Planning to include in the final prototype

Note: wanted to include amp and voltage drops and wattage but im missing my wall meter AND using a multimeter by myself for this can be a bit more difficult than I’d like (not enough hands for spinny things that aren’t tied down). Will have to update.

1. Rasp pi kit that we bought: <https://www.microcenter.com/product/627789/vilros-raspberry-pi-zero-w-complete-starter-kit>
2. Parallax 360 Servo (main dispenser) <https://www.parallax.com/product/parallax-feedback-360-high-speed-servo/>
3. ß spec sheet
4. Runs and currently has a mini auger attached to it. I super glued it and ran it through the PVC piping with food to see if it would work… it does!
5. Mini auger <https://www.menards.com/main/tools/power-tool-accessories/drill-bits-accessories/new-england-carbide-4-1-2-stubby-wood-auger-drill-bit/sas1000/p-1444445245107.htm> close to this.
6. IR break beam sensor (hopper food level check) <https://www.adafruit.com/product/2168>
7. Would sit inside hopper a certain distance from bottom and tell the user when its time to replenish their fur friends food. Simple and effective. Ready to be placed into the hopper whenever.
8. Load cell amplifier IC (takes data from the load cell; amount food dispensed) <https://www.sparkfun.com/products/13879?_ga=2.7558834.1691337246.1645211069-720504184.1644614439>
9. Mini load cell (measures weight dispensed) <https://www.sparkfun.com/products/14728>
10. Will send signals to the pi from the load cell that come out as a weight. The feedback from this and the inputs of the user for how much they want dispensed will give an approximate stopping point to the servo running the auger.
11. Battery backup (for now just alkaline batteries) need to speak with TA and Andy about possible ways to implement this better. Final reach for the project scope.
12. Planning for now to have it be a 6v (4AA battery in 2 different packs in parallel to the load)
13. Inland 5v relay <https://www.microcenter.com/product/617949/inland-single-5v-relay-module-for-arduino>
14. pending code will allow for backup battery to kick on when main power would go out; still figuring this out
15. <https://community.microcenter.com/kb/articles/637-inland-5v-relay-module#connection-diagram> diagrams. NO PDF for this part.
16. Mechanical implementation so far. And electrical set up. Pins and connections.
17. Main power adapter) <https://www.adafruit.com/product/1466>
18. has splitter to parallel the voltages, that’s 5V to each component and they split the amperage.
19. 1st output to raspberry pi.
20. 2nd output to the motor

THINGS TRIED BUT NOT IN FINAL DESIGN AS OF NOW.

1. Gave thought to a water pump (having a water connection to our device that pumps fresh water)
2. Ultimately a heavyish load and undesirable to final design due to scope creep and necessity.
3. LCD screen. Set it up and it was broken when we got it.
4. Ultimately we felt this was insignificant to the end user and a pain for us for load capacity and pin implementation on the pi and putting it on the actual device.
5. Also, everyone has a smart phone and the idea is to be connected away from going up to the machine to see metrics and set info anyway.
6. Camera
7. Would be used to watch the pet. As for now this is a backburner project. We bought a cheap module and it may or may not be added. Practicality and other important issues are taking precedent.
8. FSR weight sensor
9. A cheap module we used in first semester. In code it could read that there was or wasn’t pressure.
10. Decided to upgrade this to the weight sensors above in our final decide. Much better and serves a wider purpose in the distribution of food.