

Warning: Read First!

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

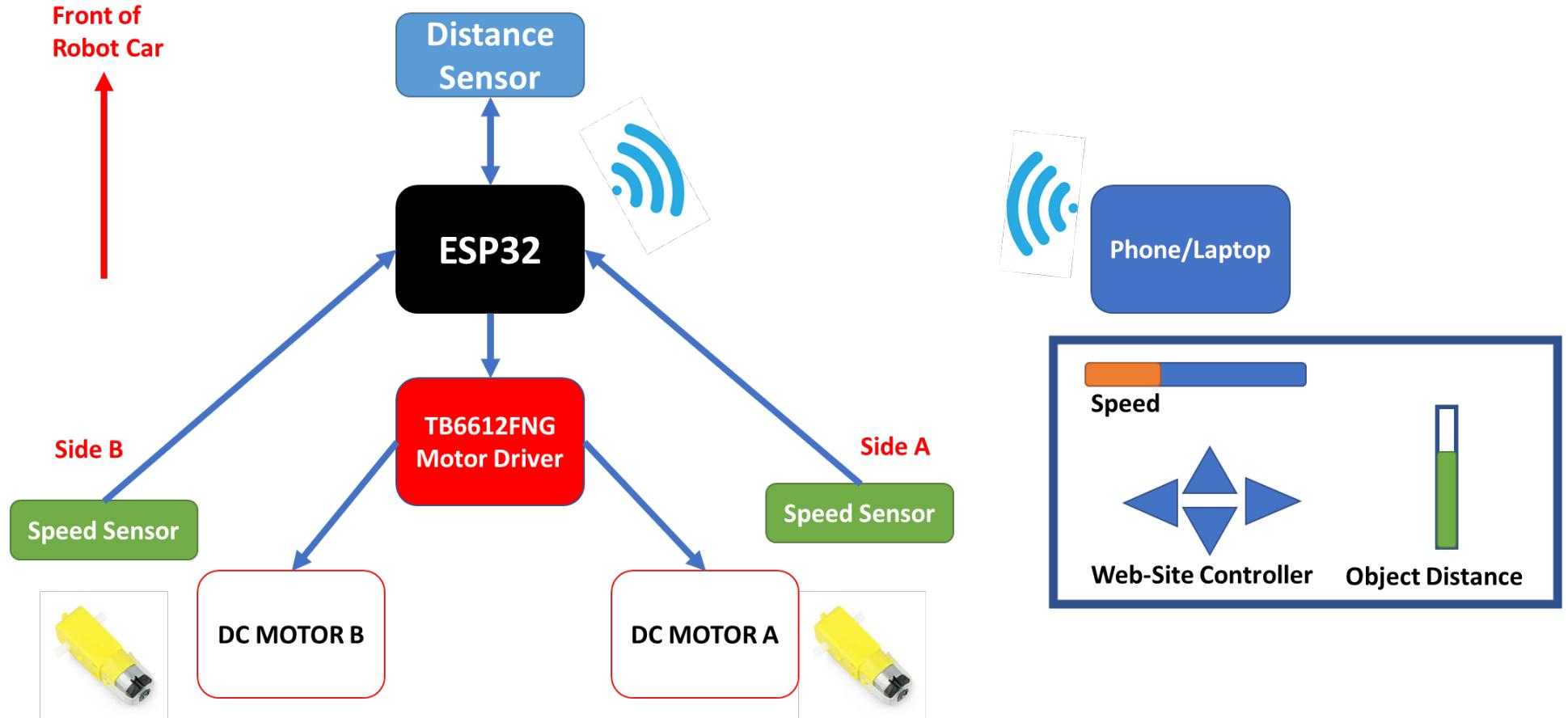
Use only one power source at a time either:

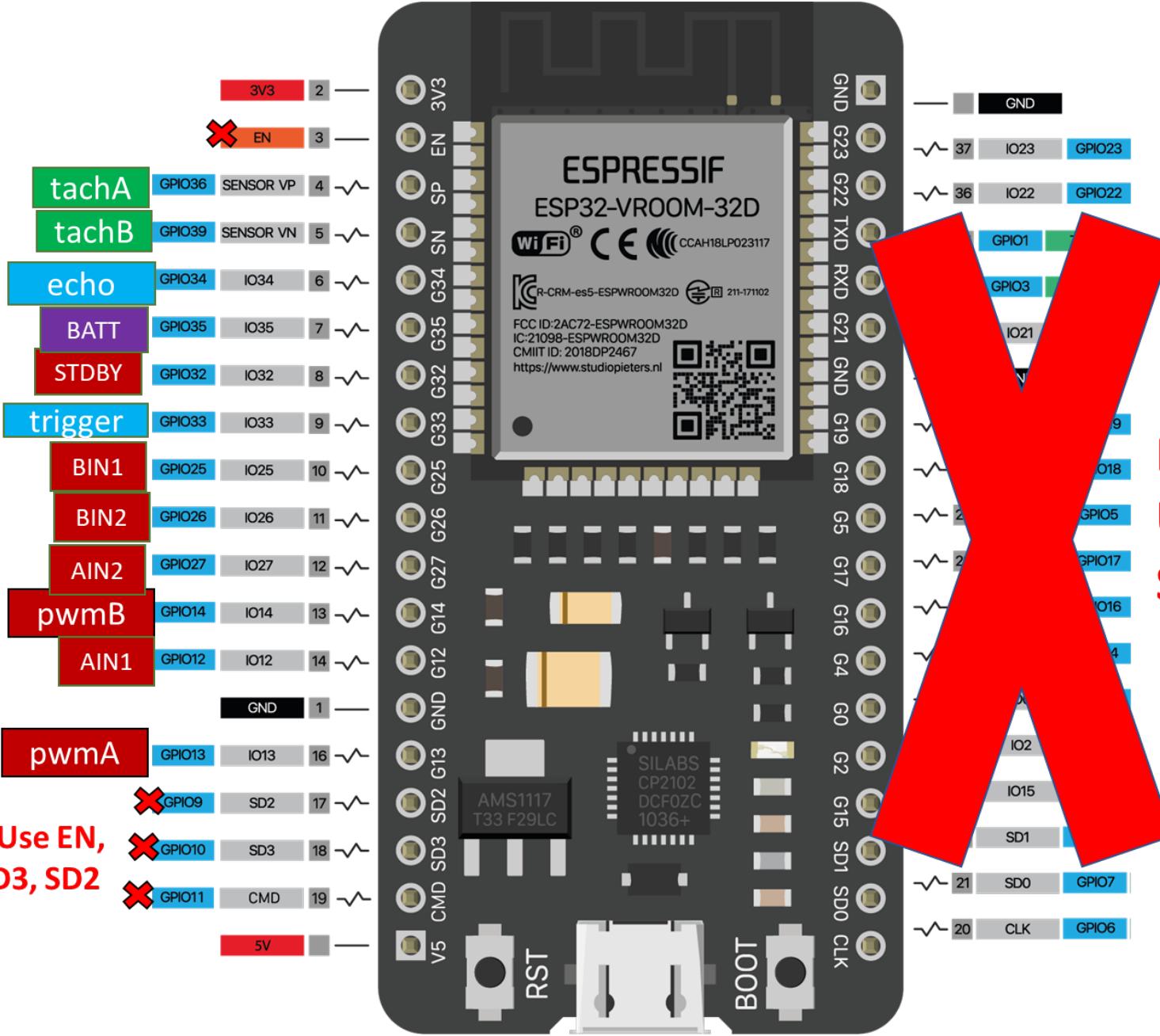
- USB
- Injecting 5V-12V into the 5V pin from battery pack

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.





