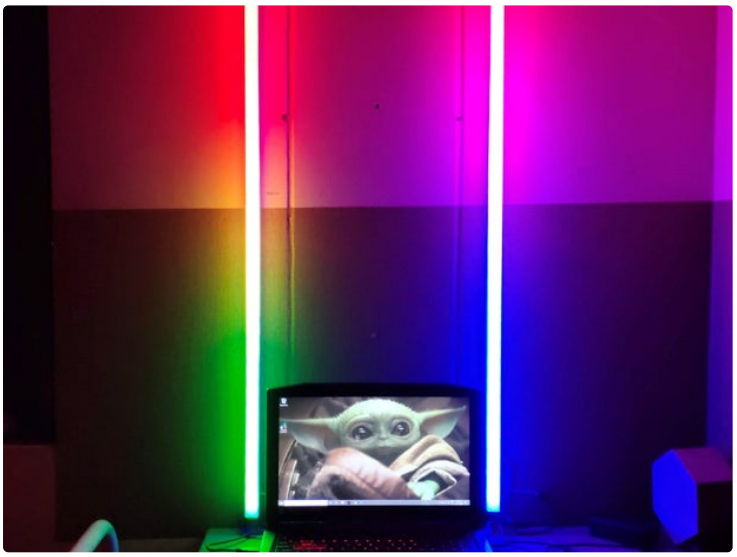
DIY RGB Tube Lights

by Mukesh_Sankhla

https://www.youtube.com/embed/niXeil0AYxQ

DIY RGB Tube light is a multi functional tube light which can be used in photography, light painting photography, film making, gaming, as a VU meter and more. The tube light can be controlled by Prismatik software or by a push button. These tub lights are made using a Arduino Nano and WS2812B LED strip.

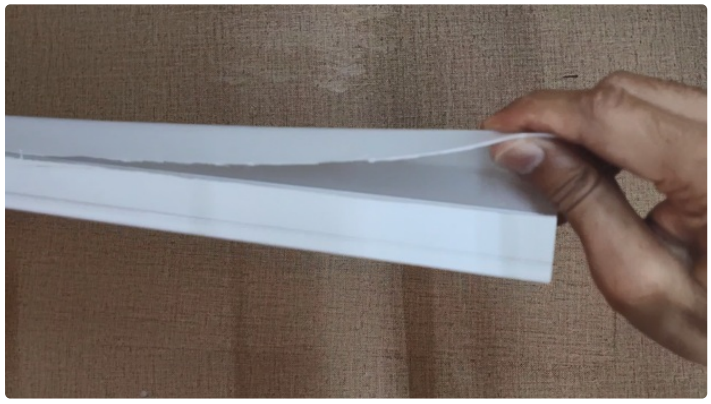


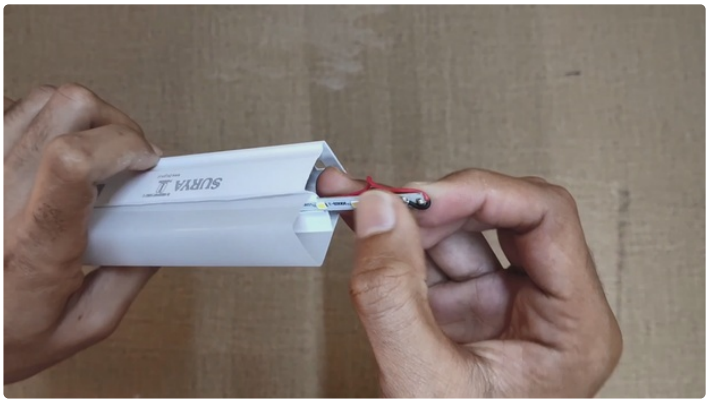
Step 1: Supplies:

1. (1) Arduino Nano : https://amzn.to/3r2x4sY
2. (2mt) WS2812B LED Strip: https://amzn.to/2Kwe70O
3. (2) White Tube Lights Or Aluminum Light Fittings with Diffuser : https://amzn.to/38fF6Gu Or https://amzn.to/38fF6Gu
4. (1) 5V 5A Power Supply : https://amzn.to/3nqCvQi
5. (1) Push Button : https://amzn.to/3mpNEPK
6. (1) Wires : https://amzn.to/3npgYrh
7. (1) DC Connector : https://amzn.to/3nocDV2

