

## **Warning: Read First!**

**Do not power the ESP32 with both USB and 5V pin! This is dangerous.**

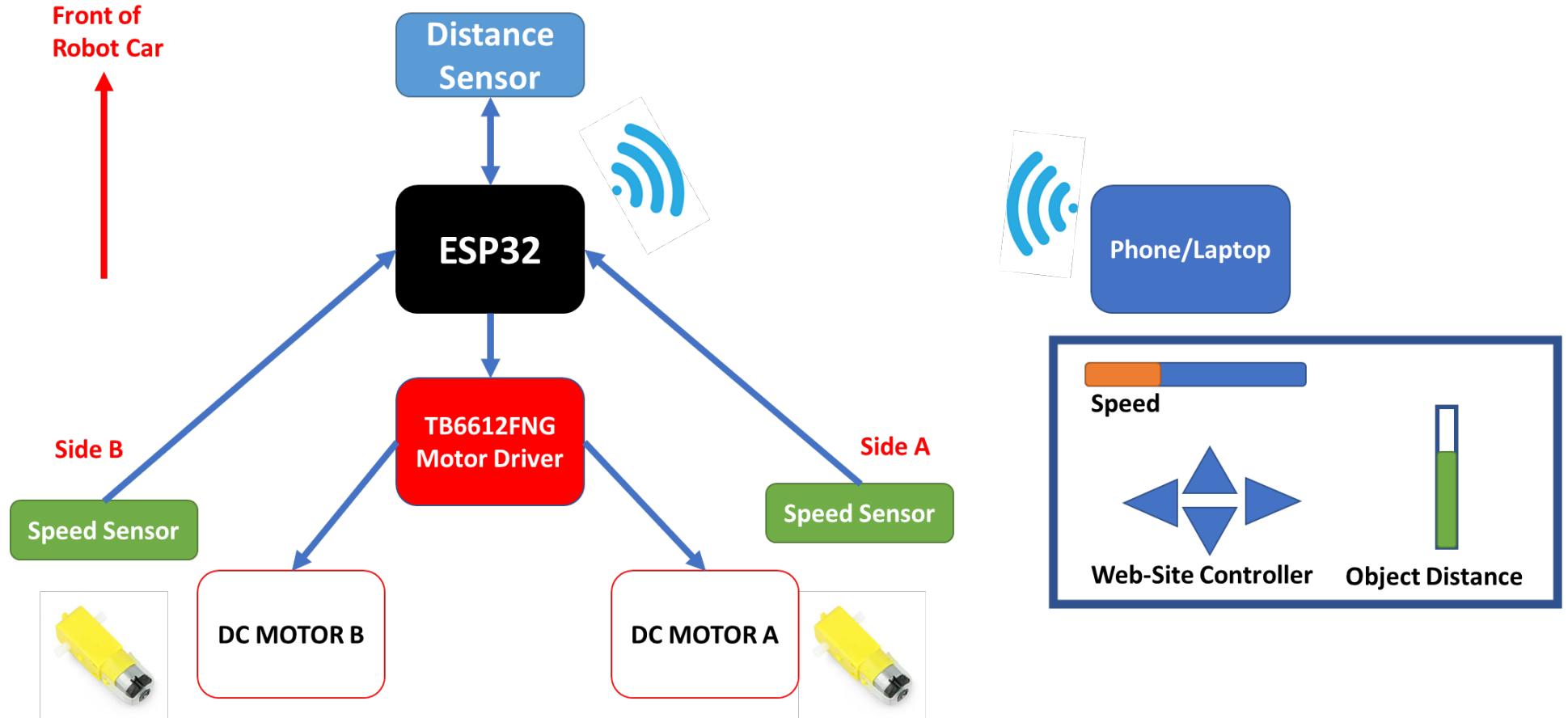
Use only one power source at a time either:

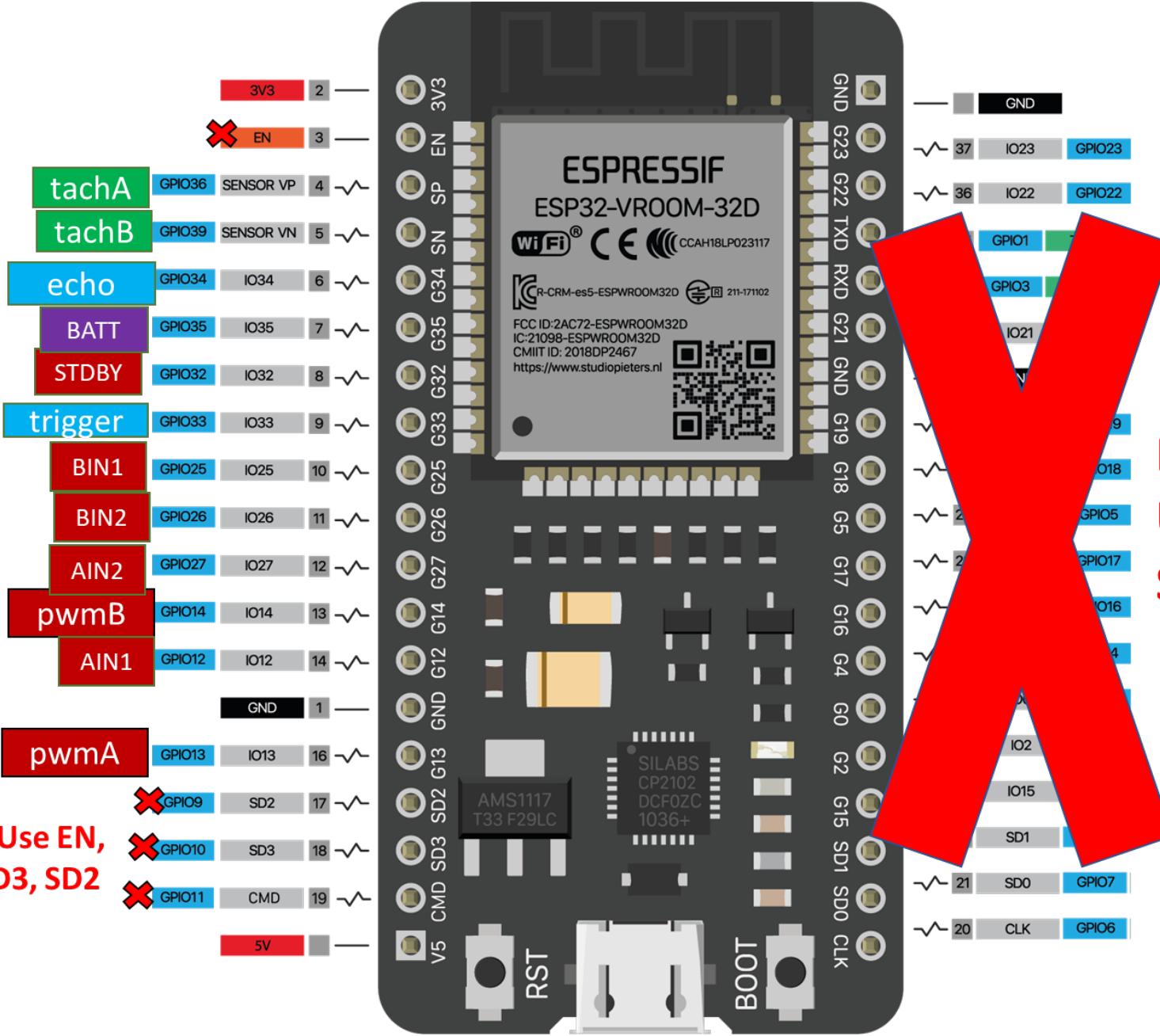
- USB
- Injecting 5V-12V into the 5V pin from battery pack

But not at the same time!

**Do not connect a load (i.e., external circuit) that demands more than 40mA (milli amps).** Hence, we don't ever connect GPIO pins directly to any DC motors.

**Do not input a voltage higher than 3.3V into the GPIO pins.** One should always reduce the voltage to about 3V or less.