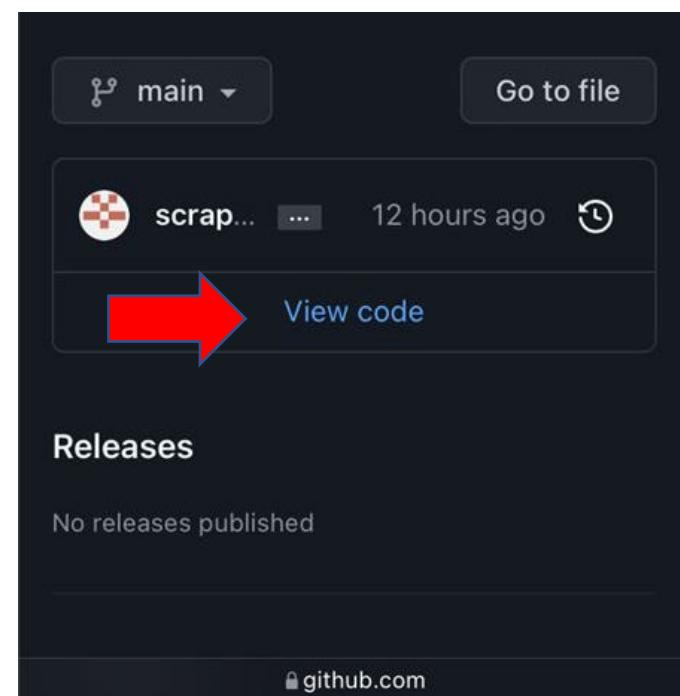
**Do Not Use EN,
CMD, SD3, SD2**

**Do Not
Use This
Side**

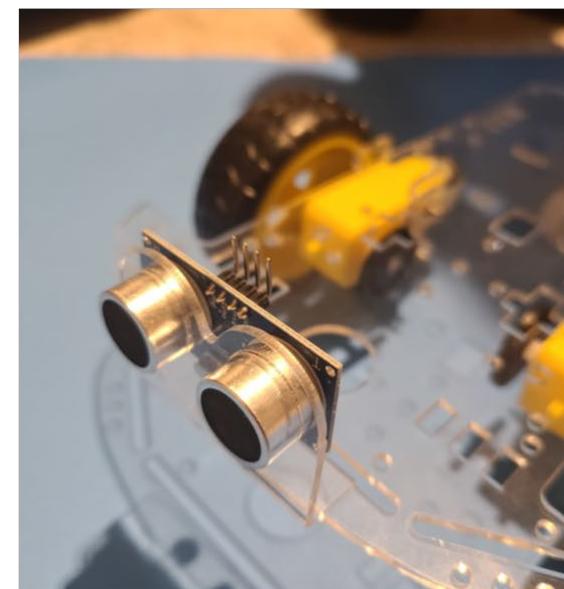
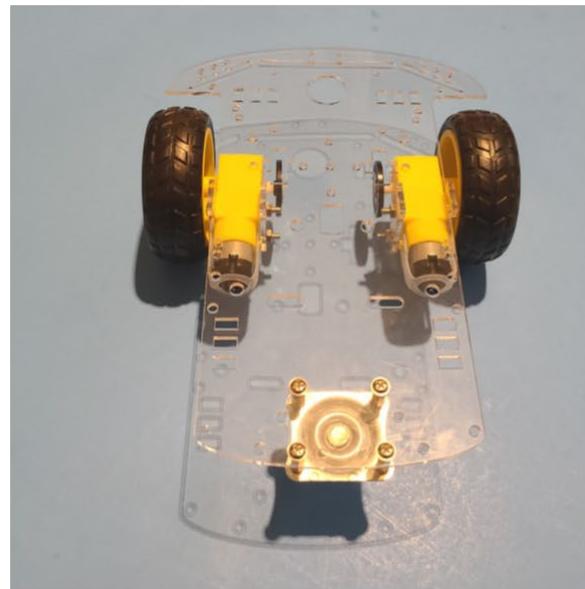
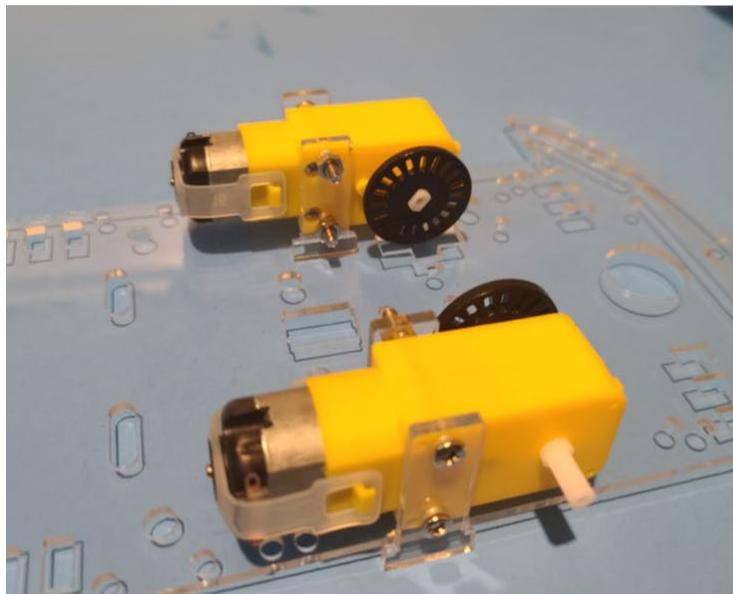
Where to find all Module PDFs

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

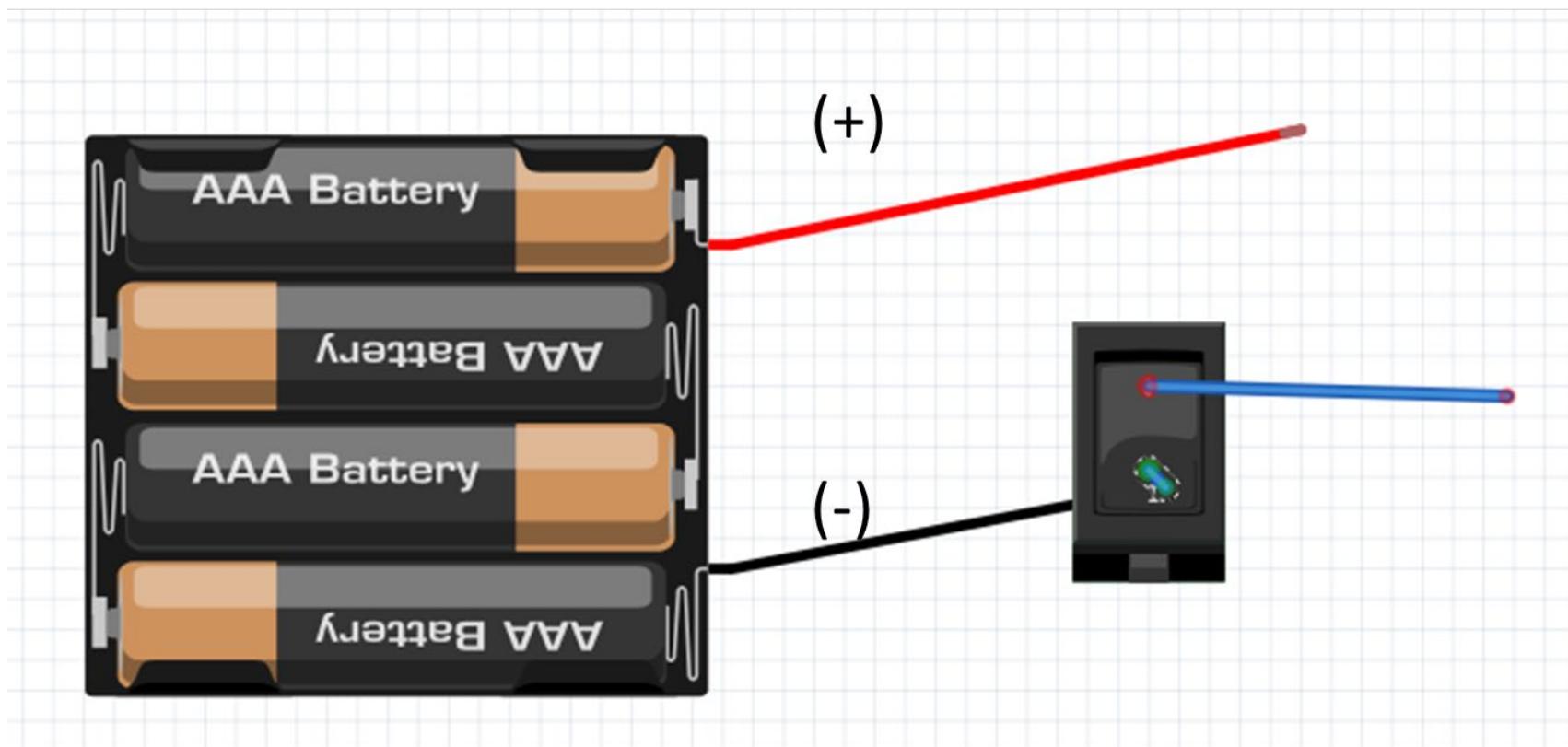
Open the camera app on your phone and point at the QR code:



Module 1



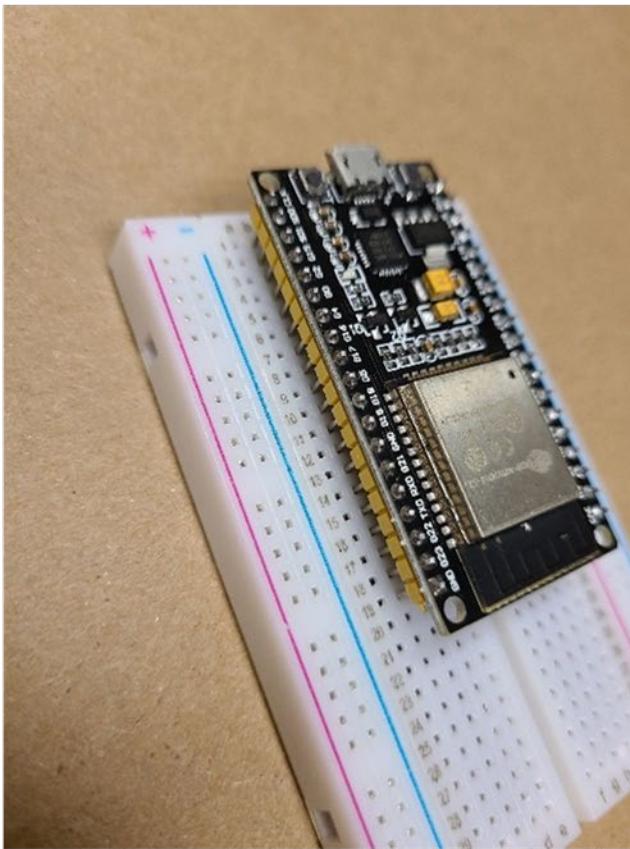
Module 2



Module 3

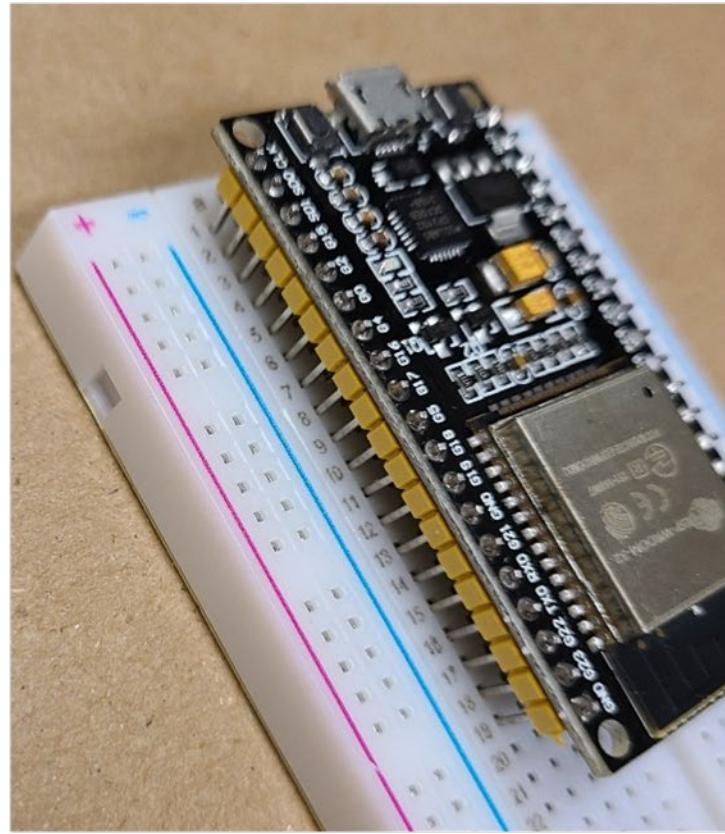
If you are able to expose columns **A** and **J** **while mounting**, that is good.