Step 2: Tube Lights Disassembling:

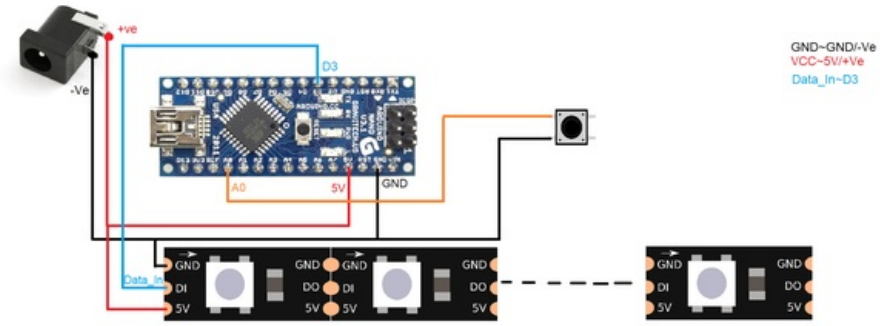
- Disassemble the tube light by removing end caps, separating diffuser and removing whites LED strip from the tube.

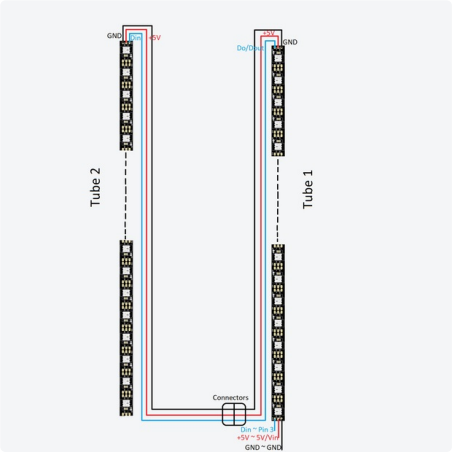


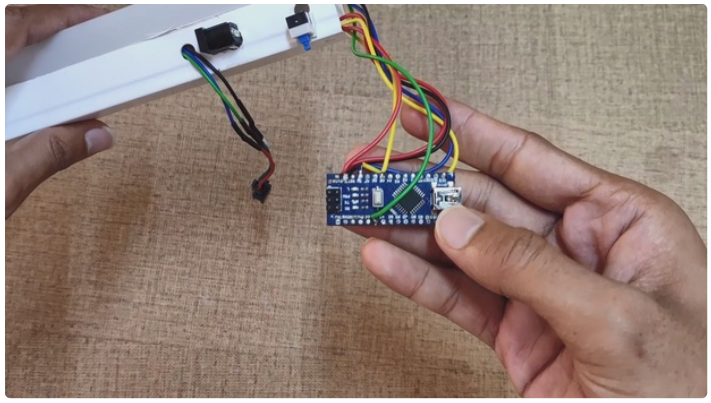


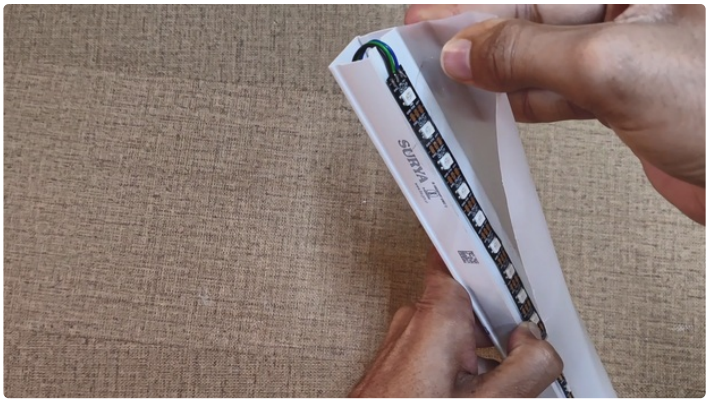
Step 3: Circuit Connection:

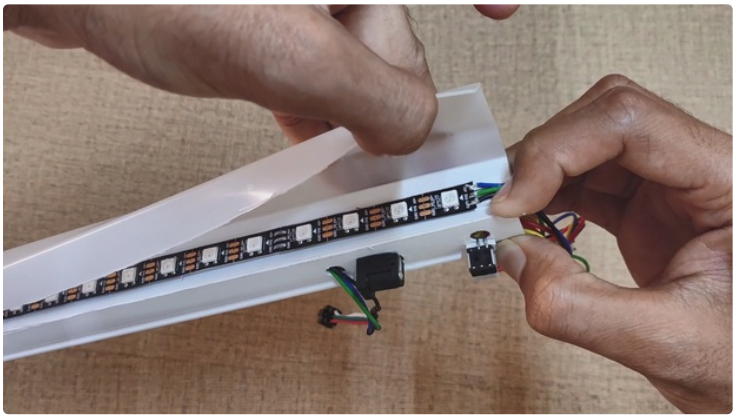
- Make all the connections as shown in circuit diagram.





