
For this smart house project, I have used the **Blynk IoT Cloud Free plan.**

Click on the following link to create a Blynk Cloud account.

https://blynk.cloud/dashboard/register

1. Enter email ID, then click on "**Sign Up**". You will receive a veri cation email.
2. Click on **Create Password** in the email, Then set the **password**, click on **Next**.
3. Enter your **rst name**, click on **Done**.

After that Blynk cloud dashboard will open.



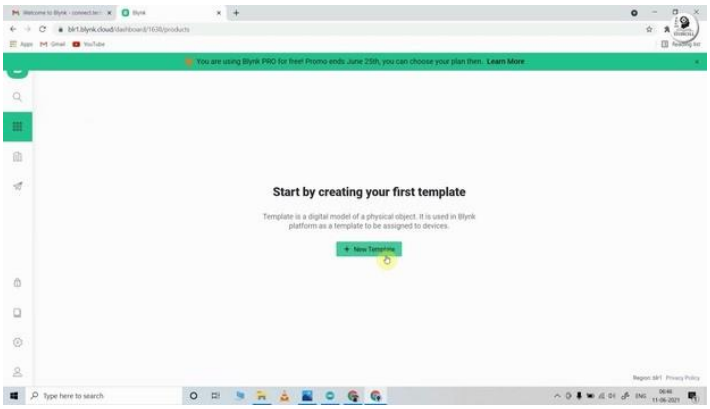

## Step 10: Create a New Template in Blynk Cloud

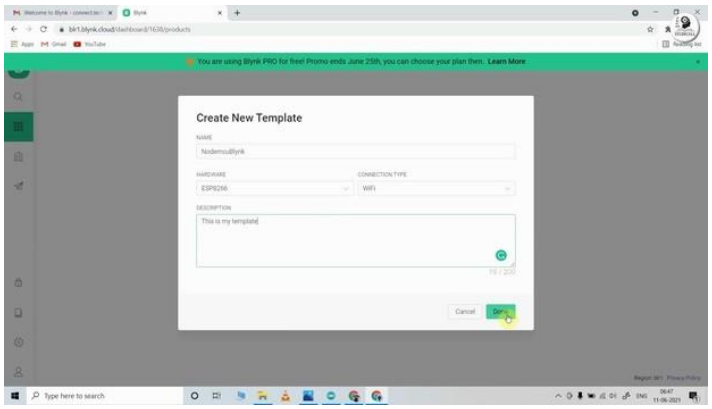
First, you have to create a template in the Blynk cloud.

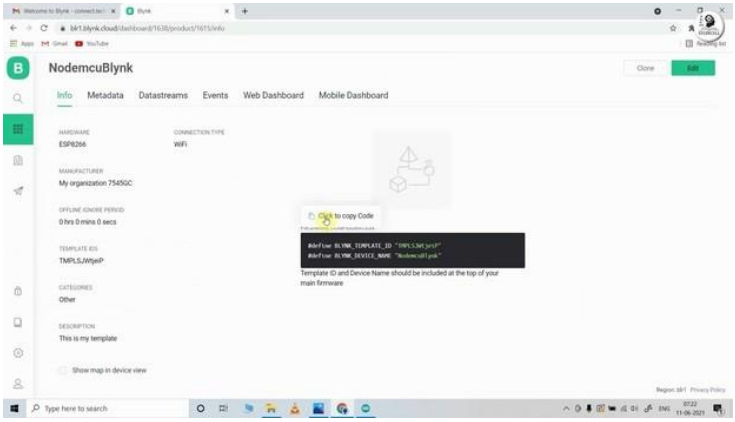
1. Click on **New Template.**
2. Enter a template **name**, select the hardware as **ESP8266**, and the connection type will **WiFi**.
3. Then click on **DONE**.

You will get the **BLYNK_TEMPLATE_ID** and **BLYNK_DEVICE_NAME** after creating the temple.

The BLYNK_TEMPLATE_ID and BLYNK_DEVICE_NAME will be required while programming the NodeMCU.