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

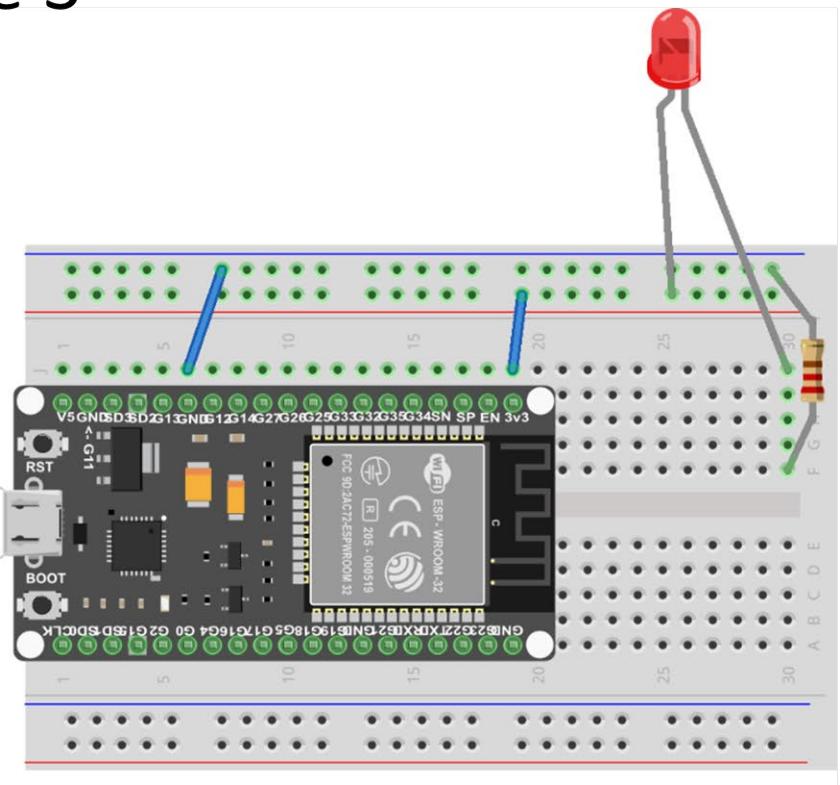
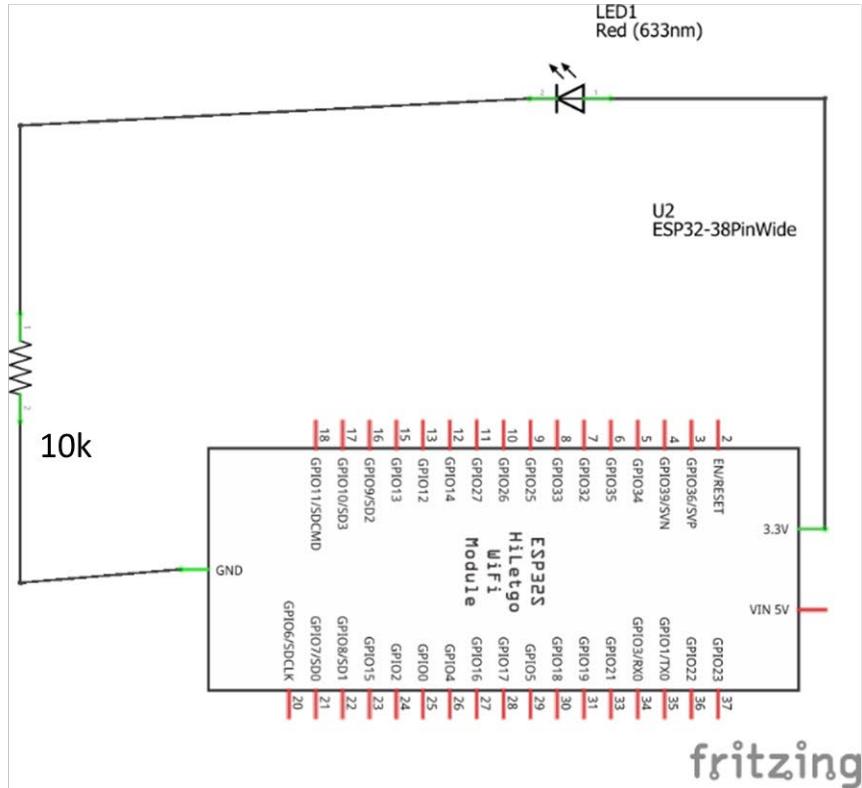


If you are not able to expose both column **A** and **J** then only expose column **J**, by inserting the side of the ESP32 into column **A**.

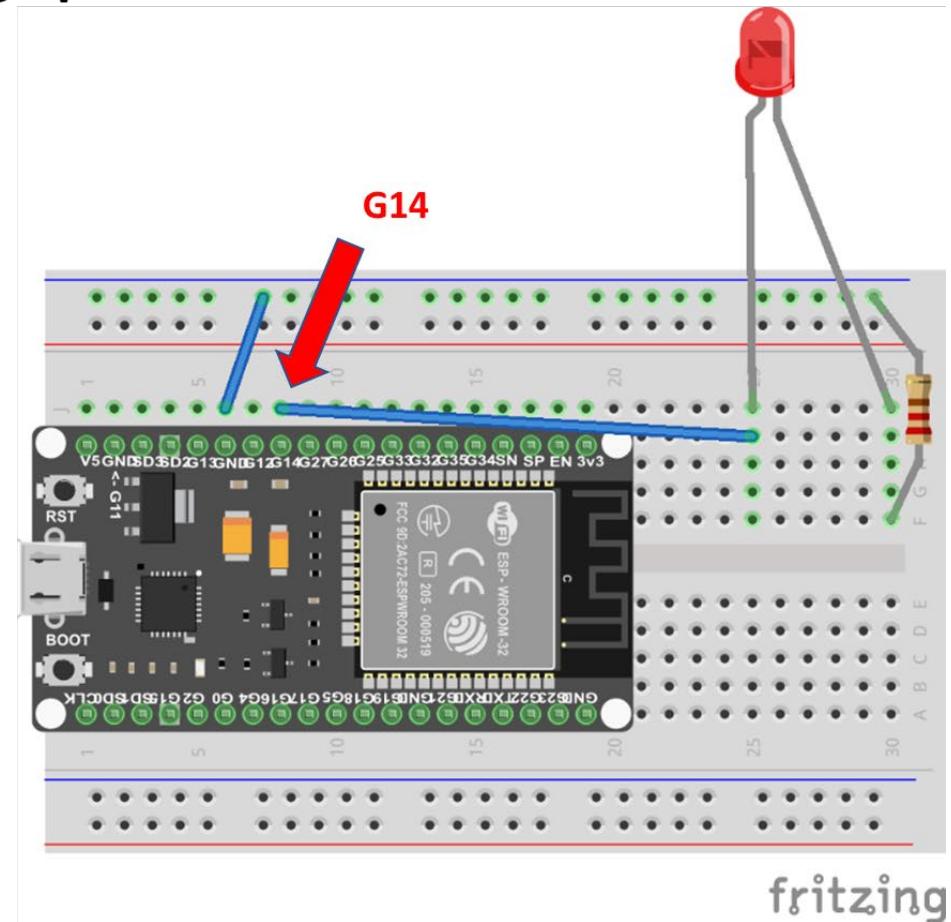
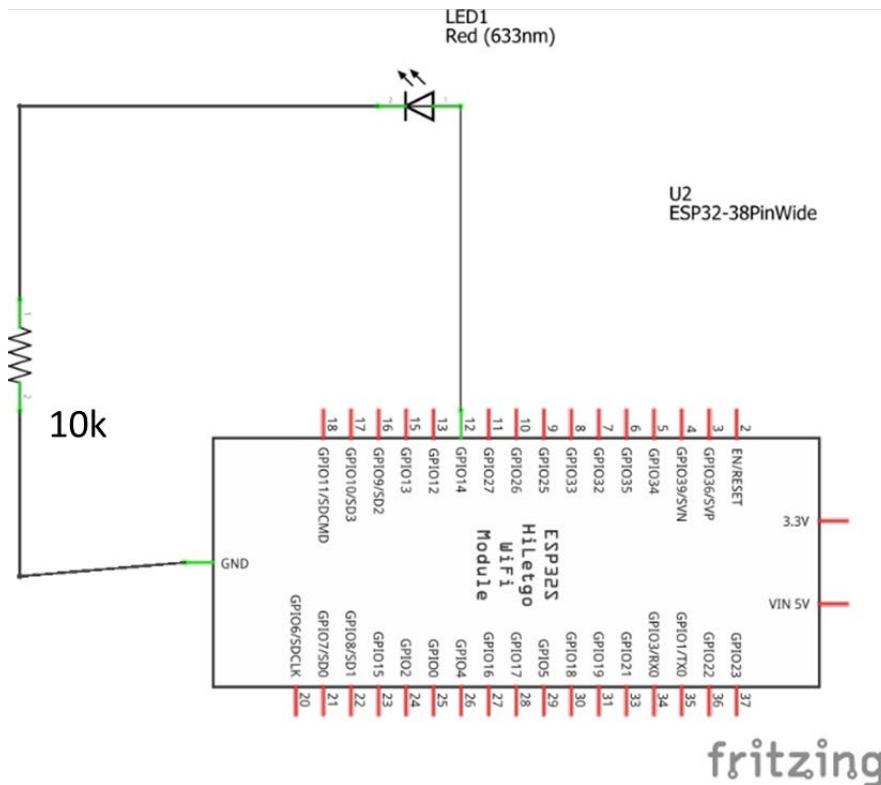
Only column **J** is exposed.