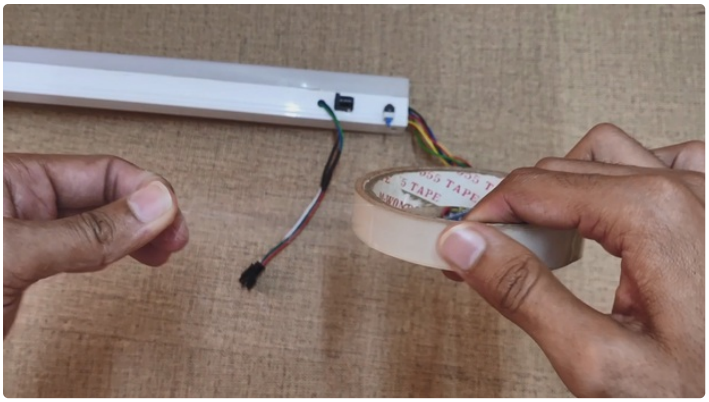
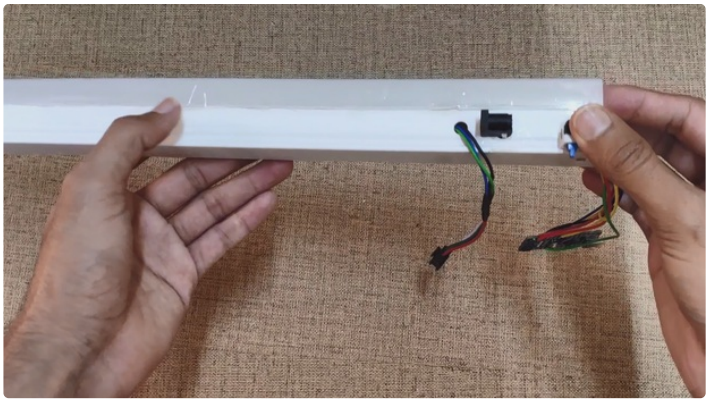
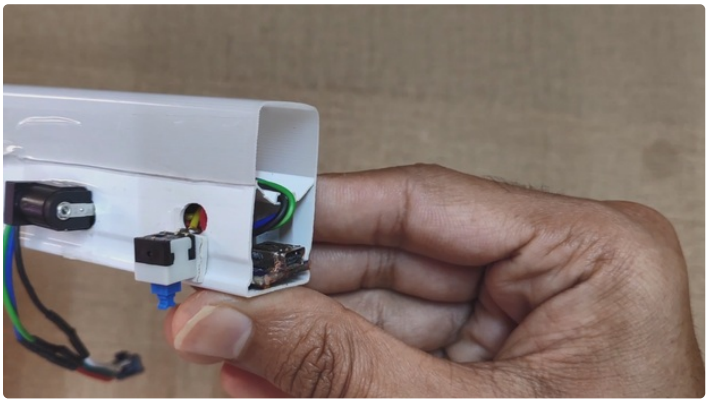
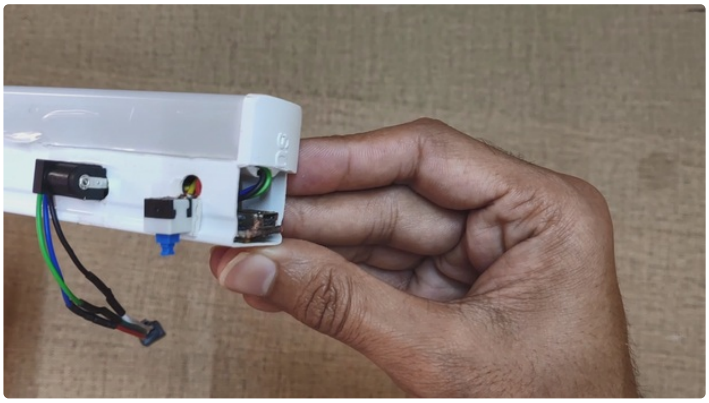