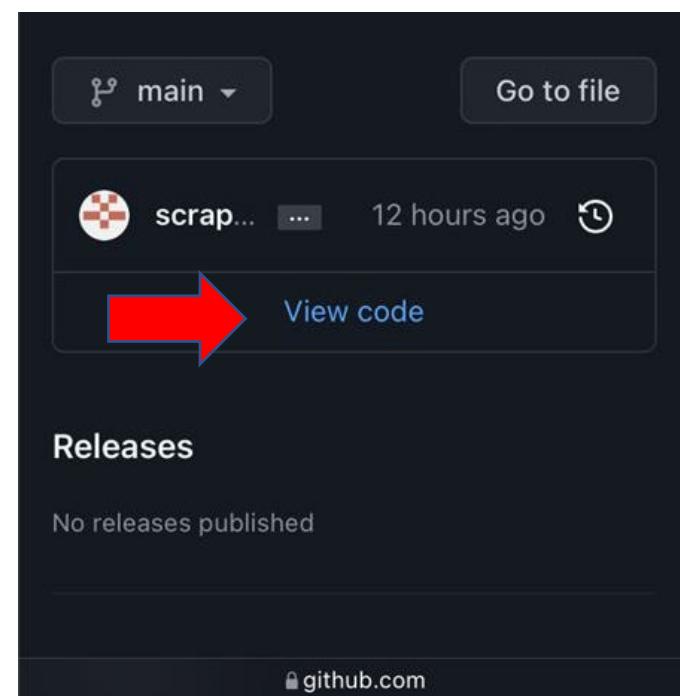
**Do Not Use EN,  
CMD, SD3, SD2**

**Do Not  
Use This  
Side**

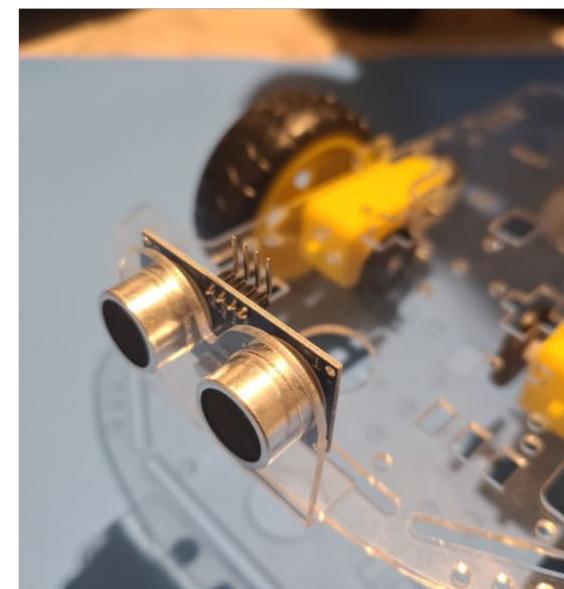
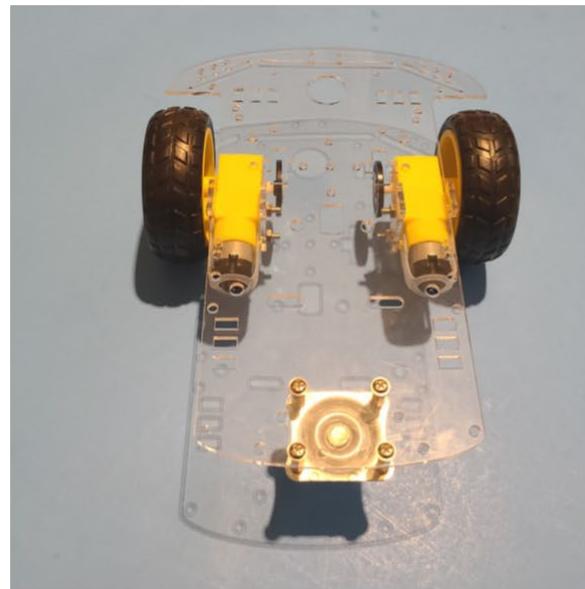
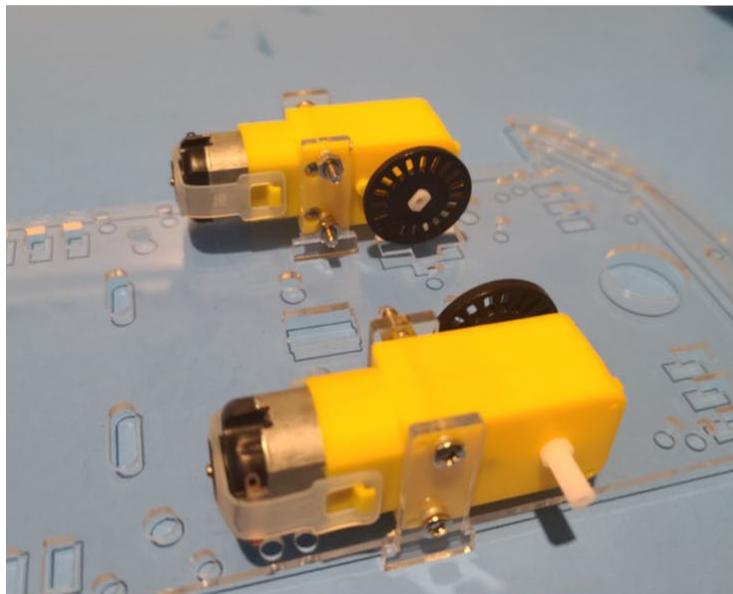
Where to find all Module PDFs

<https://github.com/Intelligent-Mobile-Device-Lab-at-KSU/stem-camp>

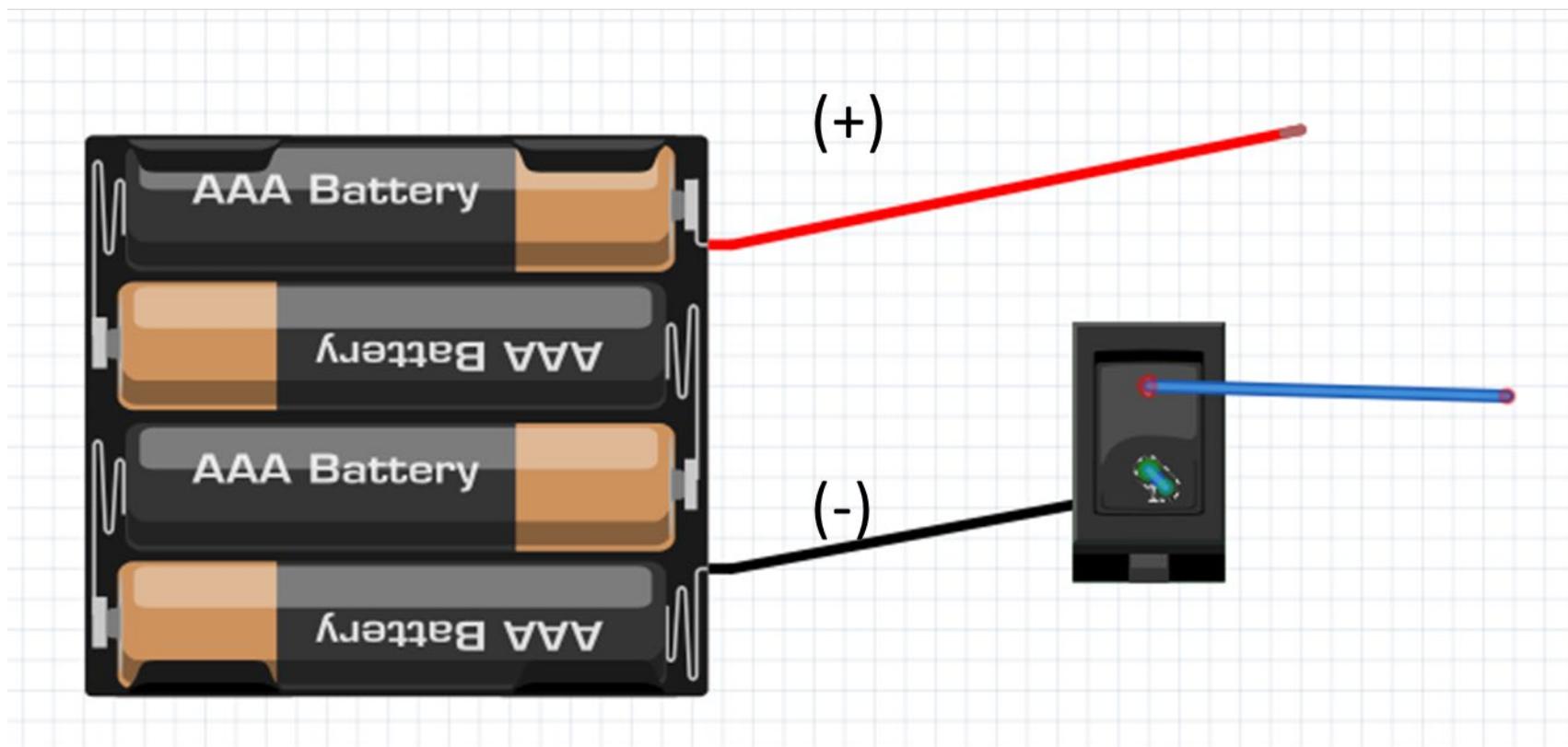
Open the camera app on your phone and point at the QR code:



# Module 1



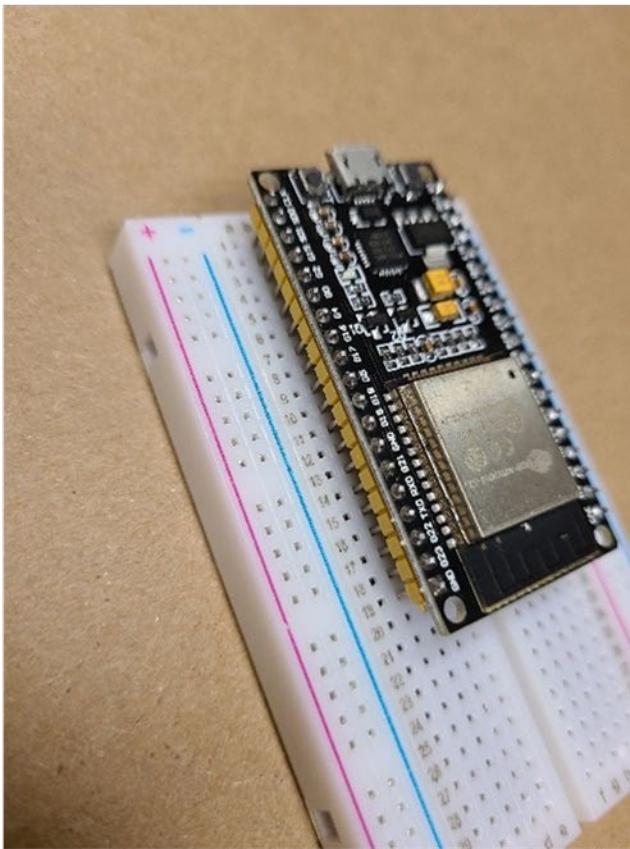
# Module 2



# Module 3

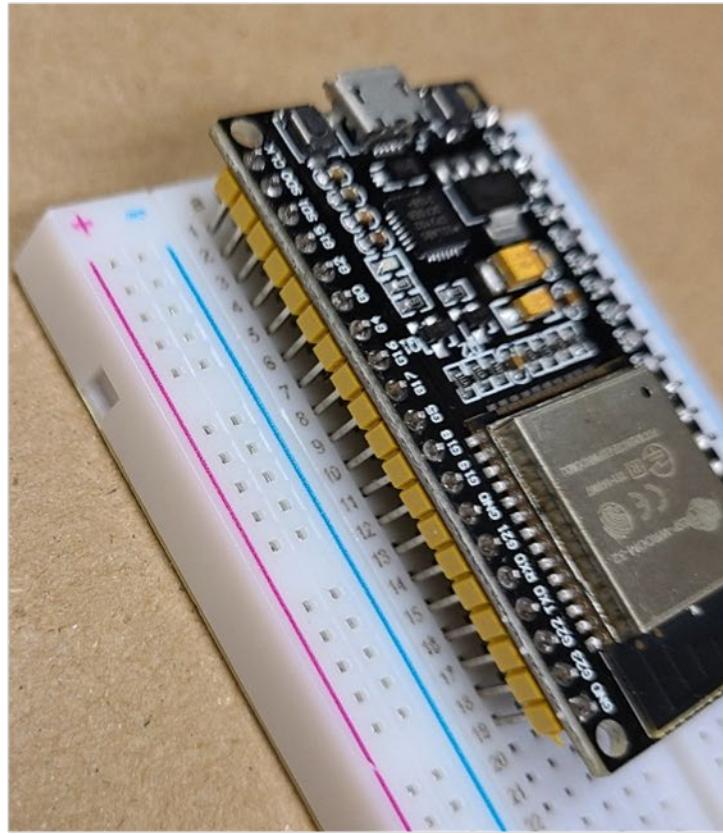
If you are able to expose columns **A** and **J** **while mounting**, that is good.

Both column **A** and **J** are exposed.

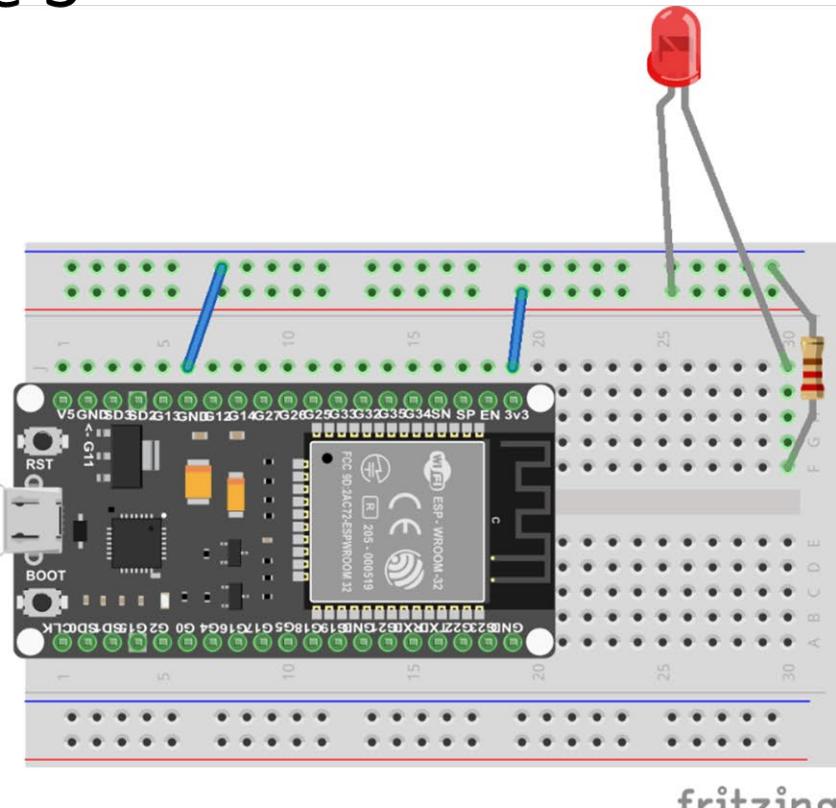
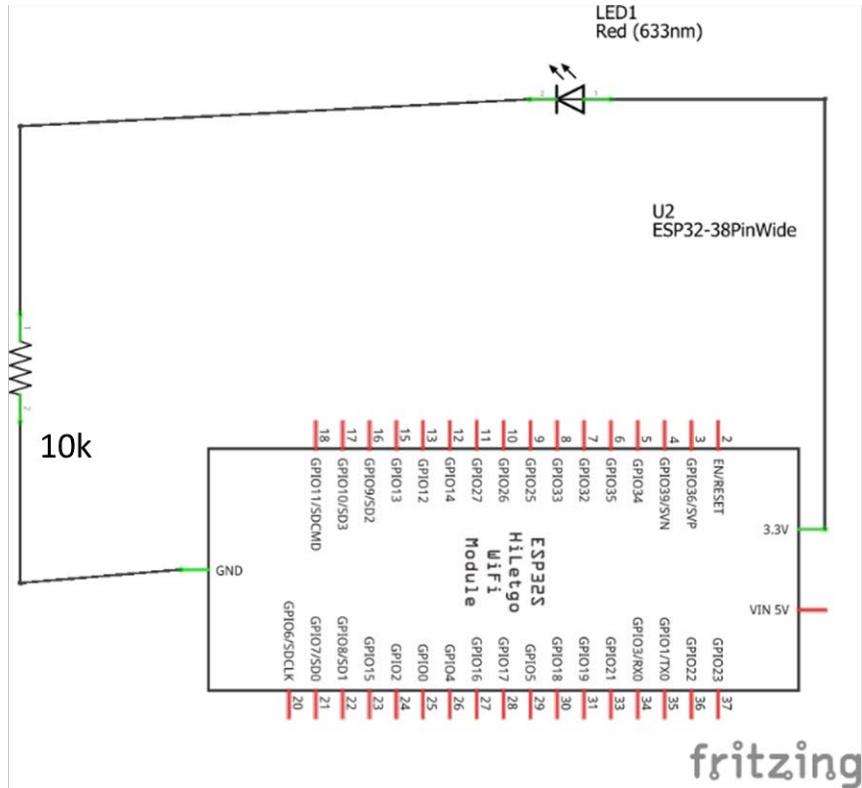


