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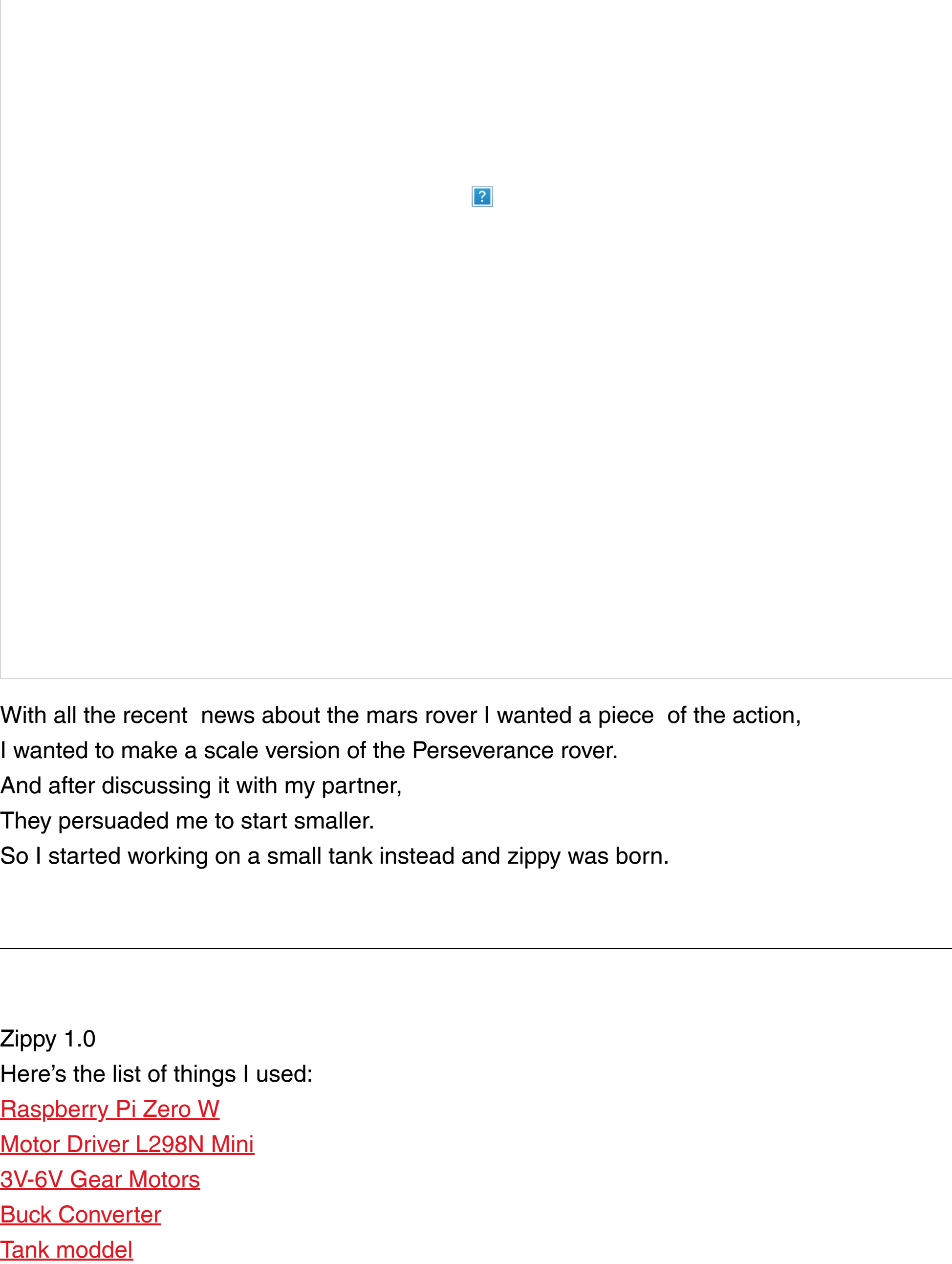