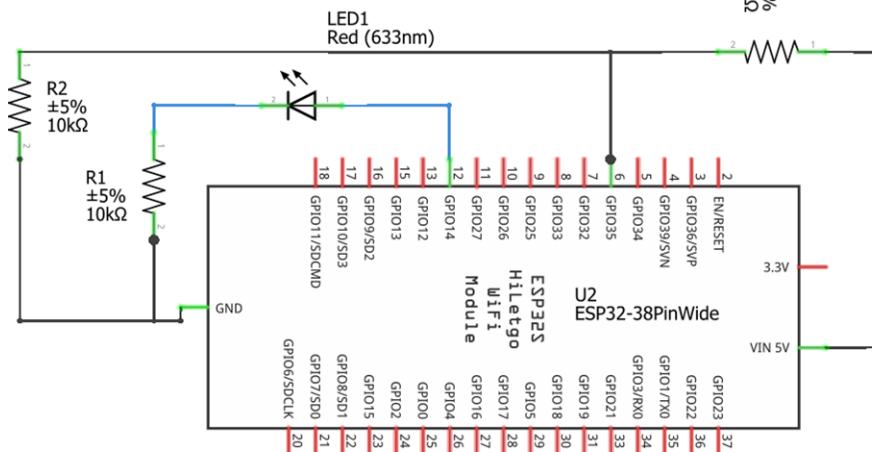
Module 3



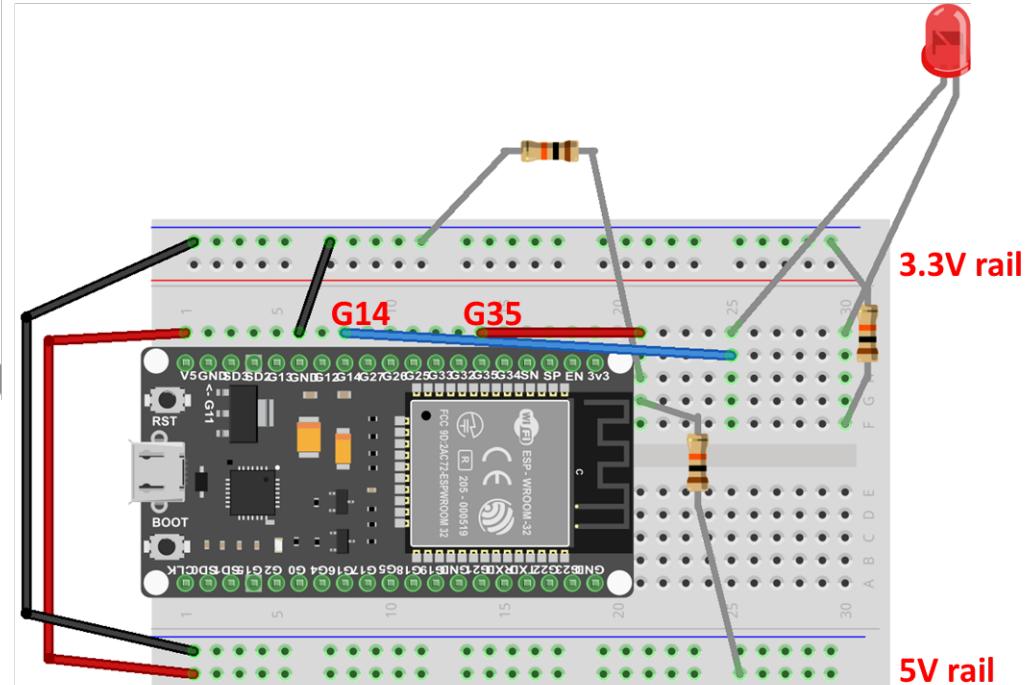
Module 4



Module 5

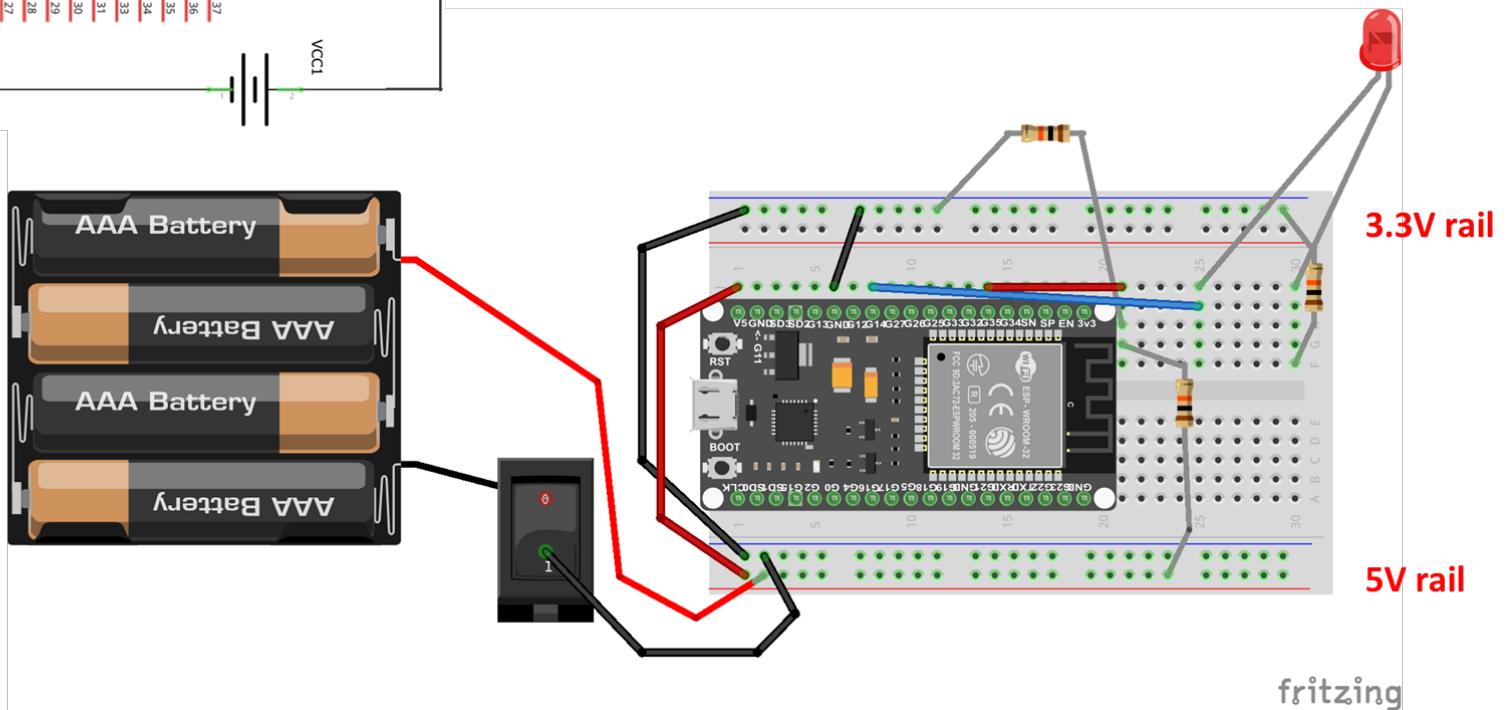
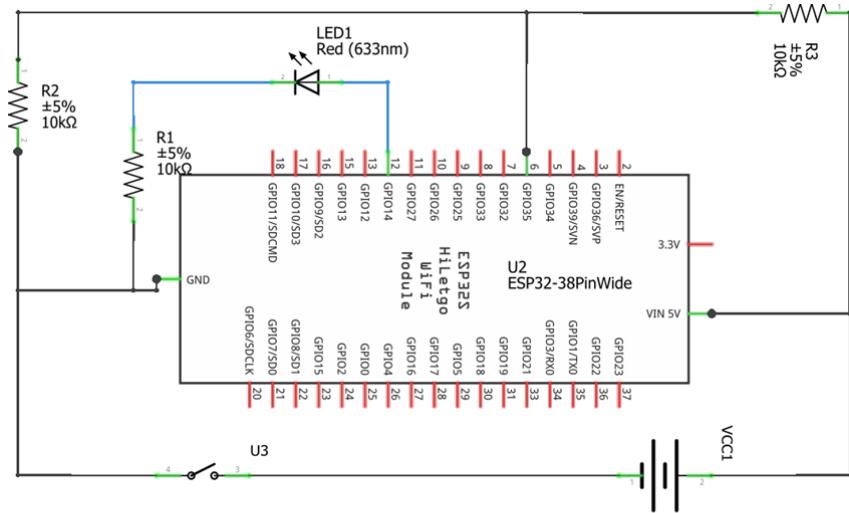