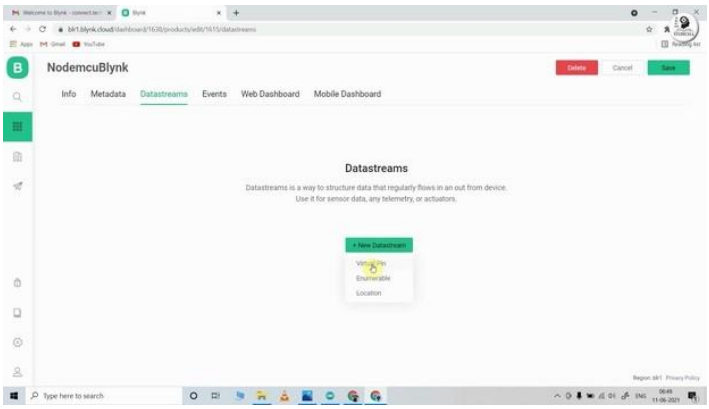



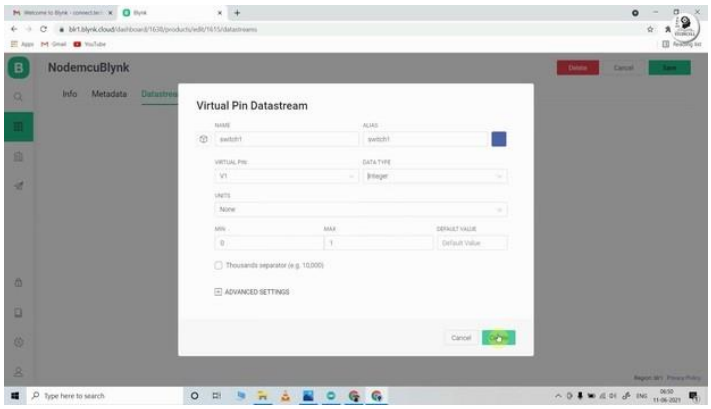

## Step 11: Create a Datastream in Blynk Cloud

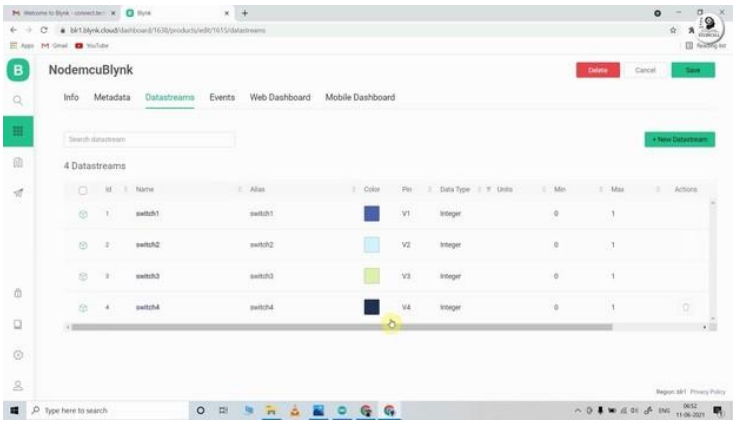
After that, you have to create Datastreams. Here I will control 4 relays, so I have to create 4 Datastreams.

1. Go to the **Datastreams** tab.
2. Click on **New Datastream** and select **Virtual Pin**.
3. Enter a **name**, select the **virtual pin V1,** and the datatype will be **Integer**.
4. Then click on **Create**.

In a similar way, create 4 datastreams with virtual pin **V1, V2, V3**, and **V4.**