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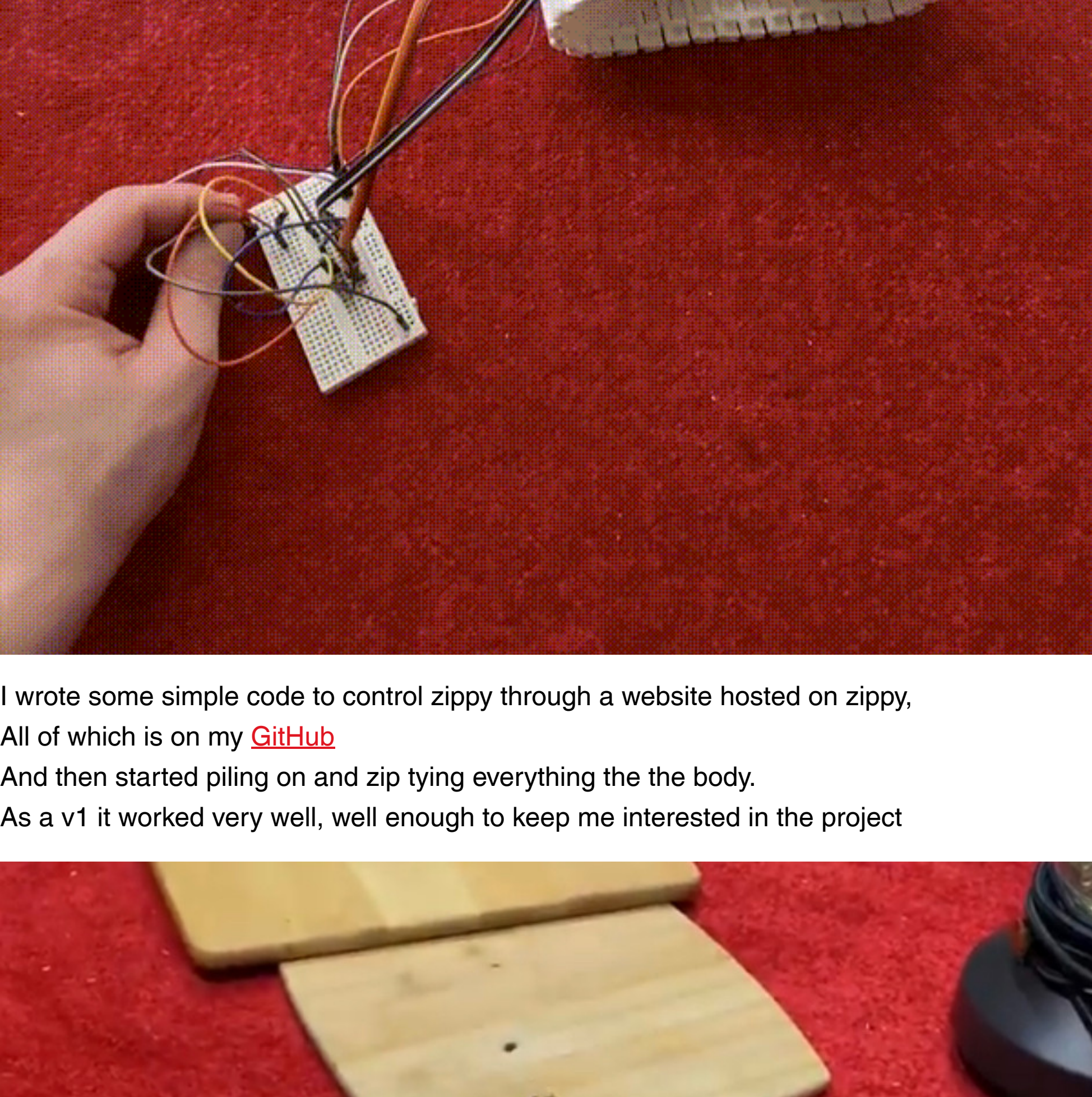
 robot astronaut · Jul 21 · 4 min read

