

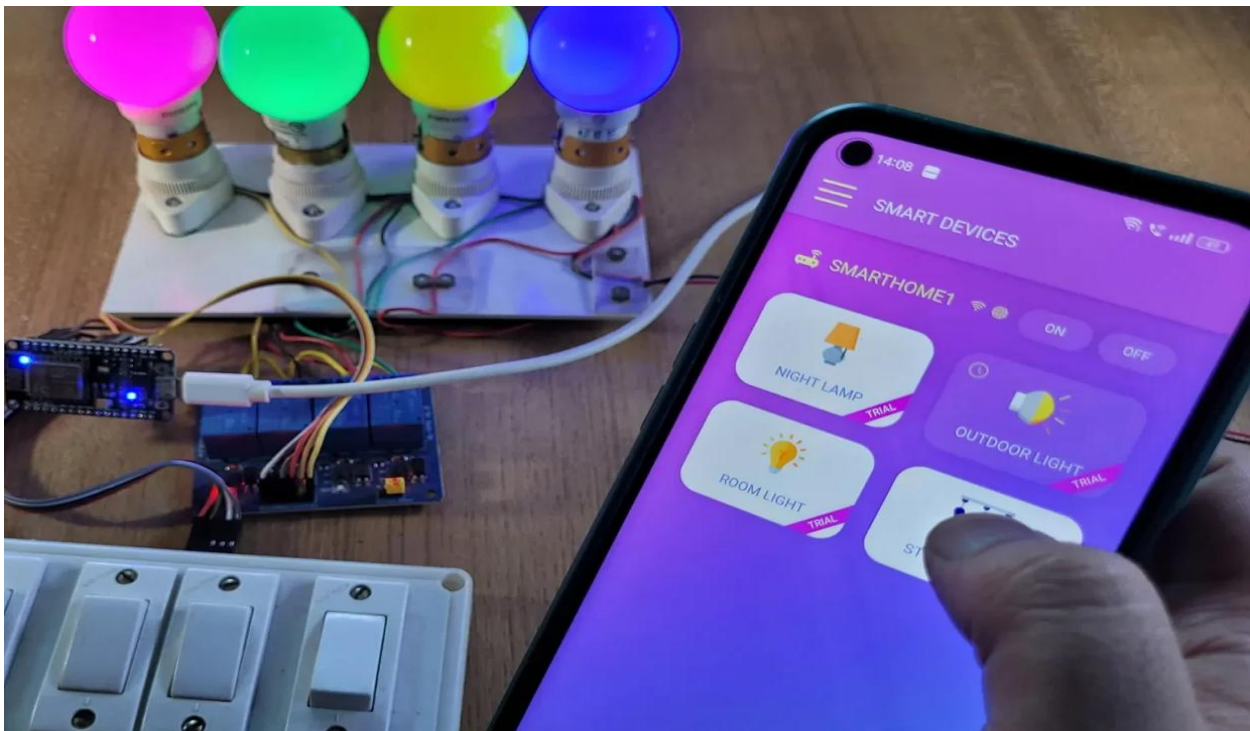
Aim: Home Automation by Cadio Application

Components:-

1. Node MCU
2. Esp8266
3. 4-channel 5V SPDT Relay Module (Active LOW)
4. Switches or push buttons

Theory:-

In this IoT project, we have explained how to make an IoT based ESP8266 project using Cadio to control relays through the internet. You can also connect Google Assistant and Alexa to control appliances with voice commands. If there is no WiFi available, you can still control the appliances with manual switches. You don't need any coding skills to make this ESP8266 project. I have used all the **free tools** for this IoT-based project.