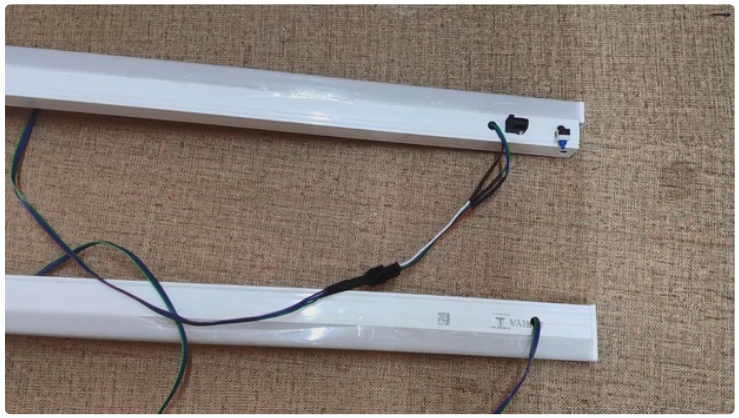
Step 4: Assembling:

- Put all the electronics in the tube, put back the end caps and seal the diffuser using clear tape.

Step 5: Tube Light 2:

- Similarly make the second tube but this time use only WS2812b LED strip, connector, wires and connect the tube lights.

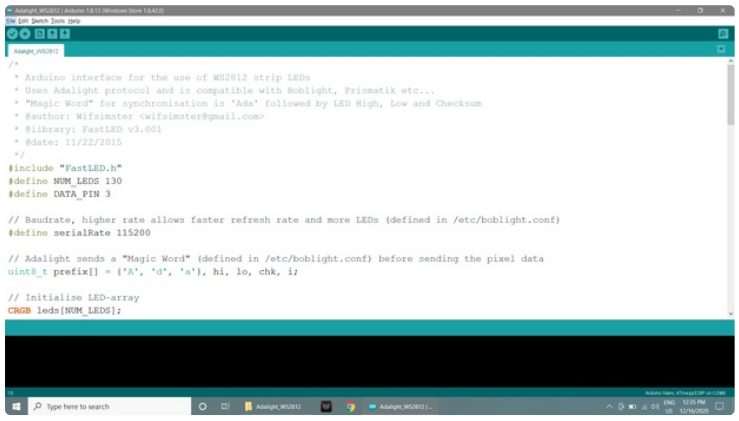


Step 6: Code for Software:

- Download the given zip files and extract them.
- RGB_Tube_code & software zip
- Open the RGB Tube code & software file, open the code given in Arduino IDE.
- Install the FastLED library in Arduino IDE.
- You can enter the number of LEDs you used in your tube lights, I used 65 LEDs in each tube lights, i.e. 130 LEDs in both tube lights.

```
#define NUM_LEDS 130
```

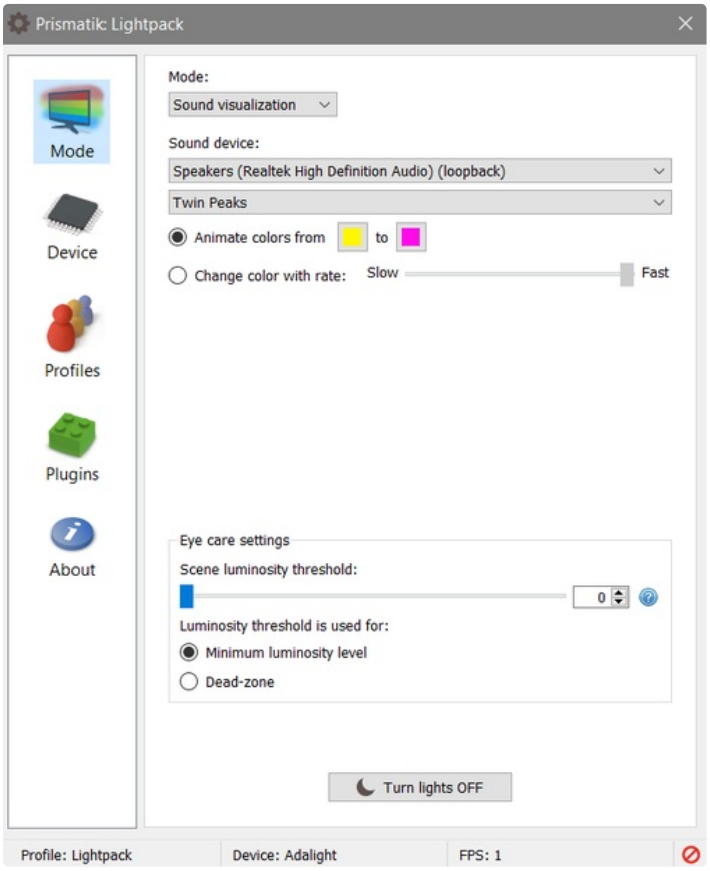
- Remember the port number. (for example: com8)
- Connect the Arduino to your PC, select the board type, select the port and upload the code.