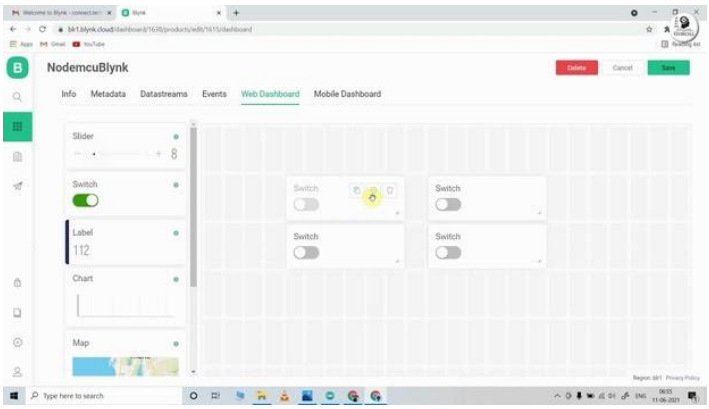



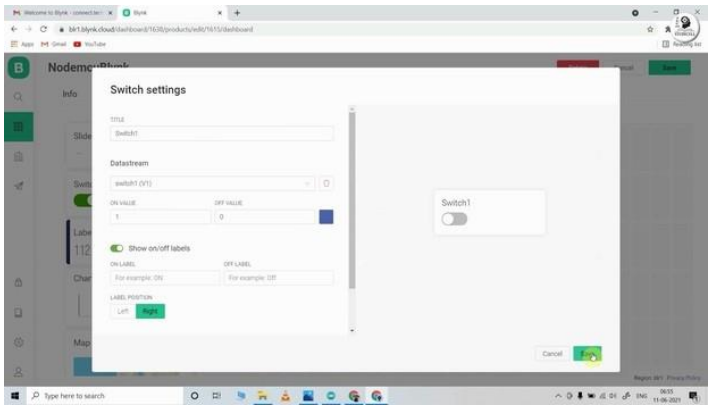

## Step 12: Set Up Blynk Cloud Web Dashboard

Now go to the web dashboard tab.

Drag and drop 4 Switch widgets.

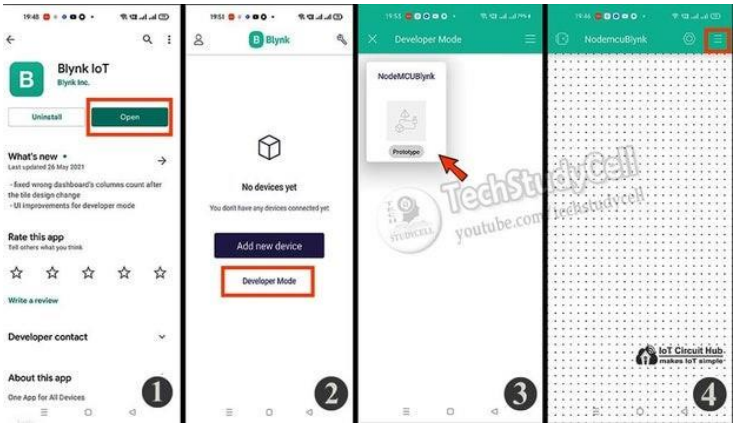
Go to the settings of each widget, and select a Datastream.



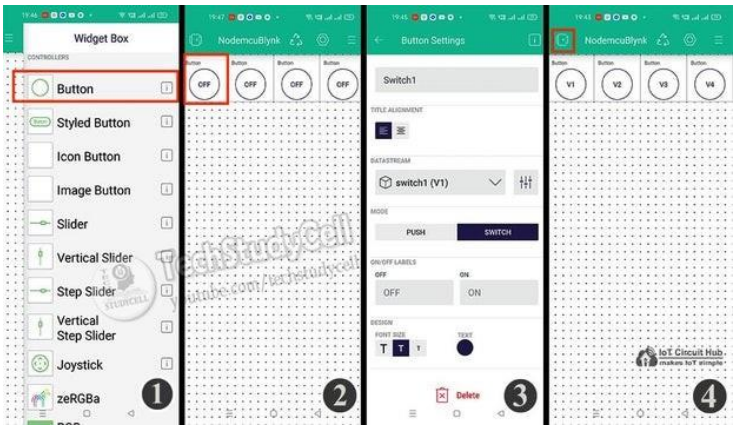

## Step 13: Install Blynk IoT App to Configure Mobile Dashboard

1. Install the **Blynk IoT app** from Google Play Store or App Store. Then **log in.**
2. Go to **Developer Mode.**
3. Tap on the **template** that you have already made.
4. Now go to the **Widget box** (on the right) to add widgets.




## Step 14: Add Widgets in Blynk IoT App

1. Add **4 Button** widgets from Widget Box.
2. Go to **Button widget settings**.
3. Enter the **name**, select **Datastream**, Mode will be **Switch**. Then exit.
4. After setting all the Buttons tap on **exit**.




## Step 15: Program the NodeMCU for This Blynk Project

First, download the code from the following link.

https://drive.google.com/ le/d/1WK6AOzVyS-

P6G22mK

You have to keep all the 9 les in the same folder.

Open the **.ino le** in Arduino IDE.