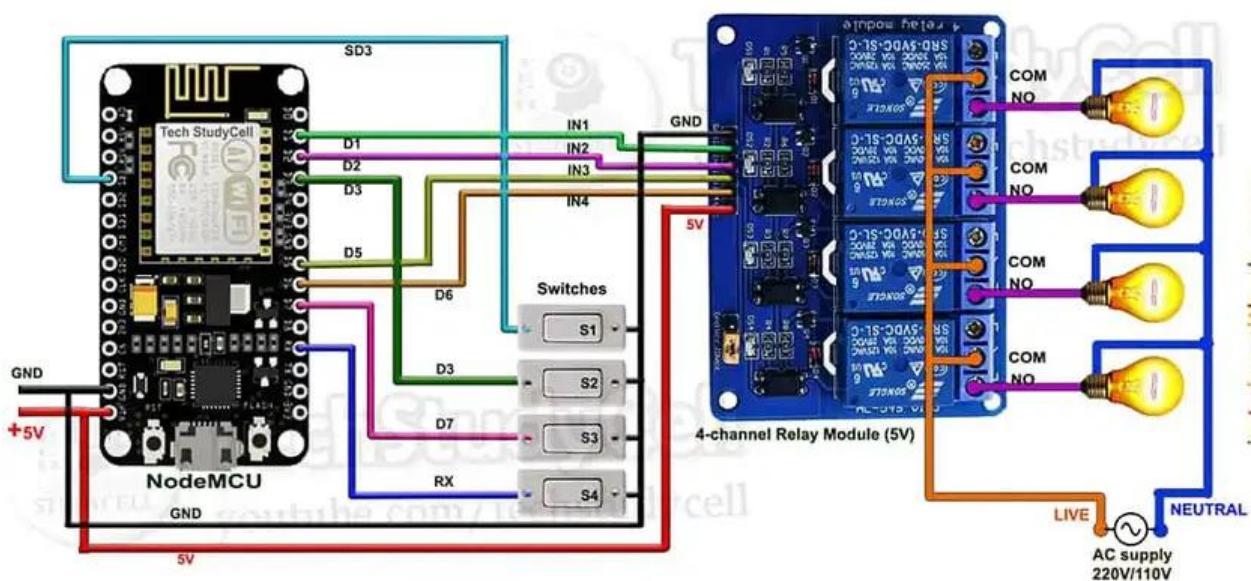


By following all the steps, you can easily make this home automation system with **ESP8266** and **relay module**.



Circuit of the ESP8266 Cadio Home Automation

NodeMCU control Relay Module



In the circuit, I have used **D1 (GPIO-5)**, **D2 (GPIO-4)**, **D5 (GPIO-14)**, and **D6 (GPIO-12)** GPIO pins to control the 4-channel relay module.

And the GPIO **SD3 (GPIO-10)**, **D3 (GPIO-0)**, **D7 (GPIO-13)**, and **RX (GPIO-3)** connected with the pushbuttons to control the relay module manually.

I have used the **INPUT_PULLUP** function in Arduino IDE instead of using the pull-up resistors with each switch.

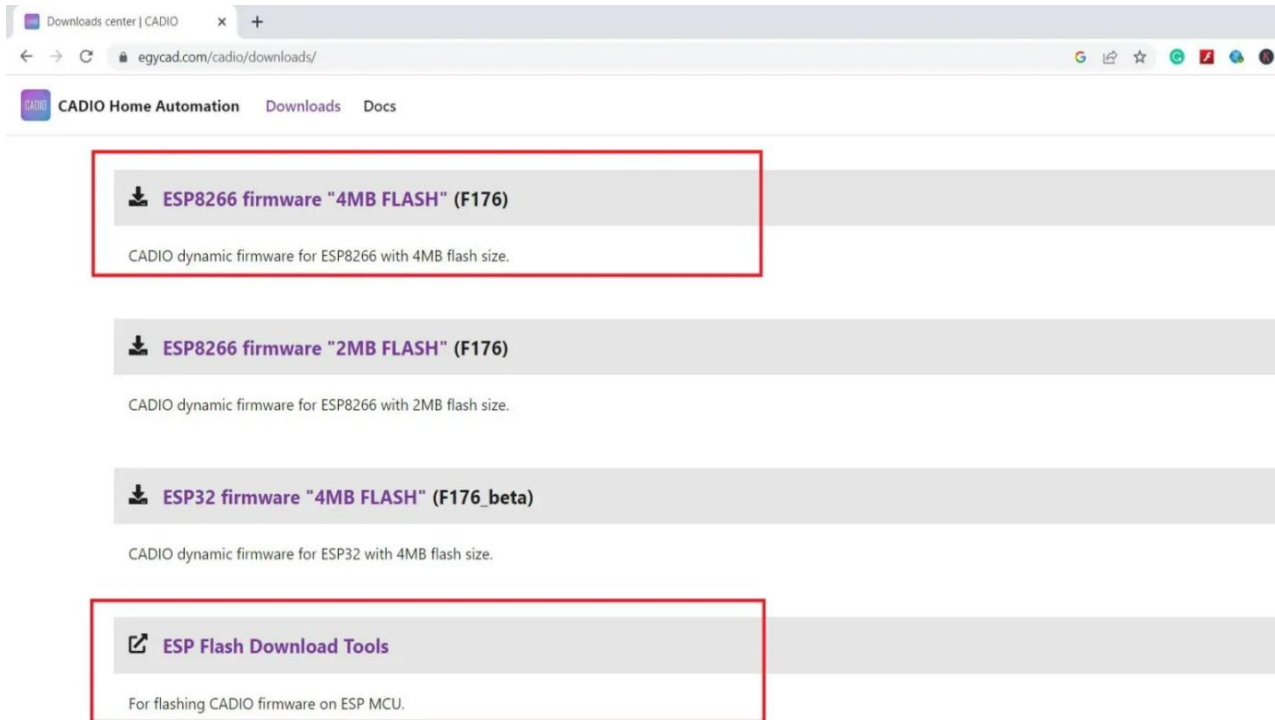
Now if you want to use the latched switch, then please refer to the following circuit.