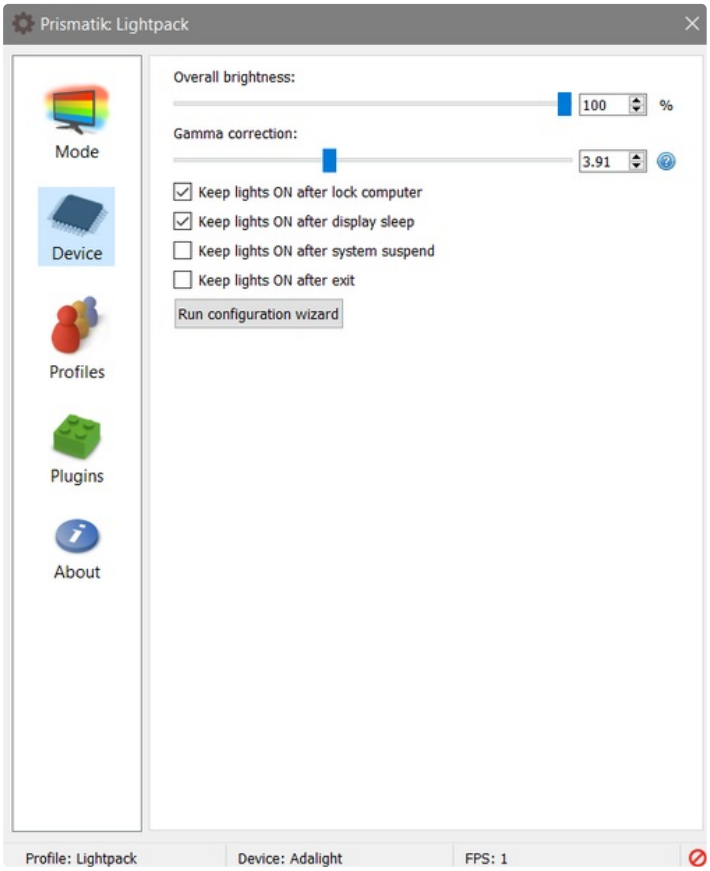


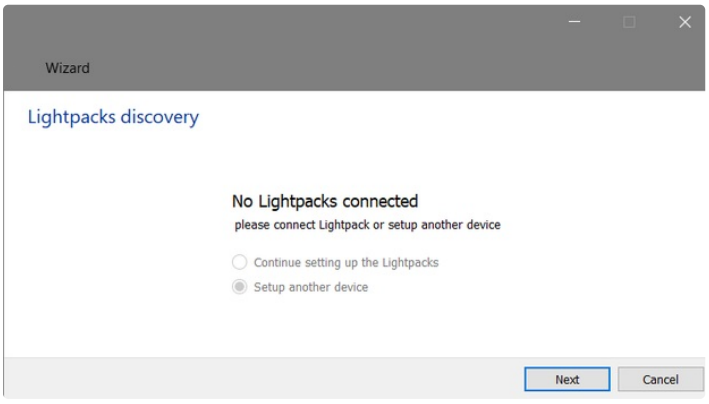
Step 7: Software Setup:

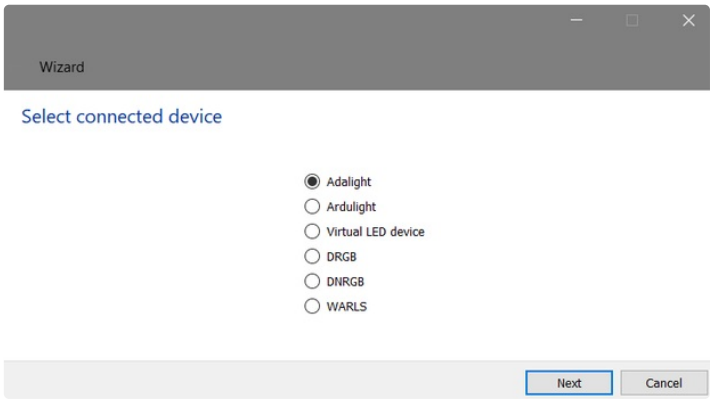
- Install the prismatik software in your PC.
- Open the software and click on device.
- Click on Run configuration wizard and simply click on Next -> Next.
- Enter the Serial Port number and click Next -> Next
- Enter the number of LEDs at sides (i.e. in my case top=0, side=65, bottom=0) and click on custom -> Next.
- Adjust the sliders to get white color on the tube lights and click on finish.
- Now you can choose different mode in the software and display on tube lights.

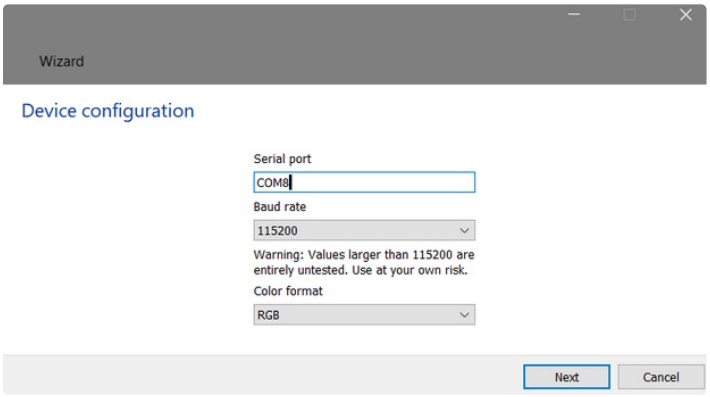
NOTE: The Arduino should be connected to the PC.