If you are not able to expose both column **A** and **J** then only expose column **J**, by inserting the side of the ESP32 into column **A**.

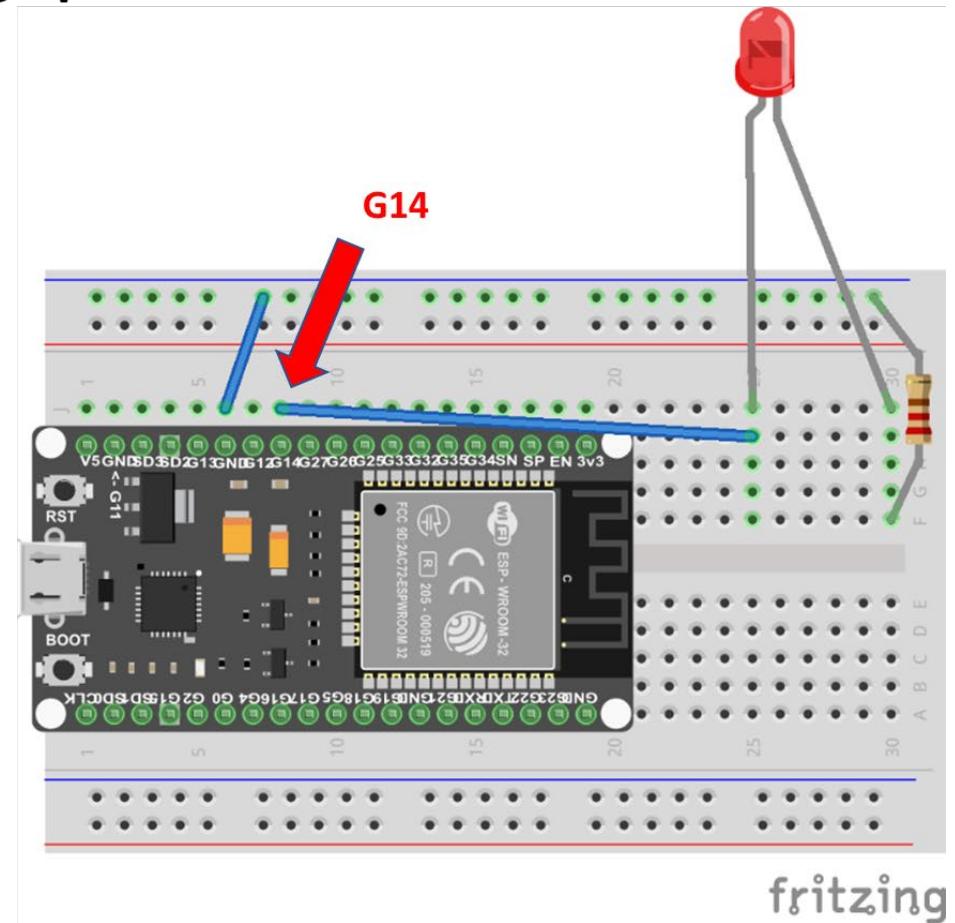
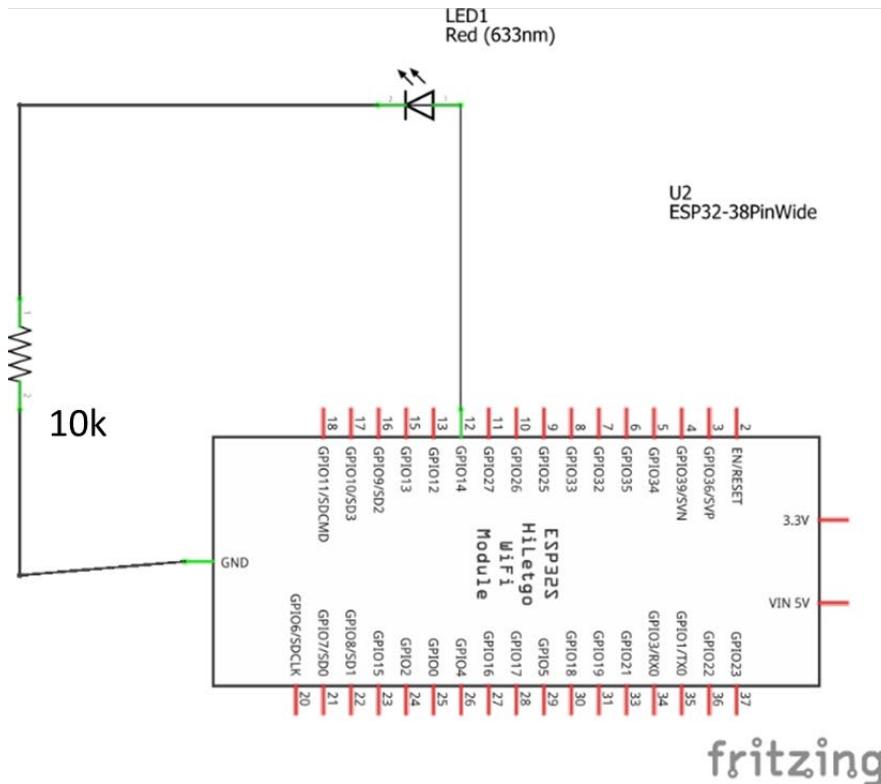
Only column **J** is exposed.