Configure ESP32 with Cadio Firmware

Install the Cadio Firmware on ESP8266

First download the Cadio Firmware for ESP8266 from the following link:

Download link:- <https://egycad.com/cadio/downloads/>



Please refer to the following article to install the Cadio Firmware on ESP8266 NodeMCU.

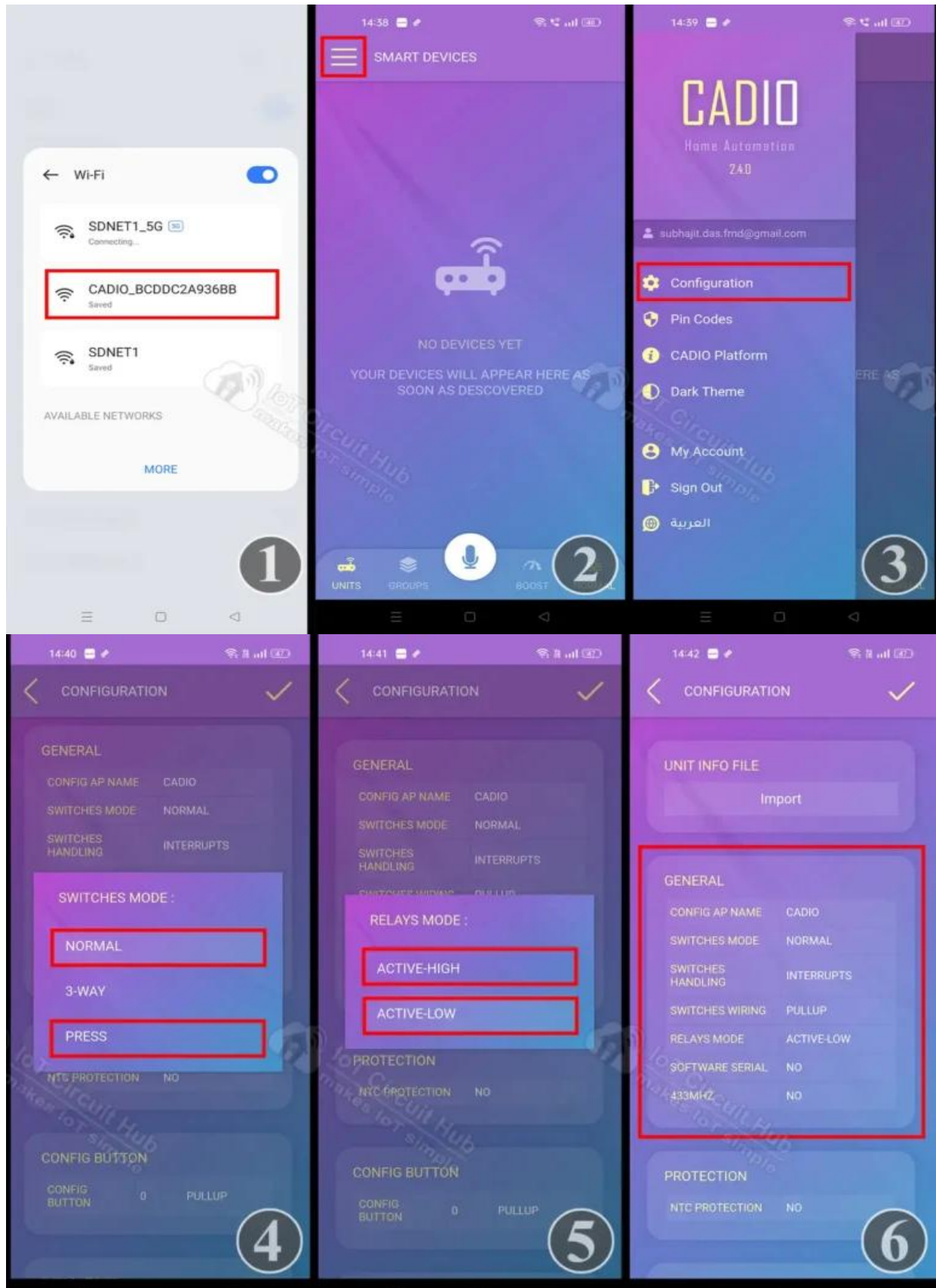
Steps to upload Cadio Firmware to ESP8266