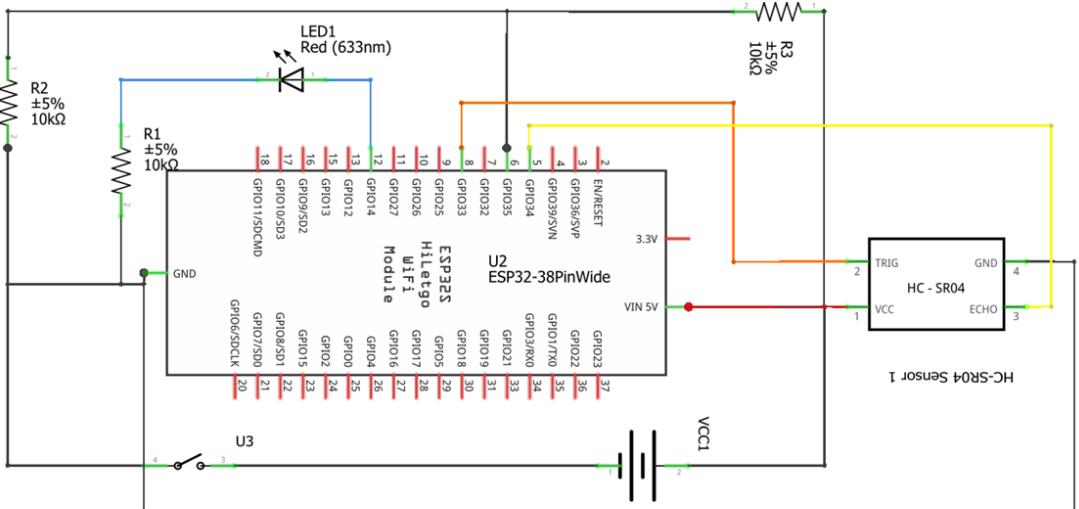
fritzing



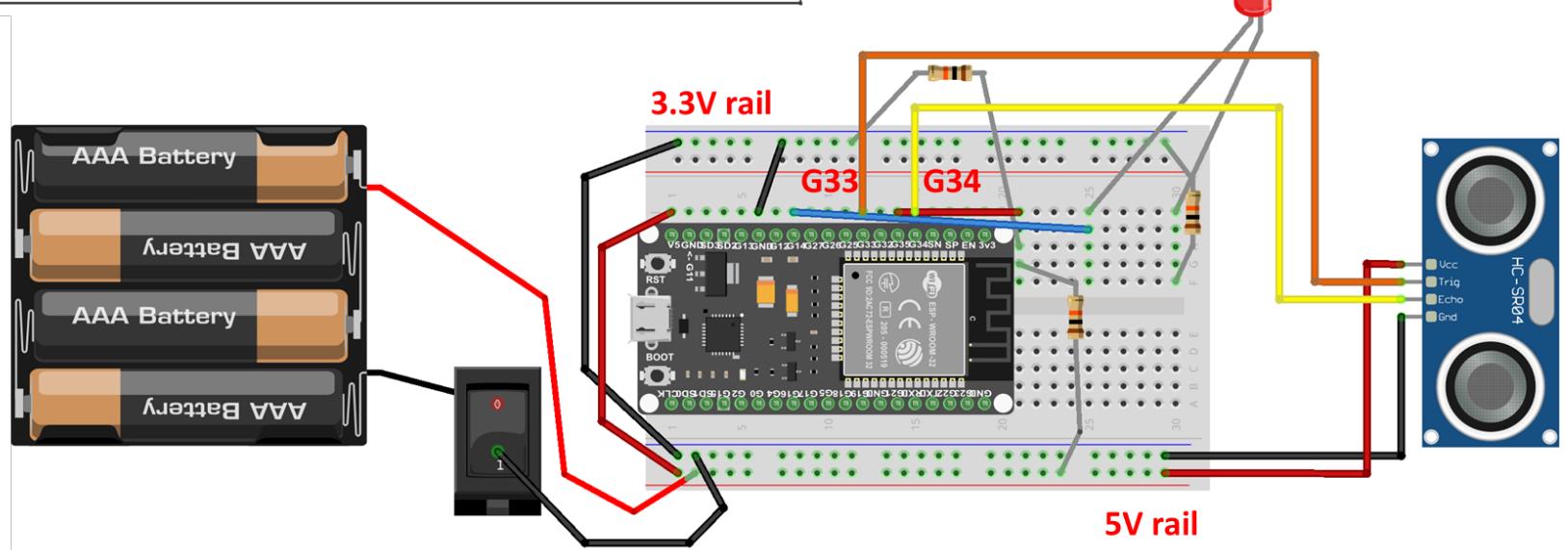
fritzing

Module 6



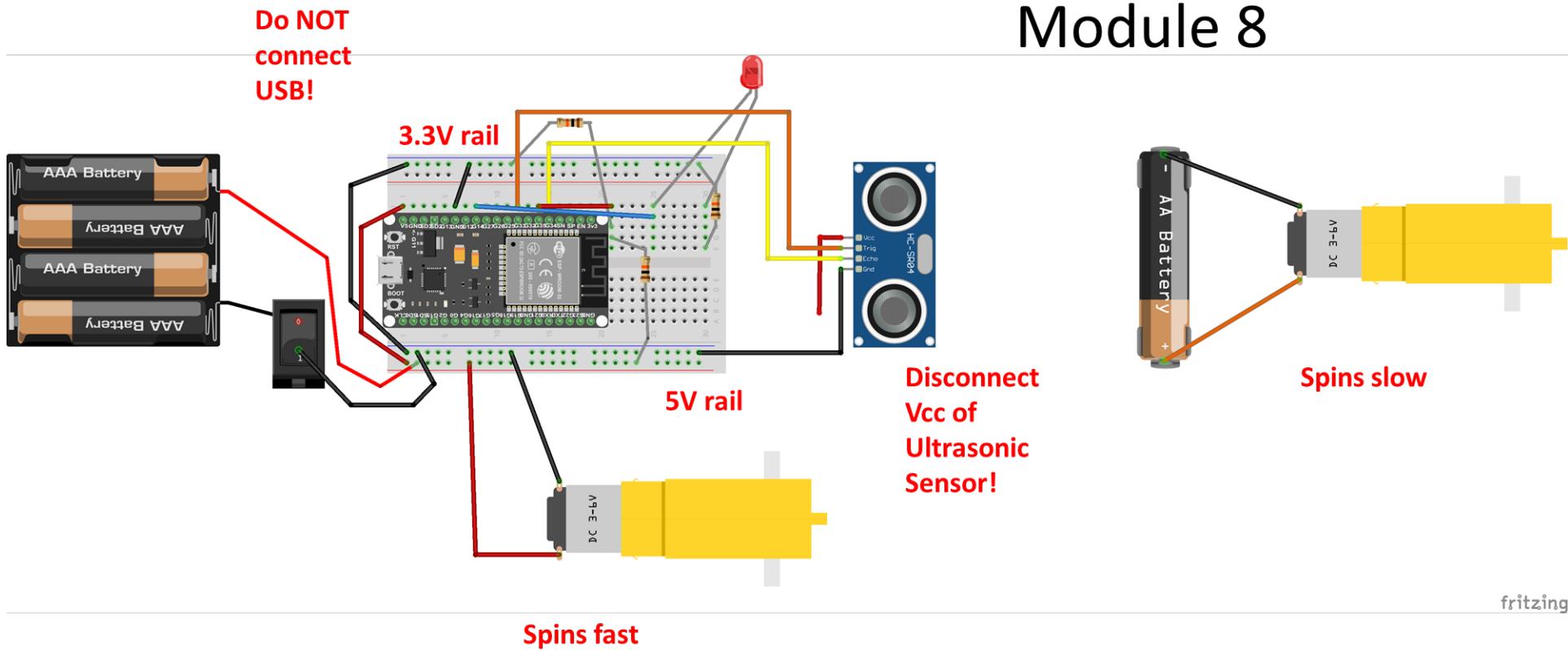