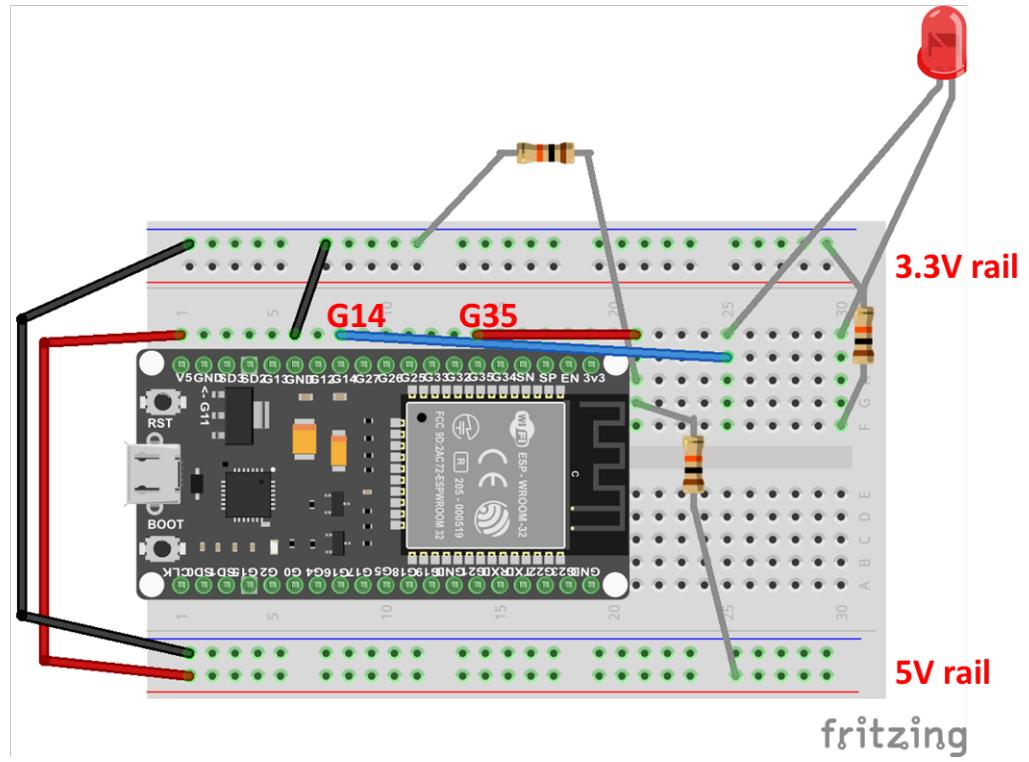
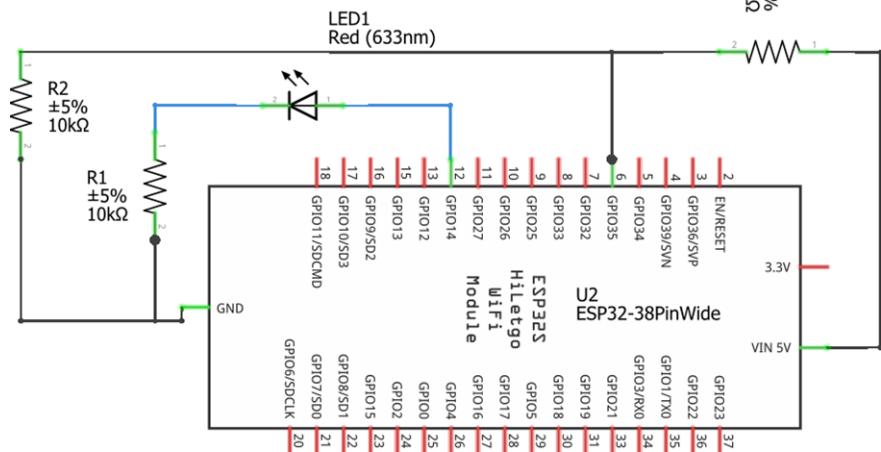
# Module 3



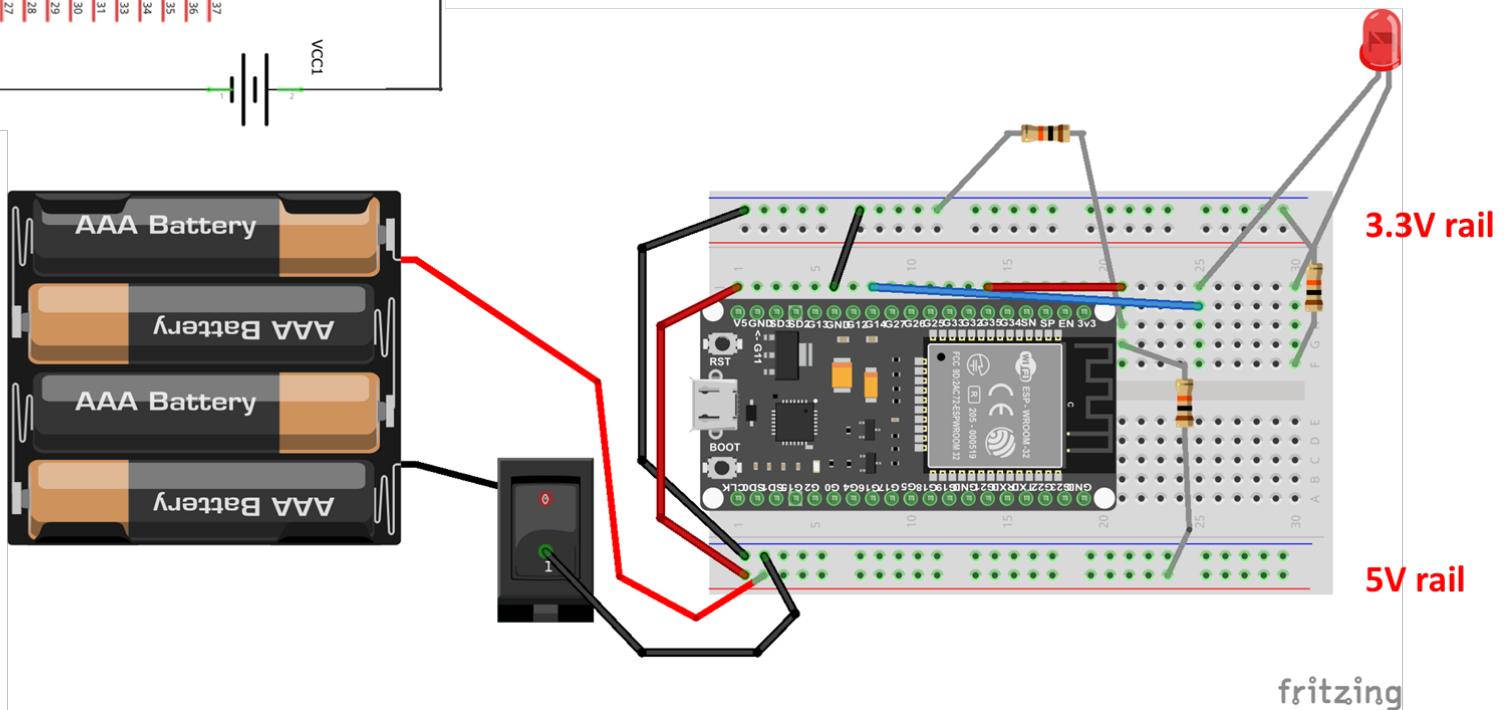
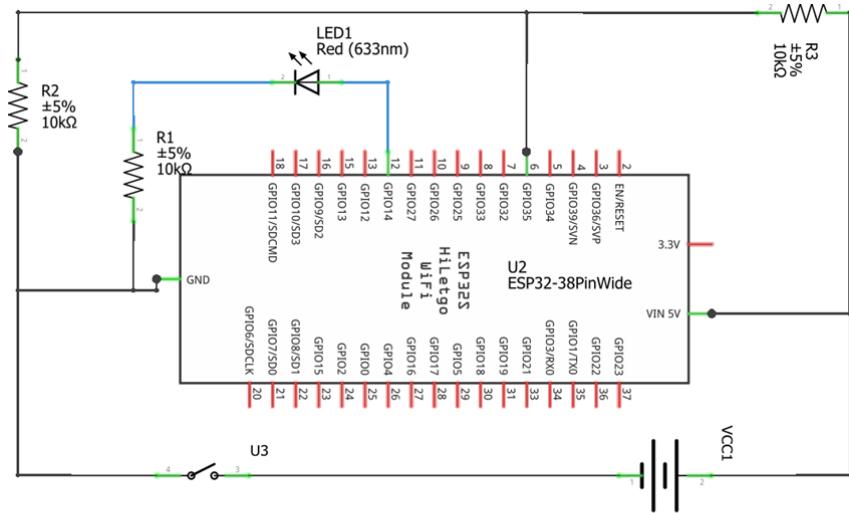
# Module 4