Zippy

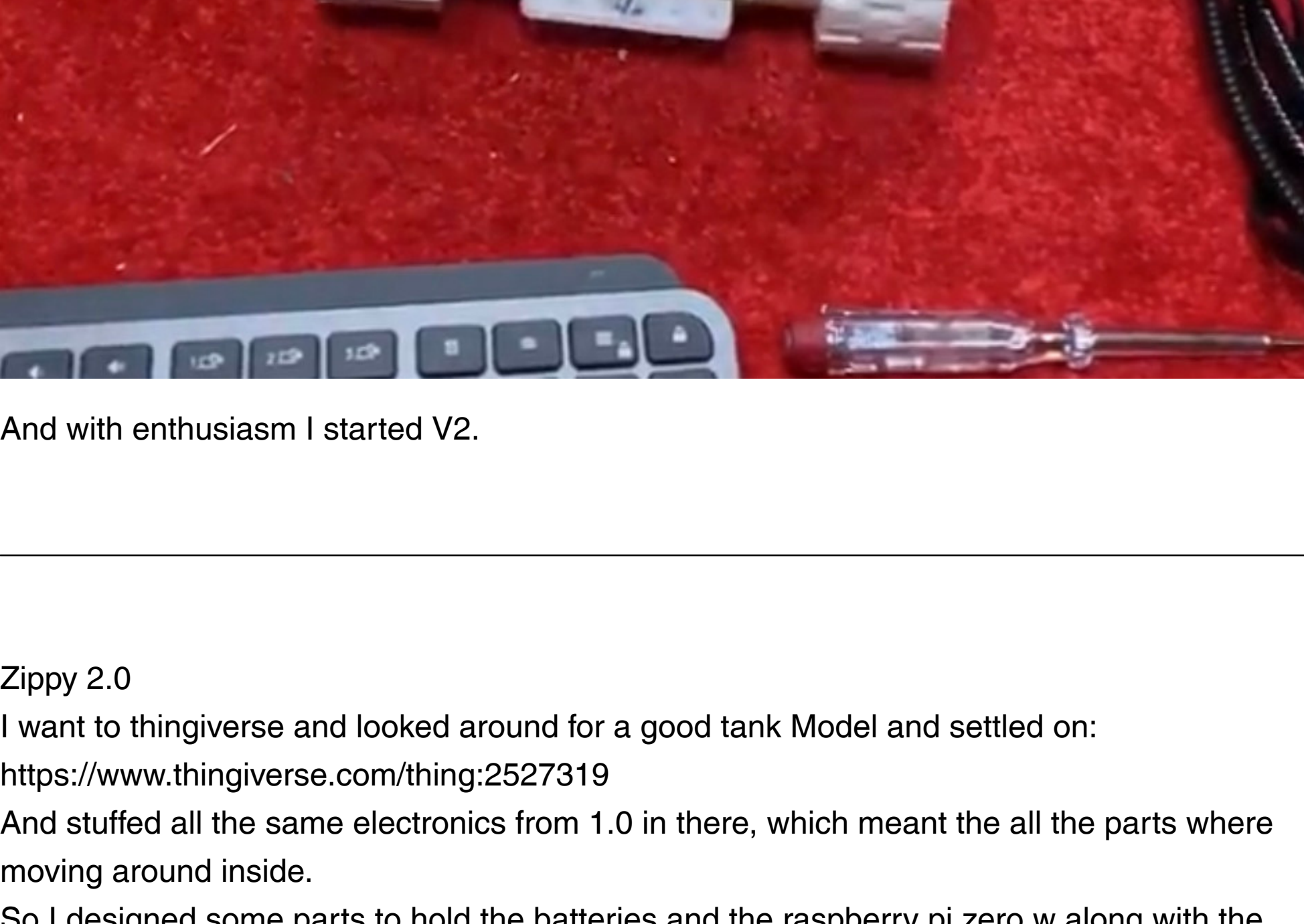
Updated: Jul 22



With all the recent news about the mars rover I wanted a piece of the action, I wanted to make a scale version of the Perseverance rover. And after discussing it with my partner, They persuaded me to start smaller. So I started working on a small tank instead and zippy was born.



I wrote some simple code to control zippy through a website hosted on zippy, All of which is on my [GitHub](#) And then started piling on and zip tying everything the the body. As a v1 it worked very well, well enough to keep me interested in the project



And with enthusiasm I started V2.