Module 7

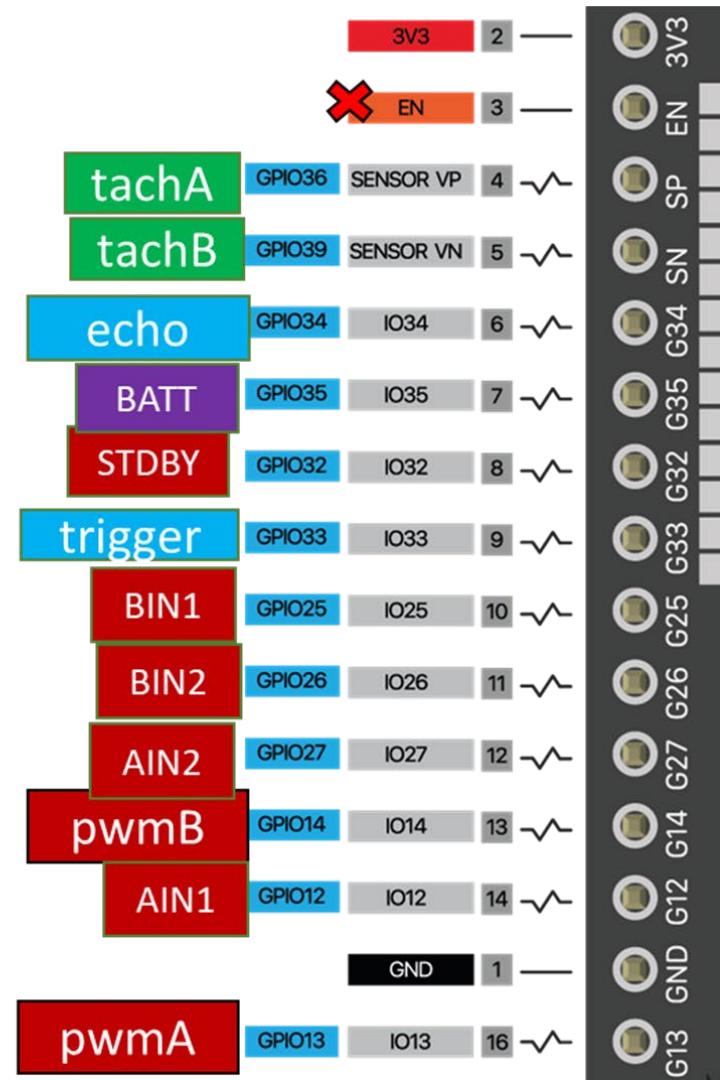
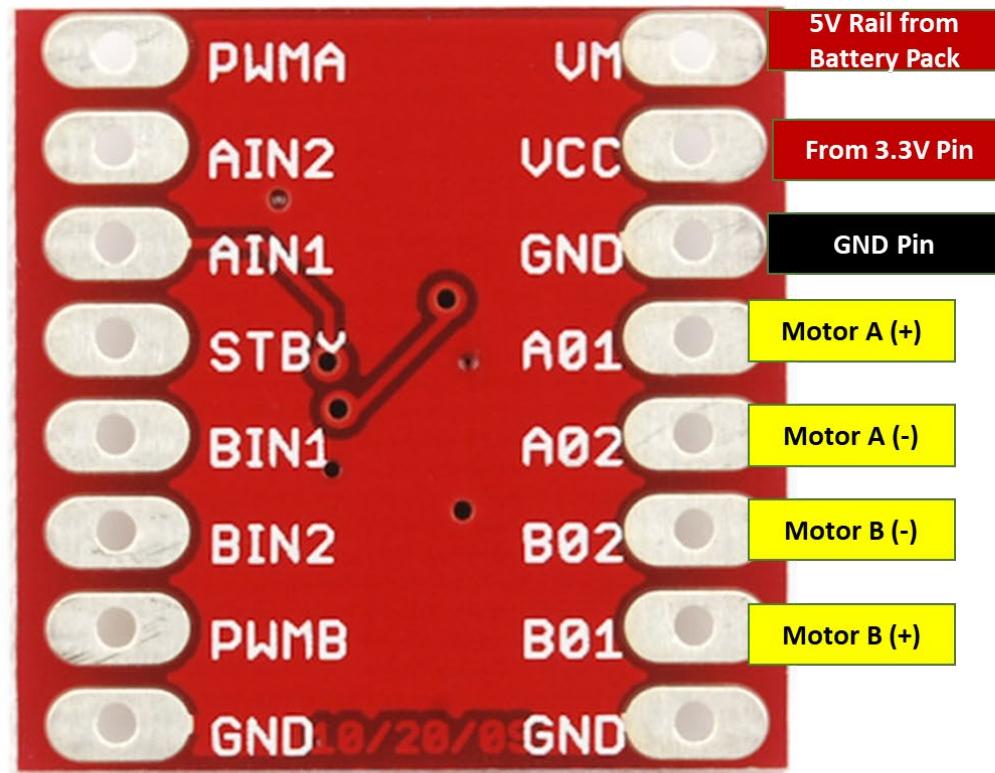


Do not turn the battery pack on! You will damage the ultrasonic sensor.

