The π Tank

by Jamie M Sams

Chapter 1: Hardware

The platform for this project is the Devastator Tank Mobile Robot Platform from DFRobot (`https://www.dfrobot.com/product-1477.html`). It has four 'plates': bottom, left, right and top/front. The side plates are taken up by the tank tracks, but the top and bottom plates have ample slots and holes to mount any other hardware that would be required.

Attached to the bottom plate via standard PCB standoffs will be the brain of the project: a Raspberry Pi SBC. I will be opting for the Pi Zero model with a USB WiFi module for network connectivity.

Power for the tank with be delivered by a collection of 18650 Li-Po batteries, in a configuration that will provide $11.1V$.

The HAT

Hardware will be attached to the Pi via a custom-made PCB. This PCB should include the following:

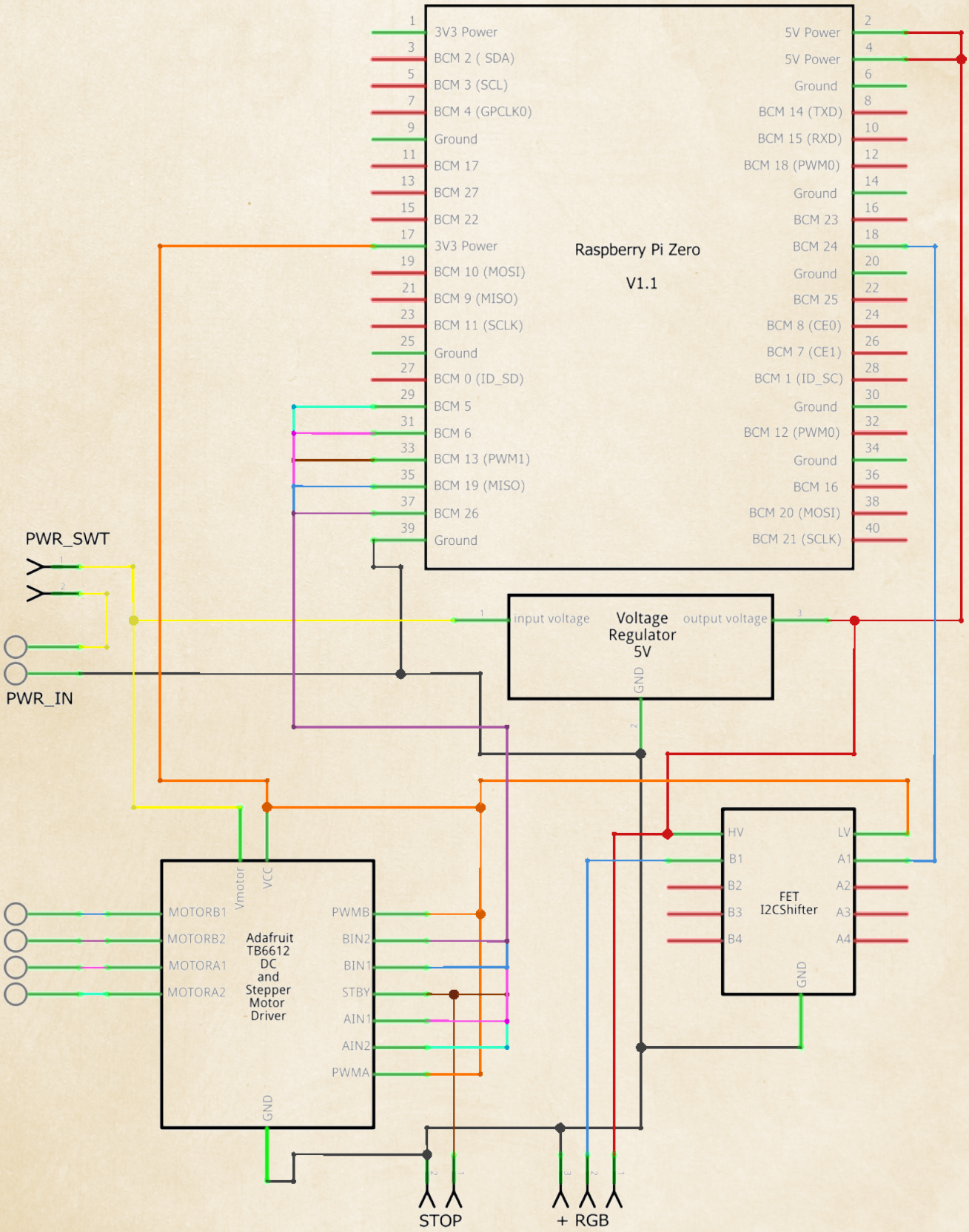
Added Motor driver

Added Power supply

Added Power switch

Added Stop button

Added Neopixels for eyes



Pi HAT Schematic

Chapter 2: Software

For the OS, the Pi will be running Raspbian Lite. The control software will be written in Python.

https://learn.adafruit.com/neopixels-on-raspberry-pi/python-usage