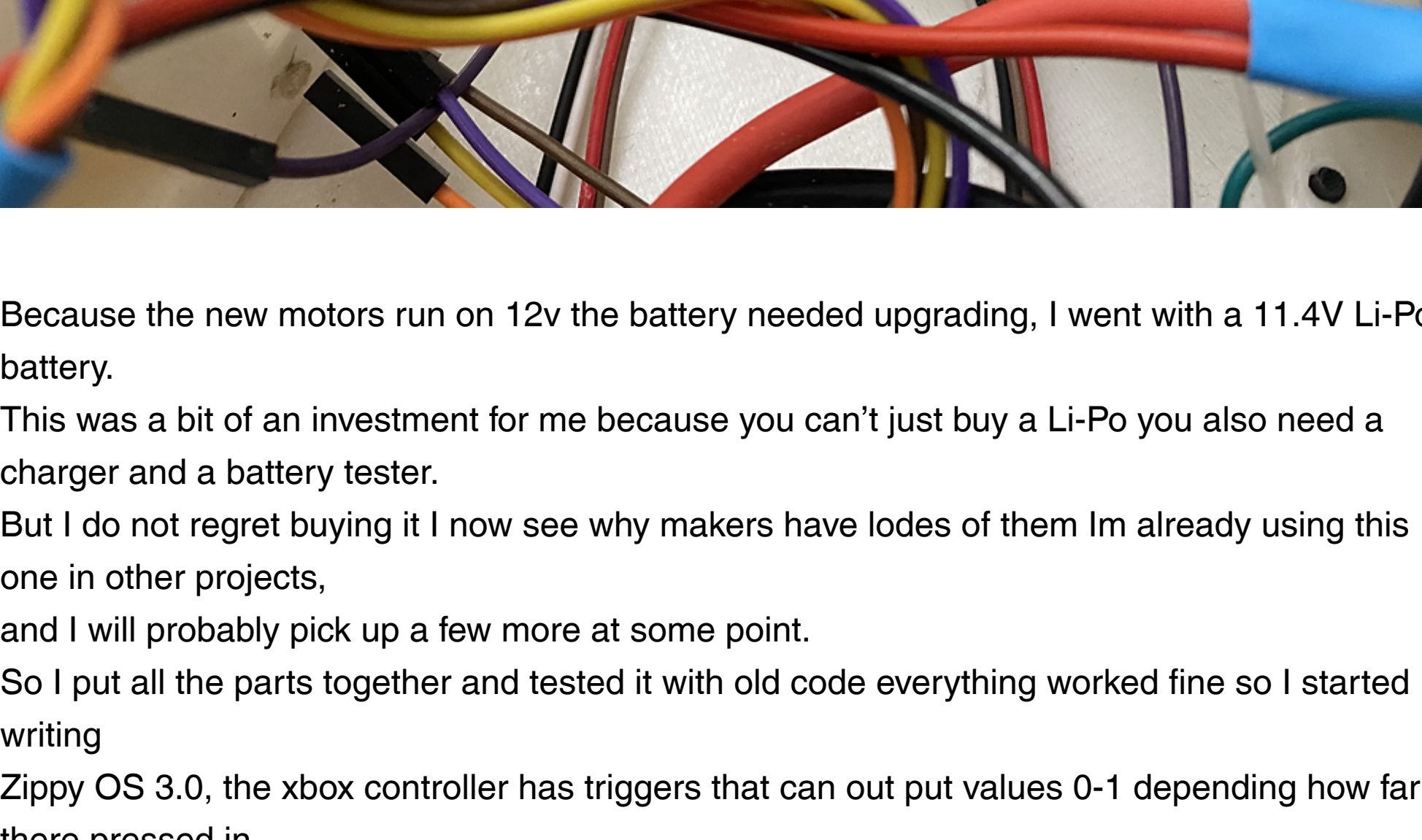


in the process I added a indicator RGB LED to let me know what's happening in the script. (blue for script starting, green for all good And red for when the controller is not connected) later on I do plan having some kind of a web interface for it but ill leave that till Zippy 4.0. After testing this version for a few day some problems emerged, the cheap motors where grinding there gears when going on grass And the power supply wasn't great. I had a bunch of 16650 batteries so I used 6 of them in series/parallel to get 7.4V, but I didn't have a charger so I had to use my bench power supply and that's NOT safe don't do this. And with those problems identified I can move of to...