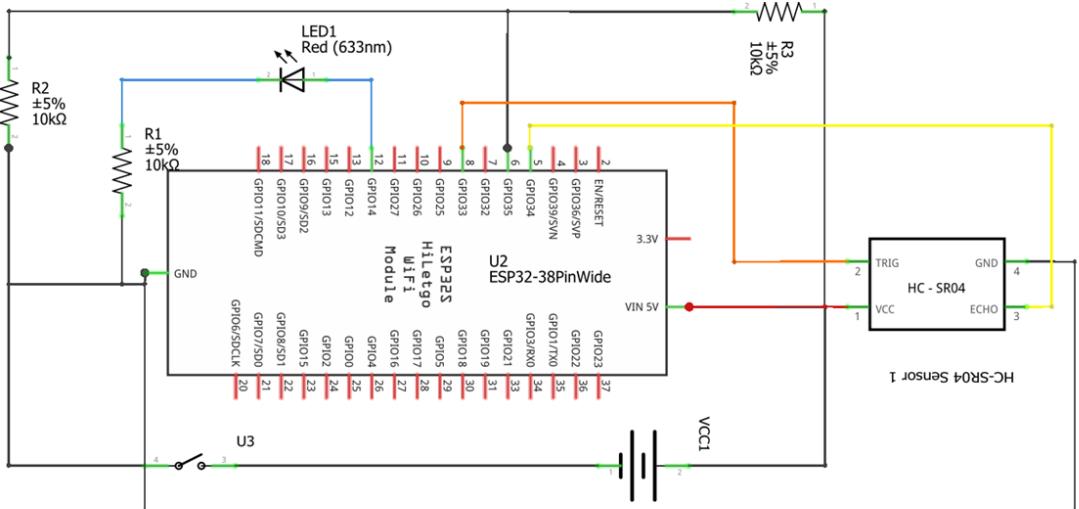


# Module 5

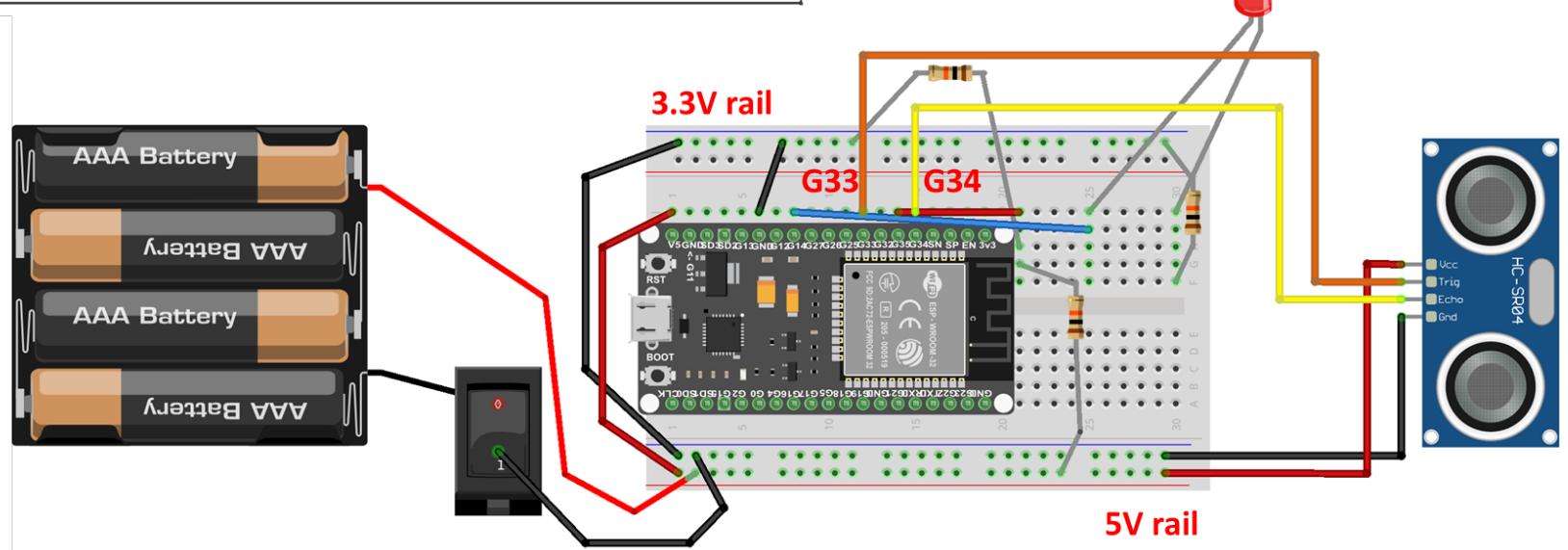


# Module 6