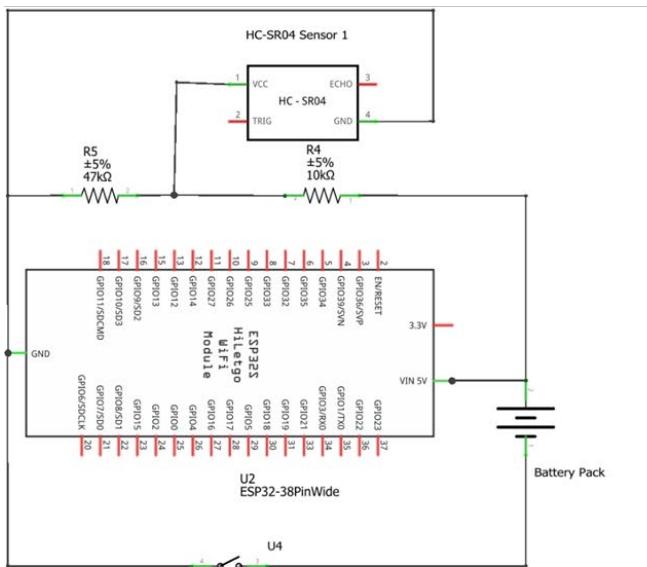
Module 8



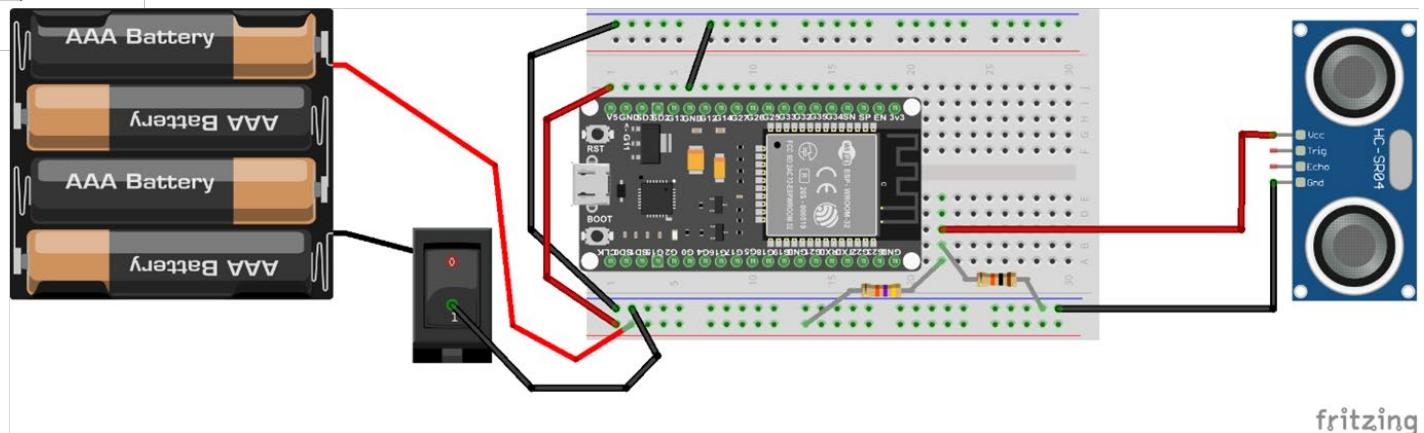
Module 9



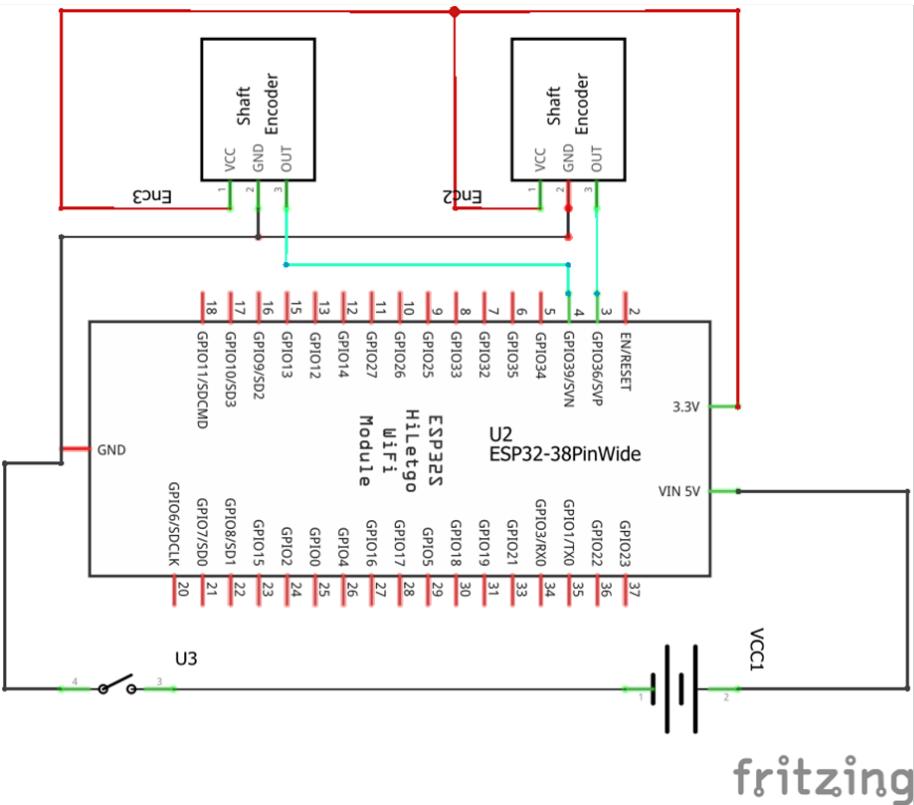
Module 10 (only affects the Ultrasonic Sensor Vcc)



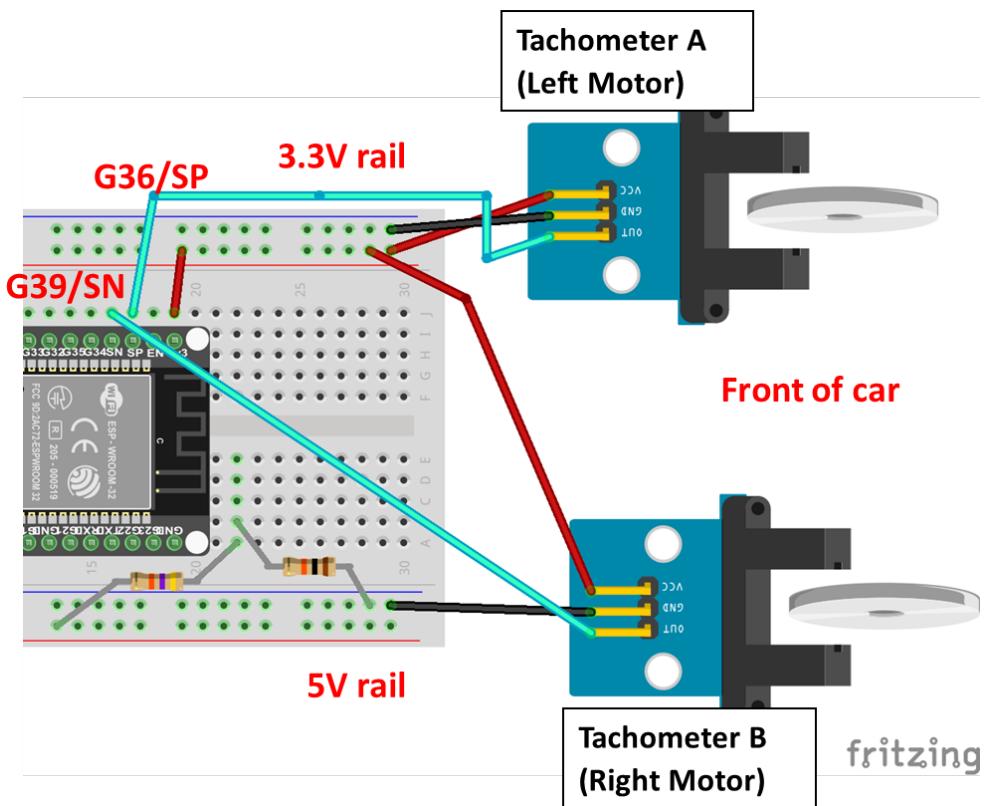
Create a new Vcc circuit for the Ultrasonic Sensor.



fritzing



Module 11 (adding Tachometers)



Module 12

With your vehicle turned on, connect to the Wi-Fi access point you named in Module 12.

Note: You will not be connected to the internet via Wi-Fi since your ESP32 is acting as the router for your laptop/phone.

Using your laptop/phone connected to the ESP32 via it's Wi-Fi SSID, navigate to:

<http://192.168.0.1:8080>

You should see the controller web-page appear on the screen and you can control your robot car!