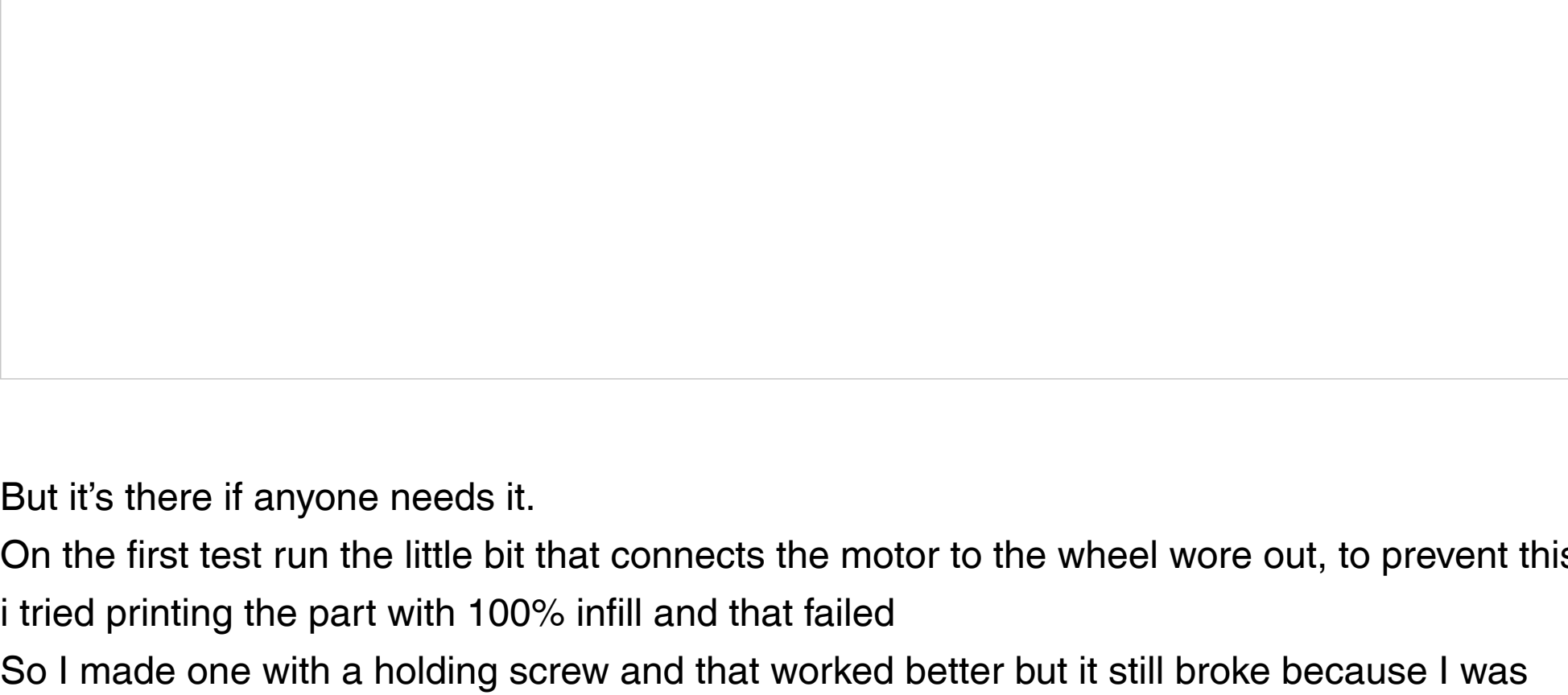
Zippy 3.0
So after learning what needed to be improved, I fully disassembled zippy 2.0 and you can found a full teardown here:

and ordered more parts:
[High Torque Turbo Worm Geared Motor DC12V Motors](#)
[3000mAh 3S 11.4V Lipo Battery](#)
[LiPo Battery Balance Compact Charge](#)
[LiPo Alarm Battery Monitor](#)
[L298N H Bridge Motor Driver](#)
[Raspberry Pi Zero W](#)