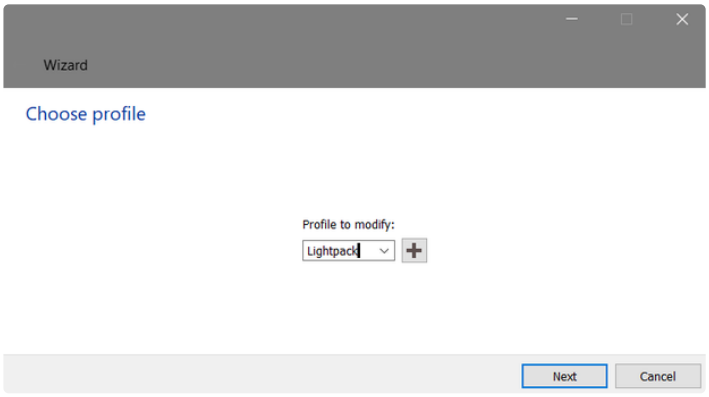


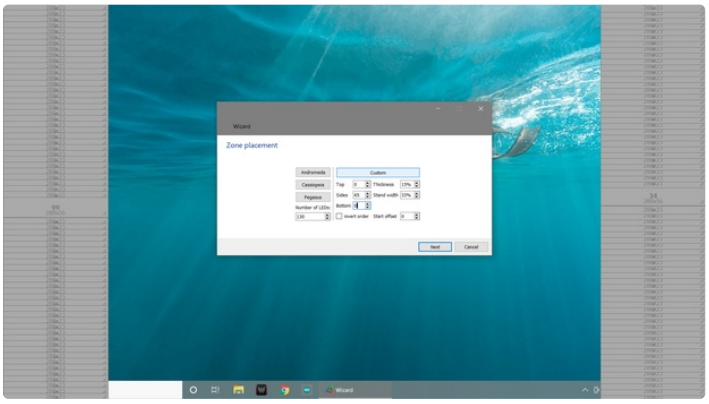


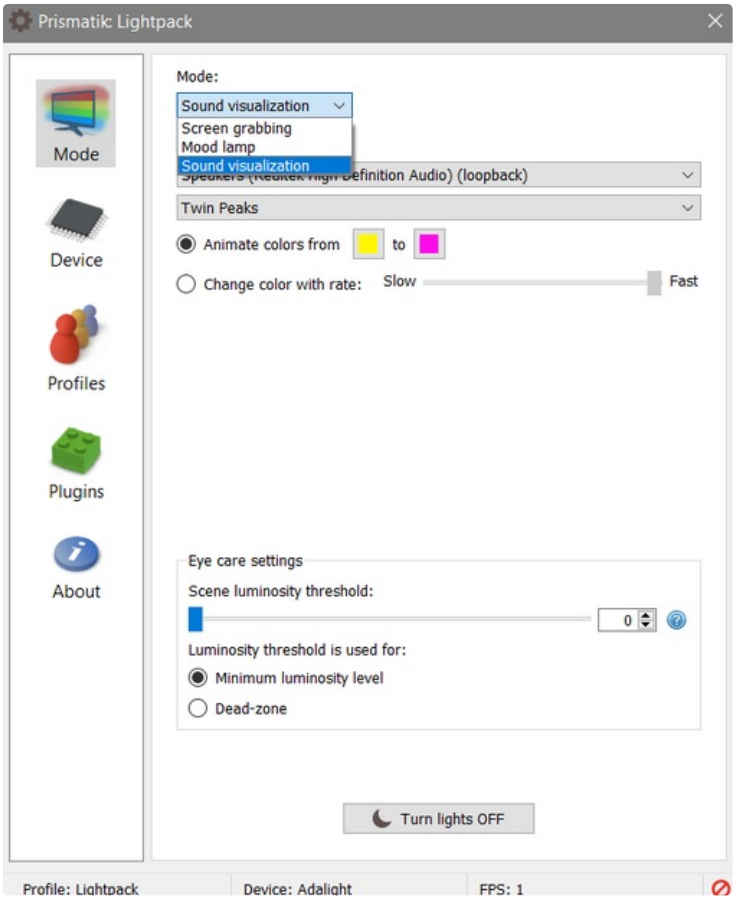












Step 8: Button Code:

- Button_Tube.zip
- Open the Button_Tube code in Arduino IDE.
- With this code you can change the color of the Tube Lights with the push of button.
- Install the Pushbutton library by clicking on sketch ->Include library -> Add zip library and select the Pushbutton-2.0 zip file in Button_Tube file.
- Enter the number of LEDs.

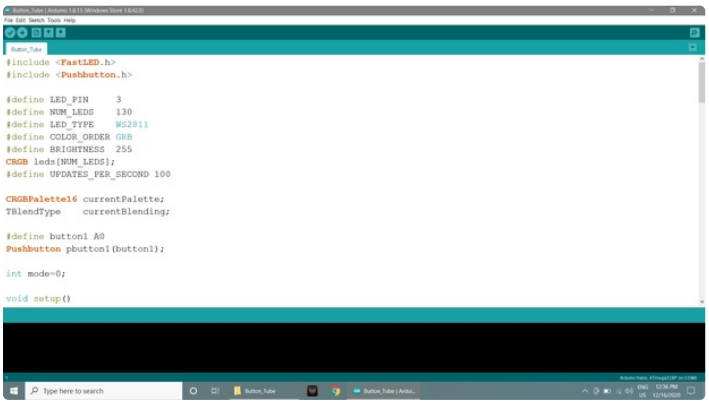
```
#define NUM_LEDS    130
```

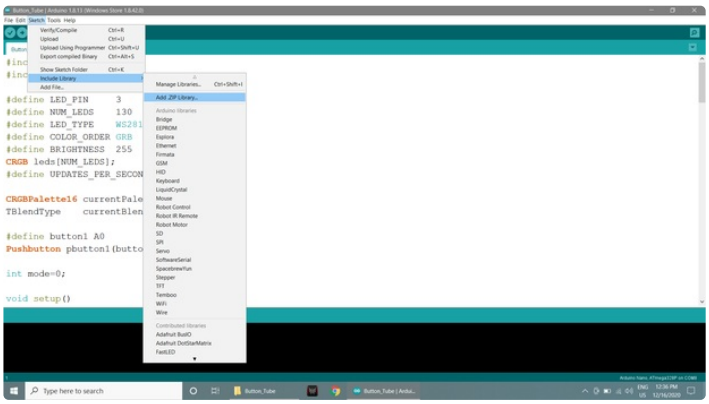
- In this code you can enter the values of the colors at CRGB(----, -----, -----);