In the code, you have to update the
**BLYNK_TEMPLATE_ID** and
**BLYNK_DEVICE_NAME.**

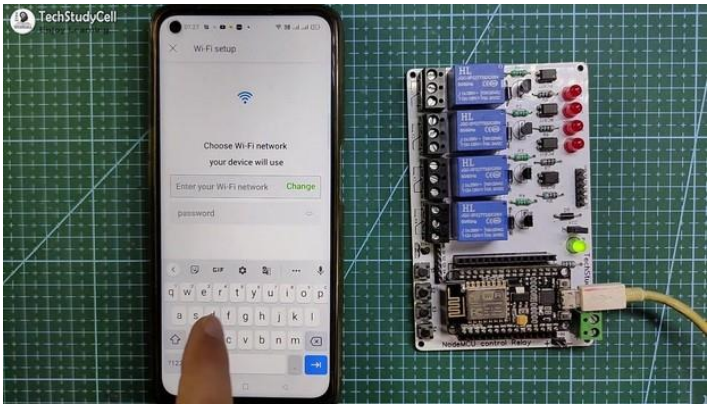
For this project, you have to install the **Blynk 1.0.0 beta.3** & **AceButton** libraries.

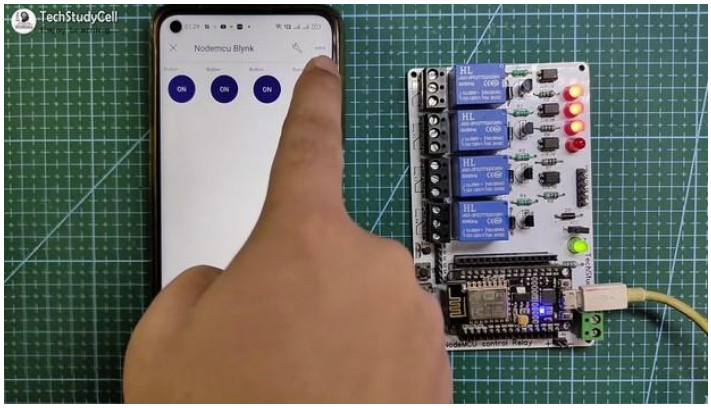
Now select the NodeMCU 1.0 board and proper PORT.
Then upload the code to NodeMCU Board.

## Step 16: Update the WiFi Credentials Through OTA

After programming the NodeMCU, you have to update the WiFi credentials from the Blynk IoT app.

In the tutorial video, I have explained all the steps to update the WiFi credentials to NodeMCU through OTA.



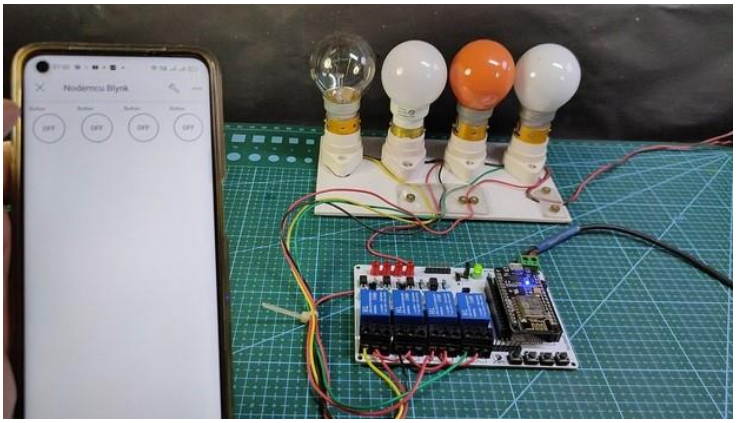




## Step 17: Connect the Home Appliances

Connect the **4 home appliances** with the relay module as per the circuit diagram.

**Please take proper safety precautions while working with high voltage.** Connect 5-

volt DC supply with the PCB. (I have used my old mobile charger 5V 2Amp)



Turn on the **110V/230V** supply and **5V** DC supply.

## Step 18: Finally!! the Blynk Smart Home System Is Ready

Now you can control your home appliances in a smart way.

I hope you have liked this new **Blynk home automation project**. I have shared all the required information for this project.

I will really appreciate it if you share your valuable feedbacks. Also if you have any query please write in the comment section.

Thank you & Happy Learning.