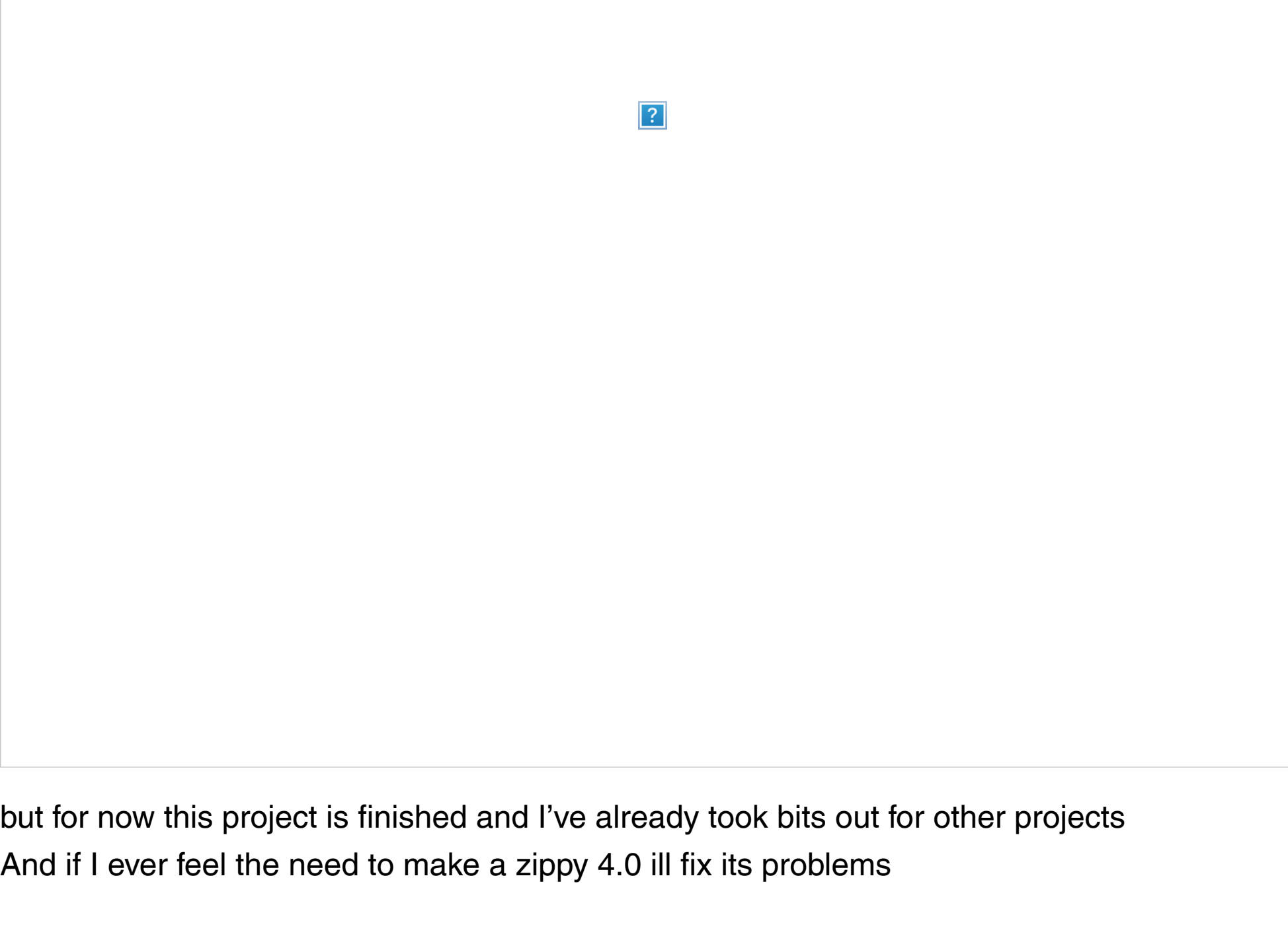
And redesigned some of the parts which you can find here:
<https://www.thingiverse.com/thing:4912372>



Because the new motors run on 12v the battery needed upgrading, I went with a 11.4V Li-Po battery. This was a bit of an investment for me because you can't just buy a Li-Po you also need a charger and a battery tester. But I do not regret buying it I now see why makers have lodes of them Im already using this one in other projects, and I will probably pick up a few more at some point. So I put all the parts together and tested it with old code everything worked fine so I started writing Zippy OS 3.0, the xbox controller has triggers that can out put values 0-1 depending how far there pressed in. So naturally I wanted to use it to control the speed going forwards, so I added PWM to the out put pins and mapped The 0-1 input to be 0-100% and pass that to the PWM and it works like a charm, untill you put the motors under lode Than the first 50% doesn't do anything and the next 50% feels like it makes no difference so I went back to using Zippy SO 2.0



But it's there if anyone needs it. On the first test run the little bit that connects the motor to the wheel wore out, to prevent this i tried printing the part with 100% infill and that failed So I made one with a holding screw and that worked better but it still broke because I was time restrained I didn't have a chance to try stronger Filaments I just printed extra ones and took a small tool kit with me. also in the test the motor driver got very hot, so i zip tied a tiny fan on it and didn't get and more complaints.



but for now this project is finished and I've already took bits out for other projects And if I ever feel the need to make a zippy 4.0 ill fix its problems

What surfaces can zippy ride on?
Sand - NO it gets stuck in the wheels.
Big rocks - NO zippy is too low to the ground and gets stuck.
Pebbles - with determination.
Grass - only very Short grass.
Human bodies - surprisingly well.
Carpets - zippy loves carpets.
flat terrain - definitely.
IP Rating - PI 10.