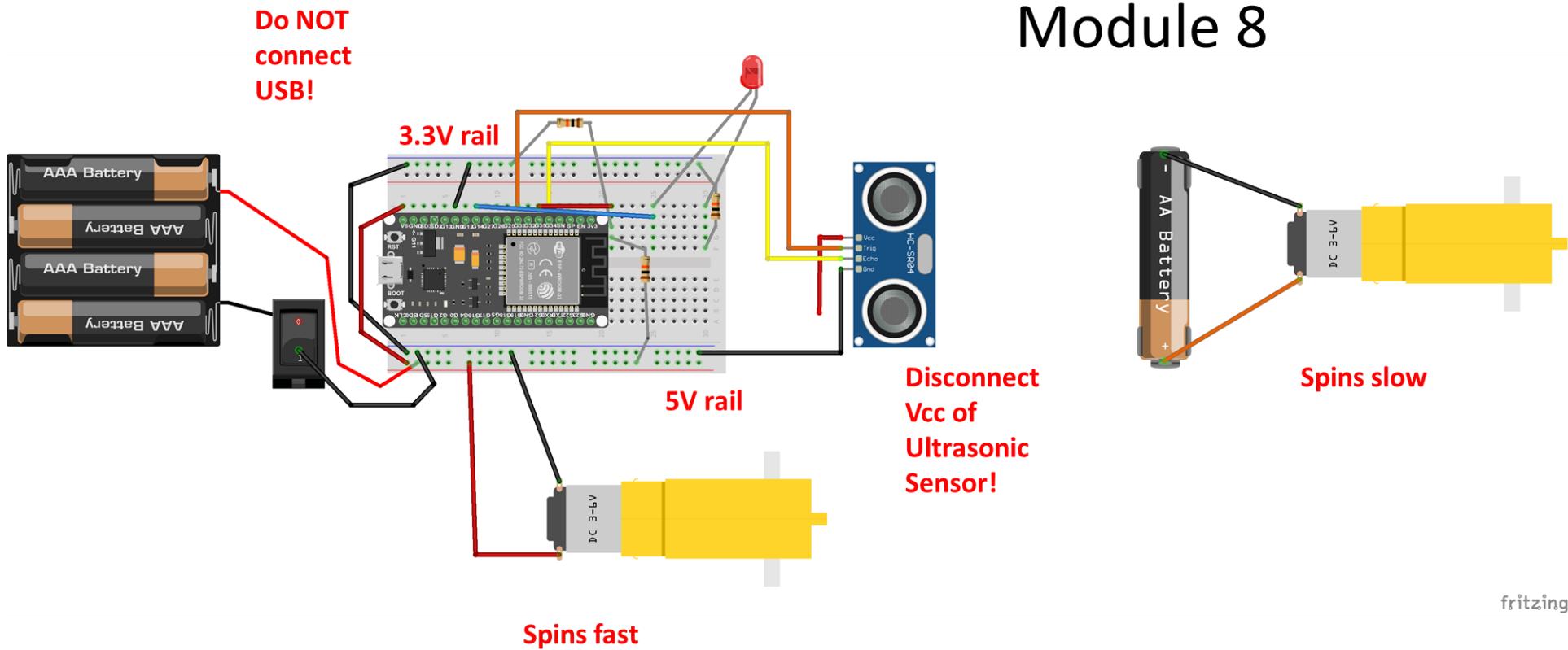


## Module 7

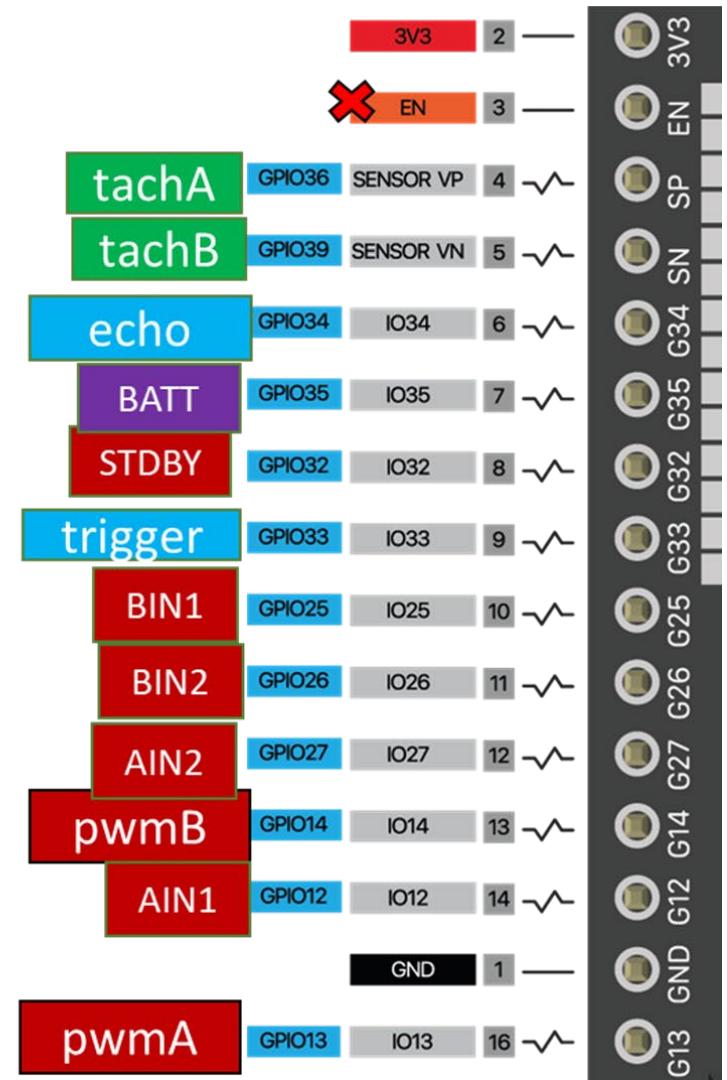
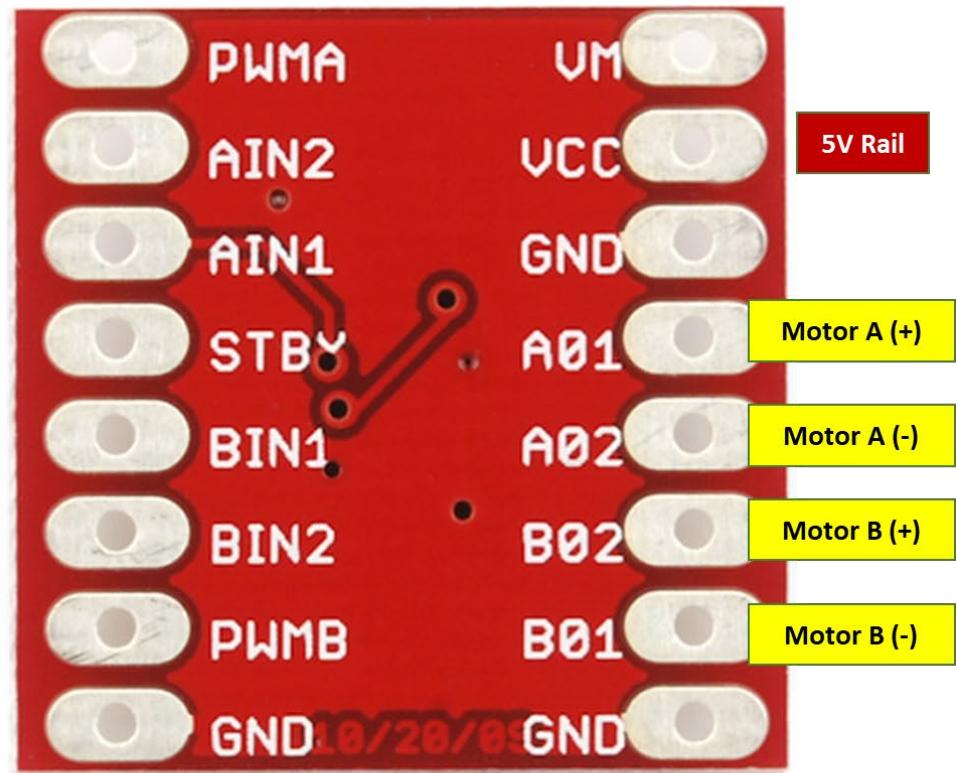