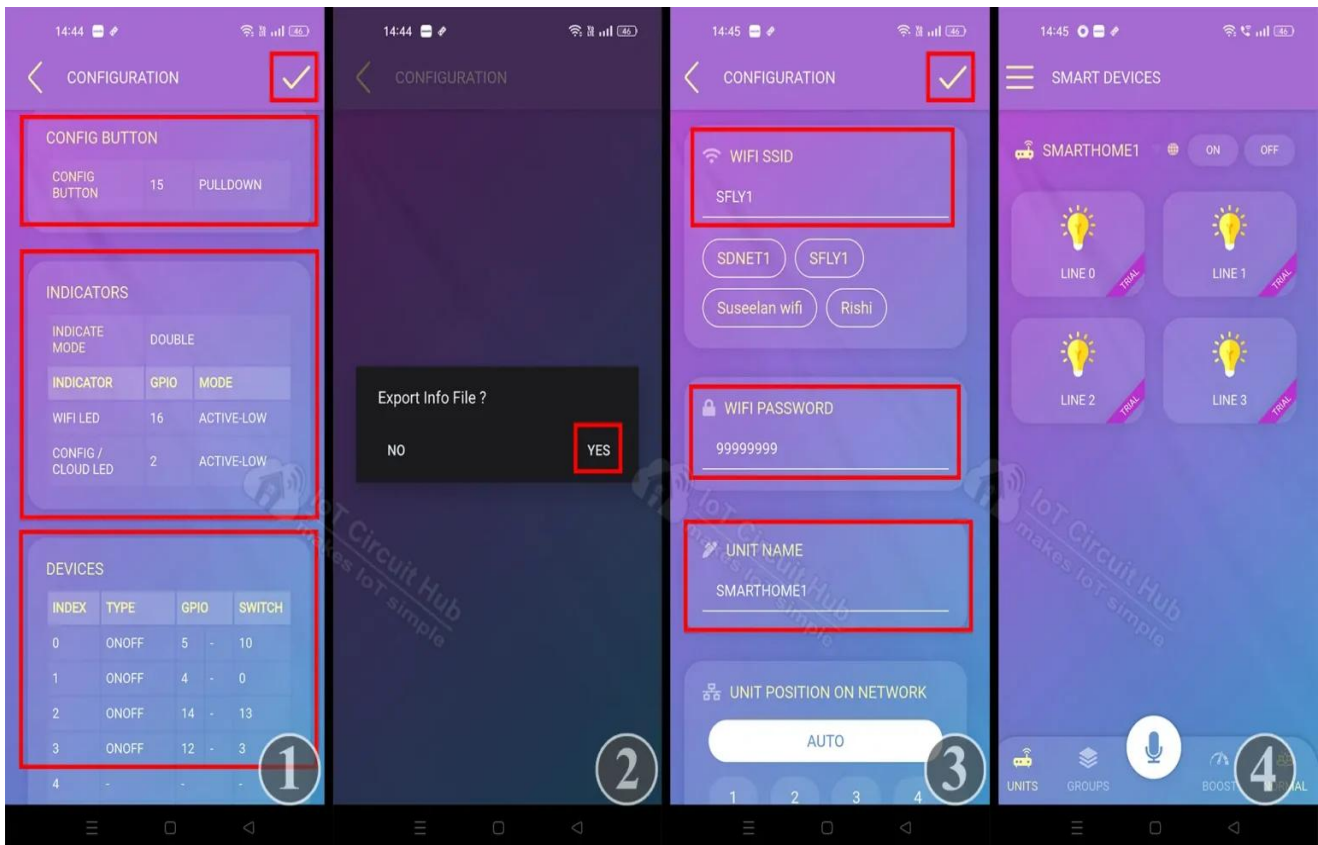
After uploading the firmware, press the Reset (RST) button of ESP8266 and wait until the built-in LED starts blinking. (This may take up to 30 seconds).

