PET FEEDER

Your Next Generation Pet Feeder For A Healthier Friend

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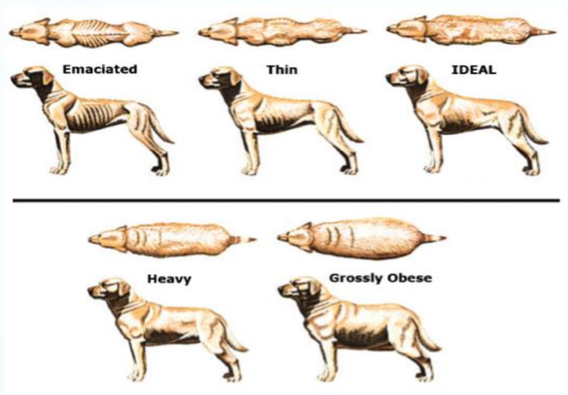
UCI Samueli School of Engineering

BACKGROUND

Over half of the dogs and cats in the United States are overweight because owners do not understand how much their pet should ideally be eating every day.



OBJECTIVE

Design and prototype a user friendly, mechanical pet feeder that will:

- Dispense veterinarian recommended amount of food according to pet's weight
- Dispense supplements based on pet needs

THE BIGGER PICTURE

Other pet feeders within the market today, often have an inaccurate way of dispensing food as well as a lack of automatic supplement mixing. Our technology will revolutionized the method of keeping pets healthier and happier.

INNOVATION & DESIGN

A large portion of the time has been invested on developing a persona, Amber, who is the fictional character that represents the target audience for the product we are developing. Based on the needs of the persona the Minimum Viable Product (MVP) was developed, this determines the fundamental features and specifications of the entire design.

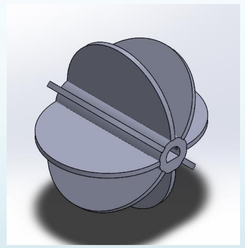
MVP Design Specifications

- Accurate measurements (1 oz increments) of dry food, according to pet's weight
- Accurate dispensing of food and supplements into the pet's bowl
- Removable food storage and supplement cartridges (up to 4 supplements)
- Digital interface to input multiple pets' information (name, weight, supplements)
- Properly sealed enclosures to ensure freshness
- Compact size, easy to clean and sleek design

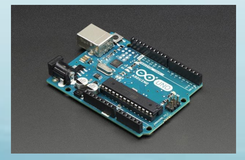
Amber Smith
Age: 35
Gender: Female
Marital Status: Married
Education: B.S.
Job: Stay-at-home mom
Location: Newport Beach
Family Income: 400,000+/year

DRY FOOD DISPENSING

A cereal dispenser served as inspiration for the food dispensing mechanism.



CAD design of the measuring star. Each wedge has measures 1 oz.



To control the angle of rotation of the measuring star, an Arduino, H-bridge and 5V stepper motor will be used. A rotation of 45 deg. dispenses 1 oz of food.

SUPPLEMENT DISPENSING

Similar to a modern coffee maker, the design will have a compartment for 4 removable supplement cartridges (30 mL each). Once the Cartridges are inserted, the closing lid mechanism creates an orifice on the cartridge's top rubber seal.

A pump used in soap dispensing mechanisms will be employed to pump air into each cartridge, creating pressure to push down on the fluid, thus, dispensing 1-2mL at a time.

TIMELINE

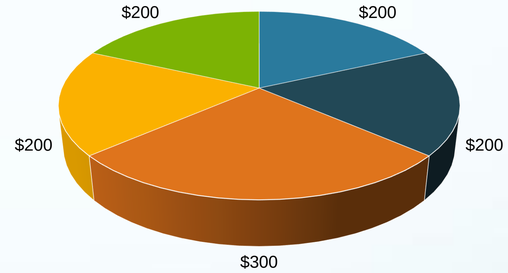
Background & Market Research → Identify Goal & Object → Create Persona → Determine Pet Feeder Features → Sketching CAD

NEXT STEPS:

- Program user interface to save multiple pets' information(name, weight, supplement, etc.).
- Determine packaging of the prototype for a sleek and modern design.

BUDGET

Total Cost (Fall Quarter): $400



Total yearly cost: $1200

TEAM

Left to right:
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