I had a lot more photos and videos to go with this blog post but in the process my nas failed, And broke my petitions and file system and fixing it would cost me £6,000. I don't normally talk about things like this in my posts, but this has been huge deal for me. I've lost about 20 TB with photos and videos from throughout my life. So if you know anybody at LTT give them a shout.

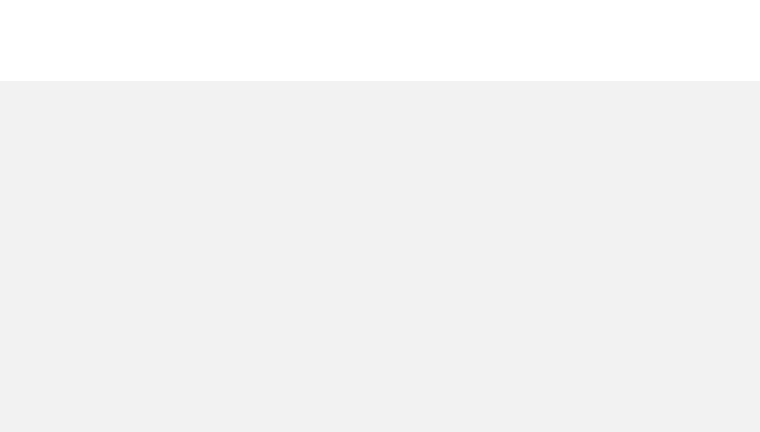
If you like what I'm doing here please consider following me I'm on please.

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5 ❤️

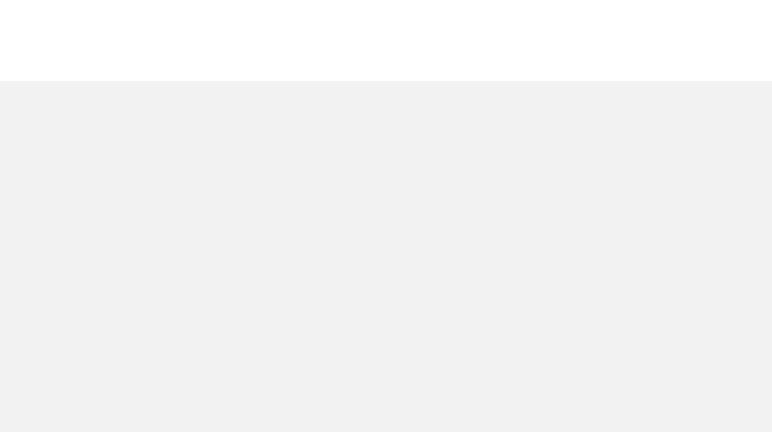
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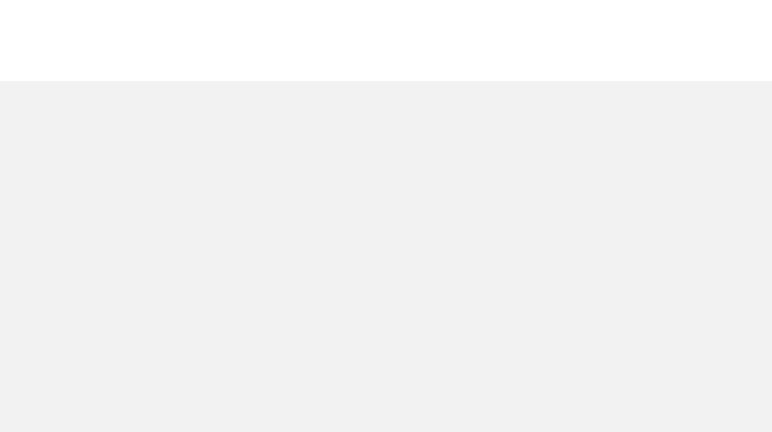
Washing up liquid dispenser V2

4 0



Logo Rocket automated

387 0



Home assistant automated blinds part 1

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