Project Proposal

Team…*cold fries*

Executive summary:

People who own pets know how it feels to be running late, have something urgent comes up, or are simply unable to be there for their pet due to work or other obligations. Because of this, sometimes it is difficult to give them food or water at the right time. With the Pet Feeder, this problem can be solved. The feeder will be able to connect to a website or app, at which the user can use those to dispense certain amounts of food or water. The feeder can also be put on a timer, so that it dispenses at certain times without needing to manually dispense through the app. There will be electrical push buttons as well, so that the feeder can still dispense, even without the need for the app or website. The water and food dispenser will automatically alert the user via sensor when the water or food is running low and indicate that it will need to be refilled. We hope it will connect to any outlet and produce a minimal amount of current draw.

With the Pet Feeder, what we know that is going to be set is that there will be a three portion set, in which there will be water and two separate departments for food (whether it be food or treats). The primary goal is that we will be only dispensing dry foods, as wet foods bring up a multitude of problems that won’t occur with just dry foods. As there will be an automated aspect, we will be using an app or website that will be created by the group in order to enable features such as scheduled feeding and feeding at command. With the feeding portion of the pet feeder, we have different options as to what it is that we can use to dispense the food; This includes solenoids, augers, actuators and more. Since this will be a smart feeder, in case of emergency or manual use, there will be an option to dispense food without the use of the app or website. With a manual switch, this will also dispense food. For the water dispenser, this will be a constant stream, it will use an elevated flow rate in which water will be available at all times, stopping at a certain level to prevent overflow. In order for the smart feeder to interact with the user (IoT), this will be done with options such as a raspberry pi, arduino, microcontroller and other possibilities.   
  
 Testing: For testing of the product, we will have people we know with pets such as dogs help test the dog feeder. We will have the pet and the feeder in the same area as each other and have it test dispense the pet food. We will run several tests with different pets and multiple times during the day (breakfast, lunch, dinner, etc). We will then run separate tests for the same duration using the manual knobs on the device. 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 multiple trials with different size pets to see how the structure holds up through time.