Project Proposal

Team…*cold fries*

Executive summary:

People love their pets, but life can be hectic. Whether it be a change of plans or even the convenience of automatic dispensing, this ease of access pet feeder will allow for a fed fur friend and ease of mind and time relief for the owner. With the Automated Remote Feeder this problem can be solved. The feeder will be able to connect to a website or app, at which the user can dispense certain amounts of food at any time with a simple click of a button. The feeder can also be put on a timer, so that it dispenses at certain times without needing to manually dispense through the app as well as give amounts of food to dispense.

The primary goal is that we will be only dispensing dry foods. The food dispenser will automatically alert the user via IR sensor when the food is running low in the hopper and indicate that it will need to be refilled. To do the dispensing, we will have an auger attached to the parallax 360 servo motor. This auger/ motor combination moves through a cylinder from the hopper and dispenses outward to the bowl. The bowl will have a smart weight sensor that will let us know the amount of food dispensed has been met and will turn off the motor. For our smart feeder to interact with the user (IoT), we will be doing this through a raspberry pi.

Testing: For testing of the product we will have specific metrics that need to be met. We will try to see if pets interact well with the feeder. Pets do not take that long to eat, so we will be stationed there to watch the entire process and record data. We will also test with multiple different types of food to see how the system handles various food types and see what type of troubleshooting will need to be done to the food dispensers. Test the wiring/outlet source is not in the way of the pets or anything in general. Test the durability through trial runs.

Expansion: One thing that we wanted to add that will help with the design of the ARF pet feeder is that addition of a better weight sensor. This weight sensor can be used for a multitude of things (whether it be knowing when food is already in the bowl to how much food is to be dispensed). An extra quality of life that we are looking to add is a camera. The purpose of the camera is so that the user can choose when they want to check up on their pet, typically after a feeding, so that they can see how their pet is doing (this addition will be an optional attachment, possibly being dropped from the overall product). Another thing that we want to add is a backup battery. The purpose of the backup battery is to allow for the dispensing of food even if the ARF becomes unattached from the primary power source. The battery will be directly hooked up to the food dispenser, and power the device. We also want to add a server/database to the pet feeder so that we can track when it is that a dispensing occurs and also how much food was dispensed. For the automatic feed times set by the web client, this will be done using a database to store the data. The database will be checked to see when to dispense food and how much to dispense at that time.