**Do not turn the battery pack on! You will damage the ultrasonic sensor.**

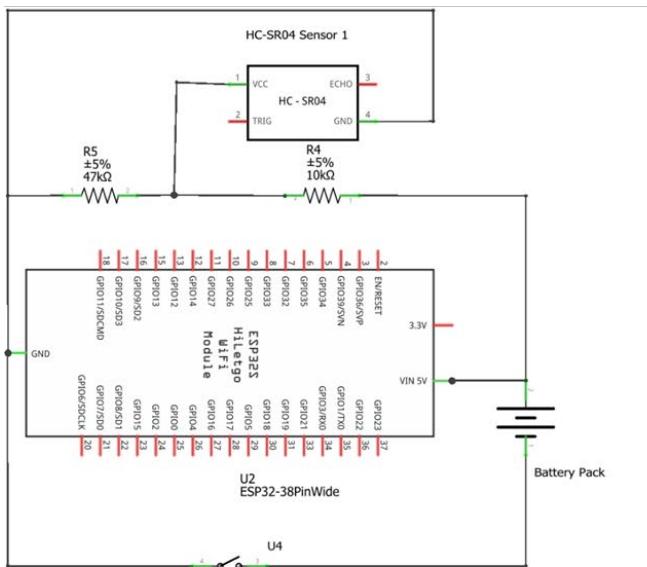
# Module 8



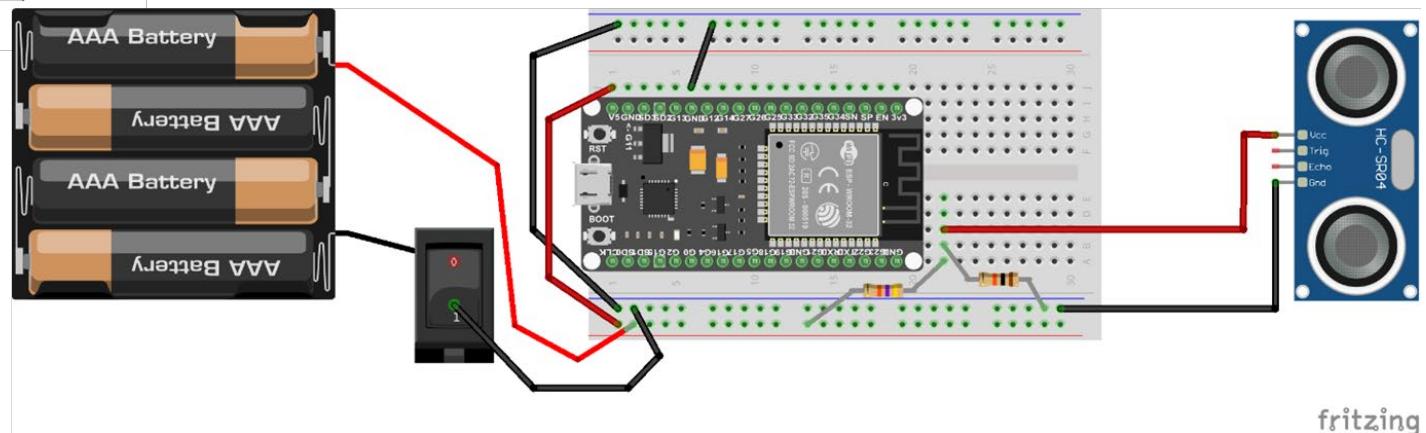
# Module 9



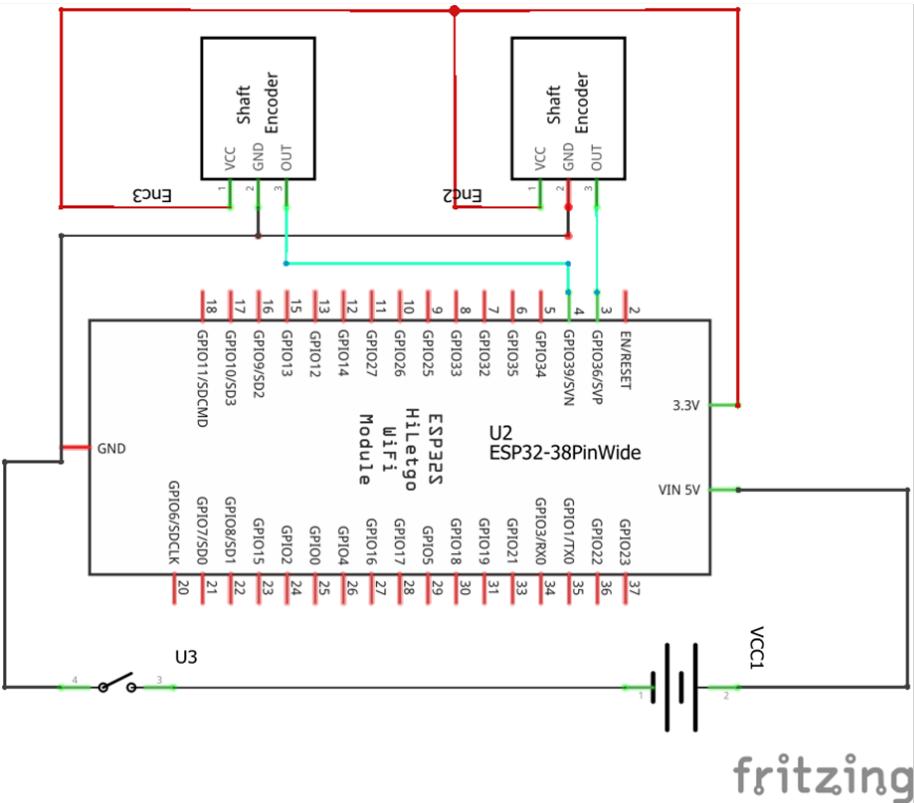
# Module 10 (only affects the Ultrasonic Sensor Vcc)



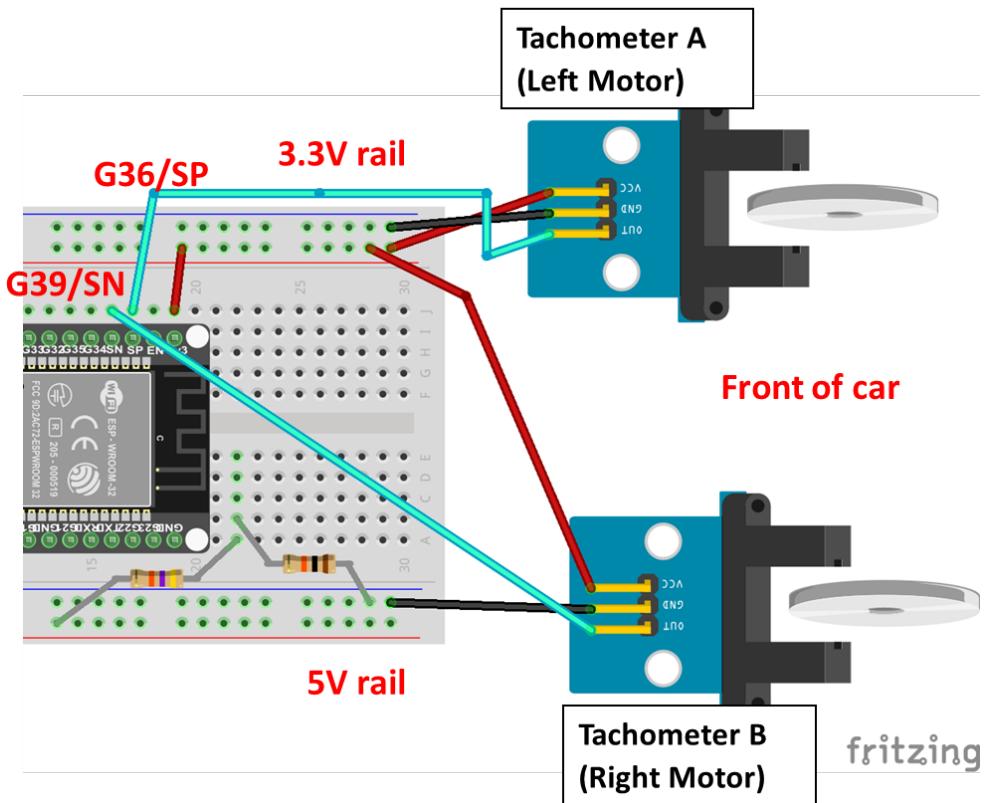
Create a new Vcc circuit for the Ultrasonic Sensor.



fritzing



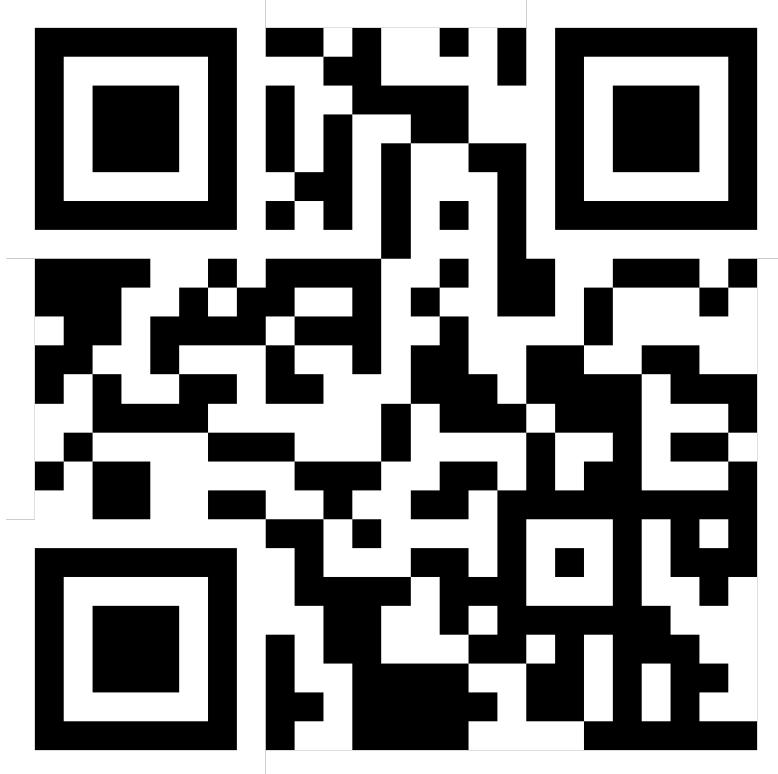
## Module 11 (adding Tachometers)



## Module 12

Where to find Bluetooth web-page (laptop/android phone only)

<https://www.raddmusic.com/rover/>



Click connect. Select your ESP32. Wait for starting notifications.

Then Type: **HELLO** click send

The IP address will appear.