Configure ESP8266 using the Cadio app

First, install the Cadio Home Automation app from Google Play Store or App Store, and create an account in Cadio.

1. Turn off mobile data and connect the “CADIO” hotspot created by the ESP8266.
2. Open the Cadio app, tap on the 3-dash icon.
3. Select Configuration.
4. Select Switches Mode: “NORMAL” for switch. For pushbutton select “PRESS“.
5. Select Relay Mode: “ACTIVE LOW“. For active HIGH relay select “ACTIVE HIGH“.
6. Select the Switches wiring as per the circuit.





1. Now enter the GPIO pins for Config button, Indicator LEDs and Devices as per the circuit. Then tap on the tick icon (in the top right corner).
2. Tap on YES to export the info file.
3. Select the WiFi Name and enter the WiFi Password. Also, enter a unique unit name and tap on the tick icon.
4. Wait for some time the dashboard will appear automatically.

Change Device Names in the Cadio app

1. You have to long press on the device.
2. Now tap on “Settings” to open the setting page.
3. Give a Device name and select the Device icon. Then tap on the tick icon to exit. In a similar way change the device name for all the devices.

Now you can control all the relays from the Cadio app through the internet. You can also tap on the MIC icon and control the relays with voice commands.

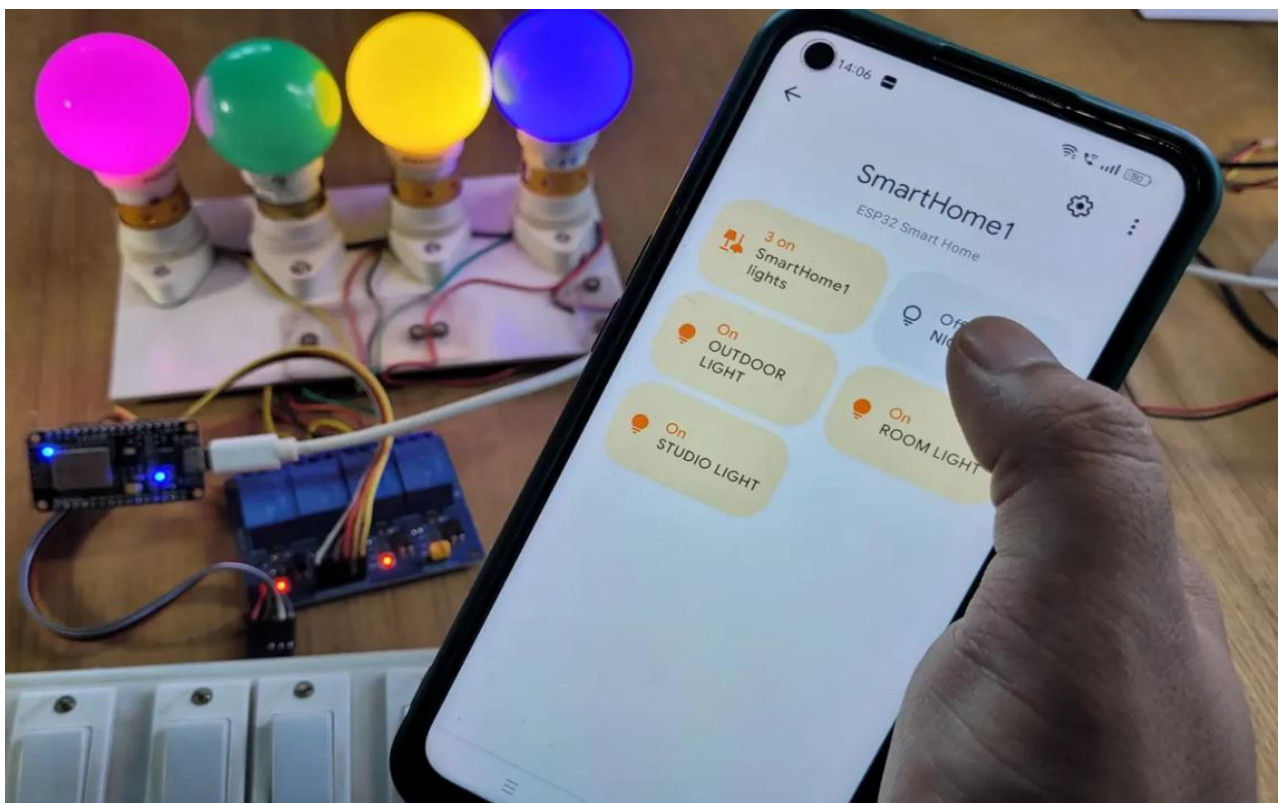
Control Relays manually with Switches



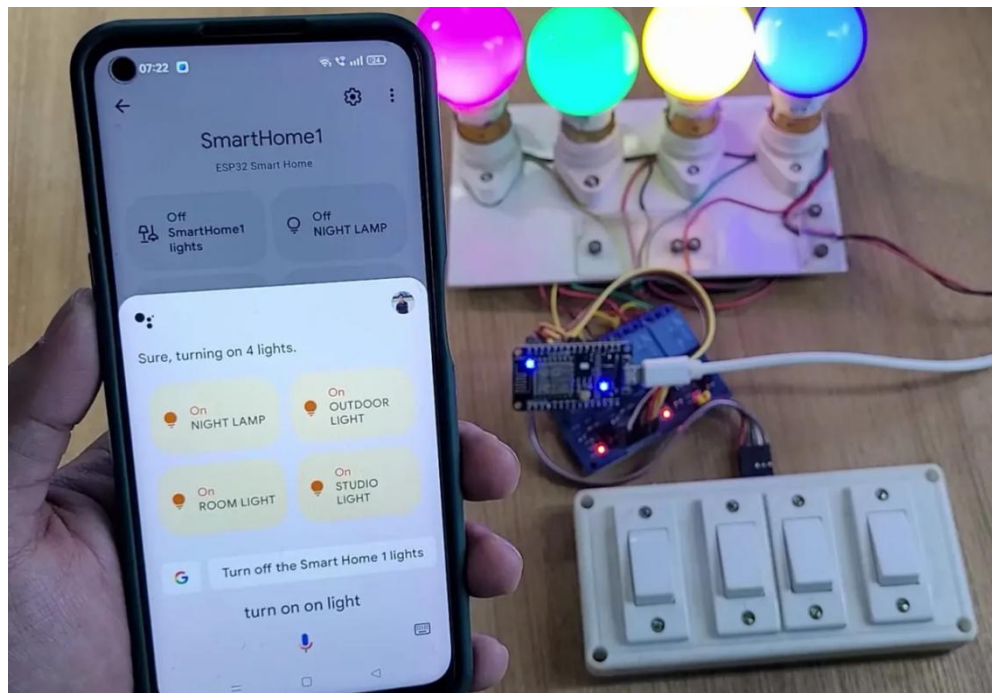
You can always control the relays with manual switches. If the ESP8266 NodeMCU is connected with WiFi, then you can monitor the real-time feedback in the Cadio app. If there is no internet, you can still control the relays with switches or pushbuttons.

Control Appliances with Google Assistant

First, you have to connect the Cadio with Google Home app.



Now you can control the appliances from Google Home app.



After connecting the Google Home with Cadio, you can also control the appliances with voice commands using Google Assistant.