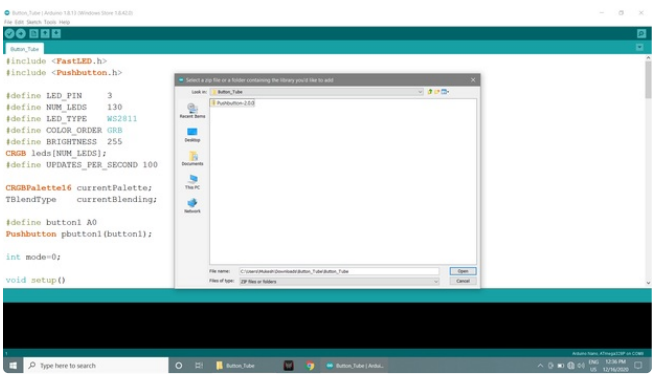
```
for(int i = 0; i < NUM_LEDS; i++){      <br>
leds[i] = CRGB(0, 100,255);

FastLED.show();
```

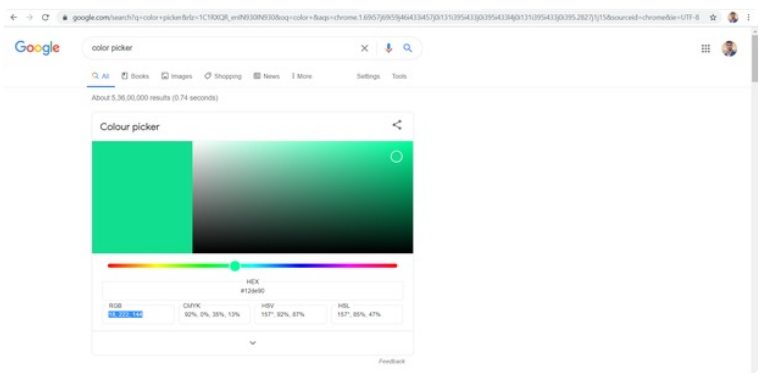
- You can copy paste the color values from color picker.

- Connect the Arduino to your PC, select the board type, select the port and upload the code.



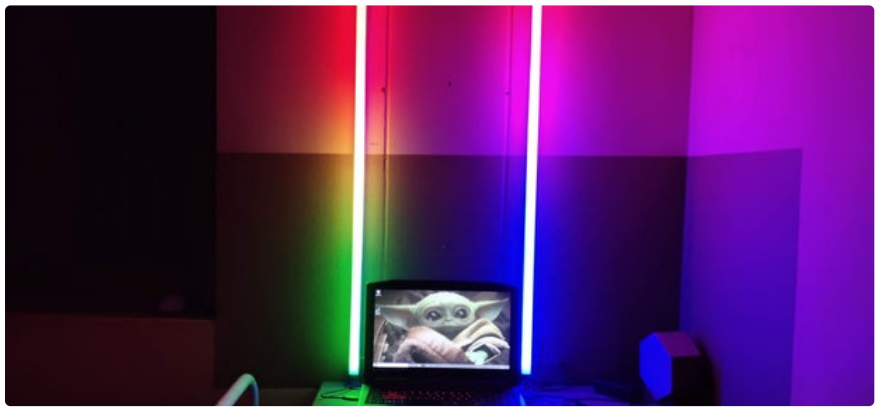


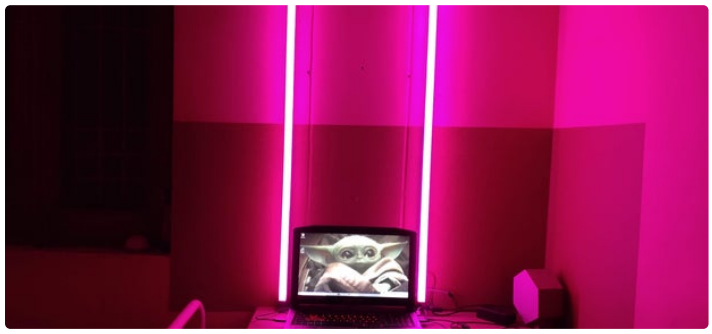




Step 9: NOTE:

- You can make this lights portable by using a power bank or some batteries.
- By using any Wi-Fi board like ESP8266 or ESP32 you can change the colors of the tube lights with a mobile app.





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